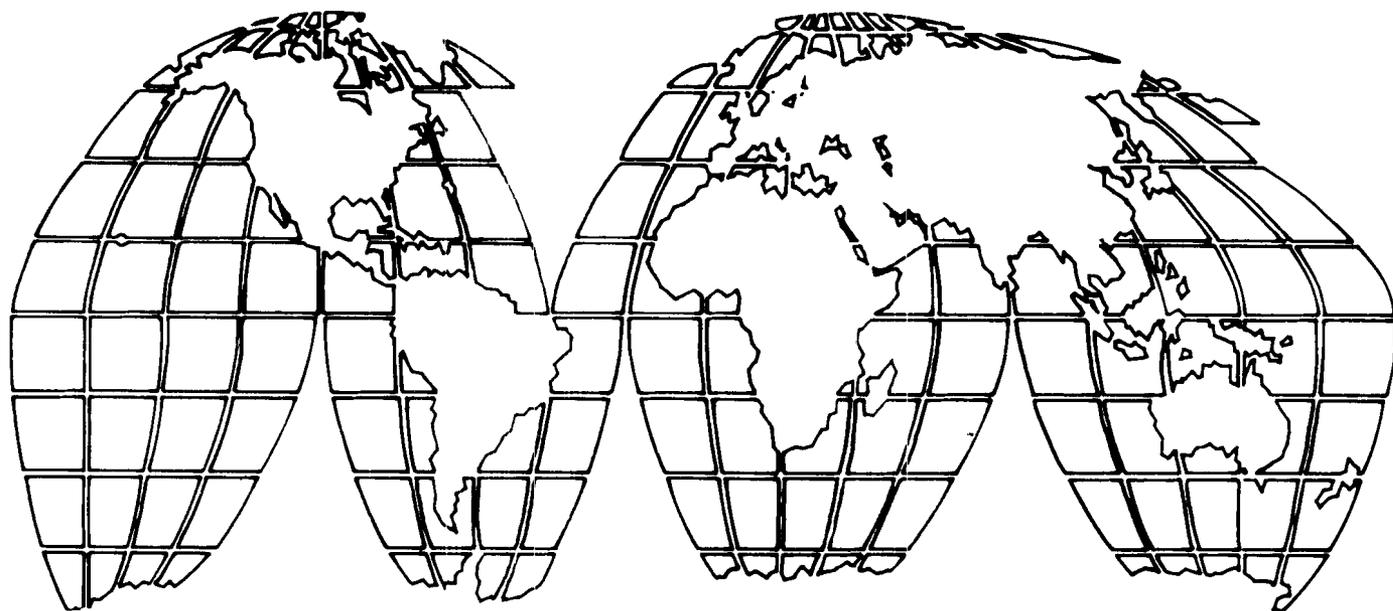


A.I.D. Program Evaluation Report No. 6

PL 480 Title II: A Study of the Impact of a Food Assistance Program In The Philippines



August 1982

U.S. Agency for International Development (AID)

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BEST AVAILABLE

PL 480 TITLE II: A STUDY OF THE IMPACT OF A
FOOD ASSISTANCE PROGRAM IN THE PHILIPPINES

by

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A.I.D. Program Evaluation Report No. 6

Bureau for Asia
U.S. Agency for International Development

August 1982

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INTRODUCTORY NOTE

"PL 480 Title II: A Study of the Impact of a Food Assistance Program in the Philippines" examines the impact and effectiveness of U.S.-assisted supplementary feeding programs in the Philippines.

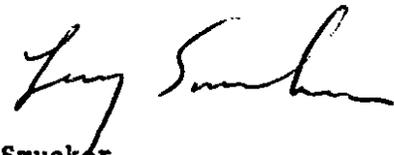
The PL 480 Title II program is an important component of U.S. foreign assistance. Since the program's inception in 1954 through 1981, approximately \$3.6 billion in food assistance has been provided to selected countries in Asia. The program has saved many lives--surely numbering in the millions--and represents the genuine humanitarian impulse of the American people. However, questions have frequently been raised concerning the nutritional and developmental impact of various Title II programs.

For over a decade, the academic literature on nutrition witnessed a spirited debate on the relationship between donor provided food aid and nutrition status. Some argued that the intuitively obvious linkage between supplementary feeding programs and improved nutrition status did not exist. Similarly, development practitioners and senior leadership in AID questioned the program's developmental impact and urged closer integration of the Title II program with the overall development assistance effort. Finally, a growing awareness of the lack of empirical data on the comparative effectiveness of the major Title II sub-programs--Maternal and Child Health (MCH), School Feeding (SF), Food for Work (FFW), and other programs such as Day Care or Adult Feeding--underscored the need for comprehensive assessments of program impact to permit more informed program planning and decision-making.

For these reasons, USAID/Philippines initiated this evaluation of the PL 480 Title II program. The major purposes of the evaluation were to assess the nutritional and developmental impact of the PL 480 Title II program and to determine cost-effectiveness.

The report concludes that the MCH and Day Care programs brought about a positive nutritional impact and were cost-effective. School Feeding programs, on the other hand, were not found to be cost-effective, while their nutritional impact was marginal.

The analysis examines a number of program design elements that were critical to the outcome of the various sub-programs. In light of this information, the report should be of interest to others who have responsibility for planning and implementing supplementary feeding programs.



Larry Smucker
Director
Office of Development Planning
Bureau for Asia

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PREFACE

Appendix II describes the methodology used in this evaluation. However, the success of this task hinged very heavily on the cooperation of the agencies which actually implement the Title II program in the Philippines. The openness of CARE, Catholic Relief Services, and the Ministries of Education and Culture, Health, and Social Services and Development in making records available and their generosity with staff time made them a joy to work with. Such openness and wholehearted cooperation springs from a deep-seated belief in the value of their own work in promoting the welfare of the undernourished children of the Philippines. The sincerity of this effort was unmistakably evident at every level from bottom to top. In addition, the USAID Mission in Manila provided the team with a great deal of administrative support during its weeks in-country. This vital support continued in the months afterward, as well, as documents continued to flow back and forth between the Washington team members and their colleagues in Manila.

In another section of the report is a listing of the many different people who cooperated in one way or another with the evaluation team, either in the Philippines or in Washington. The team expresses its gratitude to all of them.

Nevertheless, certain people just must be singled out because they gave of themselves truly exceptionally. Thus, the members of the evaluation team wish to express their particular thanks, both professional and personal, to the following:

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AID/Washington

Dr. Richard Johnson
Dr. Peter Thormann
Dr. Carol Adelman
Ms. Karolyn Kuck
Mrs. Cheryl Williams

PROGRAM IDENTIFICATION DATA SHEET

1. Country: Philippines
2. Project Title: PL 480 Title II Program:
 - (1) Maternal and Child Health Program
 - (2) School Feeding Program
 - (3) Other Child Feeding Program
 - (4) Snack Food Program
 - (5) Day Care Program
 - (6) Food for Work Program
 - (7) Adult Feeding Program
3. Project Number: 1974 Food and Nutrition Project: 492-0252
4. Project Dates:
 - a. First Project Agreement: Child Nutrition Support, FY 1968
 - b. Second Project Agreement: Food and Nutrition, FY 1974
 - c. Final Obligation of Food and Nutrition Project: FY 1979
 - d. Title II Program: Ongoing
5. Program Funding:
 - a. AID Bilateral Funding: \$305.6 million in Title II commodities
6. Mode of Implementation: Nutrition and Related Services provided to the Republic of the Philippines by Virginia Polytechnic Institute and State University under contract AID/ASIA, C-1136
7. Project Design: Virginia Polytechnic Institute and State University; Catholic Relief Services (CRS); Cooperative for American Relief Everywhere (CARE)
8. Responsible Mission Officials:
 - a. Mission Director(s): Anthony Schwarzwald 1979-Present; Peter M. Cody 1976-1979; Garnett Zimmerly 1975-1976; Thomas C. Niblock 1969-1975; Westley Haroldson 1965-1969.
 - b. Project Officer(s): R.W. Engel; W.F. Doody; A. Fraleigh; W.B. Carter.
9. Previous Evaluations and Reviews:
 - a. AID Evaluation, "An Evaluation of PL 480 Title II in the Philippines," Edwin K. Fox, Office of Food for Peace, AID, 1978;
 - b. Numerous internal evaluations undertaken by CRS, CARE, and GOP implementing agencies.

10. Host country exchange rates:

- a. Name of currency: Peso
- b. Exchange rate at time of project: 7.5 pesos = U.S. \$1

Part I

EXECUTIVE SUMMARY

The Problem: Malnutrition in the Philippines. Although malnutrition in the Philippines has decreased in the last few decades, it remains a serious problem requiring sustained attention and resources. The relatively high prevalence of malnutrition affecting pre-school children is a useful indicator of the problem. As of 1978, only one-third of children under six years were normal. Among one year olds, 38 percent were moderately or severely malnourished and only 20 percent were normal.

U.S. Assistance. The PL 480 program was initiated in 1954 to assist the Philippine government (GOP) in combatting malnutrition. Under Title II, four major sub-programs have been established, each with distinct objectives and each implemented by separate GOP and U.S. private voluntary agencies. These programs are: (1) Maternal and Child Health (MCH); (2) Day Care; (3) School Feeding; and (4) Food for Work (FFW). Together, the MCH, Day Care, and School Feeding programs constitute approximately 98.5 percent of the total number of Title II beneficiaries. Three other programs--Other Child Feeding, Adult Feeding, and Snack Food--serve the remaining beneficiaries. The Title II program is implemented by the Cooperative for American Relief Everywhere (CARE) and by Catholic Relief Services (CRS). The CRS MCH program is the largest program by dollar volume; the CARE School Feeding program is the largest program by beneficiary level. From 1975 to 1977, beneficiaries averaged about 11 million per year and U.S. government (USG) costs averaged \$17.1 million--73 percent of total program costs. From 1978 to 1980, beneficiaries averaged about 21 million and USG costs \$26.3 million, about 58 percent of total costs. The proportion of USG costs has been declining regularly since 1976 and was scheduled at 45 percent for FY 81.

Evaluation Purpose and Methodology. The purpose of the evaluation was: (1) to assess the nutritional impact of the Title II program on beneficiaries; (2) to determine cost-effectiveness of the components of the Title II program; (3) to compare actual impact with the stated (and implied) goals of the GOP, USG, and the voluntary agencies; and (4) to produce information which could assist in enhancing the effectiveness of the Title II program. Findings and conclusions presented here are based upon site visits, interviews, and analyses of primary weight-for-age data collected and analyzed by the team for each of the three major programs.

AID Effectiveness. MCH and Day Care are effective in combatting the highest priority malnutrition problem in the Philippines. Thus, U.S. assistance to these programs represents a sound use of AID resources. By contrast, School Feeding addresses a lower priority malnutrition problem and does so less effectively than the MCH and Day Care programs. As a consequence, U.S. assistance to this program represents a less effective AID investment.

Reaching the Most Nutritionally Vulnerable. MCH and Day Care are reaching the most nutritionally vulnerable age group--children under six years--a group which has been correctly identified by the GOP as the highest priority age group for all GOP nutrition programs. School Feeding, on the other hand, is reaching a less nutritionally at-risk group--school children 7 to 14 years--a group correctly designated by the GOP as a lower priority.

Targeting to the Moderately and Severely Malnourished. MCH and Day Care are reaching very high percentages of moderately and severely malnourished children within the 0 to 6 age group. By comparison, the School Feeding program is reaching substantially lower percentages of moderately and severely malnourished children than MCH and Day Care.

Nutritional Impact. MCH and Day Care beneficiaries appear to have experienced considerable weight gain--the commonly used indicator of nutritional impact. The amount of weight gained by MCH and Day Care participants compares extremely favorably with the best known results achieved in other supplementary feeding programs worldwide. Weight gain by School Feeding participants, even relying on the most favorable data available, is marginal at best. The nutritional impact of the U.S.-assisted School Feeding program does not vary substantially from the impact of the GOP-supported school feeding programs which use local foods and resources.

Cost-Effectiveness. MCH is the most cost-effective program, with the costs of the rural Day Care program only slightly higher. The School Feeding program is least cost-effective.

Factors Linked to Nutritional Impact. Participants having the lowest nutritional status show the most improvement. An important finding, therefore, is not merely that MCH and Day Care are effective, but that there is a differential effectiveness which favors the most malnourished. The same program investment yields a greater return--higher nutritional impact--when focused on the most malnourished.

Food for Work. The Food for Work program appears to have provided positive and equitable community benefits but does not appear to make a substantial or sustained contribution to the material well-being of individual participant households. Greater amounts of commodities on a more regular basis would be needed to result in a measurable contribution to household income.

Recommended Priorities for Future Investment.

1. The MCH and Day Care programs should be accorded the highest priority by AID as long as the Title II program exists in the Philippines. No reductions should be made in MCH and Day Care in the absence of all other possible reductions in the other Philippine Title II programs.

2. The School Feeding program should be phased over to the GOP. While the program continues it should be accorded third priority but on the conditions that: (1) all normal children are eliminated from the program; and (2) the plan to target the program to the moderately and severely malnourished is implemented immediately.
3. The Food for Work program should be accorded fourth priority for immediate purposes but gradually phased out.
4. Other Child Feeding and Adult Feeding, lacking integrated developmental objectives, should be accorded fifth priority but on strictly humanitarian grounds.
5. The Snack Food program, serving children who are not malnourished and who are economically better-off, should be accorded lowest priority, the program's revenue-generating potential notwithstanding.

Part II

CONCLUSIONS AND RECOMMENDATIONS

A. MAJOR TITLE II PROGRAMS: CONCLUSIONS AND RECOMMENDATIONS

1. Maternal and Child Health and Day Care Programs. The Maternal and Child Health and Day Care programs are effective supplementary feeding programs and have had a positive impact on the nutritional status of program participants.*

Recommendation: The MCH and Day Care programs, serving considerably effectively the most at-risk age groups (0 to 6), should be accorded the highest priority by AID among all Title II programs for as long as the Title II program exists in the Philippines. No reductions should be made in MCH and Day Care in the absence of all other possible reductions in other Philippine Title II programs, all of which serve groups less nutritionally at-risk. If reductions must be made in the MCH and Day Care programs, AID priorities should remain consistent with the age and special group priorities established by the Philippine National Nutrition Council (NNC). Thus pregnant and lactating women would be eliminated first, the 6 to 4 year olds in Day Care would be eliminated second, the normal 6 to 11 month olds in MCH would be eliminated third. To avoid the actual elimination of these groups from the MCH and Day Care programs, and program disruption, the USAID health and nutrition staff should begin collaboration as soon as possible with the Ministry of Social Services and Development (MSSD) and the Ministry of Health (MOH) to develop a plan whereby responsibility for providing assistance on a priority basis to each age group and special category specified by NNC guidelines is gradually assumed, over the next five years, by the GOP.

2. School Feeding Program. The School Feeding program has not resulted in a substantial improvement in nutritional status of program participants over non-participants, in part because approximately three-quarters of participants are normal or only mildly malnourished.

Recommendation: The School Feeding program should be phased over to the GOP. While the program continues it should be accorded third priority but on the conditions: (1) that all normal children are eliminated from the program; and (2) the

*The supporting evidence for each major conclusion presented here is elaborated in the following pages which present the conclusions and recommendations for each individual program.

plan to target the program to the moderately and severely malnourished is implemented immediately. If reductions must be made in a targeted program, first to be eliminated should be the 12 to 14 year olds, second the 9 to 12 year olds, and last the 7 to 9 year olds. If the program remains untargeted during FY 82, it should be phased out and commodities reprogrammed for the MCH and Day Care programs.

3. Food for Work Program. The Food for Work Program is contributing to community development but does not represent a viable strategy for increasing income and employment among the poor.

Recommendation: Although the Food for Work program's income and employment objectives are consistent with USAID/Philippines CDSS strategy, these objectives are not being met. For immediate purposes, the program should be accorded fourth priority but gradually phased out.

4. Other Child Feeding and Adult Feeding. The Other Child Feeding and Adult Feeding programs are humanitarian feeding programs, not developmentally-oriented nutrition interventions.

Recommendation: As a developmental agency, AID should allocate Title II commodities to the extent possible to developmentally-oriented nutrition interventions rather than to humanitarian feeding programs. Accordingly, AID assistance to these programs should be phased out. For immediate purposes, these programs should be accorded fifth priority.

5. Snack Food. The Snack Food program is designed as an experimental program to generate revenue, rather than as a nutrition intervention. Snack food beneficiaries are not the poor and malnourished; beneficiaries are economically better-off school-age children.

Recommendation: As an activity whose objectives are not consistent with USAID/Philippines CDSS objectives and whose target group is neither poor nor nutritionally at-risk, the Snack Food program should not be allocated Title II commodities, the program's revenue-generating potential notwithstanding. For immediate purposes it should be accorded lowest priority.

B. DAY CARE PROGRAM: CONCLUSIONS AND RECOMMENDATIONS

1. Nutritional Impact. The Day Care program is having a positive impact on the nutrition status of pre-school participants age 2 to 6. This conclusion rests on three findings: (1) participants experienced a statistically significant improvement in nutrition status, while non-participants did not; (2) the percentage of participants who improved in nutrition status was considerably higher and the percentage of participants who declined was considerably lower than for non-participants; and (3) participants gained approximately 6 percent of standard weight-for-age in a six month period while the few non-participants who improved experienced a 3 percent gain. This percentage gain compares highly favorably with the best known results in other supplemental feeding programs around the world.

Recommendation: Day Care, as part of the MCH program, should be considered the second highest priority by AID for funding purposes. It serves children in a highly nutritionally at risk category (age 2 to 6) and the analyses show that the program serves these children effectively. Reductions in this program should be made only after all possible reductions have been made in other Title II programs which serve those less nutritionally at-risk. U.S. assistance to this program should be continued for the foreseeable future.

2. Effectiveness of Day Care Service. Day Care is an effective nutrition intervention for the pre-school participants served. The major design components of Day Care which serve to enhance its impact and effectiveness are: (1) considerable targeting to the moderately and severely malnourished; (2) carefully supervised, on-site feeding; (3) regular weighing and recording of weights; (4) the provision of a scheduled ration which provides between 20 and 29 percent of pre-schoolers' daily caloric needs, depending upon the child's age; (5) the integration of a variety of complementary activities to enhance long-term impact, such as nutrition education, women's income generation and village food production; and (6) the involvement at all levels of program operation--region, district, and barangay--of individuals with at least a minimum of nutrition training. Beyond the soundness of program design, an additional factor to which program effectiveness should be attributed is a considerably high level of support and enthusiasm for the program found in the local communities.

It is important to make a distinction between immediate and long-term effectiveness. Although the program is immediately effective in bringing about significant improvement in nutrition status, long-term effectiveness and genuine developmental impact--reduction in malnutrition prevalence through the modification of villagers' food-consumption behavior--is critically

dependent upon the further development, strengthening and expansion of Day Care's complementary activities. These, rather than the ration itself, are the program elements that will bring about a more pervasive and longer-lasting change in malnutrition prevalence.

Recommendation: To ensure that the immediate and positive effects achieved thus far are not short-lived, USAID, CRS and MSSD should jointly consider ways to strengthen and expand Day Care's complementary activities such as nutrition education, women's income generation and village food production or other similar activities to increase the program's potential for long-term, developmental impact.

3. AID Effectiveness. U.S. assistance to Day Care from 1976 to the present in the form of PL 480 commodities represents an effective use of AID resources: U.S. assistance has been used to foster a developmental process. A national infrastructure has been established to reach a highly at-risk group--preschoolers--whose nutrition needs are not usually met through the traditional health and nutrition delivery systems. The Day Care infrastructure will in all likelihood carry on and expand its efforts after AID assistance is withdrawn. This infrastructure was initiated with the CRS-provided training of 12 regional nutritionists and now consists of a network of barangay-level fieldworkers, the majority of whom have been provided a minimum of two weeks training by MSSD. Thus, during the past decade, U.S. assistance has been used to foster a developmental process, the creation of a human resources network, that has the potential to reduce substantially the prevalence of malnourishment in pre-schoolers.
4. Program Targeting and Nutritional Impact. Program targeting to the moderately and severely malnourished is an extremely important factor which is critically linked to the program's positive nutritional impact. The extent of program targeting varies between regions and averages obscure these variations. The analysis undertaken for this study revealed that the program is highly targeted in Tarlac and Pampanga, the rural areas, and less so in Manila. A sample from the rural areas showed that the moderately and severely malnourished comprise, on the average, 57 percent of all participants, while the mildly malnourished and normal participants comprise 36 percent and 6 percent respectively. For Manila, only 13.6 percent of participants are moderately malnourished, while 35 percent are normal and 50 percent are mildly malnourished.

The analysis revealed the critical linkage between program targeting and program impact: the worst-off children improved the most. These findings are consistent with other analyses of food supplementation programs: the lower the nutritional level, the better the response to food supplementation.

Recommendation: It is recommended that the MSSD implement nationwide more stringent selection criteria and strengthen outreach efforts to ensure that all moderately and severely malnourished children living in a barangay served by a day care center are identified and accorded first priority at admission. Only after all moderately and severely malnourished children have been identified and included, should mildly malnourished children then be accorded second priority. For those urban-based programs whose objectives may include the provision of child care services to working women whose children may not be malnourished, it is recommended that CRS and MSSD consider the feasibility of providing separate morning and afternoon sessions, thus separating the normal from the malnourished accordingly, and that Title II commodities be provided on a priority basis to the malnourished participants.

5. Goal Achievement. The Day Care program has exceeded the goal established for it by the National Nutrition Council (NNC). The objective of the Philippine Maternal and Child Health Program, as stated in the NNC guidelines, is to elevate 25 percent of participants to mildly malnourished status. The average percentage of children elevated to mildly malnourished status in both the rural and urban programs has exceeded the NNC objective.
6. Use of Age/Weight Data to Monitor Nutritional Progress. The decline in nutritional status of normal and mildly malnourished children suggests that the age/weight data collected are not being used to maximum effectiveness to monitor nutritional progress. Nutritional decline of normal or mildly underweight children may occur because it is easier for the relatively untrained and busy fieldworker to identify and treat those who are worst-off than it is to detect nutritional decline, through regular monitoring of weight records, in normal or mildly malnourished children who appear to be much more healthy. For the severely malnourished, appearances alone suggest the need for immediate treatment. Failure to use the data collected in an operational sense means that a child's nutritional decline may go undetected and program impact is constrained.

Recommendation: It is recommended that CRS and MSSD review and improve training procedures for field workers in the operational use of age/weight data and that MSSD institutionalize a procedure to review regularly this aspect of program operation. Given that ample data is already regularly collected by fieldworkers, it is recommended that MSSD and CRS review the monitoring and information systems being established for other Title II programs and consider establishing a simple and practical monitoring system. This would help ensure that data collected is regularly reviewed and used for programmatic purposes.

7. Nutrition Education. CRS and MSSD have striven, in the four years of program operation, to develop a nutrition education component in the Day Care program and have succeeded in establishing nutrition education classes in many Day Care centers. However, two factors suggest that the nutrition education component could be strengthened considerably: (1) participation levels and (2) mothers' attitudes. One approach to enhancing the effectiveness of nutrition education is the use of individual child growth charts, filled out and assessed during the classes and maintained by the mother in the home.

Recommendation: It is recommended that the MSSD and CRS: (1) strengthen the nutrition education component; (2) develop individual growth charts to be used as integral components of nutrition education classes; and (3) conduct all weighing and recording of weights on a monthly, rather than a quarterly basis, to monitor nutritional improvement and decline as closely and as accurately as possible.

8. Calorie/Protein Balance of the Day Care Ration. The Title II commodities provided to the Day Care program may be considerably higher in protein than is necessary to meet the calorie/protein needs of pre-schoolers. Numerous studies undertaken worldwide have revealed that calorie deficiency is frequently more severe than protein deficiency in pre-school children. FAO guidelines suggest that 11 percent of the calories in the food ration should be supplied through protein. Protein, moreover, is generally more expensive than calories. Analysis of the calorie/protein balance of the Title II commodities provided to the Day Care program reveals that they supply a higher percentage of protein than the recommended range.

Recommendation: It is recommended that the Office of Food for Peace review the calorie/protein balance of Title II commodities provided to Day Care to determine the appropriate ratio needed to achieve maximum nutritional impact and cost-effectiveness.

9. Cost-Effectiveness. The Day Care program is the second most cost-effective program compared to MCH (most cost-effective) and School Feeding (least cost-effective). The costs of the rural Day Care program are only slightly higher than the MCH program.

C. MATERNAL AND CHILD HEALTH PROGRAM: CONCLUSIONS AND RECOMMENDATIONS

1. Nutritional Impact. The Maternal and Child Health (MCH) program is having a positive impact on the nutrition status of participants. This conclusion rests on three findings. (1) For five out of six centers visited between 70 and 100 percent of participants improved. (2) In a sample of 238 cases, 53 percent improved, 24 percent remained unchanged and 23 percent declined. (3) Those who improved experienced substantial weight gain--6 percent gain in standard weight-for-age in six months. This amount gained compares most favorably with the best known results in other supplementary feeding programs worldwide.

Recommendation: The MCH program should be accorded the highest priority by AID for funding purposes. It serves children in the highest nutritionally at-risk category--infants and pre-schoolers--and the analyses show that the program serves these children effectively. Reductions in this program should be made only after all possible reductions have been made in other Title II programs which serve those less nutritionally at-risk. U.S. assistance to this program should be continued for the foreseeable future.

2. Effectiveness of the MCH Program. MCH is an effective program. Because it is soundly designed as a nutrition intervention rather than as an untargeted humanitarian feeding program, the program is having an immediate and positive impact on nutrition status. Essential features of sound program design include: (1) a high degree of targeting to the moderately and severely malnourished; (2) regular monthly weighing and recording of weights; (3) the provision of a scheduled ration which provides 29 percent of the daily caloric needs of a two-year old child and 92 percent of the protein; and (4) the integration of mandatory nutrition education classes.

Despite the clear indications of immediate impact, serious questions remain concerning the long-term effectiveness of the program. The limited follow-up data gathered from Rural Health Units and Operation Timbang records do not suggest that program graduates continue to progress nutritionally, or even maintain their weight levels, once they have left the program.

Recommendation: The possibility of extremely short-lived program effects warrants immediate examination. CARE and CRS should plan thorough follow-up studies of a sample of program graduates to assess the long-term effects of the MCH program.

3. Program Targeting and Nutritional Impact. The MCH program is highly targeted to moderately and severely malnourished infants and pre-schoolers. Eighty-five to 95 percent of all participants are moderately or severely malnourished at entry. Moreover, MCH

targeting is consistent with the age and nutritionally at-risk priorities established by the National Nutrition Council (NNC). NNC guidelines state that first priority is to be accorded to all infants, malnourished or not, and to 1, 2 and 3 year olds who are moderately and severely malnourished.

Analysis revealed the critical linkage between program targeting and nutritional impact. Of three variables--(1) age at entry into the program; (2) length of program participation; and (3) nutrition level at entry--the latter variable shows the strongest correlation with degree of nutritional improvement. That is, those who enter the program in the poorest nutritional state improve the most. An important finding of the evaluation, therefore, is not merely that the program is effective, but that there is a differential effectiveness which favors the most malnourished. The same program investment yields a greater return when it is focused on the most malnourished.

Recommendation: Although the MCH program is highly targeted, the critical linkage of program targeting to positive program impact requires that it continue to be implemented as firmly as possible. CRS, with 18 percent of 12 to 60 month old infants entering at a level of mild or normal, should improve its level of targeting to this age category. Nevertheless, CARE and CRS should be given some leeway to use their judgment concerning special circumstances warranting admittance for older or less malnourished children.

4. Use of Inaccurate Weighing Scales. The MCH program is in dire need of accurate weighing scales to improve nutritional monitoring, program targeting and program evaluation. The widespread use of inaccurate spring scales produces targeting errors which, while random, do not nullify one another, but, in fact, compound. Analysis revealed that a scale which produced a 5 percent weighing error caused a 16 percent targeting error (i.e., 16 percent of the children would not be truly eligible for the program) and, in addition, resulted in the wrongful exclusion of 13 percent of the population. The use of more accurate scales would represent an opportunity to improve program targeting and obtain far more accurate monitoring and evaluation data from a program which costs the U.S. government \$18 to 20 million per year.

Recommendation: The widespread use of bathroom scales to weigh children should be stopped as soon as possible. CARE, CRS, the Ministry of Health, the Diocesan representatives, and USAID should collaboratively develop a plan to obtain appropriate weighing scales for the MCH program nationwide.

5. Record Keeping. Lack of accurate, regular and orderly records of weight-for-age and nutrition levels of participants is a serious problem in many MCH centers and rural health units, especially in

the CARE MCH program. In some rural health units the records were in extreme disarray. This problem appears to constrain program impact because it prevents monitoring of the nutritional progress of beneficiaries, accurate targeting, and thoroughly reliable assessments of program results. To its credit, CARE has come to the conclusion that enough records are being falsified in the field to warrant a change in monitoring methodology. It is moving towards a system which will place more of its staff in a position to examine data at the field level, rather than relying almost exclusively on aggregated data forwarded to the Manila headquarters.

Recommendation: CARE should experiment with ways to improve the record keeping performance of the Rural Health Units staff and the Barangay Nutrition Scholars with whom it collaborates. Even with the new evaluation scheme, CARE will be heavily dependent upon these non-CARE staff to acquire and maintain the data in the field. Improvement in their performance is essential to the success of the new scheme.

To increase mothers' knowledge of her child's nutritional progress, CARE, CRS, the diocesan representatives, the Ministry of Health and USAID should collaborately develop a plan to return to the use of the graphic weight ("road to health") card maintained by the mother in the home. This type of record keeping is followed in many countries and is highly regarded as a means of encouraging mothers to accept more responsibility for their child's nutritional well-being.

Both CARE and CRS should continue to use the 10-level nutrition scale for maintenance of weight-for-age data rather than the 4-level (normal, mild, moderate, severe) scale. The finer 10-level scale detects smaller changes in nutrition level, changes which may not appear if the 4-level scale is used. Such information is important for accurately measuring nutritional progress and impact.

6. The Malward Program. The malward program, a hospital-based program for the treatment of the severely malnourished, improves the nutrition status of participants but fails to play any role as a change agent to the family. The purpose of the malward program in theory is to elevate the severely malnourished to mildly malnourished. However, in practice, mothers remain with their severely malnourished children in the malwards only until the children are no longer acutely ill, at which point they leave. Under these circumstances, long-lasting change is unlikely.

Recommendation: CRS and CARE should encourage the Ministry of Health to transform the malwards to a pediatrics ward specializing in nutrition problems. It would concentrate on

immediately improving the nutrition status of the severely malnourished, educating the mother on an out-patient basis and, at the appropriate time, initiating center-based (on-site) feeding for the child.

7. Nutritional Decline of 6 to 11 Month Old Participants. Analysis revealed that a high percentage--59 percent--of 6 to 11 month old participants in the CRS program regressed in nutrition status. CRS itself discovered this problem in the course of one of its own evaluations and indicated that they intended to investigate this problem.

Recommendation: CRS should initiate a comprehensive investigative effort to determine the reasons for the decline in nutritional status of 59 percent of the 6 to 11 month old participants. This should be undertaken as soon as possible since the underlying objective of bringing 6 to 11 month olds into the program is to prevent malnutrition.

8. Reprogramming CARE from School Feeding to MCH. As will be seen in the next section, it is recommended that School Feeding, implemented principally by CARE, be phased over to the GOP.

Recommendation: Since CARE's major Title II activity presently is School Feeding, as this activity is reduced, CARE should be provided Title II commodities to expand its MCH effort. This is important because CARE works in MCH through the very appropriate channel of the Ministry of Health. The Ministry should be encouraged to integrate this nutrition component into its general primary health care program.

9. Cost-Effectiveness. MCH is the most cost-effective program, compared to Day Care and School Feeding, with CRS per targeted beneficiary costs at 28.6 cents and CARE per targeted beneficiary costs at 25.3 cents.

D. SCHOOL FEEDING PROGRAM: CONCLUSIONS AND RECOMMENDATIONS

1. Nutritional Impact. The nutritional impact of the School Feeding program is marginal. Analysis revealed that 75 percent of participants are either normal or only mildly malnourished--they are not in nutritional need. In addition, while the program appears to have some impact on the nutritional status of some categories of participants, overall there is little substantial difference in nutritional progress between Title II School Feeding participants and those who participate in Government of Philippines-supported once-or-twice-a-week school feeding programs that use indigenous foods. This means that the nutritional impact of both programs is roughly similar: approximately 25 percent make some modest nutritional gains. In addition, the School Feeding program is aimed at children 7 to 14 years old, a lower priority age group than infants and pre-schoolers.

Recommendation: The School Feeding program should be phased over to the GOP. For immediate programmatic purposes it should be considered the third priority program by AID after MCH and Day Care and should be implemented only on the condition that the program is targeted almost exclusively to the moderately and severely malnourished.

2. Effectiveness of School Feeding. The School Feeding program is less effective than MCH and Day Care. While logistically impressive and, all things considered, well-managed, the program suffers several serious deficiencies in program design and implementation which inhibit the achievement of maximum effectiveness. The deficiencies include the following: (1) insufficient targeting to the moderately and severely malnourished; (2) insufficient targeting to schools situated in the most economically depressed areas and consequent inclusion in the program of some schools with a relatively high level of resources at their disposal; (3) some lack of supervision during consumption of the ration permitting sharing; (4) the provision of a ration supplying a fairly low percentage of participants' daily caloric requirements; (5) minimal parental and community involvement; and (6) minimal operational involvement (e.g., at the classroom level) of individuals with nutrition training or background.
3. AID Effectiveness. U.S. assistance to the School Feeding program, as presently administered, represents a less effective use of AID resources than U.S. assistance to the MCH and Day Care programs, in part, for two reasons. (1) Although the program was originally carefully designed as a nutrition intervention targeted to the malnourished and supplying one-third to one-fourth of daily caloric

requirements in a 500 calorie ration, as the program developed over the years there appears to have been overemphasis on reaching as many school-age children as possible rather than on targeting the largest possible ration to those most in need. This was evidenced in part by the mid-seventies decision to reduce the ration from 500 to 250 calories while the program continued to expand. (2) AID failed to mobilize comprehensive external assessments of the adequacy of program design and of the nutritional progress of participants compared with non-participants. Thus, the School Feeding program has been implemented for eight years in the absence of appropriate and critically-needed reassessments and modifications (primarily targeting and a review of the adequacy of the ration) to achieve genuine nutritional impact. On the positive side, the program appears to have mobilized the creation of a logistically impressive system for the delivery of food commodities to the schools, a system which presumably the GOP could take over. Nevertheless, speaking solely in nutritional terms, it is clear that over the years many resources have been allocated to those who are not malnourished and insufficient resources have been allocated to those who are. In the end, as an actor who should have played a greater leadership role in the implementation and monitoring of this program, AID--not CARE or the MEC--must bear the responsibility for the less effective use--in nutritional impact terms--of its resources.

4. Program Targeting. Analysis revealed that while some individual schools include a relatively high percentage of malnourished, overall the School Feeding program is not targeted to the moderately and severely malnourished. Most important, the analysis revealed that approximately 21 percent of participants were normal. Analysis revealed that approximately 75 percent of participants are either normal or mildly malnourished. The available data also indicated no substantial difference in levels of targeting between CRS and CARE-assisted schools. Over the past year, CARE and the MEC have collaborated to develop a plan to target assistance to the moderately malnourished.

Recommendation: It is recommended that all normal children be immediately eliminated from the program. In addition, it is recommended that CARE and the MEC proceed immediately with their plan to target assistance to the moderately and severely malnourished and that the health and nutrition advisors in USAID/Philippines work closely with CARE and the MEC to facilitate implementation of the plan as thoroughly and as comprehensively as possible. It is also recommended that the USAID/Philippines health and nutrition advisors work with CRS to develop a similar plan to improve targeting in all CRS-assisted schools.

5. Goal Achievement. It is unclear whether the School Feeding program is achieving the program objectives specified in the Food Assistance Guidelines. According to Food Assistance Guidelines, the objective of the School Feeding program is to improve 25 percent of underweight children and to maintain 90 percent of the remaining children. One data set shows that the guidelines are being met; the other two show mixed results because of relatively high rates of nutritional decline.

6. Adequacy of the Ration. One important factor that may be linked to the minimal nutritional impact of the School Feeding program could be the caloric inadequacy of the ration. The daily scheduled ration--a nutritious bread loaf called a nutribun--supplies only a small percentage of the daily caloric requirements of school age children-- between 11.5 percent and 20 percent, depending on the age, sex, and availability of fillings for the nutribun. These percentages are low in comparison with the percentage of daily calories supplied in ration by MCH and Day Care and by other feeding programs. While the schools themselves may not be able to provide a filling for the nutribun daily, it may be that many local communities can. A striking scene in a Northern Luzon province was a school at which nutribun fillings were provided only rarely when the teachers could afford to pay for them out of their own pockets, yet the school itself was surrounded by a veritable vegetable garden--hundreds upon hundreds of acres of potatoes, sweet potatoes, cabbages, carrots, eggplants, tomatoes and more.

Recommendation. It is recommended that USAID collaborate with CARE, CRS and the MEC to examine alternative ways to increase the caloric content of the ration. It is recommended that serious consideration be given to developing a plan to mobilize local communities to provide dollars or food commodities to ensure that all nutribuns are served with a 50 calorie filling at a minimum. Efforts to mobilize local communities might represent the beginning of real local community support and control of the School Feeding program.

7. Nutrition Education and Substitution. The MEC has made substantial progress in its efforts to include nutrition education directed toward the school children in both participant and non-participant schools. Nutrition education for the children frequently involves posters and other visual aids throughout the schools and the children's actual involvement in school vegetable and medicinal herb garden maintenance and production. While these efforts may result in improved food consumption behavior over the long-term, as the school children reach maturity, the need for at least minimal nutrition education directed towards the parents is underscored by one finding in particular. In three out of the four schools analyzed in the Bicol, participants' nutritional status was higher

during the summer vacation period when not participating in the program. While this phenomenon may be attributable to seasonality of illness or increased food availability during the school vacation period, one could speculate that it might also be attributable to substitution. Although the team could not investigate this point, substitution has been found to occur in many programs worldwide. Thus, parents of beneficiaries may assume that the School Feeding program provides a complete meal when, in fact, the nutribun provides only a small percentage of daily caloric needs. Under these circumstances parents may feed their children less during the school year than they would normally.

Recommendation: It is recommended that USAID, CARE, CRS and the MEC develop a plan to use alternative methods of information dissemination--e.g., regular school channels of information, regular teacher/parent consultations and school and local media displays to inform parents that the School Feeding program provides a supplement to, not a substitute for, regular meals.

8. Cost-Effectiveness. Compared to MCH and Day Care, School Feeding is least cost-effective.

E. FOOD FOR WORK: CONCLUSIONS AND RECOMMENDATIONS

1. Impact on Community Development and Material and Social Well-Being.

The sample of 20 Food for Work (FFW) projects surveyed are perceived as beneficial and equitable in local communities. Survey findings suggest that a majority of both recipients and non-recipients deemed the projects beneficial to the community. Nevertheless, despite the beneficial effects of some individual projects on the community as a whole, the income transfer effect of FFW commodities on recipients' individual household income appears to be marginal. FFW projects in the Philippines provide recipients who are poor, but not destitute, a small and occasional supplement to their income. A minimal and irregular food ration, while possibly generally beneficial to the family, does not provide the type of supplement that would be needed to alter household expenditure patterns substantially. Thus, although FFW projects may have a beneficial effect on communities, the income transfer effect is, in all likelihood, marginal.

Recommendation: Although the Food for Work program is consistent with the CDSS goals of USAID/Philippines to increase rural household income and employment, this program does not represent the most effective and viable alternative for achieving these objectives. Because of competing demands for scarce resources for higher priority activities, the Food for Work program should be phased out and commodities allocated to it should be reprogrammed for the MCH and Day Care programs.

2. Beneficiaries. The data collected indicated that FFW recipients who directly benefitted from the FFW program by receiving food commodities in exchange for labor were from the lowest economic level in their communities. Nevertheless, recipients were not destitute. Seventy-five percent of recipients own radios and 54 percent have electricity in their homes.

In addition to those who directly benefitted as recipients of food commodities, the majority of recipients and non-recipients perceived FFW projects as providing benefits to the entire community.

3. Completion Rate of Food for Work Projects. Of the 18 completed Food for Work projects, 12 or 2/3 of the projects had been completed satisfactorily and 6 or 1/3 of the projects were left in an unfinished or unsatisfactory state. The projects left in an unfinished or unsatisfactory state almost invariably were projects requiring a relatively high degree of technical expertise--a potable water system, a communal gardening project, and an irrigation system. Those that were completed satisfactorily were construction projects which were less technically demanding--road or building construction or repair.

4. Impact on Food Production. Projects relating directly to food production were less successful than other types of projects. For this reason, the sample of twenty projects surveyed do not suggest that the FFW program is resulting in a direct impact on food production. The FFW program may contribute indirectly to increased food production through the roads construction and canal repair projects.

5. Food for Work Commodities as an Incentive for Project Development and Participation. Survey findings do not suggest that FFW commodities play an important role in project development by proponents (individuals who prepare FFW project proposals for review and approval) nor in participation in project implementation by recipients. Project proponents indicated that they would have pursued the preparation of project proposals even in the absence of the availability of food. And although project proponents believed that the availability of food commodities was useful in obtaining the cooperation of the workers, all proponents believed that the workers would have participated in the projects even in the absence of food. Furthermore, most recipients indicated they would continue working on FFW projects even in the absence of the provision of food commodities.

Part III

PROGRAM CONTEXT: THE PHILIPPINE NUTRITION SITUATION

A. PROTEIN-ENERGY MALNUTRITION AND SPECIFIC NUTRIENT DEFICIENCIES

In the Philippines, as in most developing countries, malnutrition takes its heaviest toll among specific vulnerable groups, most notably young children. Although the prevalence of malnutrition has declined in recent decades, Philippine children are affected by both protein-energy malnutrition (PEM) and specific nutrient deficiencies. The results of a nationwide survey of pre-schoolers in 1978 (Table 1) revealed that 30.6 percent of the 4.5 million children weighed were moderately or severely underweight--24.8 percent and 5.8 percent respectively. These averages obscure important differences. For one year olds, only 20 percent were normal. A regional breakdown of the results shows that the regions with high percentages of moderate and severe malnutrition (greater or equal to the national average of 30.6) were Region VI-Western Visayas, Region VIII-Eastern Visayas, Region III-Central Luzon, Region I-Ilocos and Region V-Bicol (Table 2).

Among school children 7 to 14 years of age, surveys conducted by the Child Youth Study Center in 1975 showed a 14 percent prevalence of moderate and severe malnutrition or an estimated 1.3 million malnourished school children. ^{1/} However, a recent survey by the Ministry of Education and Culture showed a prevalence rate for moderate and severe malnutrition of 28 percent. ^{2/} The difference probably reflects a change in methodology rather than a severely deteriorating situation.

Specific deficiencies affect children and other sectors of the population as well. Biochemical studies conducted by the Food and Nutrition Research Institute (FNRI) showed widespread prevalence of iron, iodine and Vitamin A deficiencies. The 1978 nationwide survey revealed that anemia is prevalent in 55.87 of 0 to 6 year old children, 85 percent of pregnant women and 62.5 percent of lactating women. The same studies revealed a high incidence of endemic goiter, especially in iodine deficient areas such as landlocked mountainous regions. Among pregnant and lactating women randomly sampled, 12 percent and 8 percent respectively were found to be afflicted.

1/ "Child Study Center 1975. Preliminary Results," Philippine Journal of Nutrition, 24:161, 1981.

2/ A Study of the Nutritional Status of Filipino Public Elementary School Children. School Year 1979-1980, Ministry of Education and Culture, School Health and Nutrition Center, Manila.

Table 1

OPERATION TIMBANG RESULTS
March 1978

<u>Degree of Severity</u>	<u>Number</u>	<u>Percentage</u>
Severe	259,267	5.8
Moderate	1,104,567	24.8
Sub-Total	1,363,834	30.6
Mild	2,103,241	47.1
Normal	992,619	22.3
Total	4,459,694	100.0

Source: Nutrition Service, Ministry of Health

Table 2

REGIONAL BREAKDOWN OF RESULTS FROM OPT
March 1978

	<u>Normal</u>	<u>First Degree</u>	<u>Second Degree</u>	<u>Third Degree</u>	<u>Second and Third Degree</u>
Philippines	22.3	47.1	24.8	5.8	30.6
1. Ilocos	22.0	47.0	25.3	5.7	31.0
2. Cagayan	23.4	47.4	23.6	5.6	29.2
3. Central Luzon	20.6	46.9	25.3	7.2	32.5
4. Southern Luzon	22.5	48.3	24.3	4.9	29.2
5. Bicol	22.7	46.7	24.6	6.0	30.6
6. Western Visayas	16.6	44.6	30.7	8.1	38.8
7. Central Visayas	24.0	49.0	22.2	4.8	27.0
8. Eastern Visayas	20.3	45.3	27.0	7.4	34.4
9. Western Mindanao	23.6	47.0	23.7	5.7	29.4
10. Northern Mindanao	25.3	46.6	22.8	5.3	28.1
11. Southern Mindanao	26.3	48.7	21.0	4.0	25.0
12. Central Mindanao	25.8	46.4	23.0	4.8	27.8

Source: Nutrition Service, Ministry of Health

In a separate study, out of more than 200,000 school children surveyed by the Ministry of Health in known endemic areas, 60 percent were found to have goiter. ^{1/}

The above information underscores the fact that physical malnutrition remains an extensive problem affecting a high proportion of the Philippine population. The most serious problem is PEM, affecting most seriously pre-school children (0 to 6 years), then school children (7 to 14 years). The occurrence of PEM in children reflects a low level of food available to the family as a whole. Deficiencies of specific nutrients are also prevalent: iron-deficiency leading to anemia, vitamin A deficiency resulting in eye disorders, and iron-deficiency leading to goiter.

B. CAUSES OF MALNUTRITION IN THE PHILIPPINES

1. Food Availability and Consumption

Estimates of food availability at the national level may be obtained from the Food Balance Sheet. The FBS for 1976 (Table 3) shows a net average supply at the household level of 2,328 kcal per capita per day and 66.8 grams protein per capita per day. ^{2/}

When compared to the recommended allowances of 2,000 kcal and 52 g. protein after 10 percent has been deducted to account for wastage (preparation and plate waste), the FBS gives an estimate of food consumed of 2,095 kcal and 60 g. protein per capita per day. These figures, however, must be interpreted with caution because the FBS does not show the variation in regional food availability and distribution, as well as intrafamily food distribution.

Food consumption estimates obtained from surveys done by the FNRI give an average intake of 1,804 kcal and 53 g. protein per capita per day, meeting 87.1 percent and 101.9 percent of calorie and protein requirements, respectively, while iron and vitamin A intakes meet 89.5 and 67.4 percent of the recommended levels, respectively (Table 4).

^{1/} 1976 Fact Sheet No. 18: Endemic Goiter, Padlan, A., Communications Department, Nutrition Council of the Philippines.

^{2/} "The Philippine Food Balance Sheet, CY 1976," Philippine Development, 1979, National Economic Development Authority, pp. 33-40.

Table 3

THE PHILIPPINES FOOD BALANCE SHEET, CALENDAR YEAR 1976
(SUMMARY)

	<u>Food Net</u> <u>Met. Tons</u>	<u>KG Per</u> <u>Year</u>	<u>Grams Per</u> <u>Day</u>	<u>Calories</u> <u>Per/Day</u>	<u>Protein</u> <u>Grams/Day</u>	<u>Fats</u> <u>Grams/Day</u>
TOTAL	17,832,121	407.9	1,115.8	2,328	66.8	35.0
I. CEREAL & CEREAL PRODUCTS	5,774,118	131.9	360.4	1,318	29.1	2.8
II. ROOTS & TUBERS	1,636,906	37.5	102.4	108	0.8	0.2
III. SUGAR & SYRUP	1,151,593	26.3	71.8	277	0.0	0.0
IV. PULSES & NUTS	206,239	4.7	12.8	27	1.0	1.6
V. VEGETABLES	1,222,442	25.0	76.4	20	1.1	0.1
VI. FRUITS	3,370,989	77.0	210.4	134	1.5	0.6
VII. MEAT PRODUCTS	871,108	20.0	54.6	134	8.7	10.3
VIII. MILK & MILK PRODUCTS	640,191	14.7	40.2	27	1.3	1.6
IX. EGGS	141,701	3.3	9.1	14	1.0	1.0
X. FISH & OTHER MARINE PRODUCTS	1,999,120	45.7	124.9	74	11.7	2.6
XI. FATS & OIL	200,171	4.6	13.9	107	0.0	13.8
XII. MISCELLANEOUS	617,543	14.3	38.9	88	10.6	0.4

Table 4

MEAN ONE DAY PER CAPITA NUTRIENT INTAKE
AND PERCENT SUFFICIENCY
Philippines 1978

<u>Nutrient</u>	<u>Intake</u>	<u>RDA</u>	<u>Percent Sufficiency</u>
Calories (Kcal)	1,804	2,036	88.6
Protein (gm)	53.0	51.5	102.9
Iron (mg)	11.0	12.0	91.7

Source: First Nationwide Nutrition Survey, FNRI 1978

The effective intakes of the nutrients were probably lower than the figures indicated. The low caloric intake aggravates the deficiency in protein since additional protein has to be utilized to fill up the deficiency in calories. Most of the iron intake comes from plant sources such as rice and vegetables, in which the biological availability of iron is low.

2. Income, Occupation, and Location

Distribution of food energy intake by income group is shown in Table 5. The table shows that malnutrition is higher among households with the lowest incomes. More than a third of these households are meeting less than 80 percent of their requirements.

The finding that malnutrition affects households with the lowest income is reinforced by the results of the most recent study conducted by the Nutrition Oriented Development Planning (NORDPLAN) team of the National Nutrition Council in Samar Island in 1979. ^{1/}

The results reveal that among the 14 occupational groups surveyed, kaingeros (shifting cultivators), hired laborers of food crop farms and share tenants of coconut lands had the highest percentage of pre-school malnutrition while large fishermen had the lowest (Table 6).

Among ten occupational groups studied in the Laguna Multipurpose Household Survey of UP Los Banos in 1974, it was shown that protein-energy malnutrition affected most severely households of small fishermen while larger farmers, livestock raisers and professionals were considered less at risk of malnutrition. ^{2/}

A comparative analysis of urban-rural consumption patterns in the Philippines (Table 7) reveals that protein intake sufficiently met recommended levels only in urban Philippines. Rural Philippines presents a more gloomy picture with recommended levels for calories, protein, vitamin A and iron not being met.

1/ The Nutrition Problem and Development Policy Implications. A Preliminary Study of Two Philippine Provinces, National Nutrition Council, Unpublished report, January 1978.

2/ Survey to Determine the Nature and Causality of Malnutrition Among Fourteen Functional Groups in Samar Island, Sison, M., July 1979.

Table 5

PERCENTAGE DISTRIBUTION OF HOUSEHOLDS BY HOUSEHOLD
AND PER CAPITA INCOME AMONG TWO LEVELS OF
ADEQUACY FOR ENERGY INTAKE

Philippines 1978

<u>Income</u>	<u>PHILIPPINES</u>	<u>Less than 80%</u>	<u>80% and over</u>
Household Income			
Less than 1,500.00	22.7	44.5	55.5
1,500 - 2,999	23.3	45.5	54.5
3,000 - 5,999	23.6	35.6	64.4
6,000 - 9,999	13.4	35.8	64.2
10,000 - 13,000	7.7	31.2	68.8
14,000 and over	9.3	22.6	77.4
	<u>100.0</u>	<u>38.4</u>	Ave. <u>61.6</u>
Per Capita Income			
Less than 250.00	21.1	51.9	48.1
250 - 499	23.3	42.5	57.5
500 - 999	24.1	37.9	62.1
1,000 - 1,499	13.4	31.3	68.7
1,500 - 1,999	6.0	23.7	76.3
2,000 and over	12.0	22.5	77.5
	<u>100.0</u>	<u>38.3</u>	Ave. <u>61.7</u>

Source: FNRI

Table 6

RANKING OF OCCUPATIONAL GROUPS ACCORDING TO
NUTRITION STATUS
Samar, 1979

<u>Occupational Group</u>	<u>Total</u> <u>Preschoolers</u>	<u>Second and Third</u> <u>Degree Malnourished</u>		<u>Rank</u>
		<u>Number</u>	<u>Percent</u>	
Kaingeros	52	18	34.6	1
Hired Laborers of Food Crop Farm	50	15	20.0	2
Share Tenants of Coconut Lands	47	14	29.8	3
Other Farm Operators	31	7	22.6	4
Hired Laborers of the Fishing Industry	43	9	20.9	5
Share Tenants	32	6	18.7	6
Small Entrepreneurs	38	6	15.8	7
Other Laborers not in the Food Industry	50	7	14.0	8
Other Operators of Coconut Farms	23	4	13.0	9
Large Farmers	19	2	10.5	10
Large Fishermen	34	2	5.9	11
Service Related Workers	47	0	0.0	
Large Entrepreneurs	21	0	0.0	
Small Fishermen	38	0	0.0	
TOTAL	525	89	16.9	

Source: National Nutrition Council

Table 7

MEAN ONE DAY PER CAPITA NUTRIENT INTAKE AND
PERCENT SUFFICIENCY: URBAN AND RURAL AREAS
Philippines, 1978

<u>Nutrient</u>	<u>URBAN</u>			<u>RURAL</u>		
	<u>Intake</u>	<u>RDA</u>	<u>Percent Suffic.</u>	<u>Intake</u>	<u>RDA</u>	<u>Percent Suffic.</u>
Calories (KCal)	1,872	2,052	91.2	1,769	2,029	87.2
Protein (g)	58.2	52.3	111.3	50.3	51.0	98.6
Iron (mg)	11.4	12.4	91.9	10.8	11.8	91.5
Vitamin A (i.u.)	2,922	3,663	79.8	2,253	3,595	62.7

Source: Summary Report, First Nationwide Nutrition Survey, 1978, Food and Nutrition Research Institute, 2nd Revision, January 1981.

3. Education, Food Beliefs and Practices

Although lack of effective demand is a major constraint, many of the country's nutritional problems could be substantially improved if people were aware of better methods to use resources already at hand. FNRI findings indicate a direct relationship between education of heads of families and nutritional status of family members. In general, nutrition status improves as the number of years of schooling increases. This trend reflects greater awareness of modern ideas on nutrition as well as child-rearing practices. Food beliefs and practices related to pregnancy, lactation and child health also have serious consequences for nutrition status.

In sum, food availability, household income, education and food beliefs are all important factors which directly influence nutrition status.

C. FOOD AND NUTRITION PLANNING TO COMBAT MALNUTRITION

For the past several years numerous nationwide programs have been established to address malnutrition in the Philippines. In 1974, in recognition of nutrition as a national priority, the Government of the Philippines (GOP) created the National Nutrition Council (NNC). The latter is a cabinet-level, policy-making body which is responsible for formulating a national nutrition program based on the nutrition strategies, plans and projects of the various line agencies of government and private agencies. The NNC is also responsible for coordinating all nutrition activities in the country which are then implemented as the Philippine Nutrition Program (PNP). To date, these activities have focused mainly on building a central secretariat, policy-making at the national level, nutrition planning at all levels, the design of a nationwide nutrition surveillance and monitoring system, the formulation of an extensive information, education and communication network, the creation with the cooperation of various agencies of a growing paraprofessional corps of volunteer nutrition aides who provide their services at the barangay level, and the development of a human infrastructure for planning, coordination and evaluation at various levels.

During the past 25 years, over \$300 million in PL 480 Title II food has been shipped to the Philippines for a variety of feeding and relief programs. The commodities are consigned to two United States voluntary agencies, CARE and Catholic Relief Services (CRS) which, in cooperation with GOP agencies, handle food distribution to approximately 800,000 pregnant and lactating women, infants and moderately and severely malnourished pre-schoolers, as well as to approximately 1.7 million school age children. The PL 480 Title II program constitutes the main food assistance outreach activity of the Philippine Nutrition Program.

A national Food and Nutrition Plan (FNP) has been proposed recently by the NNC and the Ministry of Agriculture. It identifies major food production, consumption and nutrition problems of the country as of 1980, and provides a set of strategies for overcoming these problems within the decade. Viewing nutritional improvement as a multi-sectoral concern, the plan provides the groundwork for effective coordination among agriculture, nutrition, and those areas within other sectors with direct relevance to nutrition.

The Food and Nutrition Plan has three objectives:

- a. to increase and diversify production of food and other agricultural commodities, and to continue to achieve gains in the productivity of both land and labor;
- b. to improve the quality of the diet of all Filipinos; and
- c. to assure a basic minimum diet for those who are undernourished.

The strategy for achieving these objectives has four major components:

- a. stimulating the growth of the food economy, with special emphasis on programs for the nutritionally at-risk and/or deprived population groups, and ensuring availability of requisite food supplies, the generation of additional employment opportunities, and increased incomes;
- b. increasing export earnings and producing local substitutes for expensive imports through agriculture;
- c. maintaining consumer food prices at reasonable levels; and
- d. correcting the most urgent nutritional deficiencies afflicting the population and preventing malnutrition.

The FNP seeks to bring about improvement in overall nutritional status. Specifically, in terms of energy adequacy, it calls for bringing the energy adequacy level in the diet of all Filipinos to approximately 100 percent. The agricultural production targets required to bring this about form an important component of the plan.

To determine the limits of feasible agricultural actions during the 1980s, an overall supply and demand framework was established. This provides the basis for the projections of crop and livestock production, exports and imports. The aggregate elements of this framework are those used for the national economic plan, such as population and income growth.

The Ministry of Agriculture is committed to the formulation and implementation of the FNP. The initiative which it has taken towards the formulation of the FNP stems from the recognition of the link between agricultural policies and programs and the food consumption and nutrition status of the population. This link is both at the farm and rural levels where foods are produced and consumed directly, as well as at the national and regional levels where general agricultural productivity, the composition of food production, the efficiency of food marketing, and overall agricultural and food policies, affect the availability and price of food for consumers. Furthermore, a large percentage of malnutrition (80 percent according to FNRI results), is to be found in the rural areas. Moreover, the Ministry has a large staff of employees available in rural areas. Its Farm Management Technicians (FMTs) and Home Management Technicians (HMTs) can have a profound effect on the implementation of the FNP. The HMTs are particularly crucial since they deal directly with mothers.

In sum, despite improvement in recent decades, malnutrition remains a serious problem in the Philippines, where it most seriously affects young children, especially in the rural areas. The specific causes of malnutrition transcend food availability and are closely associated with the level of household income and education, food beliefs and family size. Combating malnutrition is a national priority of the GOP. In 1974 the GOP established the cabinet level National Nutrition Council and authorized it to be responsible for the coordination of all nutrition programs throughout the Philippines. Most recently, the NNC has worked closely with the Ministry of Agriculture to formulate a national Food and Nutrition Plan which sets forth strategies to overcome malnutrition within the decade.

Part IV

TITLE II OBJECTIVES, IMPLEMENTATION AND BACKGROUND

A. PL 480 TITLE II OBJECTIVES

1. Food for Peace Objectives and Policy

The Food For Peace program, also known as U.S. Public Law 480, was enacted in 1954 primarily as an agricultural surplus disposal measure. Since then, the focus of the Food For Peace legislation has shifted to give greater emphasis to the use of food aid for humanitarian and development purposes.

PL 480 is intended to serve multiple objectives of U.S. policy. These are stated in the legislation's preamble as follows: "Sec. 2. The Congress hereby declares it to be the policy of the United States to expand international trade; to develop and expand export markets for the United States agricultural commodities; to use the abundant agricultural productivity of the United States to combat hunger and malnutrition and to encourage economic development in the developing countries, with particular emphasis on assistance to those countries that are determined to improve their own agricultural production; and to promote in other ways the foreign policy of the United States."

According to the legislation, Title II food assistance should serve developmental as well as humanitarian and nutrition purposes. Programs are to be conducted within a framework of increasing local participation in management and funding to achieve the following objectives:

- To meet famine or other extraordinary relief requirements;
- To combat malnutrition, especially in children;
- To promote economic and social development.

AID policy emphasizes the need to concentrate U.S. resources, including PL 480 programs, in an integrated approach to solving priority development problems. Generally, Title II program emphases are given to Maternal Child Health (MCH) (including pre-school feeding), Food For Work (FFW), School Feeding (SF) and Other Child Feeding (OCF) in that order.

AID views Title II donations to projects as interim assistance to reach specific objectives noted above. Commitments for program support are expected from the recipient country and these commitments are to lead to the eventual transfer of full responsibility for the program to the recipient country.

The services of U.S. voluntary agencies are to be used to the extent practicable to carry out these programs. The need to integrate Title II resources with other AID and development resources in solving priority development problems requires close collaboration among the Mission, the recipient country and voluntary agencies.

Regulations in AID Handbook 9 stipulate that the "Cooperating sponsor's plans for projects are to be developed in conjunction with the USAID Mission and should relate to the Mission's Country Development Strategy Statement (CDSS)." In addition, projects should be consistent with the host government's overall national policy.

2. GOP Objectives and Policy

The National Nutrition Council (NNC) is the organization charged by presidential decree with the coordination of the entire nutrition program of the Philippines. The NNC has established guidelines for all food assistance programs which specify national objectives and priorities. According to NNC guidelines, first priority for all nutrition programs is to be accorded to infants (i.e., age 0 to 11 months), whether malnourished or not, and to 1 to 3 year olds who are moderately or severely malnourished. Second priority is to be accorded to 4 to 6 year olds who are moderately or severely malnourished, third to pregnant mothers of malnourished children and to lactating women, and fourth to underweight children aged 7 to 14 years.

3. USAID/Philippines Country Development Strategy

The USAID/Philippines FY 82 Country Development Strategy Statement (CDSS) identified underemployment as the major cause of poverty in the Philippines. Malnutrition is both a symptom of underemployment and a contributing factor to low productivity. An important element of the Mission's strategy, therefore, is to address the calorie/protein gap in part with measures which promote increased income and productivity among target groups. It is clear, however, that for the near term, some supplemental feeding of the most vulnerable segments of the population will be necessary. Hence the Mission's support for a Title II program for the time being.

The USAID/Philippines FY 1980 budget for Title II activity was 34 percent of its total bilateral Development Assistance budget, excluding Title I. Provisionally, for FY 1982-86, PL 480 Title II food resources are projected to constitute 19 percent of USAID's proposed assistance level, with Title I levels remaining to be determined.

The CDSS recognizes that a Title II program during FY 82 remains an essential element of the GOP's food and nutrition planning over the short term. The GOP has also indicated that perhaps the Title II program might be partially redirected so that all commodities would be targeted to the high priority categories of infants and malnourished pre-school children, and pregnant and lactating mothers, and that this might be best accomplished during the earlier stages of implementation of the Food and Nutrition Plan.

B. IMPLEMENTATION

1. General Method of Operations

Title II of Public Law 480 authorizes donations of food on behalf of the people of the United States to meet famine or other urgent relief requirements, to combat malnutrition (especially in children), and to promote economic and community development. Title II programs are designed to supplement and reinforce other developmental and nutritional activities, and are conducted within a framework of increasing local management and funding. The Title II program is administered by the Agency for International Development (A.I.D.). The Department of Agriculture finances the cost of food including processing, fortifying, packaging and shipping, and delivery to points of entry of landlocked countries.

A major priority of Title II is to help meet the nutritional needs of vulnerable groups. Consistent with the emphasis on nutrition in the 1966 Act, substantial amounts of blended and fortified foods are provided.

Title II food distribution is integrated with other developmental programs through the activities of the U.S. voluntary agencies. In fiscal year 1981, Title II programs were approved for CARE, Catholic Relief Services (CRS), Seventh-Day Adventist Welfare Service, Church World Service, Lutheran World Relief, American Joint Distribution Committee, and the Cooperative League of the United States of America.

Other Title II donations are made through the World Food Program (WFP) and directly to recipient governments, mostly for large emergency feeding programs.

The administration of PL 480 is an interagency responsibility. Coordination and reconciliation of various individual agency interests is achieved within the framework of a Working Group combining representatives from the Departments of Agriculture, Commerce, Treasury, and State; USAID; and the Office of Management and Budget. All PL 480 programs are reviewed and approved by the Working Group.

Based on information contained in Mission Country Development Strategy Statements and various reviews held in Washington, the Office of Food for Peace develops a consolidated worldwide PL 480 budget. USDA indicates the amounts and kinds of commodities which may be available for programing under PL 480 and provides seasonal average prices. However, the budget request to OMB is based upon AID's detailed review and analysis of individual country needs, a process which starts with Mission discussions with recipient governments of their food needs and the other steps being taken to address these needs. The analysis and details for the need and justification for the PL 480 program must be rooted in the same poverty analysis for the dollar program which is contained in the Mission's CDSS, Annual Budget Submission (ABS) and pertinent sector studies. The voluntary agencies submit orders on a quarterly basis within approved programs. USDA procures these commodities.

Participating agencies involved in the PL 480 Title II program in the Philippines include USAID, CRS, CARE and the GOP through the Ministries of Health (MOH), Social Services and Development (MSSD) and Education and Culture (MEC). The voluntary agencies have prime responsibility for design of the projects and for supervision of the transport, storage and distribution of commodities. Filipino governmental and private agencies are responsible for the institutional infrastructure so crucial to reaching the recipients.

The voluntary agencies have been involved in Title II food distribution programs in the Philippines since 1957, operating under a blanket agreement between the U.S. and Philippine governments. Under the agreement, the GOP funds all inland handling and transportation costs through the various ministries and provides duty-free entry of the commodities.

2. Catholic Relief Services (CRS) Operations and Programs

CRS is a voluntary, church-affiliated organization with headquarters in New York and operations in 70 countries, including the Philippines. It is particularly interested in the social aspects of development. CRS provides development and disaster relief assistance in five program areas:

- Emergency and disaster services;
- Social welfare services;
- Socioeconomic development;
- Services to refugees;
- Food and nutrition.

In 1979, CRS expended (worldwide) \$241.2 million, representing nearly 70 percent of total funds available, in their food and nutrition and socioeconomic development programs.

In the Philippines, CRS works primarily through the infrastructure of the Catholic Church and in cooperation with the Ministry of Education and Culture and the Ministry of Social Services and Development.

The CRS staff in the Philippines consists of the following:

Program Director	- 1 American
Assistant Program Director	- 1 American
Administration Department	- 7 Filipinos
Nutrition Department	- 31 Filipinos
Shipping Department	- 10 Filipinos
Field Department	- 9 Filipinos
Special Projects Department	- 8 Filipinos

Details of each of the major CRS Title II activities are provided in the appropriate sections of this report. The following is a listing of all CRS Title II activities in the Philippines for FY 1981 and the number of participants scheduled:

1. Maternal and Child Health, including Day Care (620,000)
2. School Feeding (200,000)
3. Food for Work (5,000)
4. Other Child (18,000)
5. Adult Feeding (2,000)
6. Snack Food Project (18,000)

3. Cooperative for American Relief Everywhere (CARE)

CARE is a non-profit voluntary organization with its headquarters in New York and operations in about 40 countries. The goal of CARE is to assist people in the lower income segments of the population to organize and utilize their own resources for tasks of socioeconomic improvement, with special emphasis on the local community level. Programs focus on basic causes of poverty and underdevelopment: insufficient employment and income earning opportunities, insufficient and poor quality education, poor health and nutrition, and lack of effective community organization. Of special interest to CARE with regard to Food for Peace activities are School Feeding, MCH supplementary feeding, and Food for Work programs. In 1977, CARE's operating budget was about \$186 million of which PL 480 Title II support accounted for \$109 million.

CARE's Philippine program began in 1949 with support to the government's activities in rural development and school feeding. Since the early 1970s, feeding programs have concentrated on combating malnutrition, with particular emphasis on children.

Under the guidance of the Philippine National Nutrition Council, CARE is currently implementing Title II programs in Maternal Child Health, Other Child Feeding, School Feeding, Food for Work and Disaster Relief.

To implement the Title II food aid program, CARE has entered into separate agreements with the Ministry of Health, the Ministry of Social Services and Development, and the Ministry of Education and Culture. Counterpart agency supervision and administration of the program involve regional, provincial, divisional, and district officials and their staff.

The CARE operation in the Philippines is headed by a director; two other international staff held positions of Assistant Director and Field Representative. The national personnel number 41 and comprise:

- 1 Administrator
- 1 Nutritionist
- 1 Home Economist
- 2 Warehousemen
- 14 Field Officers
- 8 Accounting Staff
- 14 Support Staff

Details of each of CARE's major Title II activities also are provided in the analytical sections of the report. The following is a listing of all of CARE's Title II activities, with the number of beneficiaries of each for FY 1981 shown in parentheses:

- 1. Maternal and Child Health (192,500)
- 2. School Feeding (1,500,000)
- 3. Food for Work (18,750)
- 4. Other Child (1,580)

4. Logistical Structure

The provision of commodities to voluntary agencies in the Philippines follows the regular routine of all Title II programs. After a program level is approved by AID, commodities are called forward in quarterly installments by the voluntary agencies. Requests for these shipments originate with voluntary agency field offices and are submitted to USAID/Philippines for clearance. The Mission evaluates the Call-Forward and advises AID/FFP. The commodity purchase, determination of port and export, and the estimated time of delivery are arranged by USDA. At the time of export, applicable ocean bills of lading are sent by the voluntary agencies to USDA, USAID, the Consignee and others as applicable. The voluntary agencies take delivery or title of commodities upon arrival in Manila.

The agreements between the GOP and the U.S. voluntary agencies provide for duty-free entry of Title II food and other commodities needed for relief and development projects. Inland transportation costs are covered through various agreements between the Philippine Government counterpart agencies and Transport Contractors, Inc. (TRANSCON), a government-owned corporation. These agreements are signed annually to provide distribution services for the Title II commodities. These services include the receipt of the commodities at the Manila Port at the end of ship's tackle, customs clearance, brokerage, lighterage, unloading, storage, guarding, warehousing, hauling, trucking, and transshipment by boat to outer islands.

Under the terms of the agreements, TRANSCON is responsible for losses of or damage to commodities until they are delivered to the program consignee. But the voluntary agencies, under their agreements with the government ministries, maintain ownership of Title II commodities until distribution to the ultimate recipients is made.

Previous audits have established that the port and warehouse facilities in the Philippines are adequate and available to prevent spoilage or waste of PL 480 commodities.

This evaluation did not delve deeply into a logistic/distribution assessment. In any event, such an effort would have duplicated efforts of a USAID audit which was underway at the time of the team's visit.

C. BACKGROUND OF TITLE II ACTIVITIES

Although Title II commodities have been shipped to the Philippines since 1954, the use of Title II commodities in programs carefully designed as nutrition interventions began in 1968. In 1968, the first project utilizing Title II commodities, the Child Nutrition Support project, was approved. The purpose of this project was: (1) to devise and test means of reaching malnourished infants, pre-school and elementary school children with supplemental feeding programs; (2) to undertake programs for reaching and educating mothers of malnourished children on nutritional aspects of child feeding; (3) to effect better use and distribution of available PL 480 Food for Peace commodities to reach the most needy children; (4) to develop various nutritional food formulas utilizing agriculture products indigenous to the Philippines or a combination of these and imported products; (5) to work with the private sector in developing, testing, and marketing nutritious products; and (6) to encourage the government of the Philippines to develop and support a nationwide nutrition effort. A.I.D. assistance has consisted of technical advisors provided under a contract with Virginia Polytechnic Institute, commodity assistance and participant training. Virginia Polytechnic Institute and State University (VPI) was authorized to

provide technical assistance under this project thus beginning over a decade-long association with USAID/Philippines and GOP nutrition programs. 1/

In 1974 a second follow-on project, Food and Nutrition, was approved. The purpose of this project was: (1) to assist the National Food and Agriculture Council (NFAC), the Philippine Agency responsible for national nutrition planning and coordination, in strengthening its functions through technical advice and commodity support; (2) to assist NFAC in pre-feasibility studies to develop new ways and methods (interventions) for correcting local malnourishment which reduce reliance on donated and other imported foods for supplementary feeding programs; (3) to reach 1.3 million malnourished infants and preschool children and 0.5 million of their pregnant or lactating mothers with supplemental foods and with food and nutrition education; and (4) to reach 2.7 million underweight or malnourished elementary school children with supplemental food and with food and nutrition education.

In the pages that follow, the major supplementary feeding programs--Day Care, Maternal and Child Health (MCH) and School Feeding--that were established through these two projects will be assessed. The nutritional impact of these programs will be the major question examined. The Food for Work program (FFW) will also be discussed.

1/ The full range of VPI's activities in the Philippines is comprehensively described in Nutrition and Related Services Provided to the Republic of the Philippines by Virginia Polytechnic Institute and State University, Contract AID/ASIA C-1136.

Part V

DAY CARE PROGRAM

A. PURPOSE, BACKGROUND AND DESCRIPTION OF DAY CARE

1. Purpose

Day Care is a national program implemented by the Ministry of Social Services and Development (MSSD) since the early seventies. Its purpose is to provide daily custodial care to and to improve the nutritional status of malnourished pre-school children age 2 to 6.

The MSSD has been designated the lead agency responsible for food assistance in the Philippine Nutrition Program. Under Presidential Decree No. 1567, the MSSD was assigned the responsibility of operating and maintaining day care centers. Under this decree, day care centers were to be established in each and every barangay throughout the Philippines.

2. Background

The Day Care program began in 1970, initiated by Estafana Aldaba Lim, Secretary of the then Department of Social Services and Development, in collaboration with the Social Action Arm of the Catholic Conference. Under this program, originally called the Tulungan project, centers in urban depressed areas were organized to rehabilitate malnourished pre-school children, to educate mothers in nutrition and family planning, and to provide primary health services and treatment. Approximately 40 such centers were supported for two years with USAID funds.

After the Tulungan centers were functioning effectively, Secretary Lim began the Day Care program, a vastly expanded effort to deliver nutrition and family planning services throughout the country. To finance this program, approximately 4,000,000 pesos were generated through the appeals of Secretary Lim and the First Lady, Mrs. Imelda Marcos. These resources were used to provide local food on a matching basis with U.S. Title II commodities. Day care centers were to be operated in every municipality, with the understanding that after the first year of operation, the salary of the center caretaker would become the responsibility of the municipal or city government.

In 1976, the MSSD and Catholic Relief Services (CRS) signed a Memorandum of Agreement to establish a nutrition component in the Day Care program. To implement this new program, the MSSD agreed to:

- (a) integrate supplemental feeding as one of the major components of the Day Care program;
- (b) establish day care guidelines specifying that to be qualified for day care, children must be moderately malnourished;
- (c) provide counterpart funding for the procurement of at least 50 percent additional food commodities to supplement foreign donated commodities provided by CRS; and
- (d) monitor the implementation of the day care feeding component according to the approved guidelines.

Under the same agreement, CRS agreed to:

- (a) train 12 regional nutrition consultants and provide technical supervision in the areas of concern related to the use of CRS food commodities;
- (b) accord first priority in providing food commodities--corn soya milk (CSM) and non-fat dried milk (NFDM)--to the day care centers at the rate of four pounds per child per month; and
- (c) offer technical advice in the implementation of the supplemental feeding program.

In signing this agreement, CRS and MSSD established a nutrition intervention aimed at combatting malnutrition in the pre-school population--a highly at-risk sector of the population in the Philippines, an age group correctly designated as the highest priority after infants, and one extremely difficult to reach through most traditional interventions.

In many countries, health and nutrition infrastructures for pre-schoolers are non-existent. The health of school age children, on the one hand, is frequently monitored through school health programs. The progress of infants, on the other, is usually monitored within the context of post-natal care. When post-natal care comes to an end, frequently at the time of infant weaning, at which point nutritional vulnerability increases considerably, there is, in many countries, no existing health or nutrition infrastructure to assist parents in monitoring the nutritional status of older infants and pre-schoolers.

The Day Care program represents an effort to create a national infrastructure to address the nutrition needs of the pre-school population. In the past decade, and especially during the past

four years since the establishment of the nutrition component, what has been accomplished? Is the nutrition component effectively combatting malnourishment? What has been the impact of PL 480 Title II food commodities on the nutrition status of pre-school beneficiaries?

B. DAY CARE EVALUATION METHODOLOGY

To answer these questions, six day care centers in Region I, the National Capital Region, 1/ and six day care centers in Region III, Tarlac and Pampanga provinces, 2/ were visited. Age/weight data of pre-school participants were collected from each day care center. A total of fourteen day care and social workers and twenty-four mothers were interviewed.

In addition, data on non-participants not served by day care centers were collected in Tarlac and Pampanga provinces to serve as the control group. This data was gathered from neighboring barangays similar in socioeconomic characteristics to day care center barangays. Non-participant pre-schoolers did not participate in any organized supplemental feeding program and consumed only the food provided in their homes. Non-participant data--recorded weights and ages of pre-schoolers--were available for certain barangays because these were the barangays under consideration by the MSSD as future day care center sites. The data were to be used by MSSD to examine the extent of malnutrition and the potential need for day care activities.

Unfortunately, the data sets are not perfectly matched. The short length of time spent conducting the evaluation (3 weeks) precluded obtaining perfectly matched sets of participant and non-participant data. The difficulty in obtaining comparable data sets was compounded by the relative inaccessibility of the data itself. Each participant data set was available only at the individual day care centers--rather than at a central location, e.g., a district or regional office. Thus much time was spent simply in travelling to collect the data, and, subsequently, copying it by hand.

The resulting participant and non-participant data sets are roughly matching with regard to age, socioeconomic status, and time of year weighed. However, for participants the length of time of program coverage varies. It would have been ideal to obtain data covering one year to eighteen months. Not all day care centers visited had data for this length of program coverage available. The majority of day care centers provided age/weight data covering approximately a six month time period. When length of program coverage may affect impact, it is noted accordingly.

1/ Referred to henceforth as "Manila".

2/ Day care centers in these provinces will also be referred to as "rural day care centers."

From Tarlac and Pampanga, the entire sample of participant pre-schoolers totalled 268, while the non-participant sample totalled 221. The Manila sample totalled 209.

C. NUTRITIONAL IMPACT

"When the Day Care Center opened, one child was severely malnourished. The rest were moderately malnourished. During the last weighing, if I am not mistaken, roughly one-quarter were normal, one-half were mildly underweight, and one-quarter were moderately malnourished."

Day Care Worker

What has been the impact of the day care centers on the nutritional status of the pre-school children served? Does the same kind of clear and positive impact described above hold true for the Day Care program as a whole?

To answer these questions, three analyses of the data collected were undertaken: (1) a comparison of the statistical significance of nutritional improvement between participants and non-participants; (2) a comparison of the percentage change in the nutritional status of participants and non-participants; and (3) a comparison of the rate of nutritional improvement for participants and non-participants. ^{1/} The results of these analyses demonstrated that: (1) participants experienced a statistically significant improvement in nutrition status while non-participants did not; (2) higher percentages of participants improved in nutritional status and lower percentages declined compared to non-participants; and (3) participants experienced higher rates of improvement than non-participants.

1. Statistically Significant Improvement in Nutrition Status

Analysis revealed that a statistically significant improvement has occurred in the nutritional status of pre-school participants at seven of the eight rural day care programs. ^{2/} For the one day care center not showing statistically significant improvement, it should be noted that data were available from this center for a seven-month time period only.

^{1/} Charts setting forth the results of all analyses undertaken for each day care center are presented in Appendix V.

^{2/} For one rural day care center, two additional data sets were obtained bringing the number of data sets analyzed to eight, while the number of day care centers visited was six.

There was no statistically significant improvement in nutrition status in barangays not served by day care centers. In fact, non-participants living in Barangay St. Cristo suffered a statistically significant decline in nutritional status. For Manila, the participants at three of the five day care centers visited showed a statistically significant improvement in nutritional status. The failure of two of the day care centers to show a statistically significant improvement may be due in part to the relatively short program treatment--six and seven months. However, a more critical factor that, in all likelihood, inhibits the impact of the Manila program is the lower level of targeting to the moderately and severely malnourished and the inclusion in the program of a correspondingly higher level of normal children. 1/

In addition, it may well be considerably more difficult to improve nutrition status in urban settings--especially in squatter settlements where a number of the day care centers visited were located--than in rural settings. The common response in rural areas to the question, "What do you tell the mothers of the malnourished children?" was, "We tell the mothers not to sell so much of the food they produce at home, the kamote (sweet potato) tops and the mangoes, and to give more to their children. When they realize their child is malnourished, they usually do it." Another common response was, "We tell them to start a garden, and we try to show them how."

Obviously, such an approach is extremely difficult in a densely crowded squatter settlement. Day care and social workers in Manila commented that they had tried to start gardens at some centers, "But the food was stolen at night and there was nothing left for the children." Day care workers in Manila also noted that the cheapest food was to be found in supermarkets rather than at street vendor stalls. But the inhabitants of squatter settlements frequently live a considerable distance from supermarkets and, lacking transportation, continue to purchase food from street vendors at higher prices than necessary. Administrators of the Manila program are well aware that income is a prime constraint on improving nutritional status. They have, through the Day Care program, initiated some income generation projects for mothers of day care participants. 2/

1/ Program targeting will be discussed in greater detail in the following section.

2/ Income generation projects will be discussed in greater detail in a following section.

2. Percentage Change in Nutritional Status

"While the children are eating, I tell them the food will make them healthy and beautiful."

Day Care Worker

The impact of the Day Care program on nutritional status is most clearly seen through a comparison of percentage change in nutritional status--improvement, no change or decline--of participants and non-participants. In Tarlac and Pampanga, the percentage of day care participants who improved was in all cases significantly higher and nutritional decline significantly lower than similar percentages for non-participants. On the average, 54.25 percent of rural participants improved after six months of program treatment while, during approximately the same time period only 14.17 percent of non-participants improved. For a one year period, 82.95 percent of participants improved while only 11.5 percent of the non-participants improved. With respect to nutritional decline, 19 percent of rural participants declined, while 30.9 percent of non-participants declined over a four to six month period. For the two day care centers and matching barangays providing data covering one year, 6.25 percent of participants declined while 40 percent of non-participants declined. In two day care centers, there was no decline in nutritional status. The difference in percentage improvement and decline between each day care center and the non-participant barangay is striking as revealed by Table 8. The day care center is listed with the matching non-participant barangay immediately below.

Unfortunately, non-participant data was unavailable for the Manila day care centers. On the average, after six months of treatment, approximately 33.6 percent of participants improved and 10.1 percent of participants declined.

3. Rate of Nutritional Level Improvement and Decline

Day care participants improve at a rate significantly higher than the few non-participants who improve. Participants who decline, decline at higher rates than non-participants. The average rate of rural participants' nutritional level improvement per six months is 1.18 ^{1/} while, for non-participants, the average rate is 0.74. This means that participants gained on the average 6 percent of standard weight-for-age in six months while the few non-participants who improved gained on the average 3 percent of standard weight-for-age. This degree of weight gain compares most favorably with the best known results in other supplementary feeding programs worldwide.

1/ Based upon the 1-10 scale used in the Philippines.

TABLE 8

COMPARISON OF PERCENTAGE CHANGE OF PARTICIPANTS
AND NON-PARTICIPANTS

	<u>% Improved</u>	<u>% Decline</u>
<u>Baraca Day Care Center</u>		
Jan-Dec 1980	72.9	12.5
<u>Barangay San Nicholas</u>		
Jan-Dec 1980	14.3	23.0
<u>Suizo Day Care Center</u>		
Jan-Dec 1980	93.0	0.0
<u>Barangay Sto Cristo</u>		
Jan-Dec 1980	8.0	57.0
<u>San Jose I Day Care Center</u>		
June-Dec 1980	35.7	10.5
<u>Barangay Cafe</u>		
March 1980-Jan 1981	2.2	37.8
<u>San Jose II Day Care Center</u>		
Jan-Dec 1980	45.0	3.0
<u>Barangay Pitabunan</u>		
Jan-Dec. 1980	33.3	27.5
<u>Daisy Hill I Day Care Center</u>		
Morning Session		
July 1980-Jan 1981	67.3	6.5
<u>Daisy Hill II Day Care Center</u>		
Morning Session		
June-Dec 1980	60.0	0.0
<u>Daisy Hill I Day Care Center</u>		
Afternoon Session		
Aug-Dec 1980	50.9	20.0
<u>Daisy Hill II Day Care Center</u>		
Afternoon Session		
June-Dec 1980	66.6	20.0
<u>Barangay Arangunen</u>		
Jan-Oct 1980	6.8	27.5

This comparison can be seen by examining Table 9. The table shows the average increase in percentage points of standard weight-for-age of pre-school children in various types of feeding programs around the world. It shows that the best results have been an 8 percent increase in standard weight-for-age through programs providing 100 percent of the daily requirement in ration after 4-6 months of treatment. The Day Care program compares most favorably with these results. On the average, Day Care participants gained, after 6 months of treatment, 6 percent of standard weight-for-age while being provided 20-29 percent of their daily requirement in ration.

TABLE 9

AVERAGE INCREASE IN PERCENTAGE POINTS OF STANDARD WEIGHT FOR AGE OF
PRESCHOOL CHILDREN IN VARIOUS TYPES OF FEEDING PROGRAMS*

<u>Type of Feeding</u>	<u>Country</u>	<u>Authors</u>	<u>Age of Beneficiaries (mos.)</u>	<u>% of Daily Calorie Requirement in Ration*</u>	<u>Duration of Participation (mos.)</u>	<u>Average Increase in Percentage Points of Standard Weight for Age</u>
Nutrition Rehabilitation	Brazil	Federal University of Pernambuco 1972	12-23	100	4-6	3-8
			24-35			4-7
			36-47			5-6
			48-59			3-7
	Latin America	Beghin and Viteri 1973	12-84	100	3-4	3-5
	Philippines	Asia Research Organization 1976	6-11 12-23 24-60	66	3	7 8 4
Take-Home	Lesotho	McKay, Capone and Jacob 1974	0-60	33	12	3
	Philippines	Asia Research Organization 1976	6-11	25	13-18	4
			12-23			6
24-60	1					
On-Site	India	Narangwal Rural Health Research Center 1974	0-36	66	24 36	3 4.5
	India	Gopaldas et al. 1975	6-36	25	12	4.4

*FAO requirement for 12-47 month old children is 1,360 calories.

Source: Study I, Supplementary Feeding, Harvard Institute for International Development, USAID, 1981.

In sum, the key findings of the foregoing analyses are: (1) participants experienced a statistically significant improvement in nutrition status while non-participants did not; (2) higher percentages of day care participants improve and fewer percentages decline in nutritional status compared to non-participants; (3) improved participants' weight gain is approximately twice that of the few non-participants who gained; and (4) that the amount of weight gained compares most favorably with the amount of weight gained by participants in other supplementary feeding programs around the world.

In view of the outcome of these analyses, it seems not unreasonable to suggest that the positive results appear to be attributable to the Day Care program itself, rather than to unknown socioeconomic, health, or agricultural factors. It was obviously impossible to investigate rigorously the numerous external events and socioeconomic variables that may have influenced the nutrition status of participants and non-participants. Nevertheless, during interviews, day care workers and mothers were asked whether water availability, sanitation, health facilities or food availability had changed over the past year and all responses were negative. In addition, site visits to four of the seven rural day care centers suggest that it is somewhat unlikely that other events occurred to influence nutritional status. These day care centers were located in economically depressed barangays, a considerable distance from any urban setting. Two were located at the end of dirt roads accessible only by a four-wheel drive vehicle. None of the barangays appeared to have sanitary facilities or water other than from a central pump. Government services in the form of health centers or agricultural extension units were not apparent. The barangays consisted of 50 to 100 nipa huts surrounded by rice or sugarcane fields. Thus it seems unlikely, but of course not wholly improbable, that an external event may have occurred to confound the interpretation of program outcome.

D. PROGRAM TARGETING

"How do you select the children to participate in the day care center?" "We weigh them."

Day Care Worker

"Later we will walk down through the squatter settlement and you will see many malnourished children. We have weighed most of the children there. Many are badly malnourished, but are too young to participate in the Day Care program. We know who they are and we will include them as soon as they are old enough."

Day Care Worker

1. Level of Targeting

These comments are illustrative of the kind of effort being made to target the Day Care program to moderately and severely malnourished children.

The Day Care program in Tarlac and Pampanga is highly targeted to the moderately and severely malnourished. On the average, the mildly malnourished comprise 36 percent of all rural program participants and the moderately and severely malnourished comprise 57 percent of all program participants. The normal children average 6 percent. Some normal children are included in the program for a number of reasons. They may come from very large and poor families making their potential for nutritional decline high. Or they may be economically better off and are included because their parents will then bring needed resources--food, money or assistance--to the day care center. Children of normal nutritional status may also be included if their families are unable to take care of them during the day. Nevertheless, malnourished children are to be accorded priority at admission.

The Manila day care centers are less targeted to the moderately malnourished and include a higher percentage of normal children in the program. On the average, approximately 35 percent of the day care participants are of normal nutritional status, 50 percent are mildly malnourished and only 13.6 percent are moderately malnourished.

The lack of targeting in Manila is attributable, in part, to a 1978 decision to include in the program normal and mildly malnourished pre-schoolers of working mothers in need of temporary custodial care for their children. The greater likelihood of higher employment rates outside the home for poor urban women--compared to rural women--and their greater need of day care partially explains the lower levels of targeting in Manila.

Program targeting appears to exist for the program nationwide. According to one study of 3,003 beneficiaries in four regions, 38 percent were moderately and severely malnourished, 42 percent were mildly malnourished, 18 percent were normal and 1 percent were without records. These averages may obscure the differences between highly targeted rural programs and less targeted urban programs.

2. Linkage of Program Targeting to Nutritional Impact

Which pre-schoolers are improving? Is it those who are only mildly malnourished, or is it those who are moderately and severely malnourished? The analysis revealed that it is the moderately and severely malnourished who improve the most and decline the least. ^{1/}

On the average, 66.3 percent of moderately and severely malnourished participants improved, while only 46.9 percent of mildly malnourished participants improved. For Manila, 44.6 percent of moderately malnourished participants improved while only 36.7 percent of the mildly malnourished improved. In other words, there are higher rates of improvement for pre-schoolers who enter the program in a moderately or severely malnourished state than for those who are mildly malnourished at entry. This finding underscores--especially for the Manila day care centers and other less targeted centers in other regions--the importance of according priority at admission to the moderately malnourished. Even more significant program impact could be anticipated were the program more highly targeted to the moderately malnourished.

Who is declining? Again, is it the mildly or more moderately or severely malnourished child? In Tarlac and Pampanga, on the average, 6.5 percent of moderately and severely malnourished participants declined, while 16.12 percent of mildly malnourished participants declined. For Manila, 0 percent of moderately malnourished participants declined while 13.17 percent of mildly malnourished participants declined. In addition, relatively high rates of nutritional decline are found in the normal children in five centers. On the other hand, it is noteworthy that for five day care centers there was no nutritional decline whatsoever for the moderately or severely malnourished.

E. GOAL ACHIEVEMENT

Has the Day Care program achieved the nutritional goals set forth by the National Nutrition Council (NNC) and CRS for pre-school nutrition programs? The NNC objective is:

^{1/} The summary results of this analysis for each rural day center are shown in Table 10.

Table 10

CHANGE IN NUTRITION STATUS BY ENTRY NUTRITION LEVEL

RURAL DAY CARE CENTERS

		(Moderately and Severely Malnour- ished) <u>Levels 5-10</u>	(Mildly Malnourished) <u>Levels 2-4</u>	<u>Normal</u>
<u>Suizo</u>	Improved	100	92	
	Declined	0	0	0
	No Change	0	7	100 (1 case)
<u>Baraca</u>	Improved	64.5	50	
	Declined	12.5	50	0
	No Change	20.8	0	0
<u>Daisy Hill I</u> Morning Session	Improved	72	44.4	
	Declined	12	16.6	33.5
	No Change	16	38.8	66.5
<u>Daisy Hill I</u> Afternoon Session	Improved	73.9	36.3	
	Declined	4	18	83.3
	No Change	21.7	45.4	16.6
<u>Daisy Hill II</u> Morning and Afternoon Session*	Improved	70	10	
	Declined	5	20	0
	No Change	20	70	0
<u>San Jose I</u>	Improved	40	50	
	Declined	0	8.3	100 (1 case)
	No Change	60	41.6	0
<u>San Jose II</u>	Improved	43.7	46.1	
	Declined	12.5	0	0
	No Change	43.7	53.8	0

*Combined because of small sample size of 15 each.

"To elevate to mild underweight status at least 25 percent of the identified severely and moderately underweight for age among 0 to 6 years old, giving priority to 0 to 3 years old." 1/

The more stringent CRS objective is:

"To elevate to mildly underweight status approximately 50 percent of the moderately and severely malnourished in one year to 18 months."

The average percentage of children elevated to mildly underweight in both rural and Manila Day Care programs providing four to six months of treatment has exceeded the NNC objective. After this period of time, 36.6 percent of Tarlac and Pampanga participants and 37.8 percent of Manila participants who entered the program in a moderately or severely malnourished state were elevated to mildly malnourished. 2/

To analyze adequately the extent to which the CRS objective has been achieved, data would be required for one year to 18 months for all day care centers. Unfortunately, data for this period of time for all day care centers were unavailable. Nevertheless, the data in Table 11 available show that three day care centers exceeded the more stringent CRS goal--Baraca elevated 86.6 percent to mildly malnourished in one year, Daisy Hill elevated 60 percent to mildly malnourished in six months and Minipark elevated 66 percent to mildly malnourished in six months. Another Tarlac day care center almost achieved the CRS goal in one-half the time by elevating 48 percent to mildly malnourished in six months.

One Tarlac program failed to achieve the NNC objective by elevating only 12 percent to mildly malnourished in one year.

F. OTHER IMPACTS

1. Community Development

"The day care center is our point of entry into the community. Other families in the community benefit as well."

Director
Day Care Program
National Capital Region

1/ Food Assistance Guidelines, p. 2.

2/ Table 11 shows individual percentages for each center.

Table 11

PERCENTAGE OF PARTICIPANTS ELEVATED TO MILDLY UNDERWEIGHT

Rural Areas

Suizo: 86.6%
1 year

Baraca: 12.0%
1 year

San Jose I: 20.0%
6 months

San Jose II: 25.0%
6 months

Daisy Hill I: 48.0%
Morning Session
6 months

Daisy Hill I: 30.4%
Afternoon Session
4 months

Daisy Hill II: 60.0%
Morning & Afternoon Sessions
6 months

Manila

Kabayan: 33.0%
6 months

Unang Sigau: 27.2%
4 months

Minipark: 66.0%
6 months

Tenement: 25.0%
5 months

The morning day care session had just begun. The day care workers placed the weighing scales in the doorway of the day care center--a 12 by 20 foot chapel in a small clearing in a squatter settlement. Suddenly, women with babies in their arms appeared and began lining up. "Are these mothers of children in the program?" "Oh no, they just live here. They see us put up the scales for the children and they come just to have their babies weighed. Now they can learn if their babies are healthy or malnourished."

Day Care Worker
Manila

The Day Care program is a well-run child care and socialization program. In addition, in many instances, the day care centers are a vehicle for initiating a variety of self-help and education activities in the communities they serve. For example in one barangay--San Luis--in Tarlac, the villagers were initially hostile to MSSD fieldworkers and resisted having their children weighed. Nevertheless gradually, over time, not only did the day care center become an integral part of the community, but equally important, many self-help projects were initiated through the initial impetus provided by the center. A self-employment credit assistance (SEA) association was established and it was noted that increases in the family income now range from P100-P300 per month. Other projects initiated included sawali-making (palm weaving), vending projects, a sari-sari store, food processing and animal raising. Clearly, the level of such activity varies from center to center and from region to region and, of course, depends in large measure upon the skill, initiative and charisma of the day care and social workers themselves. There is little question, however, that as resources permit, the MSSD at the municipal, regional and national level has encouraged and supported day care and social workers to view their roles more broadly than solely as caretakers of children. The result is that many day care centers, especially those which have been established in isolated rural barangays not served by other government services, function as a means to provide needed services and educational activities. They appear to be, in many instances, the "entry point into the community."

2. Women's Income

The Day Care program does not provide daily child care for a period of time sufficient to enable women to engage in full-time employment outside the home. Day care sessions provide child care for two to three hours in the morning or afternoon. During

this time, some urban women work as laundresses; rural women work in the rice or sugar cane fields, or at home on handicrafts to sell in the local market. It was estimated by day care workers that, at best, about 30 percent of the mothers are able to work for a few hours outside the home. The majority, however, have many other children to care for. Thus the Day Care program assists the majority of the women in their work at home, substantially onerous in the absence of running water, transportation and in many instances, electricity, by relieving them for a few hours of the care of one or more of their children.

Some day care centers--especially in Manila--have initiated income generating activities for the mothers. Many of these activities involve food-processing such as vinegar-making, salt-preservation, and the production of snack foods such as "chicharron baboy" (pork chitterlings). Some of the women are learning to supplement the family income through the sale of home-processed food.

3. Food Production

Thus far, day care centers do not appear to have had a significant impact on local food production. What is notable, however, is: (1) the effort made by some day care workers to cultivate day care center gardens and to encourage the cultivation of home gardens; and (2) the awareness on the part of MSSD administrators at the barangay and regional levels of the potential role of the day care center in increasing local food production.

Some effort has been made by day care workers to initiate day care center gardens. There are formidable obstacles to this strategy, however. At one center in Tarlac, day care workers and barangay officials discussed the problems. The plot they cultivated was now barren. The dry season had begun and nothing could be grown. The river was about one kilometer away, but located down a steep embankment making the construction of a simple irrigation system more technically demanding than they were equipped to undertake. Moving the plot nearer to a water source was impossible. As tenant farmers, the land they were permitted to use was limited to that immediately surrounding the huts. The land beyond the barangay belonged to a landowner and was used to cultivate rice and sugar cane. Thus food production for the day care center was limited to the rainy season. Yet even then production was unstable. Tarlac is a disaster prone area and crops are frequently lost in torrential rains and typhoons.

Despite these constraints, MSSD administrators in Tarlac were eager to discuss ways in which the day care centers might mobilize local food production efforts. They acknowledged that local food production in each barangay was the only long-term solution to the problems they were attempting to solve.

As a partial response, the MSSD has initiated the SEA (Self-Employment Assistance) "Kalusugan" (Nutrition-Health) project on a pilot basis to provide assistance to day care parents for food production initiatives.

While it is too early to assess the impact of this project, its implementation, as well as the efforts to initiate income-generating activities, are indicative of the potential role of the day care center--and actual role in many cases--in mobilizing community development at the local level.

G. DISCUSSION OF OUTCOME: SOURCES OF STRENGTH AND SOURCES OF CONCERN

1. Program Outcome

Based upon the total sample of 477 participants, the Day Care program appears to be an effective, community level nutrition intervention for the pre-school population age 2 to 6. Although it is, in many instances, highly effective, several aspects of the program could be refined and improved to use available resources more effectively and to have an even greater impact. What are the components that contribute to nutritional impact? What aspects of design and implementation inhibit impact? In other words, what are probable explanations for the outcome of the program?

2. Sources of Strength

a. Targeting to the Moderately Malnourished

Program targeting to the moderately and severely malnourished is integrally linked to high program impact. ^{1/} The analysis revealed that the most malnourished children improve the most. These findings are consistent with other analyses of food supplementation programs: the lower the nutritional level, the better the response to food supplementation. ^{2/}

1/ Lower levels targeting in the Manila area will be discussed as a source of concern.

2/ See Study I, Supplementary Feeding, Harvard Institute for International Development, prepared for the Office of Nutrition, Development Support Bureau, USAID, 1981. See also, "Supplementary Feeding Programs for Young Children in Developing Countries," G.H. Beaton and H. Ghassemi, UNICEF, 1979.

What explains this? Permanent stunting--due to previous severe malnourishment--is one possible explanation for failure of some mildly malnourished children to improve. Being short in stature, stunted children's weight-for-age is lower than normal and they are misclassified as malnourished when, in fact, no further nutritional improvement will occur. The lower rates of improvement of the mildly malnourished suggest that a percentage of day care participants may be stunted.

There may be operational reasons as well for greater improvement among the moderately malnourished. Site visits suggested that program treatment, while in theory the same for each child, may actually be more intensive for the moderately malnourished. It may be that the moderately and severely malnourished children and their families, understandably, receive the most "attention"--in terms of food, guidance, and nutrition education from the day care workers. On numerous occasions, the response to the question posed to day care workers, "What do you do when a child is moderately or severely malnourished," was always "I give him more food!" or "I try to give him a little extra!" or "I explain to the mothers that they must give him more food!" The understandable attention given to more highly malnourished children may bring about a rapid improvement in their nutritional status, but may result in the neglect of normal and mildly malnourished children and their subsequent nutritional decline.

b. Community Participation

The nipa hut was at the very end of a long dirt road. This was the day care center. As the barangay captain led the team into the hut, the social worker noted that the barangay officials were very proud of the day care center. "They built it themselves," she explained. Tacked on to the front was a sign that read, "Donated by the Community."

Community participation in the Day Care program appears to be very high, especially in the more isolated rural barangays where the Day Care program has become the villagers' first point of contact with government services. Community support and participation was evidenced in many ways. In all centers visited, mothers were observed to be involved in all aspects of the day care operations. They assisted the day care worker in caring for the children, in preparing and distributing the food, and in cleaning up afterward.

In addition, families who benefit from day care services support the center financially. Interviews revealed that many families are willing and somehow able to pay a small fee ranging from 60 centavos to one or two pesos, despite their limited income. Beneficiaries' incomes averaged P150-500 (\$20-\$65) per month for a family of four to six persons. Yet even at this income level, many families managed to find ways to pay for the centers' services. The majority of families, however, provided in-kind rather than cash contributions for day care service. The in-kind contributions usually included foods, condiments and utensils.

Community support and participation was evidenced in other ways as well. Two of the six day care centers in the rural areas were built by the villagers themselves--one was a small concrete structure, the other, a nipa hut. In Manila, a city councilman donated his own home, which was surrounded by a squatter settlement, for daily use as a day care center. His wife assisted with the program daily. In many instances, local women's groups or Rotary clubs had provided uniforms for the children. Finally in all cases, the salary of the day care worker, approximately P300 per month (\$40.00), was paid by the municipal government or through parent contributions.

c. Commitment and Dedication of Day Care Workers to Nutritional Improvement

"My job is to rehabilitate the moderately malnourished children by the end of the school year."

Day Care Worker

This comment by a day care worker is illustrative of the importance the day care workers themselves attach to the nutritional component of their work. All day care workers interviewed recognized that their work entails more than the provision of daily custodial child care. Even with relatively minimal nutritional training, and in some cases, very limited general education, they attach great importance to and attempt to carry out faithfully the nutritional components of the job--regular monitoring of the children's nutritional status, quarterly weighing, computation of weight-for-age and the child's nutritional status, and regular consultations with parents regarding the child's nutrition progress. While the nutritional computations were not always done accurately, they were done thoroughly and regularly. The age/weight chart was always posted in a prominent place in the day care center.

The day care workers' high level of dedication was also evidenced by their willingness to work relatively long hours at low pay--in extremely impoverished squatter settlements in Manila and economically depressed and isolated barangays in the rural areas. In Tarlac, moreover, all day care workers were required to live in the communities they served--so as to develop a closer relationship with and better understanding of the villagers themselves. Many of the day care workers were fluent in the local dialect--which differed considerably from their own native tongue. Finally, all day care workers appeared to be on close and familiar terms with the villagers.

d. Commitment of the Government of the Philippines and Catholic Relief Services

The MSSD's commitment to the nutrition-oriented Day Care program is very high as reflected in the program's expansion over the years, the Ministry's investment in fieldworker training, the provision of counterpart commodities to day care centers and the share of the MSSD budget devoted to Day Care.

Since the signing of the 1976 agreement with CRS to establish a nutrition component in Day Care, the program has been expanding steadily. In June of 1976, approximately 3,390 day care centers were in operation serving approximately 350,000 beneficiaries. ^{1/} By 1979, approximately 5,191 day care centers were operational serving approximately 715,789 children. ^{2/}

Moreover, the MSSD has invested in the nutritional training of both regional supervising nutritionists and the day care workers. A 1976 audit revealed that day care workers lacked skills and knowledge with regard to service delivery. As a result, a workshop for day care workers was initiated. In addition, the MSSD is now paying the salaries of 12 Regional Supervisory Nutritionists for the Day Care program as agreed to in the 1976 agreement.

The MSSD also provides counterpart food commodities to the day care centers to supplement the foreign donated

^{1/} Department of Social Services and Development, Annual Report, FY June 1975-Dec. 1976.

^{2/} Department of Social Services and Development, Annual Report, FY 1979.

commodities. While it is impossible to determine whether MSSD food commodities are provided in quantities sufficient to supplement, together with the PL 480 commodities, the caloric gap of the children, a 1976 audit found that the day care centers are receiving adequate food commodities from MSSD on a quarterly basis. The MSSD donated foods include: rice, glutinous rice, noodles, tuna fish, sugar, dried fish, and macaroni, among other commodities.

Finally, the MSSD's budgetary allocation to the Day Care program appears to be satisfactory. In 1979, Day Care was allocated 23.95 percent of the MSSD's budget. ^{1/}

In addition to MSSD commitment, the Day Care program has benefitted substantially from the guidance and involvement of CRS. CRS is to be commended for perceiving its role in the Day Care program substantially more broadly than merely as a vehicle for the delivery of food commodities. During the establishment of the program, CRS worked closely with MSSD to identify and develop complementary activities and program components that would support the program's nutrition objectives. Admittedly, not all program components are implemented wholly satisfactorily. Nevertheless, from the beginning and especially through the involvement of CRS's own nutritionists, CRS has striven to work with MSSD to develop a sound conceptual basis for the implementation of a nutrition-oriented Day Care program.

3. Sources of Concern

a. Program Targeting in Manila

The Manila Day Care program is less targeted than the rural program. In Manila, approximately 35 percent of participants are normal, 50 percent are mildly malnourished and only 13.6 percent are moderately malnourished.

The inclusion of such a high percentage of normal children and such a low level of moderately malnourished is a matter for concern. Interviews with day care workers suggested that some normal children were included because they were from large and indigent families and their potential for nutritional decline was quite high. Lower targeting in Manila was also attributed to a 1978 decision to include normal and mildly malnourished children of working mothers.

^{1/} MSSD, Annual Report, 1979.

The actual decline of a relatively high number of normal children in three Manila day care centers--23 percent, 30 percent, and 13.3 percent--appears to give some justification to the felt need to include some normal children who may be nutritionally at-risk in the program. At the same time, however, much greater effort should be made to accord first priority to the moderately and severely malnourished.

To their credit, the Manila MSSD administrators seem to be aware of the targeting problem. During the past year, a survey was undertaken by the MSSD to identify the enclaves of poverty within the National Capital Region. The MSSD is currently in the process of transferring the day care centers serving marginally better-off populations to the enclaves of poverty identified in the survey.

b. Failure to Use Age/Weight Data to Monitor Nutritional Progress and Decline

In theory, age/weight data of each child is collected regularly to monitor the child's nutritional progress. The fact that higher percentages of mildly malnourished and normal pre-schoolers are declining, compared to the moderately malnourished, suggests it is the observed appearance of the child rather than the actual age/weight data collected that indicates the need for program treatment--e.g., consultations with parents, referrals to Health Centers or additional food supplements.

Quarterly or monthly weighing of pre-schoolers and maintenance of age/weight records is an integral component of the Day Care program for all centers visited and for the program nationwide. A 1980 study of 3,003 beneficiaries in four regions found that age/weight records were maintained for 87 percent of supplemental feeding beneficiaries. 1/

However, it appears that the data collected is not being used in an operational sense--to monitor the progress of the children or as an educational tool for the parents. In the absence of continued monitoring of the actual weight

1/ 1980 Audit.

recorded, the gradual deterioration of the mildly malnourished and normal children might not be apparent, especially to a relatively untrained field worker, until a somewhat advanced state of nutritional decline has been reached. Thus, failure to use the data in an operational sense means that nutritional decline goes undetected and program impact is constrained.

In addition, questions can be raised whether the data collected is actually used at higher administrative levels for decision making purposes, for program modification or for feedback to lower levels to provide information on program progress. Since ample data is already being collected in the field, taking the present data collection efforts one step further to develop a monitoring and information system would be challenging but not impossible. After analyzing the outcome of eight community-level nutrition programs, the authors concluded that "a nutrition program capable of monitoring and evaluating itself is more likely to reduce malnourishment than one that does not have this capability." ^{1/}

c. The Impact of Nutrition Education on Food Consumption Behavior

"We meet with the mothers about once a month under the tamarind tree next to the barangay captain's house."

Day Care Worker
Tarlac

There is little question that CRS and MSSD have striven, in the four years of program operation, to develop a nutrition education component for the Day Care program and have succeeded in developing nutrition education classes for many day care centers. Some excellent nutrition education materials have been developed to guide day care workers. Recipe booklets on the preparation of foreign-donated and local commodities have been circulated and recipe contests using these commodities have been held. ^{2/} All day care workers interviewed were knowledgeable about the mothers' food preparation and consumption habits that needed modification in order to improve the children's nutritional status. Day care workers noted that they met regularly with the mothers about once or twice a month. One study,

1/ Volume I: Final Report: Analysis of Community Level Nutrition Programs, USAID, Community Systems Foundation, October 1980.

2/ First prize in Manila was CSM-kamote tops soup.

however, noted that of 669 day care centers investigated, only 46 percent conducted sessions with parents on sanitation and health and only 37 percent conducted sessions with parents on food production. 1/

Equally if not more important than the extent of nutrition education is the question of its impact. Does the nutrition education result not merely in a change in knowledge and attitudes, but in a behavioral change in food preparation and consumption habits in the home? Is the nutrition education sufficient to overcome the substitution effects that may occur in supplementary feeding programs of this nature? 2/

Based on interviews providing information on class participation and on mothers' attitudes questions can be raised concerning the actual impact of nutrition education on behavioral change.

Participation Levels. The majority of day care workers interviewed responded that only 20 to 40 percent of mothers participated regularly in the nutrition education classes.

Mothers' Attitudes. Twenty-four mothers were interviewed during the site visits. When asked why they valued the day care center, the majority responded that "it helped to prepare the child for school" or "it helped the child get along with the other children." Very few responses suggested that the day care center was valued because of the actual or potential nutritional improvement of the child or because of the information the program provided on ways to improve the child's nutrition status. Moreover, an occasionally heard comment was, "please send us more food," or "please send us bulgar" or "please send green peas instead of CSM." These remarks raise questions about the efficacy of nutrition education in stimulating greater reliance on and use of local foods.

1/ Day Care Services Assessment, MSSD, 1979.

2/ While sharing of the food is virtually impossible because of the carefully supervised, on-site nature of the feeding, "substitution"--or the parents' reliance on the ration as a "substitute for" calories normally provided at home, rather than as a "supplement to" those calories has been found to occur in many supplementary feeding programs.

The task of providing nutrition education to illiterate and impoverished parents, whose incomes have been declining in real terms, is an extremely challenging one and dramatic change cannot be expected quickly or easily. Certainly the nutrition education component may well be the most important component of the Day Care program--and the component--rather than the supplemental food itself--that in the end may be expected to be most effective in combating malnutrition at the village level.

It is for these reasons that the findings related to nutrition education are extremely important. One approach to improving the nutrition education component might be the use of growth charts in the nutrition education classes. Individual child growth charts, regularly reviewed by the mother and day care worker during nutrition education classes, and possibly kept in the home, might be a useful vehicle for more effective nutrition education and as a stimulus to behavioral change. The authors of a recent study of supplementary feeding programs world wide have observed, "In those situations where the charts were maintained simply for data keeping purposes, the reliability of the measurement deteriorated over time, and the cost in both time and money probably was not worth the effort. On the other hand, the charts proved extremely effective when incorporated as part of a nutrition education program, and were actively used to monitor the progress of the individual child."^{1/} Moreover, weighing on a monthly rather than a quarterly basis would provide a more comprehensive picture of nutritional progress and would allow parents and field workers the opportunity to detect nutritional decline and to begin treatment before a more advanced state of nutritional decline had been reached.

H. ADEQUACY OF THE RATION

Two aspects of the ration may play a role in inhibiting maximum nutritional impact: (1) amount of the ration and (2) calorie/protein balance of the ration.

1. Amount of the Ration

Although a ration is provided daily, it appears that occasional delays in delivery of commodities and varying quantities of food served from day to day, result in somewhat less than the provision of 400 calories daily.

1/ Volume I: Final Report: Analysis of Community Level Nutrition Programs, USAID, Community Systems Foundation, October, 1980.

According to the 1976 agreement, the ration is to provide 400 calories and 17 grams of protein daily. It is to be fed once a day, 5 days a week, all year round. Both MSSD and CRS provide food commodities to be used as the daily ration, although MSSD provides the bulk of these commodities. In four regions, MSSD provided the major share of food commodities in 1980 in the form of legumes, rice and non-grain protein. ^{1/} The day care workers responses to the question "What does MSSD provide?" were notably similar: "Mungo, pancit, malaggit, dilis..." (mungo beans, noodles, glutinous rice, dried fish...).

All day care workers interviewed suggested that, on the whole, food supplies from MSSD were adequate. On the other hand, some day care workers noted that, while the irregular delivery of PL 480 commodities was not a major problem, occasional delays in delivery did occur--sometimes for a week or two or occasionally longer. When asked what they did under these circumstances, the common reply was, "We ask MSSD or the parents for more food." "Do they provide it?" "Usually."

In addition to occasional delivery problems resulting in a possible reduction in the daily calories consumed, observations of the actual ration served to the children also raises questions concerning caloric adequacy. In one day care center, the children were being served a clear soup and crackers, an amount and type of food not likely to provide 400 calories and 17 grams of protein. Although it appears that the children are fed daily, no studies have been undertaken to assess the caloric content of the ration actually consumed and observations suggest that it may be less than 400 calories.

Table 12 shows the percentage of energy and protein requirements supplied by the ration if the entire 400 calorie ration is provided on a daily basis. Depending upon the age of the child, the scheduled ration provides approximately 20 to 29 percent of the child's caloric needs.

2. Calorie/Protein Balance of the Ration

In addition to deficiencies in the amount of the ration provided daily, an analysis of the calorie/protein balance of corn soya milk and non-fat dried milk suggests that these commodities may have a less than optimal calorie/protein balance for the needs of pre-school children.

^{1/} 1980 Audit.

Table 12

PERCENTAGE OF DAILY CALORIES AND PROTEIN
SUPPLIED BY SCHEDULED RATION

Age Year	Per Child Per Day		
	Energy (Kcal)		Protein
2	1,350.0	29%	58%
3	1,550.0	25%	58%
4	1,715.0	23%	54%
5	1,860.0	21%	48%
6	1,960.0	20%	47%

Numerous studies undertaken worldwide have revealed that caloric deficiency is frequently more severe than protein deficiency in pre-school children. A child's energy requirements have to be satisfied before protein can be used for tissue building. The ration must be adequate in calories; if it is not, the proteins will be broken down to provide the body's primary need for energy. In view of this, careful attention must be paid to the caloric/protein balance of the ration to ensure that the caloric as well as the protein needs of pre-schoolers are met. ^{1/}

FAO/WHO guidelines suggest that 11 percent of the calories in the food ration should be supplied through protein. PL 480 commodities supplied to day care provide a higher percentage of protein than the recommended range. Corn soya milk is 21 percent protein. Non-fat dry milk is 39.6 percent protein. Although some recent research may challenge the view that caloric deficiency is a more serious problem than protein deficiency, it remains important to determine the most appropriate mix of calories and protein to achieve optimal nutritional impact.

I. CONCLUSIONS AND RECOMMENDATIONS

Based upon the analysis of the sample of 477 participants and 221 non-participants, we can conclude that the Day Care program appears to be an effective, and in some cases a highly effective, nutrition intervention for the pre-school population. This conclusion rests on the findings summarized below.

--Statistically Significant Improvement in Nutritional Status

The participants at 10 of the 13 day care centers analyzed have experienced a statistically significant improvement in nutritional status while non-participants have not.

--Percentage Change

The percentage of participants who improved was significantly higher than the percentage of non-participants who improved (54.2 percent vs. 14.1 percent) and the percentage of participants who declined was significantly lower than the percentage of non-participants who declined (9 percent vs. 30.9 percent).

1/ Study I, Supplementary Feeding.

--Rate of Nutrition Level Improvement and Decline

The average rate of nutritional improvement for participants who improved is almost double the rate of improvement of non-participants (Rural 1.29 vs. Rural .74). The average rate of improvement in the urban areas is higher: 1.53. The rate of decline for participants who declined is higher than the rate of non-participants' decline (1.09 vs. .67). This means that average improvement was a gain of 6 percent of standard weight-for-age in six months while the few non-participants who improved gained 3 percent.

--Targeting

The rural program is highly targeted to moderately and severely malnourished (normal = 6 percent; mild = 36 percent; moderate and severe = 57 percent) while the urban program is targeted to the mildly malnourished and includes a higher percentage of normal children (normal = 35 percent; mild = 50 percent; moderate = 13.6 percent).

--Percentage of Mildly Malnourished Who Improved vs. Percentage of Moderately and Severely Malnourished Who Improved

The percentage of moderately and severely malnourished participants who improved was higher than the percentage of mildly malnourished participants who improved (Rural Moderate 66.3 percent vs. Mild 46.9 percent; Urban Moderate 44.6 percent vs. Mild 36.7 percent). The percentage of moderately and severely malnourished participants who declined was less than the percentage of mildly malnourished who declined (Rural Moderate 6.5 percent vs. Rural Mild 16.1 percent; Urban Moderate 0 percent vs. Urban Mild 13.1 percent).

--Goal Achievement

The average percentage of children elevated to mildly malnourished in both rural and urban areas (Rural = 36.6 percent; Urban = 37.8 percent) providing 4 to 6 months of treatment has exceeded the NNC objective of elevating 25 percent to mildly malnourished status.

The key findings of the analysis are that: (1) participants experienced a statistically significant improvement in nutrition status while non-participants did not; (2) higher percentages of participants improved and lower percentages declined compared to non-participants; (3) participants improved at rates almost double the rate of non-participants; and (4) that Day Care beneficiaries' average percentage gain in standard weight-for-age compares most favorably with the best known results achieved in other feeding programs worldwide.

In view of the foregoing, it seems clear that U.S. assistance to the Day Care program represents an effective use of Title II commodities.

U.S. assistance in the form of Title II commodities has contributed to a developmental process--the establishment of an extensive infrastructure which has the potential to eliminate malnourishment in a highly at-risk yet traditionally hard to reach sector of the population.

Nevertheless, despite its growth and coverage, the present infrastructure is not yet sufficient to achieve a national impact on the malnourished pre-school population.

The national Day Care program currently reaches approximately 700,000 beneficiaries. This represents approximately 40 percent of the malnourished pre-school population (ages 2 to 6), which has been estimated by UNICEF for 1980 as 1.5 million. Although day care has been in operation since the early seventies, the nutrition component was added only in 1976. Thus, it is reasonable to expect that it will be some time before national impact is achieved.

This report has made clear that supplementary feeding in day care is having an immediate and positive effect on the nutrition status of beneficiaries. Attention must now be turned toward further development and enhancement of the complementary activities of supplemental feeding (education, food production, and income-generation) which will have the real long-term developmental effects on the malnourished pre-school population.

In striving to achieve national impact on malnutrition prevalence in pre-schoolers, attention should also be paid to several aspects of program design and implementation in need of improvement to enhance nutritional impact. They are: (1) the level of targeting to the moderately and severely malnourished; (2) the operational use of age/weight data by field workers and MSSD administrators to monitor nutritional progress of each child and the program as a whole; (3) the level of nutrition education to combat the effects of substitution; and (4) the caloric adequacy and calorie/protein balance of the ration. Accordingly, the following recommendations are made:

Recommendation: Day Care, as part of the MCH program, should be considered a high priority program by AID for funding purposes. It serves children in a highly nutritionally at-risk category

(age 2 to 6) and the analyses show that the program serves these children effectively. Given these factors, reductions in this program should be made only after all possible reductions have been made in other Title II programs which serve those less nutritionally at risk. U.S. assistance to this program should be continued for the foreseeable future.

Recommendation: To ensure that the immediate and positive effects achieved thus far are not short-lived, USAID, CRS and MSSD should jointly consider ways to strengthen and expand Day Care's complementary activities such as nutrition education, women's income-generation and village food-production, or other similar activities, to increase the program's potential for long-term, developmental impact.

Recommendation: It is recommended that the MSSD implement nationwide more stringent selection criteria and strengthen outreach efforts to ensure that all moderately and severely malnourished children living in a barangay served by a day care center are identified and accorded first priority at admission. Only after all moderately and severely malnourished children have been identified and included, should mildly malnourished children then be accorded second priority. For those urban-based programs whose objectives may include the provision of child care services to working women whose children may not be malnourished, it is recommended that CRS and MSSD consider the feasibility of providing separate morning and afternoon sessions, thus separating the normal from the malnourished accordingly, and that Title II commodities be provided on a priority basis to the malnourished participants.

Recommendation: It is recommended that CRS and MSSD review and improve training procedures for field workers in the operational use of age/weight data and that MSSD institutionalize a procedure to review regularly this aspect of program operation. Since ample data is already being regularly collected by fieldworkers, it is recommended that MSSD and CRS review a recent report on monitoring systems undertaken for the India Title II MCH program and consider establishing a similar simple and practical monitoring and reporting system to ensure that the data collected is regularly reviewed and used for programmatic purposes.

Recommendation: It is recommended that the MSSD and CRS: (1) strengthen the nutrition education component; (2) develop individual growth charts to be used as integral components of nutrition education classes; and (3) conduct all weighing and recording of weights on a monthly, rather than a quarterly basis, to monitor nutritional improvement and decline as closely and as accurately as possible.

Recommendation: It is recommended that the Office of Food for Peace review the calorie/protein balance of Title II commodities provided to Day Care to determine the appropriate ratio needed to achieve maximum nutritional impact and cost-effectiveness.

Part VI

MATERNAL AND CHILD HEALTH PROGRAM (MCH)

A. PURPOSE AND DESCRIPTION OF THE MCH PROGRAM

According to the Food Assistance Guidelines of the National Nutrition Council (NNC), the purposes of food assistance in maternal and child health are both preventive and remedial. In their preventive mode, MCH food assistance programs are to be designed to deter malnutrition in children 0 to 18 months old by locating and feeding those in high-risk economic and geographic groups, plus certain pregnant and lactating women. In the remedial mode, MCH programs are supposed to locate and treat--with supplementary feeding and parent education--children who already are moderately or severely malnourished.

The guidelines allocate the highest targeting priorities, first to all infants (whether or not malnourished) and to one, two, and three year olds who are severely or moderately malnourished; second, to 4 to 6 year olds who are severely or moderately malnourished; and third, to pregnant mothers of identified malnourished pre-schoolers and to nursing mothers. Other population groups (e.g., school children) follow in the list of priorities, but it may be seen that the MCH program goes directly to those in the first rank of national concern.

Both CARE and CRS operate major MCH programs targeted to those highest-priority groups. In the case of CRS, its MCH program comprises nearly half (420,000/862,500) of its total AID-approved effort for FY 81 in terms of beneficiaries. CARE is involved more deeply in school feeding, but its targeted 192,500 MCH beneficiaries (out of a total 1,712,500) still represent a sizable effort.

1. CRS

CRS's stated goals and objectives follow closely the qualitative guidelines set down by NNC for the food assistance program. Quantitatively, CRS appears to set even more stringent objectives for itself than NNC calls for. In particular, where the guidelines call for elevating 25 percent of identified severely or moderately malnourished children to the status of mildly malnourished, CRS sets its target at 50 percent. CRS distinguishes two separate MCH programs (or "projects," in their terminology), although the difference is more a matter of historical development than objective differentiation, and in fact one routinely feeds into the other. (CRS also justifiably classifies its Day Care Program as part of its overall MCH effort, but that program is dealt with separately in this report.) The targeting of participants is the same--all infants aged 6 to 11 months,

children aged 1 to 4 years if they are severely or moderately malnourished, and pregnant or nursing mothers of enrolled children. The basic difference between the so-called Mothercraft and Targeted Maternal and Child Health (TMCH) projects is that centers which are designated Mothercraft employ a center-based feeding approach for the first 3 months of a child's enrollment (twice per day, 6 days a week), after which the food is allocated in dry form for home feeding. In the TMCH program there is no initial phase of center-based feeding. In both programs, 8 pounds of Corn Soya Milk (CSM) are provided per participant per month, sufficient to constitute (at 23.8 calories and 0.2 grams of protein per gram of CSM) about 29 percent of the daily calorie and 92 percent of the daily protein requirement of a two-year old child, or about 19 percent of the daily calories and 30 percent of the daily protein requirement of a pregnant or nursing woman. ^{1/}

Recognizing that supplementary feeding is a stop-gap measure, CRS requires that mothers of child participants regularly attend seminar/demonstrations dealing with child health and nutrition, nutritious meal preparation, food production, and sanitation. This information and aimed-for behavior modification is expected to offer the potential for permanent maintenance of improved nutrition and health once the remediation phase--which is limited to 18 months duration--is over. In the case of normal 6 to 11 month olds, the period of supplementary feeding is viewed as a maintenance phase for the child while providing access to the mother for exposure to the educative program. An attempt is also made to convey modest income-generating skills, usually sewing or confection-making, in order to ameliorate the anti-nutrition effect of poverty.

In addition to its Nutrition Center-based program, CRS also supports a malnutrition ward ("malward") program which is hospital-based. Children in a very serious state of malnourishment are directed to a malward which is essentially a hospital pediatric ward specializing in treatment of severe malnutrition. Very often the children have severe infectious disease problems overlying acute malnutrition and constitute very difficult cases to manage. The staff includes not only the standard pediatric complement, but also a nutritionist who works with the pediatrician to manage the nutrition aspects of the patients and also with the mothers in an educative program. In the malward program, mothers (or a guardian) are required to remain in the hospital with the patient in order to provide intensive--if low-level--nursing care and be involved in the education program.

^{1/} Recommended Dietary Allowances for Filipinos, Food and Nutrition Research Institute of the Philippines, Publication 75, May 1977.

The CRS food supplementation services delivery system is linked closely with the infrastructure of the Catholic Church in the Philippines. Commodities are distributed through the parishes, and diocesan and parish staff participate in the logistical and technical management of the program.

CRS uses a fairly (and appropriately) simple management information system to monitor and evaluate its system. Quarterly, each parish consignee reports commodity receipts, disbursements, and remaining inventory; an accounting is expected of foodstuffs which arrive or become unfit for use or are otherwise lost in distribution. Since CRS beneficiaries pay (a nominal sum) to participate in the program, an accounting also is made of generated funds. The number of continuing participants, "graduates" (those completing their 18 months of participation), "dropouts" (those who depart prior to completion), and new enrollees also is reported by each parish center. In order to get some estimate of the nutritional impact of the program, the children are weighed monthly or quarterly, depending upon age and condition, and the weight converted to a nutrition level based on Filipino weight-for-age standards.

Quarterly, each center reports on a special form, which CRS calls its "crossover" table, the number of children who move from each nutrition level to another (up or down) or remain the same. In the past, on an ad hoc basis, CRS also has conducted occasional impact studies of its program using its own resources or has cooperated with Filipino agencies in such studies.

2. CARE

CARE also designates its MCH activities in two programs, Targeted Maternal and Child Health (TMCH) and Targeted Food Assistance (TFA). Both have identical objectives and targeting: 2nd and 3rd degree malnourished preschoolers, malnourished mothers of child participants, and malnourished pregnant or nursing women. (In contrast to CRS, CARE does not target any normal children.) The basic difference between the two programs lies in the service delivery structure, with TFA utilizing the health service system of the Ministry of Health and TMCH operating through local, i.e., municipal or barangay, nutrition committees supported by the Ministry of Social Services and Development. The CARE TMCH program was developed only at the end of 1980. As well as its target subjects, its operation is very similar to the major component of TFA.

TFA has four components. The biggest by far is that built into the rural health units (RHU) and urban health centers operated by the Ministry of Health. Subject children are those in the barangays serviced by the health unit or center who have been found to be severely or moderately malnourished in the Operation

Timbang exercise. In accordance with NNC guidelines, pregnant and nursing women also are eligible. Each participant is given 8 pounds of food (usually 5 pounds CSM, 3 pounds NFD) per month. Children aged 12 to 71 months are programmed for 18 months of participation (unless older ones are ready to start school, for which they are eligible at age 7 years), while new enrollees aged 0 to 11 months are programmed for just 12 months. The TFA guideline calls for dropping from the program a child who does not appear to be gaining ground nutritionally by reason of insufficient family interest in the program. Food distribution is in the form of daily center-based feeding for one or two months, then reverting to take-home.

Mothers whose children participate in the feeding program also attend monthly seminar/demonstrations in nutrition, health and sanitation, and meal preparation, the latter concentrating on appropriate use of CSM, NFD, and nutritious local foods. These sessions are conducted by midwives or nurses at the RHU and by Barangay Nutrition Scholars in the Neighborhood Feeding Centers.

CARE supports a malward program which is very similar to that of CRS. It is hospital-based and intended to treat children who are either malnourished to a life-threatening degree or severely malnourished with concurrent disease problems requiring hospitalization. While a child is in the hospital, a guardian is required to remain with the child to provide intensive care. She (the person is almost always the mother or grandmother) is also required to attend mother-craft classes. The hospital provides live-in facilities--usually not much more than a space or a pallet in the ward itself--and she prepares meals for herself and for the child under the guidance of the hospital nutritionist or dietitian. The hospital provides the foodstuffs, for the most part, although in some malwards the mother is expected to provide some supplementary local foods. Some of the better-run malwards organize shopping expeditions and use the occasion to teach good food-selection. Upon discharge from the malward, the child and mother are referred to a health unit for enrollment in the TFA program. CARE also aids some pediatric and obstetrical wards by providing a 1 month ration of food upon discharge and encouraging enrollment in the TFA program.

For purposes of monitoring the flow of commodities, CARE requires each of its food distribution centers to send in a monthly report of quantities received, distributed, and in stock, losses, and number of beneficiaries served. Field staff periodically review records, conduct audits, and inspect storage facilities.

For purposes of evaluating nutritional outcome of the feeding program, CARE requires that each child recipient be weighed monthly (i.e., when the food is distributed) and that the staff of the feeding center maintain a continuous record, or growth

chart, for the child. At the health center (TFA program), this is the task of the midwife; at the neighborhood feeding center (TMCH), it is the task of the Barangay Nutrition Scholar. Until recently, each center was to summarize its quarterly results in the same beginning nutrition level/ending nutrition level matrix format as is used by CRS. Now, due to a suspicion that some data were not reported accurately, CARE has made a basic change in its evaluative approach. Instead of relying primarily on the service delivery staff to summarize its quarterly results, CARE's own staff will conduct an annual random sample survey of the weighing data in the field. Moreover, since improved dietary habits is one objective of the nutrition education component of the MCH program, CARE also proposes to conduct an annual dietary survey in the same population to study changes therein. And finally, recognizing that part of the expected impact of improved nutrition status is reduced morbidity and mortality, CARE also proposes to study changing levels of "malnutrition related diseases" ^{1/} in its recipient population.

B. MCH EVALUATION APPROACH

Ideally, a comprehensive evaluation of the PL 480 Title II Maternal and Child Health program would involve detailed examination of the entire system: goals and objectives; process, the activities by which commodities and intended beneficiaries are brought together; formativity, the factors--many exogenous to the system--which interact with the planned system to determine outcome and impact; outcome, the immediate result of the system's actions on the target subjects; and impact, the longer range effects on the subjects and their communities. Given time and resources, all of these aspects of the systems approach should be considered. In this case, since available time and staff could not accommodate a comprehensive analysis, the decision had been made in the planning stage that, where tradeoffs had to be made, the order of precedence would be outcome, then formativity, and then process. Goals and objectives were to be examined briefly for conformity with PL 480 and Philippine government stipulations. Examination of impact was for the most part clearly beyond the scope of the evaluation, entailing study of such matters as distortion of local price structures, disincentives to agricultural production, effect on morbidity, mortality, and fertility, effect on cognitive development, and other problems of a research nature. On the other hand, preliminary investigation of the type of data available led the evaluation team to believe that the Philippines did present an opportunity to evaluate the outcome of Title II, with outcome being defined, as it is implicitly in the National Nutrition Council Guidelines, anthropometrically as

1/ TMCH Multiyear Plan (1982-83), CARE, January 1981.

weight-for-age against a Filipino standard. Most countries receiving Title II aid do not offer an opportunity to evaluate outcome, hence the decision to emphasize outcome and devote less attention to process, if need be, in this case.

The objectives of the MCH component evaluation thus were:

1. To examine the process of the MCH program to verify that major components actually are functioning reasonably in conformance with descriptions in various program documents, but not to delve very deeply into the process, for example, by studying the content of nutrition education classes in detail;
2. To determine the outcome in nutritional terms of the Title II program;
3. To assess the probable impact of Title II.

The mechanics of obtaining requisite information and data consisted of:

1. Discussions with staff of the Manila headquarters of CARE and CRS;
2. Discussions with Manila staff of the Ministry of Health and the Ministry of Social Services and Development;
3. Visits to field sites for purposes of discussion with intermediate and service-level staff, including regional, municipal, diocesan, and parish officials, observation of activities, and examination and sampling of service records;
4. Analysis of primary data collected in the field and secondary analysis of data submitted to the team by the voluntary agencies;
5. Examination of evaluative study documents provided by the voluntary agencies.

The team selected field sites for visits in Regions II and VIII and the National Capital Region. Region II is categorized by the National Nutrition Council as very depressed nutritionally, Region VIII as mid-level, and National Capital as best-off (though still containing badly-off pockets). In each region, the visits of the team were coordinated by the NNC Regional Coordinator.

The following sites were visited:

Isabela Province (Region II):

Isabela Provincial Hospital Malward, CARE-assisted

Santiago Nutri-Village, CARE-assisted
Ilagan Rural Health Unit, CARE-assisted
Gamu Rural Health Unit, CARE-assisted
Alicia Rural Health Unit, CARE-assisted

Ifugao Province (Region II):

Banaue Rural Health Unit, CARE-assisted

North Leyte Province (Region VIII):

Palo Feeding Center, CRS-assisted
Dulag Feeding Center, CRS-assisted
Tanauan Feeding Center, CRS-assisted
Romualdez Memorial Hospital Malward, CARE-assisted

Metro-Manila (National Capitol Region):

Baranka, Marikina Health Center, local foods, local funding
Las Pinas Neighborhood Feeding Centers (3), CARE-assisted
Quezon City General Hospital Malward, local funding
Malibon Feeding Center, CARE-assisted

The team was not able to visit any CRS-assisted program in Region II due to a mixup in communication over when specific programs there had been closed down. However, CRS did provide the team with a large set of age/weight data of the type being sought which included results from that region and these are analyzed in depth later in this section.

At each field site, procedures and activities were discussed at some length with the service level staff. Following these discussions, age/weight records for current and previous beneficiaries were examined and, if the records were seen to be in appropriate condition, sampled and copied. Records were deemed suitable for analysis if they included program-entry weight and birthdate and subsequent weighings (one or more) at least 6 months into the program. Moreover, where more than a beginning and ending weighing existed, i.e., where weight-change could be tracked, the data had to be plausible to be considered suitable for analysis; that is the progression of weight measurements could not be so erratic as to be very unlikely in human terms. An example of this problem is shown below.

C. ANALYSIS OF DATA AND RESULTS

1. CARE Data

In the case of the parish feeding centers, participant weight records are retained by the parish nutrition aides at the feeding centers and appeared to be generally in good order. By contrast, weighing data for rural health unit (RHU) program participants are retained in some cases by the RHU midwives and in some by the Barangay Nutrition Scholars who carry out the food distribution

and weighing activities. The team visited six different BNS's in their homes in an effort to obtain useful data. In four cases, such individual participant data as could be dredged up by the BNS's was often brought out on scraps of paper, incomplete and impossible to reconstruct; some were undated. Ilagan Province in Northern Luzon had been hit by a major typhoon in November 1980; one BNS said that her records were lost when the roof came off the house, while another explained that the room in which we were sitting had been flooded to the ceiling and the weight records and other of her property destroyed, including the last Operation Timbang (OPT) data. Two BNS's produced data sets, one of which was usable, the other illustrating the erratic characteristics referred to above. To illustrate the problem, the latter set of data is shown in Table 13.

Perhaps the most striking aspect of the data in Table 13 is the large gain in percentage weight of some of the children, ranging up to 55 percent. Of the 19 children for whom we have 3-month weights, 13 ostensibly gained an average of 34.6 percent of their body weight in 3 months (standard error = 3.35), while the remaining 6 lost an average of 7.3 percent (standard error = 0.80). The questionable verity of the t3 set of weighings is brought into sharper focus when we examine the results of weighing one month later (t4). Twelve of the 13 "gainers" now have lost weight in that month, and all 6 of the "losers" have gained weight. Moreover, the data are presented in the same order as the subjects were listed on the sheet of paper which constituted the BNS's first weight record. The probability of the second weighing being unbiased and still coming out with 5 positives in a row, then 6 negatives, then 8 positives is less than 0.1 percent. The picture, thus, is one in which an entire weighing session, t3, the first following initiation of the feeding program, seems to have gone haywire. Subsequent weighings at months 8, 9 and 10 would normally arouse no suspicions concerning reasonable accuracy. They portray a program in which the children are making good progress nutritionally--possibly a little too good, it turns out.

The final measurement, t11, represents a set of children the team was able to track down in the barangay and weigh. Eight of the 9 children show significant declines in nutrition status after having shown regular good progress in the preceding three weighings covering 7 months. While there is no way to prove that there is not some reasonable explanation for this other than that of inaccurate weighing, the BNS and other local nutrition people in the area had no ready explanation, except for the possible effect of a decline in the general availability of foodstuffs in the region which followed the November 1980 typhoon due to washed out roads and bridges and damaged local crops.

TABLE 13

APPARENT CHANGE IN NUTRITION LEVEL AND PERCENTAGE CHANGE IN BODY WEIGHT
BETWEEN WEIGHINGS OF CHILDREN OF ONE BARANGAY IN ALICIA MUNICIPALITY
ISABELA PROVINCE (tn is number of months after entry into program)

<u>Child</u>	<u>t3</u>	<u>t4</u>	<u>t8</u>	<u>t9</u>	<u>t10</u>	<u>t11</u>
1.	+5/+50%*	-4/-18%	+2/+19%	+1/+7%	+1/+7%	
2.	+4/+47%	-3/-19%	+4/+31%	0/+37%	0/-1%	+1/+4%
3.	+4/+41%	-2/-15%	+2/+21%	+2/+23%	+2/+10%	-4/-19%
4.	+3/+31%	-1/-6%	+1/+15%	+1/+7%	+1/+7%	
5.	+2/+20%	-1/-7%	+1/+12%	+2/+13%	+2/+20%	
6.	-2/-10%	+3/+28%	+1/+13%	+1/+7%	+1/+6%	
7.	-1/-5%	+3/+24%	0/+6%	+2/+15%	+1/+6%	
8.	-1/-8%	+2/+23%	+2/+15%	+2/+14%	+1/+9%	
9.	N.A.	+1/+129%**	+2/+18%	+2/+15%	+1/+11%	
10.	-1/-6%	+2/+24%	+2/+16%	+1/+15%	+1/+8%	-1/-10%
11.	N.A.	+1/+11%**	+5/+48%	+0/-2%	+2/N.A.	-2/?
12.	-1/9%	0/0	-1/-1%	+1/+9%	+1/+9%	
13.	N.A.	+3/+25%**	+2/+23%	0/+12%	0/N.A.	
14.	-1/-6%	+3/+29%	+3/+28%	+2/+11%	+1/N.A.	
15.	+3/+40%	-1/-5%	+3/+30%	+1/+8%	+2/+13%	
16.	+2/+55%	-1/-5%	+3/+39%	+1/+8%	+1/+8%	-3/-18%
17.	0/+22%	+1/+15%	+4/+40%	+2/+17%	+2/N.A.	-5/?
18.	+2/+22%	-1/-7%	N.A.	N.A.	N.A.	
19.	N.A.	+1/+17%**	+4/+33%	+2/+16%	+1/N.A.	-1/?
20.	+3/+31%	-2/-8%	+1/+12%	+2/+15%	+1/+7%	-3/-14%
21.	+2/+19%	-1/-10%	+4/+52%	+1/+6%	+2/+12%	
22.	+3/+30%	-1/-12%	0/+12%	+2/+12%	+1/+7%	
23.	N.A.	0/+6%**	+6/+54%	0/+11%	0/N.A.	
24.	+4/+42%	-3/-21%	+3/+35%	+2/+10%	+1/N.A.	-4/?
25.	N.A.	+1/+16%	+3/+26%	0/+10%	+1/+6%	

*a/b%: a = no. of nutrition levels change from previous measurement;
b = percentage change in weight
** : change measured from t0 instead of t3
N.A.: Not Available

The above discussion notwithstanding, analysis of these data under rather pessimistic assumptions, namely that entry nutrition levels should be compared to the weights the team was able to obtain under its own supervision, still shows statistically significant progress: all 9 of the subjects improved their nutrition status, and by a relatively large number of levels (4.2 on the average, with a standard error of 0.49). An even more pessimistic way to look at these data would be to compare the team weighing data (which degrade the nutrition levels of the 9 subjects very considerably from the previous month's results of the BNS) to the nutrition levels of these children 4 months after the feeding program began. According to the data, by that time every one of the children had improved at least one level, so this comparison is perhaps the most stringent that can logically be made. Even under this condition, every one of the children improved, this time by an average of 3.1 nutrition levels in the 7 months between measurements. Both of these analyses are statistically significant improvements under the Wilcoxon Signed Rank Test at $p < .005$. Our conclusion is that if the data are even within striking distance of reality the children are making progress in the program. (If only the BNS's data are considered, from time of entry to most recent weighing, a period of 10 months, 23 of the 24 children gained in nutrition status an average of 6.4 nutrition levels with a standard error of 0.3; one child entered at level 8 and remained there.) It should be noted that the entry nutrition status of the children was very low: 5 at level 10, 6 at level 9, 10 at level 8, and 4 at level 7. With 21/25 participants in the severely malnourished category and the remaining 4 on the border between severe and moderate, one must say that the targeting in the barangay (called Linglingay) was very good. As will be seen subsequently, the low entry status may have much to do with the good progress made.

A second set of data was obtainable from another barangay in Isabela Province, this one Barangay Santa Cruz, Alicia. Records of 19 participants were obtained, with 4 weighings over a period of 16 months, although the record is not complete for all subjects. The initial targeting in this barangay was not so good, with 3 entering at nutrition level 9, 6 at level 8, 4 at level 7, 3 at level 6, 2 at level 3 and 1 normal. Thus, while most of the children entering the program were severely malnourished or at the low end of moderate, a few were not supposed to have qualified for supplementary feeding. When queried as to how these children came to be included, the RHU midwives made it clear that a certain amount of laxity is sometimes necessary in order to gain the confidence of some local leaders.

The data for Santa Cruz, while not as dramatic in terms of improvement as Linglingay, nevertheless do show statistically significant improvement based on the Wilcoxon Signed Rank Test. All 13 participants for whom records could be traced 9 months after the inception of supplementary feeding had gained nutritionally, with an average of 4.1 nutrition levels (standard error 0.5). Interestingly, over the next 7 months in the program the 6 of these children for whom we have measurements made little additional progress--and may even have lost a little ground. Even more interesting, the team was able to obtain weights for 8 children who had "graduated" from the program 4 months earlier and found that none had improved their status, while 5 had remained stable (at mild or moderate), and 3 had lost some ground.

In Isabela Province, the team had an opportunity to study a unique program which is being supported by CARE (foodstuffs), the Santiago Municipality Nutri-Village. This is a 6-week intensive residential program in which an entire family (excluding school children) is brought to a live-in center called a Nutri-Village. Seventeen families are in residence at a time, each in its own hut. The families are selected from different barangays of Santiago Municipality on the basis of low economic status and the presence of at least one moderately or severely malnourished child. While the index malnourished child is the focus of the rehabilitation effort, the entire family is the subject of considerable attention. The staff--a nurse, a nutritionist, and four nutrition aides--work with the mothers on a continuous basis on the selection and preparation of appropriate local foods, while at the same time seeing to the administration of CSM and NFDM to the index child, who is scheduled to receive about 1500-2500 calories per day, based on RDA for age. They organize food shopping expeditions into the nearby town in order to demonstrate appropriate selection on minimum budgets. The money is provided in part by the family and in part by the municipality. Fathers work at their regular jobs. For those who have no work, the municipality tries to help find jobs in the private sector, though occasionally part-time work with the municipality is provided. Backyard gardening is demonstrated and mandatory for each family. Principles of healthful and sanitary living are demonstrated and enforced. In addition, on a regularly scheduled basis, experts are brought in from the Ministries of Health, Agriculture, Social Services and Development, and Local Government and Community Development, and from Isabela State University. The Ministry of Health first examines the children for specific health problems and deworms and immunizes them. They then provide information/demonstrations concerning health maintenance and sanitation. Other groups provide advice on family planning, household agriculture and livestock-raising, food preservation, and income-saving and -generation. Finally MSSD staff work with

the family to see about possibilities for raising the family income through skills development.

This program is pretty much the mothercraft program on an intensive basis, that is, remediation of the immediate malnutrition problem of the index child and its malnourished siblings, if any, plus an attempt to provide a long-range, permanent solution to a family context which is thought to be the root of the problem. Except perhaps for the short length of time, it is hard to conceive of a better program based on what we think we know about dealing with this problem.

The team collected data from one of the recent cohorts for each of the 17 index children (one per family). Entry nutrition levels were as follows: level 9, 2; level 8, 5; level 7, 7; level 5, 2. Surprisingly, one child is recorded as entering at level 3; we assume that this was not truly the index child for this family. By the end of the 6 weeks of intensive treatment, all of the children had improved considerably for such a short time, an average of 2.5 nutrition levels (standard error = 0.3). Such an outcome is not unexpected given the near-totally supervised feeding and living regimen, plus an initial health workup. The cost of such an intensive program is high. In 1979, 4 1/2 sessions were held (one lapped over into 1980). According to its treasurer, Santiago Municipality expended P207,384 on the Nutri-Village in 1979, a cost per family treated of P2711 (about \$361). This is supposed to include staff salaries and emoluments, vehicle operating expense, and maintenance of the village; it does not include any depreciated capital costs. Moreover, it does not include food expenditures of the families or the cost of CSM and NFDM supplied by CARE. The Nutri-Village uses about 21 bags of CSM and 13 of NFDM per quarter, or 1050 kilos of the former and 650 kilos of the latter. If in 1979 this volume of the commodities served about 20 families, then, at the 1979 cost of \$0.53 per kilo of CSM and \$0.62 per kilo of milk, each family received about \$48 worth of donated commodities. Thus in municipality and commodity costs, each family received over \$400 worth of services, to say nothing of what must be another sizable cost input from the ministries and university which provide health care and lecture/demonstrations in the area mentioned earlier. (An input of \$400+ can be put in perspective by noting that the minimum wage in the rural area was about \$3 per day.)

We have seen that the Nutri-Village approach was reasonably effective in quick remediation of severe and moderate malnutrition. But the uniqueness of this program is its concentration on activities expected to be more durable than direct feeding. The team was able to obtain followup data on 14 of the 17 children reported on earlier. The result was disappointing: 3-4 months after release from the program, 8 of the 14 had declined in nutrition status (an average of 1.6

levels), while 2 had remained stable, and 4 improved even further (an average of 2.2 levels, but one child alone accounted for 56 percent of that gain). Thus, the long-term gain from this intensive, expensive approach is very much open to question.

In Los Pinas Municipality of Metro Manila, the team visited a Neighborhood Feeding Center supplied with supplemental feeding commodities by CARE. Neighborhood Feeding Centers do center-based feeding for 3 months, followed by 6-15 months of take-home supplementation. A Barangay Nutrition scholar is in immediate charge at the feeding center. She is supervised by a nutritionist paid for by the municipality. As is the case at the rural health units, mothercraft classes are mandatory.

At the CARE-assisted Aldana Neighborhood Feeding Center, targeting was very good: of 20 records sampled, 3 children entered the program at nutrition level 8, 8 at level 7, 6 at level 6, and 3 at level 5, which is to say, all of the children were seriously or moderately malnourished. In treatment periods ranging from 9 to 20 months, 17 children improved, none declined, and 3 showed no change. Overall, the average improvement was 2.6 levels (standard error, 0.4). The average rate of improvement per month was 0.2 nutrition levels (standard error, 0.03). Follow-up data were obtained for 12 of these children. In a period following graduation (or dropout) from the program ranging from 2 to 6 months, none of the children improved, 10 remained at their departure level, and 2 declined one level each.

At the Malabon School Neighborhood Feeding Center, also CARE-assisted, it quickly became apparent that there was a problem in the recording of the children's weights beyond the lack of systematic organization which had been seen fairly regularly. Where the mothers were supposed to sign to acknowledge receipt of commodities, all the cards had been signed repeatedly in the same hand. Also, month after month the same weight was recorded for the child until the last month, when a dramatic jump took place. Moreover, one of the two teachers involved in administering the program claimed she gave each beneficiary a total of 10 pounds each month, while the other said she gave out a total of 3 pounds. Both were recording service to the correct (i.e., planned) number of beneficiaries, and neither could account for either the extra commodities required, on the one hand, or the commodities left over, on the other. After pointing out the problems to the Municipal Action Officer, who had been accompanying us on that day, the team beat a hasty retreat from a scene of considerable agitation.

In Metro Manila, the team also visited a completely locally-funded feeding program. The Baranka, Marikina center offers a 6-week center-based feeding program using local foods, including NutriPak, purchased with funds supplied by a private industrial concern.

The program is based in the Marikina Health Center, but in contrast to the rural health unit-based TFA program of CARE, mothercraft education is provided by the local BNS rather than the health center midwives or nurses. Targeting is done on the basis of OPT data, ostensibly following NNC guidelines; however, of 18 records examined, 7 showed program entry weights in the mild malnutrition range; indeed, one was normal. At the end of the 6-week course of feeding, 67 of the 18 had improved, but 9 showed no change, and 3 were slightly worse off. Overall, the Wilcoxon Signed Rank Test showed no statistically significant change. Follow-up data were obtainable for 16 of the 18 children for periods ranging between 9 and 16 months, by which time 9 had improved, 5 had declined, and 2 were unchanged. These results also do not constitute a statistically significant change.

The team examined one malward in each region visited. At the Isabela Provincial Hospital, a 6-bed malward is maintained. The malward had been supported by CARE, but CARE had halted its aid two years before because--according to the Provincial Nutrition Officer--the hospital did not keep adequate patient records and did not provide adequate accounting for the flow of commodities. (The pediatrician-in-charge claimed that they did not have enough staff to comply while meeting other needs.) The present CARE field representative, who was not on the scene at that time, said that she understood that the decision was made because the program appeared to be ineffective due to the short length of stay of the patients. And as a matter of fact, the pediatrician-in-charge and the hospital Chief of Staff did tell us that the average length of stay in the malward was only 4-5 days, and that most children were removed from the hospital by their parents against medical advice. Records were not kept separated by ward, so it was not possible to obtain precise data on length of stay. In any event, children placed in the malward were not always weighed upon admission, and those who were weighed on a bathroom scale. Daily progress was followed clinically rather than by weighing.

In North Leyte Province, the team visited the Romualdez Provincial Hospital malward, a 9-bed facility using CARE commodities. Here the malward was somewhat more attractive in terms of its facilities for the live-in guardian, and the staff seemed to have a good rapport with the mothers. Patients were supposed to remain in hospital for at least 30 days while the mothers received mothercraft training which consisted of a

weekly lecture by a pediatrician on child care, plus talks on marketing, food preparation, and gardening. Until recently, handicrafts demonstrations also were given, but had to be stopped because of lack of funds to buy materials. Children's meals were prepared separately from those of the general pediatrics ward under the direction of the hospital dietitian; each child's meals were custom-tailored to its needs. The CARE-supplied CSM was administered to the children, but the pediatrician claimed that since most of their patients (she estimated more than 75 percent) seem to be lactose-sensitive, they no longer give the NFDM to them, but hand it over for use in the under-6 outpatient clinic--which is not officially on CARE's roster of beneficiaries. Twenty-three patient records were examined. Upon admission, 12 patients were at nutrition level 10, 4 at level 9, 3 at level 8, 1 at level 7, 2 at level 6, and 1 at level 5. Average length of stay was 24 days (standard error, 4.5). Of 20 patients with complete records, 16 gained weight, 3 stayed the same (but were present only for 2, 3 and 6 days), and 1 lost 0.3 kg in 11 days. The 16 "gainers" gained an average of 0.038 kg per day (standard error, 0.005), or roughly 1.1 kg per month. In terms of nutrition levels, of 11 who entered at level 10 and for whom we have a discharge weight, 8 left the hospital at level 10 after having been in the malward for an average of 20.5 days (but 7 of them averaged 13.4 days), 2 others left at level 9, and 1 at level 8.

2. CRS Sample

In 1980, as part of its own program of evaluating outcome, CRS headquarters collected data on some 28,000 children participating in its TMCH program in 1979 and 1980. The data set included participants from every region of the country. The data were compressed into 4 nutrition status categories--severe, moderate, and mild malnourishment, and normal--and were hand-tabulated. The results showed that 58 percent had improved their nutrition status, 24 percent were unchanged, and 18 percent regressed.

From CRS's random sample of 28,000 a systematic sample of 5 percent was drawn for us by our contractor and the data were copied. Since the data were being computer-analyzed, the finer, more sensitive 10-level nutrition status scale was recorded rather than the less sensitive 4-level compressed scale. From this subsample was drawn yet another systematic sample of 238 cases for analysis in depth. To show the effectiveness of the subsampling procedures, it may be noted that in its narrative of the results of its analysis of these data the CRS staff comment that 25 percent of their sample are infants and that 13 percent are in the normal and mildly malnourished categories; in our subset, the respective figures are 24.4 percent and 13.9 percent.

Seventy-two percent of participants are under age 3 years, a figure which indicates that CRS is quite appropriately concentrating its effort on the most vulnerable age group. However, while targeting criteria call for inclusion only of children who are either severely or moderately malnourished, 18 percent of those 12 months or older were in the mild category. Fifty-nine percent of the 6 to 11 month olds are normal or mildly malnourished, but this is permitted in the plan for malnutrition prevention. Mis-targeting is most pronounced in the 1 and 2 year olds, 21 percent in each group. However, overall, those appropriately targeted constitute 88 percent of the sample. In terms of length of participation in the program, the sample, is not an unbiased representation of CRS's beneficiary population at the time because one of the criteria of selection was participation for at least 3 months. At the time of sampling, of the remaining group--the great majority--20 percent had participated 3-5 months, 39 percent 6 to 11 months, and 41 percent 12 months or longer. Although 18 months is supposed to be the maximum duration of participation, 5 percent managed to stay in a little longer, usually 1 or 2 or 3 months, but as much as 28 months for one child.

In this sample, 125 of the 238 cases (53 percent) showed some improvement in nutrition status, while 24 percent were unchanged, and 23 percent regressed. For those who improved, the average gain was 2.1 nutrition levels in an average length of participation of the 11.7 months, or an average gain of about 0.2 levels per month of participation. The decline in nutrition status was much more pronounced in the 6 to 11 month groups than in the balance of the children: 59 percent of the former lost ground, while only 12 percent of the latter did. This had been noted also by the CRS staff in their analysis.

Analysis shows that those who enter the program in the worst condition have the greatest tendency toward improvement. Table 14 shows the cross-tabulation for all cases other than those entering with normal status.

Table 14

Gain, Loss, and No Change in Status by Entry Nutrition Level
(6-59 months)

<u>Entry Level</u>	<u>Change</u>			
	<u>+</u>	<u>0</u>	<u>-</u>	<u>N</u>
2-3-4	25%	18%	57%	60
5-6-7	64%	24%	12%	147
8-9-10	64%	36%	0%	25
				<u>232</u>

Given that, as noted above, decline in nutrition status has substantial correlation with age, it is necessary to determine if the result shown in Table 14 would be considerably different if the effect of the youngest (and most poorly faring) group were removed. Table 15 shows the result of that analysis.

Table 15

Gain, Loss, and No Change in Status by Entry Nutrition Status
(12-59 months)

<u>Entry Level</u>	<u>Change</u>			<u>N</u>
	<u>+</u>	<u>0</u>	<u>-</u>	
2-3-4	41%	25%	34%	32
5-6-7	68%	23%	9%	128
8-9-10	65%	35%	0%	20
				<u>180</u>

It may be seen that even with the effect of the 6-11 month olds removed, proportionately more of the moderately (levels 5-6-7) and severely (levels 8-9-10) malnourished improve and fewer decline. (This is a phenomenon seen in many other analyses.)

The CRS data permit us to examine relationships between the nutritional outcome of the supplementary feeding program, measured as degree of change in nutrition status (coded DNL) and other measured variables, namely, age of entry into the program (ENTAGE); nutrition level at entry (ENTNL), length of participation (LOP), and nutrition level at the end of the period of participation (FINNL). The latter variable, however, is not necessarily the same as nutrition level upon "graduation" from the program because many of the children were still active in it; recall that 59 percent had been in for less than 1 year. Table 16 shows the simple correlation matrix (zero order) for these variables.

Table 16

Zero Order Correlations
(See text above for symbols)

	<u>DNL</u>	<u>ENTAGE</u>	<u>ENTNL</u>	<u>LOP</u>
<u>DNL</u>	1.000	0.347*	0.510*	0.132*
<u>ENTAGE</u>		1.000	0.258*	-0.090
<u>ENTNL</u>			1.000	0.020

*p < .01 **p < .05

The most solid relationship in the set of variables is that between entry nutrition level and degree of improvement. Since the biggest nutrition level numbers correspond to the worst status (i.e., 10 is worst, 1 is best) and DNL is derived by subtracting final level from entry level, the interpretation is that the poorest entry status is associated with the most improvement. This relationship holds up even when the other factors are held constant by partial correlation.

Age at entry is also correlated directly with amount of improvement, that is, within the age range of our sample, greater improvement is associated with higher age. Partial correlation analysis demonstrates that some of this effect is spurious and arises from the concomitant association of entry age with entry nutrition level. When this effect is removed, the association weakens (partial correlation = 0.256, $p < .01$), but does not disappear. Hence, we conclude that entry age and improvement are modestly associated.

The most surprising outcome of the correlation analysis is the lack of association between magnitude of outcome and length of participation. One would expect that the longer a child is in the feeding program the greater would be its improvement--within bounds, of course. Thus, it is somewhat surprising that the relationship between improvement and LOP, though statistically significant, is relatively weak. When entry nutrition status and age are controlled for, the relationship strengthens somewhat to significance at $p < 0.01$ (partial = 0.174). One possible interpretation of these results is that, since all the children had been in the program for at least 3 months (in fact, 75 percent had been in 6 months or longer), most of the observed improvement took place early in the period of participation, that is, in the first 6 or 8 months. Because of its obvious programming implications this point should be investigated more thoroughly, but can not be with this data set because it is skewed toward the longer period of participation.

Correlation analysis can give us clues as to associations between variables, but carries no direct implications of causal, predictive relationships. To gain some insight into how these results might be used to predict the outcome of a feeding program, we turned to a multiple regression analysis in which change in nutrition level was hypothesized as a function of entry level, age at entry, and length of participation. In a stepwise analysis, the first variable to enter the equation was entry nutrition level, next was entry age, and last, but still statistically significant, was length of participation.

Overall, the equation obtained explains 33.1 percent of the total variance in the system. (In nonstatistical terms, this means that the independent variables tested explain 1/3 of the effect seen, while other factors, unknown and/or unmeasured, account for the other 2/3. While this level of uncertainty may strike the non-social scientist as rather high, experienced analysts would view it as about par for the course in social systems.)

The equation describing the relationship between change in nutrition level and the three independent variables takes the form:

$$DNL = a + b_1(ENTNL) + b_2(ENTAGE) + b_3(LOP)$$

When standardized regression coefficients (the b_n) are developed, they show the relative importance of each variable in predicting the value of DNL. In this sample, the values are: $b_1=0.443$, $b_2=0.246$, $b_3=0.145$. Therefore, ENTNL is about twice as important in predicting the magnitude of change as is ENTAGE, and about three times as important as LOP. In terms of contributing to the accuracy of the prediction of DNL, however, where the entire equation removes 33.1 percent of the inaccuracy, ENTNL by itself removes 26.0 percent, ENTAGE 5.0 percent, and LOP, 2.1 percent. The prediction equation (now using the unstandardized regression coefficients) is:

$$DNL = -3.317 + 0.483(ENTNL) + 0.309(ENTAGE) + 0.554(LOP)$$

Using this equation and associated standard errors, a table can be constructed which both describes the present outcome of the CRS program in terms of these four variables and predicts the range of future outcome providing no major changes are made which create substantially different levels of interaction between them. One example of such a change might be a change in the calorie value of the distributed ration. Another might be some change in the health of the children which significantly increases or decreases the bio-utilization of ingested food. Thus, Table 17 should be reviewed as today's picture and perhaps tomorrow's, as well, if the CRS program continues along the same path.

Table 17 shows the range of outcome in terms of number of nutrition levels improvement or decline which may be expected with a 68 percent probability for the tabled combinations of entry nutrition level, age (in months) of entry, and length of participation in the program. While there is a 68 percent probability that a child with the stipulated characteristics will fall within the range shown, there is also a 16 percent probability that he/she will do better and 16 percent probability of doing worse.

Table 17

68 Percent Probability Range for DNL as a
Function of ENTNL, ENTAGE, and LOP
(See text for abbreviations)

ENTAGE (mos.)	ENTNL = 5		ENTAGE (mos.)	ENTNL = 8	
	LOP = 9	LOP = 18		LOP = 9	LOP = 18
12	-0.599 - 0.529	-0.284 - 0.844	12	0.670 - 2.158	0.985 - 2.473
24	-0.311 - 0.985	0.004 - 1.660	24	0.958 - 2.614	1.273 - 3.289
36	-0.023 - 1.441	0.292 - 2.116	36	1.246 - 3.070	1.561 - 3.745

D. PREVIOUS IMPACT ANALYSES

Over the past several years, various attempts have been made to evaluate the Title II MCH program in terms of observable nutritional improvement in the target population. CRS has been particularly active in trying to assess the effect of its program, beginning as long ago as 1971. By and large, these evaluations showed modest, but apparently fairly clear, improvement in the beneficiary population. Somewhat at variance with the other studies is a 1976 evaluation (called a cost-effectiveness analysis, but which was not, since it dealt with only one cost component, food commodities) done by MSSD. It charged in its examination that the CRS TMCH and Mothercraft programs were not well-targeted and did not result in enough improvement of the participant children. The data bear them out on the first point, but are not sufficiently detailed in the available report to judge the second, although the CRS staff did dispute key points with the MSSD staff, for example, whether maintenance of nutrition status ought to be considered a positive or a negative outcome of the program.

We have already noted a major survey undertaken by CRS in 1980 whose analysis shows a positive outcome both by the hand analysis of the CRS staff and our own more detailed EDP analysis. Early in 1980, MSSD undertook another major evaluation of the CRS program. Results were reported in the document entitled Report on the Inventory of 1979 CRS Supplies, MSSD, September 30, 1980. Although aimed primarily at analyzing the process of supplying commodities to program participants, the surveyors did include data on nutritional status of a sample of beneficiaries. Results were fairly similar in terms of movement from one nutrition level to another as those found in the CRS sample, that is to say, significant improvement was demonstrated.

Only one attempt to evaluate the CARE TFA program has been found, a 1979 study by the National Nutrition Service of the Ministry of Health. A draft report only is available. The study deals completely with process, though "an attempt was made to measure nutritional impact among pre-schoolers in the program. However, the data collected were not significant enough to present any definite findings on the subject." The report did comment that "every quarter, more than half of all consignees (60 percent) receive their commodity allocation late." The fault appeared to lie with the overland hauler used by the Ministry.

E. DISCUSSION AND CONCLUSIONS

In the discussion of a program such as this, there usually is a tendency to concentrate on problems and this may give the impression of a generally negative feeling about the program. The team wishes to dispel such a notion at the outset. Our overriding conclusion is that the Title II MCH program is for the most part reasonably effective in the remediation of its malnourished participants. We believe that analysis of the data supports such a conclusion. The CRS set of data shows that the majority of children improve nutritionally, or at least do not deteriorate, as may be seen in Table 15 and in greater detail in Table 18.

Table 18

CRS DATA, COMPARATIVE ENTRY AND PRESENT
NUTRITION LEVELS BY INDIVIDUAL

Entry	<u>Present</u>				N
	1	2-3-4	5-6-7	8-9-10	
1	17%	67%	16%	0	6
2-3-4	10%	50%	38%	2%	60
5-6-7	4%	47%	46%	3%	147
8-9-10	0	8%	48%	44%	<u>25</u>
					238

Table 19 summarizes the results found at the CARE Centers for which usable data could be collected.

Table 19

TFA/TMCH CENTERS. PARTICIPANTS' CHANGE FROM ENTRY NUTRITION LEVEL

	<u>Improved</u>	<u>No Change</u>	<u>Declined</u>	<u>N</u>	<u>Signif. Change</u>
Barangay Linglingay	100%	--	--	9	p< .01
Barangay Santa Cruz	100%	--	--	13	p<.001
Santiago Nutri-Village	100%	--	--	17	p<.001
Aldana Feeding Center	85%	15%	0%	20	p< .01
Baranka Feeding Center*	33%	50%	17%	18	n.s.
Romualdez Hospital Malward	70%	13%	17%	23	p< .01

* locally funded

While we feel quite secure with the CRS data, given that they come from a well-chosen sample of the entire program, we feel less sure of inferences drawn regarding the effectiveness of the CARE program. Great--and unexpected--difficulty was encountered by the team in acquiring available data, in part because of the typhoon which had recently occurred in Region II, but at least as much due to the extreme disorder in which the records were often kept. To anyone used to searching for records kept in the hands of modestly-trained voluntary staff, this is not too surprising. What was surprising, however, was to find weight records kept at a rural health unit (e.g., Banaue, Gamu) in such disarray. The observed state of record keeping forces one to be suspicious of data on beneficiaries turned in to CARE for its own assessment of progress. The nurse at Banaue, for example, told the evaluation team that, although she was allocated foodstuffs for 100 participants, she distributed food to 200. As noted earlier, at Malabon School (Metro Manila) Neighborhood Feeding Center, both teachers in charge of the program had obvious discrepancies between the number of assigned participants and the number apparently being served.

To its credit, the CARE organization already has come to the conclusion that enough records are being falsified in the field to warrant a change in its monitoring methodology and is moving to a system which will place more of its own staff in a position to examine data at the field level rather than relying almost exclusively on aggregated data coming to its Manila headquarters.

The data which the evaluation team were able to gather in the field at CARE sites do have one advantage, however. When it had the right look of reliability about it, some of it could also be used to trace down "graduates" of the program to check on their nutritional condition. These data, reported in detail in the "Results" section, cast doubt upon the long-term effectiveness of supplementary feeding. Again, the paucity of data preclude a firm conclusion in this regard, but at Barangay Santa Cruz, of eight children who had "graduated" from the program four months earlier, five had not gained any further and three had declined; and perhaps more significantly, of 14 "graduates" of the Santiago Nutri Village, eight declined over the next few months; and then again with Aldana, two of 12 declined and none improved; these results create a nagging suspicion that the activities that accompany feeding may not be very effective. To repeat, the team is not sure that this is an appropriate conclusion, but there is enough evidence to warrant some special attention to this question by CARE. The impermanence of the beneficial effect of supplemental feeding was noted by the Virginia Polytechnic Institute group in their recent experiment in determining the relative cost-effectiveness of various nutrition interventions. ^{1/} And in their review of outcome of supplementary feeding programs done for FAO, Beaton and Ghassemi note that little is known about the persistence of effects of supplementary feeding. ^{2/} On the other hand, a study done by CRS after the evaluation team had left the Philippines, though limited in geographic scope, indicates that it may indeed be possible to demonstrate that the multifaceted program being offered there does have a positive post-program effect. Thus, with evidence in hand pointing in both directions the question remains open. It is an important question and fortunately CRS has plans to extend its initial study.

For the time being, evaluation of the Title II MCH program is likely to depend most heavily upon weight-for-age statistics (actually, percentage of standard weight-for-age as shown by the nutrition level categorization). The flaws in this metric are well-known: it is subject to short-term fluctuation which may not be extremely significant in a child's development, and may be rendered less meaningful as a result of earlier stunting of growth which results in current underclassification on the nutrition scale. Still, on a routine basis it is perhaps the easiest of all nutrition status estimates to obtain and follow longitudinally. Though not a conclusive evaluative measure standing by itself, it is in most circumstances a good estimator; hence its near-universal employment.

1/ Alternative Nutrition/Health Intervention Effects and Cost-Effectiveness, Virginia Polytechnic Institute, Contract AID/ASIA C-1136, December 1980.

2/ Supplementary Feeding Programs for Young Children in Developing Countries, Beaton, G. and H. Ghassemi, Report for UNICEF and FAO, October 1979.

In our observations of both the production of the weight-for-age statistic in the field and recorded/tabulated data, we noticed a number of problems which degraded the accuracy of this measure.

Most striking was the use of inappropriate weighing scales, namely, the common bathroom scale. These are notoriously inaccurate, proportionately in particular at the relatively low weights of pre-school children. The "tare weight of the mother" approach used for pre-toddlers also did not inspire much confidence. However, the use of the more appropriate bar scale produced in the Philippines also was no guarantee of accuracy. We watched weighing sessions in the field which were started (until correction was offered by higher level staff not usually present) with the balance beam uncalibrated. And, of course, even when the equipment is right and correctly handled, a crying, bouncing youngster is still not easy to weigh accurately.

Weight-for-age requires two data items, age as well as weight. True age also is not always easy to come by. Presumably, with care and patience a true birthdate can be established for a child. However, each time a weight is taken an age in months must be calculated to establish nutrition level. We examined a number of records in which ages had been calculated incorrectly. To help minimize this problem, CRS issues to its nutrition aides at the parish level a table of birth months and present time which forestalls the need for calculation. In 1978, the Philippines developed and adapted its own weight-for-age index of nutrition status. New tables were issued soon thereafter, but it seems likely that some of the older tables are still in use. In preparing data for analysis, ages and nutrition levels were routinely double-checked by the evaluation team and the systematic pattern of errors in some sets lead us inevitably to that conclusion.

The data demonstrate quite clearly that the nutritionally worst-off children achieve the greatest gain in the program. This underscores the essentiality of adherence to the NNC guidelines for targeting severely and moderately malnourished children. Both the CARE and CRS programs show up fairly well on that score. Ninety-five percent of the CARE program children entered severely or moderately malnourished, as did 84 percent for CRS (not counting normal and mild 6 to 11 month olds, who are eligible in CRS's program); CRS should be able to tighten up even further.

The sampling frame of the CRS data presented an opportunity to study the effect of age at entry into the program and length of participation on outcome as represented by change in nutrition level. We saw that older children tend to do a little better than younger children. An explanation for this might have been that older pre-schoolers tend to have poorer nutrition status. However, as we saw, when by

the statistical technique of partial correlation the effect of poorer nutritional status is isolated from age, the latter maintains much of its own correlation with improvement. We are not sure what the programming implication of this might be, as we are certainly not prepared to recommend that older children be favored over younger in order to obtain a better measured program outcome.

More surprising is the finding in these data that length of participation in the program had relatively small bearing on degree of outcome. Since none of the children were in the program for less than three months, as noted earlier we think it possible that much of the time effect manifests itself very quickly and thereafter is overshadowed by the effects of other variables, including those which were not measured in these data and which account for the other 67 percent of the variance. In any event, as is shown in Table 18, LOP continues to have some effect in determining outcome for at least the full 18 months of the program.

The team visited three malwards and came away singularly unimpressed. For the most part, the malwards seemed to serve the traditional hospital role of saving the lives of acutely ill and imminently moribund children by means of intensive care. At the same time, they clearly could not carry out their role as change agents to the family. As we have already seen, the mother and child tended to remain only until the child appeared to the mother to have moved back a little from the precipice, at which point she fled. To expect different is probably naive. The malwards were grim, alien places for a mother to have to live for any length of time, especially knowing that her husband and other children were home fending for themselves. Romualdez Hospital in Quezon City took a more reasonable approach, moving the child and mother out of the malward as soon as possible and into a separate dormitory wing. Our own approach would be to view the malward as a specialty pediatrics division, treat the child to get it past the crisis, and concentrate on educating the mother on an outpatient basis, probably with center-feeding initially, as in the regular TMCH program.

Finally, a word about costs. According to the Office of Food for Peace, the FY 1980 cost per CRS MCH beneficiary was \$27.10 and the cost per CARE beneficiary was \$24.07. These include costs of commodities, ocean freight, overland hauling and storage, voluntary agency administrative costs, and miscellaneous community services. Counting now all the CRS participants and not just those who improved, that sum purchased an average increase of 0.7 nutrition levels for the year. Given the non-uniformity of the data from the various CARE establishments, it is impossible to carry out the same kind of calculation. Presumably, it would be in the same range. It is hard to argue that spending even \$50 or so to raise a child even

5 percent nearer to its standard weight-for-age (which is what one nutrition level is) is not worthwhile, even though nutritionists are frank to admit that they have no idea what this means quantitatively in terms of the child's mental and social development in adulthood. The more important question is, given that it is desirable to elevate a child's nutrition status the maximum amount within a finite budget, what is the most cost-effective way to do this. This is a question which can only be answered in an experimental setting.

The VPI group have worked on this problem. Interestingly, it was found that the most cost-effective interventions changed as the child grew older. Early on, supplementary food, alone or in combination with an educational program, was highly cost-effective, but its value decreased as the child grew older, although "older" here is less than 1 year old. However, the VPI data appear to indicate that the rapidly reducing cost-effectiveness is due much more to steeply-rising cost rather than sharply-declining effectiveness. The lesson seems to be that food aid should be targeted to young children in preference to late pre-schoolers, and that the latter should be targeted for some other (less costly) interventions.

F. SUMMARY AND RECOMMENDATIONS

The National Nutrition Council Guidelines for food assistance programs in the Philippines state that such programs are to have two broad thrusts, one remedial, the other preventive. The guidelines also set national priorities with regard to targeting. First priority goes to all infants, whether or not malnourished, and to 1, 2, and 3 year olds who are severely or moderately malnourished. Next in priority are 4 to 6 year olds who are severely or moderately malnourished. Third priority goes to pregnant and lactating women. Other segments of the population--school children, employable adults, institutionalized persons--follow, but it may be seen that the MCH food assistance program is targeted squarely to the top level of national concern, this concern being predicated on the generally accepted concept that malnutrition in the earliest years may produce irremediable damage to the nervous system of the developing fetus and child.

In the Philippines, the Title II program is administered by CARE and by Catholic Relief Services (CRS). As well as targeting their MCH programs squarely in line with the NNC priorities, both voluntary agencies offer sophisticated programs of homemaker education in an attempt to go beyond the transient effects of supplemental feeding to attack the roots of the malnutrition problem: deficient knowledge of home-level applied nutrition, insufficient use of potentially available resources for making more food available to the family, and insufficient economic resources to deal

appropriately in the food marketplace. Both voluntary agencies distribute 8 pounds of non-fat dry milk (NFDM) and/or corn soya (CSM) per month; at this time, CRS uses only CSM, CARE, both. Each voluntary agency has one program which starts with a period of daily center-based feeding and then moves to a monthly take-home ration and one which is solely on a take-home basis. Each also supports a group of hospital-based malnutrition wards ("malwards") which deal with critically malnourished children who often have simultaneous infections. Operationally, CRS works through the infrastructure of the Catholic Church, centering its activities in the parishes, each of which supplies through its own resources nutrition aides who supervise distribution, monitoring and education in the parish. CARE operates basically through the infrastructure of the Ministry of Health, basing its activities in the Rural Health Units of the Ministry, and the Ministry of Social Services and Development, with which it (as of recently) operates Neighborhood Feeding Centers. In the former, supervision, monitoring, and education are in the hands of the nurses and midwives, while in the latter these functions are performed by a local Barangay Nutrition Scholar.

Both CARE and CRS monitor their systems for process--commodity (and in the case of CRS, participant fees) accounting and number of participants--and outcome, as denoted by change in nutrition level using the Philippine standard.

In the text is found a discussion on the components of a comprehensive evaluation: process, formativity, outcome, and impact. From the beginning, it was determined that this evaluation would focus on outcome, the immediate verifiable effect of the program activities. In this case, outcome has been defined as improvement in nutrition level on the Philippine scale adopted by NNC. This scale is simply the aggregation into discrete progressive categories of the continuous variable "percent of standard weight-for-age"; level one is normal, levels 2-4 correspond to the terminology "mildly malnourished" and equate to 76-90 percent of standard, levels 5-7 are labeled "moderately malnourished" and equate to 61-75 percent of standard, and levels 8-10 are labeled "severely malnourished" and equate to 60 percent or less of standard.

The team's approach to the evaluation combined initial discussions with staff of the voluntary agencies and relevant officials of MOH and MSSD in Manila; field site visits for discussions with field staff; observation and collection of data; analysis of primary data collected by the team; secondary analysis of data collected by the voluntary agencies for their own evaluation activities; and examination of previous evaluation studies done by the voluntary agencies and other organizations.

Discussions with the voluntary agencies' staffs in Manila and with the field staffs, as well as observations in the field led to the conclusion that the process of carrying out the program was going on reasonably smoothly, though not without some problems. Occasional interruptions in supply of commodities were related and were noted in commodity receipt records. These were related to disruption of transport by natural disasters and by difficulties of MSSD in paying the inland hauler. There did not seem to be many problems arising from administrative functions of the VOLAGs. The various activities which are supposed to accompany the distribution of the commodities were operational for the most part, but not invariably. This seemed somewhat more true in the CARE system and undoubtedly stemmed from CARE's lesser control over the MOH staff responsible, as opposed to CRS's greater influence on relevant staff in the dioceses and parishes.

The big problem involved the heart of the outcome evaluation process itself: weighing and recording. Clear weighing errors obviated the utility of significant sets of data. This was most pronounced when weighing was done in the barangay, away from the rural health unit. To compound the problem, record keeping in these situations was in the hands of the Barangay Nutrition Scholars and many of them (4 of the 6 the team visited in their homes) kept the records so poorly that they were either lost or made no sense. More surprising was the disarray of the records at three of the four rural health units visited by the team, although in one case the team was able to reconstruct an analyzable set of records. Some weighing errors were undoubtedly due to the use of bathroom scales for weighing; the inaccuracy of these was recognized by the field staff, but not too infrequently it was that or nothing. Even one hospital malward used a bathroom scale. And finally, at one Neighborhood Feeding Center there was clear falsification of records.

Despite the shortcomings dwelt upon in the previous paragraph, the MCH program can be shown to be improving the nutrition status of the children who participate in it. Most, but not all, gain in status, a few spectacularly, but overall at an average rate of 1-2 nutrition levels (5-10 percent of standard) a year. Moreover, in general the correct children are being treated: 85-95 percent of the children are seriously or moderately malnourished at entry (excepting the 6 to 11 month old normal and mildly malnourished children CRS deliberately targets in conformance with NNC guidelines on prevention). Analysis of a subsample of a data set obtained by CRS for its own evaluation enabled us to develop a mathematical model which can be used to predict a range of improved nutrition, with 68 percent probability, based on knowledge of the entry nutrition level of the child, its age, and duration of participation. This predictive model is a useful planning tool for the near future, but

should be updated in two or three years. An important finding of the evaluation is not merely that the program is effective, but that there is a differential effectiveness which favors the most malnourished; that is to say, the same program investment yields a greater return when it is focused on those worst off. (The assumption in this statement is that it is at least as important to raise a moderately malnourished child one level as it is to raise one mildly malnourished.)

The malward program does improve the nutrition status of most of its patients. The problem, however, is that as a place for long-term residence by the mothers while they imbibe lessons in child nutrition/health management, it is so uninviting that most mothers abscond (which is the word used in the log of one hospital) with their children as soon as they deem it safe to move the child.

Perhaps the most serious doubt we have about the MCH program is its long-term effect on nutrition status. The small amount of follow-up data we could glean from the RHU and Operation Timbang records are not at all encouraging about program graduates continuing to progress nutritionally, or even holding their own, once out of the program. On the other hand, a CRS study done after the evaluation team had departed is clearly more encouraging. The team views this issue as open.

Cost per beneficiary for the CRS FY 80 program is, according to the Office of Food for Peace, \$27.10, for CARE, \$24.07. For CRS, this amount buys an improvement of approximately 0.7 nutrition level. The extreme variability of the present CARE data do not permit us to develop a comparable figure, but we would expect it to be reasonably similar.

We make the following recommendations concerning the MCH program:

Recommendation: The MCH program should be accorded the highest priority for as long as the Title II Program exists in the Philippines, unless there is some quite unforeseeable circumstance that greatly improves the target age group and degrades the circumstances of another. At this time, 1, 2, and 3 year olds have the highest levels of moderate and severe malnutrition in the country, and are at the same time most vulnerable to potentially permanent deleterious effects of malnutrition. If cuts must be made in the MCH program, the 5 and 4 year olds should be released first, the normal 6-11 month olds next. The former group usually are less subject to permanent damage from malnutrition than their younger colleagues, and the latter are often still on breastmilk in part and have a good chance to remain normal.

Recommendation: Targeting to severely and moderately malnourished children should be as firm as possible. As we have seen, we can have little complaint about the two voluntary agencies' targeting, although it is possible that CRS, with 18 percent of its 12 to 60 month olds entering at a level of mild or normal, could still improve. We stress, however, that the voluntary agencies should be given some leeway to use their judgment concerning special circumstances with regard to older or less poorly-off children.

Recommendation: CRS should mount a special investigative effort to determine why such a large proportion of their 6 to 11 month olds regressed in nutrition status (59 percent). CRS discovered this problem in the course of one of its own evaluations and has indicated to the team that they do intend to investigate. This should be done fairly soon, since the basic objective of bringing normal and mild 6 to 11 month olds into the program is to prevent malnutrition.

Recommendation: The malward program should be encouraged to move to a straight pediatrics ward specializing in nutrition problems. It appears futile to expect mothers to remain in the hospital, away from the rest of the family, for as long as it takes to bring the child to nutrition level 4. Since malward patients almost always come in at level 10 (or off the scale), this time could easily run to 60 days. Long before this, the mothers "vote with their feet." Before they reach this level of frustration, they should be introduced to one of the regular supplementary feeding/education programs.

Recommendation: CARE should experiment with ways to improve the record keeping performance of the RHU staff and BNS's with whom it collaborates. CARE appears to have been placed in the classic management conundrum: how to deal with having maximum responsibility and minimum control. Even with the new evaluation scheme, CARE will still be heavily dependent upon these non-CARE staff to acquire and maintain the data in the field. Improvement in their performance is essential to the success of the new scheme.

Recommendation: Both CARE and CRS should continue to use the 10-level nutrition scale for maintenance of weight-for-age data rather than the 4-level (normal, mild, moderate, severe) scale which compresses the same range of "percentage of standard weight-for-age." The finer scale detects smaller changes in nutrition levels and this is important in measuring outcome which is real, but may not show up on a coarser scale. For example, if a population is evenly distributed within, say the "moderate" category and every single person improves 5 percent of standard, only 1/3 will appear to have improved.

Recommendation: The widespread use of bathroom scales to weigh children should be stopped as soon as possible. Salter scales cost less than \$40 each; the indigenous "espada" costs even less, about \$25. Ten thousand of the latter would cost \$250,000 and represent an opportunity to obtain far more accurate data for monitoring and evaluating a program which costs the U.S. \$18-20 million a year, plus some millions more from the Philippine government. Moreover, use of inaccurate spring scales produces targeting errors which, while random, do not nullify one another, but, in fact, compound. In a recent exercise, the evaluation team demonstrated how a scale which produced a 5 percent weighing error caused a 16 percent targeting error (i.e., 16 percent of the children were not truly eligible for the program) and in addition resulted in the wrongful exclusion of 13 percent of the eligible children.

Recommendation: There should be a return to the use of the graphic weight ("road to health") card for tracking children's progress with the active participation of the mother. A few BNS's we visited did this and felt that the mother was more involved in her child's progress. Not all RHUs use the card, and CRS dropped it in 1979 in anticipation of the advent of a new chart which is yet to come forth. This type of format is being used in many countries and is highly regarded as a means of encouraging mothers to accept more responsibility for their child's nutritional well-being. This would fit well with the same general tenor being taken by CARE and CRS in the MCH program.

Recommendation: Both CARE and CRS should plan follow-up studies of participants in their programs to see how they fare nutritionally for some period, say until the child starts school, after leaving the feeding program. The approach the team had to take of searching OPT roles for former program participants is too haphazard. The disturbing possibility seen in our data that the effect of the program is evanescent warrants very early examination. We are pleased to note that CRS already is taking such steps; CARE should build this into its new evaluation scheme.

Recommendation: The voluntary agencies should be encouraged to evaluate the outcome of their efforts as opposed to the--also necessary--monitoring of process which is requisite to good management. Actually, the team was quite pleased in its discussions with the CRS staff on this score. CARE is clearly a little further behind, but seems to be developing a more sophisticated attitude also. However, the new CARE evaluation scheme calls for evaluating nutritional impact in part on the

basis of observed changes in morbidity and mortality. We urge the CARE staff to talk to people who have experience measuring morbidity and mortality in developing countries. It is a very difficult task to measure small changes, even with large resources at one's command and moreover, morbidity and mortality have many determinants other than nutrition status, and therefore, real changes in nutrition conditions might not show up measurably in these two variables.

PART VII

SCHOOL FEEDING PROGRAM

A. PURPOSE AND DESCRIPTION

The Food Assistance Guidelines of the National Nutrition Council specify that all food assistance "is a temporary, preventive and rehabilitative supplementary feeding to targeted vulnerable groups...to improve their nutrition status...." School children are not in the first tier of national priorities (younger children and certain pregnant women are), but nevertheless are considered an important segment of the population whose nutrition condition must be monitored and needs attended to. Specifically, the NNC Guidelines call for improvement in the nutrition status of "25 percent of identified underweight for age school children" and prevention of "nutritional decline of at least 90 percent of the remaining school children at the end of each year." The program is to be targeted to "schools with the highest percentage (not less than 15 percent) of children who are severely and moderately underweight."

Supplementary feeding in the schools is carried on under the auspices of CARE, CRS, and the World Food Program--all in cooperation with the Ministry of Education and Culture--and by the MEC alone under its own Applied Nutrition Program. CARE and CRS supply Title II commodities, WFP other donated commodities, and the MEC program locally produced foods. Altogether, about 4 million children are participating in some school-based supplementary feeding program; this constitutes about 40 percent of the school children of the country.

The CARE and CRS school feeding programs operate similarly and are somewhat less complicated logistically than either agency's MCH program. Title II soy-fortified flour is received on the dock by the agency's representatives, stored nearby, and then sent (by a freight forwarder paid by the Ministry) on the agency's order to a local bakery. (Most are commercial bakeries, but some schools have their own bakeries.) The bakery uses the flour and adds shortening, milk and other ingredients as necessary, following a fixed formula to bake a roll called a nutribun. Under the formula, the nutribun contains 250 or 300 calories (two sizes are in use) and 10 or 12 grams of protein, plus other nutrients in known quantity. The school then buys the nutribuns from the bakery at a price which covers the bakery's cost plus a small profit. The school then sells most of the nutribuns to the children (grades 1 - 4) at a very slight profit, using the surplus to provide nutribuns to children whose parents cannot afford their cost (even at about P. 15, 2 cents

U.S.) or to provide supplemental filling such as margarine, peanut butter, or meat. The filling is supposed to provide about 50 additional calories. All told, the supplementary feeding is expected to supply the child about 1500 calories and 50 grams of protein per week, or about 10 percent and 20 percent respectively of a 10 years old's needs. In 1981, CARE had 1.5 million beneficiaries in the program, CRS 200,000.

The voluntary agencies play a major role in the supervision and monitoring of the system. They are responsible for assuring an effective logistical chain, including transport and storage, although they themselves neither transport nor store the flour. Some problems are beyond their control, as for example interruptions in transportation due to nonpayment of the overland hauler by the Ministry. CARE and CRS personnel are supposed to detect these problems, however, and to press for rapid solutions to ensure the smoothest possible functioning of the system. They also are responsible for monitoring outcome by receiving and tracking feedback data in the form of weight-for-age for participating students.

B. EVALUATION APPROACH

As was true for the MCH and Day Care programs, this evaluation of the School Feeding program concentrated not on the process of carrying out the program--important as that is to achieving the desired outcome for the program--but on the actual outcome, defined in this case as change in nutrition status attributable to program activities. To obtain the information needed to make a judgement about the effectiveness of the program in these terms, members of the evaluation team:

1. Discussed the program with CARE and CRS staff at their headquarters in Manila;
2. With the help of CARE, CRS and officials of the Ministry of Education and Culture, selected schools in Metropolitan Manila, Ilocos Sur Province (in northern Luzon), and the Bicol region of southern Luzon for discussion with local officials and school staff, for observation, and for collection of age/weight data for the previous entire school year, and in some cases for more than one previous year;
3. Obtained, with the help of our contract organization and through the courtesy of MEC, a large set of data recording weights, heights, and ages of children taken in the 1979/80 school year as part of an MEC study of the effectiveness of school feeding.

C. ANALYSIS OF DATA AND RESULTS

Age/weight data over a two-year time period for the same Grade I to Grade IV beneficiaries were collected from two nutribun schools and two non-nutribun schools in Ilocos Sur. Similar data for a two year time period also were collected from four nutribun schools in the Bicol and from one nutribun school in Metro Manila. Data extending over a two-year period not only provide a picture of the potential longer-term effects of the program, but also of the nutritional status of the children when not participating in the program during the school vacation. Three other schools in Metro Manila provided age/weight data but not for a two-year time period. One school provided data over a four-year time period and two other schools provided data over a one-year time period. All of these data were copied from school records which are kept both for the purpose of monitoring nutritional progress and sensitizing the children themselves to nutrition as an aspect of their own health. For Ilocos Sur the sample of nutribun participants totaled 47 and the control group totaled 44. For the Bicol the nutribun participants totaled 70; no control group data were available. For Manila, the sample totaled 206; no control group data were available. Therefore, the total sample of beneficiaries analyzed was 323. The first set of analyses pertains to these data collected by the evaluation team in the field.

1. Analysis of Data Collected in the Field

National Nutrition Council guidelines call for those schools which participate in the foreign-assisted program to have at least 15 percent of students in the severe and moderate malnutrition categories. Table 20 shows the distribution of nutrition status for the 10 feeding and 2 control schools from which data were collected. It may be seen that in 8 of the 10 schools, at least 2/3 of the participants were not worse than mildly malnourished, although this is not to imply that a school population in which a quarter to a third of the student population are moderately or severely malnourished is not a school with a problem worth dealing with.

The data were analyzed school by school to see if a significant improvement in nutrition status could be detected between the beginning and the end of the school year. The children were categorized by the 10-category nutrition level scale used in the Philippine nutrition program and the shift in level of the data set for each school was examined by means of the Wilcoxon Signed Rank Test. This test is appropriate for matched pairs of measurements which are not independent, as is the case in these before and after treatment (i.e., supplementary feeding) pairs. (The two measures cannot be considered independent because the value of the first is a strong determining factor in the value

of the subsequent measurement.) The test examines a set of paired data to see if the change--whether gain or loss in nutrition status--is statistically significant, i.e., different than that which would occur by chance even if there were no actual difference. (Wilcoxon Signed Ranks is a fairly common nonparametric test which can be found in most moderately advanced statistics texts.)

Table 21 shows the results of this analysis. The outcome is quite mixed and unsystematic. Two of the nine schools registered improvement in the nutritional status of the students during the first year of participation. In other cases, there is no demonstrable improvement in the participants, and in yet other cases, there is actually a decline in status overall. Thus the analysis revealed no overall improvement in nutrition status during the first year of program participation.

If the program were at least maintaining the beneficiaries, one might expect them to experience nutritional decline when participation in the program came to an end during the school vacation period. The analysis revealed no consistent trends in nutritional status during the school vacation period that would suggest that the program was having a maintenance effect during the school year (see Table 21, Column d-4).

Also of note is the fact that beneficiaries of three of the schools in the Bicol were better off during the school vacation when program participation came to an end. In two of these three schools, Panal-Bangkilingan and Burabod, beneficiaries experienced a nutritional decline during the school year. During the vacation period the decline came to an end and weight was maintained. For the third school, Casiginan, there was no change during the school year but improvement during the vacation period. One possible explanation of this phenomenon may involve factors unrelated to the program such as seasonality of illness during school months or increased food availability during the vacation period. Another possible explanation may involve substitution. Parents of beneficiaries may assume that the School Feeding program provides a complete meal when in fact the nutribun provides only a supplement to caloric needs. Under these circumstances, parents may feed their children less than they would normally. During the vacation period, regular meals may then be given which provide a higher percentage of caloric requirements than the nutribun.

Table 20

Distribution of Nutrition Status
Beginning School Year 1979/80

<u>Category</u> <u>Nutrition Level</u>	<u>Normal</u> <u>1</u>	<u>Mild</u> <u>2-4</u>	<u>Moderate</u> <u>5-7</u>	<u>Severe</u> <u>8-10</u>
<u>Ilocos Sur</u>				
Santa Catalina	8%	65.2%	26%	0%
B P Ragasa	0%	25%	70%	4%
Control - Bayubay	0%	36.3	59%	4.5%
Control - Pudoc	4%	18%	68%	9%
<u>Bicol</u>				
Burabod	33%	53.3%	13%	0%
Panal B	22%	61%	11%	5%
Santo Domingo	37.5%	37.5%	25%	0%
Casiginan	15%	50%	25%	10%
<u>Manila</u>				
St. Nino	35%	45%	20%	0%
Malabon	12.5%	25%	50%	12.5%
Pinyahan	11%	41%	47%	0%
Legarda	18.5%	58%	21.5%	1%

Table 21

School Feeding Program
Results of Wilcoxon Signed Rank Test

<u>Ilocos Sur</u>	<u>d-1</u> <u>(1st year</u> <u>Participation)</u>	<u>d-2</u> <u>2nd year</u> <u>Participation)</u>	<u>d-3</u> <u>First and</u> <u>2nd year)</u>	<u>d-4</u> <u>School</u> <u>Vacation Period)</u>
Santa Catalina	Improvement (.01)*	No Change	No Change	Decline (.01)
B. P. Ragasa	No Change	No Change	No Change	No Change
Bayubay Control	Decline (.025)	No Change	No Change	No Change
Pudoc Control	Improvement (.025)	Improvement (.025)	No Change	No Change
<u>Bicol</u>				
<u>Panal B</u>	Decline (.01)	Decline (.05)	Decline (.01)	No Change
Burabod	Decline (.01)	Decline (.01)	No Change	No Change
Casiginan	No Change	No Change	Improvement (.025)	Improvement (.025)
Santo Domingo	No Change	Decline (.01)	Decline (.01)	Decline (.02)
<u>Manila</u>				
<u>Malabon</u>	No Change	Improvement (.025)	No Change	No Change
Pinyahan	Improvement (.01)			
Legarda	No Change			
St. Nino	No Change (4 year time-period)			

d-1 = measurement after first year participation in School Feeding program.

d-2 = measurement after second year participation in program.

d-3 = measurement after two years participation in program, i.e., between the beginning of the first year and end of the second.

d-4 = measurement during vacation period in which no nutribun is provided, i.e., between end of first school year and beginning of second.

* Level of statistical significance.

What was the nutritional trend of the children when they returned to school during the following year? The analysis revealed no statistically significant change in nutrition status of beneficiaries during the second year of program participation. Of the seven schools, one school (Malabon, CARE) showed improvement and another (B. P. Ragasa, CARE) showed that the children were being maintained, indicating that the decline experienced during the summer had come to an end and that the program may have had an effect. For the five other schools, two showed no change and three showed a decline. Of these five, the beneficiaries of the three school feeding programs discussed above as better off during the vacation period reverted to the same nutrition status as the previous year. The positive trends shown during the school vacation period came to an end. During the second year, the same two schools, Panal-Bangkilingan and Burabod showed a decline in nutrition status of beneficiaries and Casigninan showed no change.

Turning to the comparison provided by the two nutribun and two non-nutribun schools in Ilocos Sur, the analysis of the nutritional status of beneficiaries of the four schools does not provide evidence to suggest that beneficiaries of the nutribun program are better off than non-beneficiaries. Over the two year time period, beneficiaries of one nutribun feeding school experienced a statistically significant increase in nutritional status during the first year. During the second year, and for the two years of program participation in the other nutribun feeding program, beneficiaries experienced no change. By contrast, beneficiaries in one of the two non-nutribun schools--Pudoc--experienced a statistically significant increase in nutritional status for both years of school attendance. Of all schools analyzed, this non-nutribun school, which had an indigenous, school-garden based feeding program, was the only school in which school children experienced a statistically significant increase during both school years.

For one school, it was possible to obtain longitudinal data for a four year period. St. Nino School (CARE) in Metro Manila was able to provide age/weight data for twenty children as they moved through Grades I to IV. The analysis revealed no statistically significant change in nutrition status of beneficiaries participating in the program over a four year period.

The Food Assistance Guidelines state the following as a goal of school feeding: to improve the nutritional status of 25 percent of underweight for age school children and prevent the nutritional decline of at least 90 percent of the remaining school children at the end of each year.

In view of this objective, what is the actual percentage of improvement, no change, and decline of beneficiaries? The analysis revealed that for the nine schools, 27 percent of the pupils had improved. Of the remaining children, 52 percent were maintained and 47.1 percent declined. Based on this sample, the program objectives as stated in the Food Assistance Guidelines were not being met. On the basis of a small sample of schools in only a few regions of the country, we hesitate to draw firm conclusions regarding the entire program, but certainly one can say one's confidence in the ability of the School Feeding program as it was observed in these schools to have a significant impact on the nutrition status of school children is considerably undermined. Nevertheless, there are other data to examine drawn from a sample more national in scope.

2. Ministry of Education and Culture Data

The second set of data has been extracted by sampling systematically from MEC records of heights and weights of school children taken near the beginning and near the end of the 1979/80 school year. The data were separated (for us by our contractor) into a group of children from schools which were receiving Title II commodities (referred to henceforth as participant schools) and those which did not (non-participant). It must be borne in mind that in participant schools in most cases the students receive local foods in addition to the nutribun, and that many non-participant schools have some sort of supplementary feeding program using school-grown and locally-procured foods. Therefore, the contrast here is not between pure nutribun supplementary feeding and no supplementary feeding at all, but between Title II with local food and local food alone, although the latter group does include some schools which, according to the record, supply no additional food to the children from school-managed resources. Concerning the first group, according to MEC there are very few schools which did not add local fillings to the nutribun. Concerning the second group, MEC states that 95 percent of all schools in the Philippines now have gardens; therefore, there must be very few schools which do not have any school-organized supplementary feeding. In addition, it should be pointed out that the local feeding programs usually do not distribute food on a daily basis; distribution of food varies from one to three or four times per week. The question to be answered, then, really comes down to whether the Title II commodity program produces significantly better results than do the local food programs.

Table 22 shows the percentage distribution of nutrition levels at the beginning of the school year for participants and non-participants. It may be seen that taking boys and girls together would show no difference between the two groups. Separating the groups into boys and girls may appear to make a difference, but in actuality (by means of the Kolmogorov-Smirnov test), it can be demonstrated that there is not a statistically significant difference between these groups even by very lax standards ($p < .25$).

Table 22

Percentage Distribution of Nutrition Levels
At Beginning of School Year

<u>NL</u>	<u>Participants (N = 226)</u>			<u>Non-Participants (N = 172)</u>		
	<u>Boys</u>	<u>Girls</u>	<u>Both</u>	<u>Boys</u>	<u>Girls</u>	<u>Both</u>
1	25	18	21	21	23	22
2-3-4	52	59	56	60	48	54
5-6-7	24	22	23	18	28	23
8-9-10	0	1	0	1	1	1
	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

Table 23 shows the percentage distribution of "percentage of standard height-for-age" at the beginning of the school year.

Table 23

Percentage Distribution of Percentage of Standard Height-for-Age
at Beginning of School Year

<u>% of Std.</u>	<u>Participants</u>			<u>Non-Participants</u>		
	<u>Boys</u>	<u>Girls</u>	<u>Both</u>	<u>Boys</u>	<u>Girls</u>	<u>Both</u>
LT 70%	0	0	0	0	1	0
70-79%	1	0	1	0	0	0
80-89%	17	16	16	14	12	13
90-99%	76	78	77	80	76	78
100-109%	6	6	6	6	12	9
	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>101%*</u>	<u>100%</u>

* rounding error.

Once again, statistical testing gives no reason to believe that the two groups are not very similar with regard to their percentage of standard height-for-age.

If the Title II School Feeding program were meeting its objectives of elevating the nutrition status of the children, we should be able to detect some improvement between the beginning and end of the school year. Table 24 shows the percentage distributions of change in nutrition level by the magnitude and the direction of change. This change (coded as DNL) is derived by subtracting a student's end of year level from his beginning level. Since the nutrition level designations grow larger as nutrition status grows poorer (e.g., 5 = 71-75% of standard weight for age, while 2 = 86-90%), negative values of DNL indicate decline in status and positive values indicate improvement.

Table 24

Percentage of Students Changing Nutrition Level During School Year
by Magnitude of Change (DNL) Age 7.- 10

<u>DNL</u>	<u>Participants</u>			<u>Non-Participants</u>		
	<u>Boys</u>	<u>Girls</u>	<u>Both</u>	<u>Boys</u>	<u>Girls</u>	<u>Both</u>
-5	1	0	0	0	0	0
-4	0	0	0	1	1	1
-3	0	0	0	2	5	3
-2	2	2	2	5	8	7
-1	16	18	17	20	21	20
-0	52	46	50	42	41	42
1	14	24	19	24	8	16
2	10	6	8	6	9	8
3	4	3	3	0	2	1
4	1	1	1	0	4	2
5	0	0	0	0	1	0
	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

The data shown in Table 24 were tested (Kolmogorov-Smirnov) to see if there were significant differences between the distribution for participants and non-participants. No difference was found between the boys, but the difference between the girls did prove statistically significant, if only at the 10 percent probability level. To illustrate the low level of the overall difference, from Table 24 we may also calculate that for boys, the participants averaged 0.2 nutrition level gain for the entire school year, which translates to 1 percent improvement in percent of standard weight-for-age. At the same time, the non-participant girls showed no change in that period. The difference was just enough to register as statistically significant against a relaxed standard of 10 percent confidence level.

To highlight these small differences as much as possible, the data were positioned to show individual movements between nutrition levels in the course of the year. This analysis is shown in Table 25.

Table 25

Movement Between Nutrition Levels from Beginning
of School Year to End
(7-10 year olds)

		Boys				Girls					
Nut. Level		1	2-3-4	5-6-7	N	Nut. Level	1	2-3-4	5-6-7	N	
1	Part.	89%	11%	0%	28	1	Part.	95%	5%	0%	20
Norm	Non-part	83%	11%	6%	28	Norm	Non-part	50%	50%	0%	20
2-3-4	Part.	17%	78%	5%	59	2-3-4	Part.	24%	73%	3%	66
Mild	Non-part	19%	69%	12%	52	Mild	Non-part	15%	72%	13%	39
5-6-7	Part.	0%	37%	63%	27	5-6-7	Part.	0%	27%	73%	22
Mod.	Non-part.	0%	33%	67%	15	Mod.	Non-part	13%	29%	58%	24

In viewing the data sets in Table 25, it must be kept in mind that each is a zero-sum tabulation with few cells. Movement is magnified because what one cell gains, another must lose. The reader must remember that upon statistical testing, one set of differences proved insignificant and the other weak.

Summarizing the results of the analysis of this data set, first, from Table 22, it may be seen that the beneficiaries of the program are, for the most part, not too badly off at the beginning of the school year: a fifth are normal and three-quarters are no worse off than mildly underweight. The median, in fact, falls at about 83 percent of standard weight-for-age (the normal range begins at 91 percent, while 76 percent is considered the bottom of the mild range.) Second, four-fifths are at least in the 90th percentile of standard height for their age. Third, as a group, boys in school feeding programs may be making very small gains in nutrition level, but the data are not conclusively supportive of this finding. Clearly, some are making significant gains and are making progress, though it is small, say in comparison with the progress made by participants in the Day Care and MCH programs. The minimal rate of progress of the School Feeding program children probably is due to the high proportion of children who enter the program no worse off than the mid-point of the mildly malnourished range.

3. Additional Note on MEC Data

As noted, the analyses in the previous section are based on data gathered by the MEC during the 1979-80 school year for its own study of the effectiveness of supplementary feeding programs in the schools. Since this evaluation concerned Title II, we extracted from those data a subset which sampled only the CARE- and CRS-supported schools, so that the preceding analyses pertain to CARE and CRS participants. The full set of data, however, include beneficiaries of feeding programs under the auspices of the World Food Program and the Ministry's own Applied Nutrition Program. At the time that the evaluation team was in the Philippines, only the raw data were available and it was from these that our contractors drew our sample. Recently, however, the Ministry has completed its own analysis and has generously made its results available to us through both CARE and CRS. The following tables labeled IV, V, and VI, as they are in the report, are reproduced from the MEC report. ^{1/}

Table IV.

Comparative Mean Weights of Children as Percent of Standard in Relation to Duration of Feeding Before and After Feeding

<u>Duration of Feeding</u> (Days)	<u>No. of Children</u>	<u>Percent Standard</u>		
		<u>Before</u>	<u>After</u>	<u>Gain</u>
120+	2349	81.2	83.3	+2.1
100-119	2243	85.9	87.0	+1.1
80-99	1394	84.7	85.2	+0.5
Below 80	5058	82.4	82.9	+0.5
No Feeding	815	82.1	81.8	-0.3

Tables IV and V demonstrate the value of prolonged feeding in these programs and this is emphasized in the MEC report. Also, the reduction in the overall proportion of severely and moderately malnourished children is heartening. And the fact that the CARE program shows the best gains among the various schemes in use in the Philippines also is gratifying. One

^{1/} The Nutritional Impact of Supplementary Feeding on 7-14 Year Old Filipino Children in Public Elementary Schools, Ministry of Education and Culture School Health and Nutrition Center, Manila, May 1981.

Table V

Comparative Reduction Rate of the Combined Number of Severely and Moderately Underweight Children in Relation to Duration of Feeding Before and After Feeding

Duration of Feeding Rate (Days)	# of Children	# of Severely & Moderately Underweight Children		Reduction Rate (Percent)
		Before	After	
120+	2349	762	593	22.2
100-119	2243	429	378	11.9
80-99	1394	295	272	7.8
Below 80	5050	1430	1349	5.7

Table VI

Comparative Mean Weights of Children with At Least 100 Feeding Days as Percent Standard in Relation to Feeding Scheme Before and After

Feeding Scheme	No. of Children	Percent Standard		
		Before	After	Gain
CARE B	1442	80.0	82.5	+2.5
CARE A	323	84.3	86.6	+2.3
INDIGENOUS (ANP)	1054	82.3	84.1	+1.8
CRS	314	87.6	88.8	+1.2
WFP NUTRIBUN	1041	86.1	87.0	+0.9
WFP CSM	411	87.8	88.1	+0.3

cannot fail to be struck, however, by the overall gain produced in the school year in the best program, 2.5 percent of mean standard weight, or 0.5 nutrition level, admittedly a lot better than the 0.3 percent loss registered by the control (i.e., non-participating) groups, but still rather modest.

The data in Tables IV, V and VI from the MEC report are presented in a static, highly aggregate format. Table 26 presents a subset of the data disaggregated by beginning nutrition status to show decline, no change, and improvement. Perhaps the most fascinating aspect of these data is that the School Feeding program seems to do its best job in maintaining those children who start out not too badly off, but that in dealing with children who start the school year in poor condition (moderately or severely malnourished, although very few in this sample were severe) the outcome seems to be about the same whether the children are in a program or not. One possible explanation is that improvement of poorly off children is more related to greater availability of food in the home which happens to parallel roughly the school year.

D. NUTRITION EDUCATION AND SCHOOL GARDENS

"There are acres and acres of vegetables planted here in Ilocos Sur--cabbages, cauliflower, eggplant, peppers, and tomatoes planted for as far as the eye can see. How can there be malnourished children? The parents grow these vegetables but many of them don't understand that the vegetables have to go into the children's mouths."

School Administrator
Ilocos Sur

This comment by a school administrator illustrates the great need for nutrition education of the parents of school age children. Similar comments were made in other interviews. "Parents frequently leave for the field without preparing adequate meals for their children because they don't understand what is meant by good nutrition." "Parents frequently fail to recognize malnourishment or underweight in their own children and think that their child's nutrition status is normal."

Table 26

Sample of MEC Data Showing Change by Entry
Nutrition Status and Duration of Feeding

Non-Participants

Entry Status	Declined		Stable		Improved		Total
Normal	16	32%	34	68%	0		50 20%
Mild	45	36%	41	33%	40	31%	126 51%
Mo/Sev	10	14%	27	37%	36	49%	73 29%
Total	71	29%	102	41%	76	31%	249 100%

19-119 Days Feeding (ave. = 83)

Entry Status	Declined		Stable		Improved		Total
Normal	3	9%	29	91%	0		32 23%
Mild	22	30%	29	40%	22	30%	73 52%
Mo/Sev	8	22%	10	28%	18	50%	36 26%
Total	33	23%	68	48%	40	28%	141 100%

GT 120 Days Feeding (ave. = 156)

Entry Status	Declined		Stable		Improved		Total
Normal	4	11%	33	89%	0		37 19%
Mild	19	19%	37	37%	43	43%	99 52%
Mo/Sev	10	18%	21	39%	23	43%	54 28%
Total	33	17%	91	48%	66	35%	190 100%

Interviews and site visits suggest that nutrition education, through the use of posters and other visual aids, discussions and school vegetable and medicinal herb gardens, is aimed at the school children. Parental involvement in the nutrition education component appears to be minimal.

Nutrition education of school children, a component which appeared to be an integral element in the curriculum not only in nutribun but also non-nutribun schools, may have a significant positive effect over the long-term. It appears that the MEC has made substantial progress in its efforts to include nutrition education directed toward the children in both nutribun and non-nutribun schools.

The comments included above, however, illustrate the need for nutrition education directed toward the parents. Interviews suggested that nutrition education directed toward the parents was not a highly developed component of the School Feeding program. The interviews suggested that nutrition education classes with parents were held at best once a month or on the average several times during the school year. Moreover, in contrast to the MCH and Day Care programs in which parents were observed to be regularly involved, no parents were observed participating in the feeding activities.

The extent of school gardening and the enthusiasm of the teachers and students for the gardens was highly impressive. Students and teachers in both nutribun and non-nutribun schools were eager to show off the school garden. Students were frequently observed to be working in the garden.

Both nutribun and non-nutribun schools were found to have active school gardening projects but garden production is insufficient to provide daily supplementary feeding. School gardens may be an important educational tool, but cultivable school land is insufficient to produce adequate amounts of fruits and vegetables to provide supplemental feeding on a daily basis. Nevertheless, with increased resources, production could be increased. The MEC and CARE have reached an agreement to allocate jointly P125,000 and P350,000 respectively in 1981/82 for this purpose. According to MEC data, approximately 95 percent of public elementary schools have school gardens. Using a food distribution program to stimulate gardening may not be an ideal strategy, however. A recent evaluation of the World Food Program School Feeding Project in Mindanao found that "the introduction of WFP commodities has in practice worked as a disincentive to food production in school gardens. This is attributed to the misunderstanding of the objectives of the feeding program by the teachers concerned." No evidence was provided that the nutribun program acted as a disincentive to school gardens but this finding merits further examination.

E. DISCUSSION AND CONCLUSIONS

The three sets of data examined (the team-collected data, the CARE-CRS data isolated from the larger MEC data set, and the data presented in the MEC report) present a mixed picture in terms of the effectiveness of supplementary feeding in the schools as measured by change in nutrition status from the beginning of the school year to the end. The data collected by the team in 10 schools in Ilocos Sur, Manila, and the Bicol are not at all encouraging, with as many schools showing a decline overall as improvement. The CARE-CRS data extracted from the MEC's own data set do show overall improvement in the range of about 1 1/2-2 percent of mean standard weight-for-age. The MEC report shows the best results (for CARE), a gain of about 2 1/2 percent of mean standard weight-for-age in a school year. It is very difficult to say in any sort of absolute sense that these results are good, bad, or indifferent, that they should be better or that we should be satisfied with what we see.

The Food Assistance Guidelines specify that the supplementary feeding program in the schools should "improve the nutritional status of 25 percent of the identified underweight for age schoolchildren and prevent the nutritional decline of at least 90 percent of the remaining schoolchildren." Against this criterion, clearly the 323 children's records examined by the team do not measure up: 27 percent improved, but of the remainder only 52 percent were maintained. In the MEC/CARE-CRS data, in a sample of 222, 24 percent improved and 95 percent of the balance maintained. In another sample extracted from the MEC data set and limited to those who received at least 120 days of supplementary feeding 43 percent improved and 73 percent of the balance maintained. On the other hand, when a sample of 249 children who were not being fed was examined it was found that over the school year 38 percent of those underweight improved and 59 percent of the balance maintained their original status. One must ask, "Is this result so different from that of the children being fed?"

In a communication to the evaluation team, MEC staff pointed out that there was a potential difference in the quality of the data collected directly by the team and those collected by MEC for its study. They are right. The team copied records maintained in the schools themselves, the weighing being done by teachers on locally available scales of unknown quality. It should be expected that some of the weights would be accurate and some not so accurate. MEC, by contrast, sent out its own teams of weight-takers and scales; they should be expected to be more accurate.

Let us say, then, that the best data which are available are those supplied us by the MEC. In the MEC's own analyses the maximum difference they show between program children and non-program

children is 2.8 percent of mean standard weight-for-age. Compared to the gains in the MCH and Day Care programs which were 3-5 times greater with roughly the same effort and commodity cost to the USG (\$340/MT for soy-fortified-flour and \$353/MT for CSM, both without shipping), the benefit of the school program simply does not match that of MCH/Day Care. It strikes the evaluation team that this, then, is the crux of the matter: not that the School Feeding program has no impact or value at all, but that the impact seems relatively small compared to the effort involved in maintaining it. This is especially true in light of shrinking Title II resources, that the targeted population is not given the highest priority by the Philippine government itself--and rightly so in the minds of most nutritionists--and that most of the children now receiving supplementary feeding are no worse off than mildly malnourished in any event.

One additional point. It is sometimes argued that among the non-nutritional benefits of a school feeding program are its incentive value to enrollment and attendance. UNICEF data indicate that overall primary school enrollment in the Philippines is very high--between 94 and 97 percent. Under these circumstances, it seems unlikely that school feeding can have much impact on enrollment. (The team was not able to obtain data which contrast enrollment of feeding and non-feeding schools.) With regard to attendance, days of attendance for two feeding schools and two non-feeding schools were compared for school year 1979/80 and no statistically significant differences were found.

F. SUMMARY AND RECOMMENDATIONS

Supplementary feeding in the schools using Title II commodities is carried on by CARE and CRS in cooperation with the Ministry of Education and Culture. Soy-fortified flour is received in Manila and transported to commercial or school bakeries, where it is mixed with local ingredients in a standard formula and baked into a bun of standard composition containing 250 or 300 calories (two sizes are in use) and 10 or 12 grams of protein, plus other nutrients in known quantity. Participating schools purchase them from the commercial bakeries at a pre-arranged price which covers the cost of local ingredients, other costs, and a small profit. The schools then sell the nutribuns to the children--usually for between 12 and 15 centavos--at slightly over cost to generate a small profit which is plowed back into the program to provide a nutritious filling of about 50 calories (margarine and peanut butter are most common) and to provide buns to children whose parents can not pay for them.

National Nutrition Council guidelines call for targeting schools with relatively high percentages of children who are severely or moderately underweight. Children in grades 1 to 4 are eligible. In

some schools, all first through fourth graders are fed, while in others an effort is made to target the more malnourished and exclude those who are less in need. The supplementary feeding program supplies about 1,500 calories and 50 grams of protein per week, or about 10 percent and 20 percent respectively, of a 10-year old child's needs based on Philippine standards. In 1981, CARE had 1,500,000 beneficiaries in its program, CRS 200,000.

The evaluation focused, rather than on the process of delivering food, on the outcome of the program defined as improved weight-for-age against Philippine standards. Most data were presented to the team in the 10-level nutrition scale in use in the Philippines where nutrition level 1 represents the normal range of standard weight-for-age and each succeeding level denotes a decrement of 5 percent of standard. Steps taken by the evaluation team were as follows:

1. Discussions with staff of CARE, CRS, and the Ministry of Education and Culture;
2. Visits to selected schools in Ilocos Sur Province, Metro Manila, and the Bicol Region for discussions, observation, and collection of age/weight data from school records;
3. Selection (by our contractor) of a subsample of weight-for-age data for children in schools using Title II commodities and from schools without a supplementary feeding program; this subsample was taken from a larger set which the MEC was using to study the effectiveness of all the supplementary school feeding schemes in the country;
4. Perusal of other studies done on school feeding in the Philippines, especially a very recent study done by MEC using the large data set noted above.

With regard to targeting, all schools visited by the team met the NNC standard requiring participating schools to have at least 15 percent of students moderately or severely malnourished. However, in 8 of the 10 schools 2/3 of participants were mildly malnourished or normal. In the sample of data extracted from the MEC data about one-fourth of the children fell into the moderate or severe categories.

In the 10 schools visited by the team, for a total of 17 school-years for which beginning/ending data could be obtained, 3 years showed statistically significant improvement in the children, 5 showed a statistically significant decline, and 9 showed no detectable change. For 2 non-participating schools with 2 years of data each, 1 school showed statistically significant improvement in each year, while the other showed a decline and then no change.

Analysis of the subsample of the data extracted from the larger MEC set showed for participants, a small improvement in nutrition level equalling for the school year about 1 1/2 percent of standard weight-for-age, while non-participants in the same period declined very slightly.

The MEC's analysis of its more comprehensive data set showed a maximum of 2.5 percent gained in standard weight-for-age for the CARE program and 1.2 percent for the CRS program. Non-participants lost 0.3 percent. Thus, the maximum difference for the school year was 2.8 percent between the CARE program and the non-participants. Interestingly, the MEC's own Applied Nutrition Program using indigenous foods produced a gain in standard weight-for-age of 1.8 percent.

Examination of these 3 sets of data led the team to conclude that, first, although meeting what appear to be very loose guidelines for targeting, the School Feeding program is dealing, for the most part, with children who are no worse off than mildly malnourished. Second, very possibly because of the relatively small number of children who are even moderately malnourished as they enter the program, the outcome in terms of gain in nutrition status is relatively modest, especially when compared to the gains shown in children in the MCH and Day Care programs. And finally, the use of imported foods produces results only marginally better than those obtained in the indigenous feeding program.

The evaluation team thus makes the following recommendations:

Recommendation: The School Feeding program should be phased over to the GOP. For immediate purposes it should be accorded third priority after MCH and Day Care. This is in agreement with the order of priorities stipulated as national policy by the National Nutrition Council. It should continue, in fact, only so long as it does not deprive the other two programs of resources which they can possibly use to reach undernourished younger children.

Recommendation: As quickly as is feasible without wrecking the indigenous infrastructure already built up to administer the School Feeding program, the use of imported commodities should be phased over to substitution with indigenous foods. According to MEC's own study, "supplementary feeding from local indigenous foods can compare in its effects on the nutritional status of children with that of foreign-assisted feeding schemes...." The evaluation team concurs with this conclusion.

Recommendation: Supplementary feeding, especially that using Title II commodities, should be targeted immediately only to children who are moderately or severely malnourished. Greatly

improved targeting would make the program much more acceptable to those who expect better nutritional outcome results--especially when compared to the outcomes seen in the MCH/Day Care programs--even for the short run. (MEC recently has put forth a plan to improve targeting.)

Recommendation: Since CARE's Title II program in School Feeding is the lion's share both of Title II School Feeding and of CARE's own total program in the Philippines, as Title II resources are freed up as a consequence of action on recommendations 1 and 2, CARE should expand its own MCH program. Without denigrating the value of CRS's MCH program working through the structure of the Catholic Church, we feel that it is very important that the nutrition component of the Ministry of Health be supplemented and fortified as a demonstration of the value of integrating nutrition with primary health care. CARE's program, relatively small at this time, already is functioning in that capacity and could be expanded if more resources were available. (However, see recommendations in the MCH section of this report for additional requirements with regard to supervision and evaluation.)

Part VIII

FOOD FOR WORK PROGRAM ^{1/}

A. PURPOSE AND DESCRIPTION OF FOOD FOR WORK

1. Purpose

The purpose of the Food for Work (FFW) program is to generate income and employment through the distribution of PL 480 Title II commodities in exchange for labor on selected community development activities. The program is predicated on the notion that food commodities can be used as an incentive to mobilize community development, the spirit of cooperation, and attitudes of self-reliance among the poor, rather than with the objective of using the food to improve nutrition status directly. In the Philippines, Food for Work is an extremely small component of the Title II program, constituting less than one percent of the total program. Both CARE and CRS implement a Food for Work program, although the specific objectives of each agency and their administrative structures differ.

While the Food for Work program constitutes only a small fraction of the entire Title II program, it was of particular interest to USAID/Philippines. The primary objective of the USAID/Philippines CDSS strategy is to generate income and employment in the rural areas for poor households--objectives consistent with the overall goals of Food for Work. In view of this, the question arose whether or not the Food for Work program represents a viable strategy for generating rural income and employment.

2. Catholic Relief Services Food for Work Program

a. Objectives

CRS has established priorities among projects as follows:

1. Food production projects, particularly those that are associated with the nutrition program or any developmental program such as:

^{1/} The task of surveying and gathering data on Food for Work projects was contracted to the firm of Sycip, Gorres, Velayo and Company of Manila. SGV provided a detailed report entitled Evaluation of PL 480 Title II Funded CRS and CARE Food for Work Program in Selected Luzon Provinces, June 1981. This section is a summary analysis of this report.

- Farming (agriculture)
- Fishponds
- Irrigation systems (construction of canals and installation of irrigation pumps)

2. Infrastructure development:

- Housing
- Roads
- Bridges

3. Education development:

- Vocational training and retraining courses, particularly in agriculture, fishing and handicraft industries;
- Training that includes family planning, nutrition, child care and personal hygiene, home and environmental sanitation and food handling;
- Literacy classes, leadership training.

b. Administrative Structure

For the implementation of FFW, CRS works directly through the administrative structure of the Catholic Church--with the Bishop of the diocese or his designated representative.

Project proposals are usually initiated by the parish priest, the barangay captain or by any of the associations such as the Catholic Women's League or the Knights of Columbus. Proposals related to a nutrition program require a nutritionist's recommendation. Proposals are submitted to the Bishop or his representative for screening and recommendation to CRS. Final approval is made by the FFW Evaluation Panel at the national level consisting of the NEDA, USAID and CRS. Monitoring of FFW projects is conducted by six field officers who also check on the progress of other CRS projects.

c. Food Distribution Procedures

Food allocation per worker is determined on the basis of 5 pounds of commodities for every 8 hours of work per person. As a general rule, food assistance granted by CRS to projects is programmed for a maximum period of one year. Shipment of food commodities to the projects is done on a quarterly basis to prevent spoilage due to long storage.

Prior to October 1980, assistance given by CRS to FFW project workers was only in the form of PL 480 food commodities. However, there were other participants in CRS FFW projects not covered by the FFW program. These non-FFW workers usually were the skilled workers whose participation was considered essential to the completion of the project, but could not be recruited on a voluntary basis. These skilled workers were compensated in cash provided by other assisting organizations.

Food for Work commodities are consigned to the Bishop or his representative, who may be the Diocesan Social Action Director, the local parish priest or the project proponent. Consignees are held fully responsible for all foodstuff shipped to them.

d. Food Distribution by Type of CRS Project

During the past three years, only bulgur wheat and corn soya milk (CSM) were distributed to the projects, with bulgur wheat accounting for the bulk of the total quantity distributed.

Before approval is granted, MSSD or CRS personnel visit the project site to examine the site and the storage facilities for the food. Road and bridge construction and repair, food production and construction and repair of community facilities accounted for the bulk of the total quantity of commodities distributed in 1980 (20 percent, 14.9 percent and 14.8 percent, respectively). Of these projects, food production largely constituted the total quantity distributed in 1978 (49 percent) and 1979 (84 percent).

In 1980, CRS projects registered an average commodity distribution of 77 pounds per recipient. A total of 11,386 recipients participated in these projects.

3. Cooperative for American Relief Everywhere (CARE) Food for Work Program Objectives

a. Objectives

Until recently, the overall thrust of the CARE FFW Program had been toward the support of reconstruction and development projects. In particular, CARE-assisted FFW projects were "designed primarily to assist disaster victims by providing food commodities that will generate work for reconstruction and rehabilitation." Secondly, CARE

projects were intended "to encourage and promote development-type projects that will make a permanent contribution to the community's long-term socioeconomic well-being." Starting this year, CARE efforts have been redirected toward developmental projects rather than toward disaster relief. Developmental projects undertaken by CARE are those which help increase food production. Food production related projects considered to be of highest priority by CARE are as follows:

1. Construction, improvement or expansion of water supply and irrigation systems, dams, and reservoirs;
2. Land improvement through clearing, levelling, drainage;
3. Construction, improvement or expansion of streets, roads, small bridges, or foot trails.
4. Permanent improvements and major repairs to the above facilities, especially for damage due to disasters, but not routine maintenance which is the responsibility of the community without FFW.

b. Administrative Structure

CARE project proposals are originated by community members or by the local government (provincial governor, city or municipal mayor). Requests for support are usually presented to the Ministry of Social Services and Development (MSSD) representative who submits these to the Provincial Social Welfare Officer (PSWO) of MSSD for approval.

Food for Work projects may be approved on-site. Approved project proposals are transmitted by the PSWO to the Manila Offices of MSSD and CARE. Upon receipt of these approved project proposals, delivery orders for FFW commodities are issued by CARE/Manila to Transcon.

The National Economic Development Authority (NEDA) and USAID do not participate in the final evaluation of CARE projects. However, these agencies have final approval of CARE's budget for its annual commodity requirements.

c. Food Distribution Procedure

Upon approval of a project proposal, CARE/Manila determines the amount of commodities to be allocated to the project on the basis of the number of man-days required to complete the

project. Once the food allocation is determined, a delivery order is issued for commodities to be brought to the project site. Consignees of FFW deliveries are usually MSSD personnel.

In the past, participants in CARE assisted FFW projects were paid in both cash and kind. Cash equivalent to P5.00 was distributed by MSSD to workers for every 8 hours of work. In addition, these workers were also given 5 pounds of food commodities for every 8 hours. This compensation scheme was discontinued this year because MSSD felt that workers were being overpaid. Starting in 1981, FFW project workers are being compensated only in kind.

d. Food Distribution by Type of CARE Project

Among CARE FFW projects during FY 1979-1980, construction and repair of community facilities accounted for the largest share (41.2 percent) of the total food distributed for the year. Road and bridge construction and repair projects accounted for the next largest share (32.1 percent), followed by food production projects (13.6 percent).

B. EVALUATION METHODOLOGY

1. Purpose

The purpose of the evaluation was the following:

1. To provide a factual description of the Food for Work programs implemented by CRS and CARE;
2. To evaluate the impact of CRS and CARE FFW projects on the following:
 - Food production and local economic development;
 - Community participation and development;
 - Material and social well-being of workers and their families both from participation in the project and from use of completed project assets;
 - The role of PL 480 commodities as an incentive in project formulation and implementation.

2. Survey Areas and Sample Projects

To answer these questions, a survey of 20 FFW projects was undertaken. Of this number, 10 were implemented by CARE and 10

were implemented by CRS. The sample projects for each of the two agencies consisted of one ongoing project and nine projects completed during the period 1978 to 1979. ^{1/}

Three areas on Luzon Island were selected as survey sites in consultation with USAID. These were Cavite/Laguna provinces in Central Luzon, the Bicol Region in Eastern Luzon, and the Ilocos Sur, Ilocos Norte and Pangasinan provinces in Northern Luzon. These areas were selected on the basis of the concentration and variety of both CRS and CARE projects that were undertaken in these locations.

In the selection of sample projects, the stratified random sampling approach was used. Completed projects were identified and randomly selected from project records in the Manila offices of CRS and CARE. Ongoing projects were identified and randomly selected from the records of the agencies' office in the locality. To the extent possible, varied types of projects for each year were chosen, ranked according to the frequency of their occurrence. The sample projects were subject to inspection by field interviewers to verify existence of the project and to determine the stage of completion.

3. Field Interviews and Selection of Respondents

Data for the evaluation of the sample FFW projects were developed through personal interviews of ten different respondents from the community for each sample project or a total of 200 respondents for the 20 sample projects. These interviews were conducted from April 13, 1981 through April 27, 1981. Four sets of structured questionnaires were used for each group of respondents except the barangay and technical agency official, for which only one set was used.

C. ANALYSIS AND RESULTS

1. Beneficiaries

The majority of direct beneficiaries of Food for Work projects who received food in exchange for labor are at the lowest economic level in their communities. Despite their poverty, however, recipients were not destitute. Seventy-five percent owned radios and 54 percent had electricity in their homes.

^{1/} A summary of the accomplishments of each project is presented in Appendix VI.

2. Impact on Community Participation and Development

Survey findings on two indicators--percentage of recipients and non-recipients benefitting and additional projects mobilized after completion of the FFW projects--suggest that FFW projects have had a favorable overall impact on community development. Of all 130 recipients (N=91) and non-recipients (N=39) of FFW commodities, all of whom constituted the lowest economic level in their communities, 98 or 75 percent believed that they and their families benefitted from the FFW projects. The roads, canals and building construction projects were perceived as providing the most benefits to the community. The major benefits cited from the road projects were the facilitation of transportation to town, market, school, water sources or upland farms. Although limited because the projects were not completed, the major benefits of the irrigation systems were flood control during the rainy season and an increase in the harvest. Benefits derived from the dike and canal construction and repair projects were prevention of flooding and soil erosion. The building construction projects also provided benefits. The barangay hall provided the community a convenient and adequate place for meetings. The repaired day care centers and school house are now being used for pre-school education and vocational training. The health center serves as a permanent center for the community's medical needs.

On the whole the FFW projects were also deemed equally beneficial to all or most households rather than a select few in the barangay. However, the effectiveness of three projects (all CRS-assisted), specifically, an irrigation project, communal vegetable gardening and potable water installation were seriously hampered by technical deficiencies in construction and as a result benefits were short-lived or non-existent. In addition, it should be noted that while only 20 percent of recipients felt that they and their family did not receive benefits from the FFW projects, 36 percent of non-recipients believed that they and their family failed to benefit from the projects.

A second indicator which suggests that overall the FFW projects have had some positive influence on community development is the number and type of additional projects generated upon completion of the Food for Work projects. Interviews suggested that a total of 17 additional projects were generated by the 20 FFW projects surveyed. These projects include feeder road construction, construction of a communal fishpond, construction of health and community centers, communal vegetable and flower gardens. Thus, it appears that FFW projects are perceived as beneficial to the community, that the benefits are equitably distributed, and that they may have played a role in the

generation of additional projects thus promoting community development.

3. Impact on Material and Social Well-Being

While communities benefit from FFW projects, the impact on individual household income appears to be marginal. The data collected indicate that the commodities are consumed by the recipients rather than given or thrown away, suggesting some income transfer effect. The majority of recipients of both bulgur wheat and CSM indicated the numerous ways in which these commodities were prepared for home consumption. Moreover, reactions to these commodities were, for the most part, favorable.

However, taking into consideration the occasional nature of the work, the few man-days worked per project, and the small amount of food commodities provided to the family, the income effect is marginal and irregular. The data collected indicate that in many instances the workers interviewed received less than five pounds of bulgur or CSM as compensation for their participation for the entire duration of the project and on the average between five and ten pounds. In addition recipients generally worked less than five days on an entire project, occasionally from six to twenty days. Only rarely did recipients work more than 30 days. In FY 79-80, CARE distributed on the average 5 pounds of commodities to recipient households.

Thus, while these amounts of commodities might provide a measureable income transfer effect to those who are truly destitute, under circumstances such as these in which the majority of recipients are able to afford radios and electricity, the income transfer effect is, in all likelihood, slight. Communities as a whole may benefit from the completed projects, but individual households do not appear to receive commodities sufficient to provide a significant supplement to their income.

4. Food Production

The sample projects surveyed do not suggest that the FFW program is resulting in a direct and positive impact on food production. However, the completed projects may contribute indirectly to increased food production by facilitating the transport of produce to market. Of the 18 terminated projects, only 3 related directly to food production--2 communal gardening projects and 1 irrigation project. Of these three, only one was successful--a communal vegetable garden project which required participants to clear land in front of their homes for vegetable growing. The other gardening project and the irrigation project were unsuccessful. The failure of the irrigation project was due to the high cost of operating the pump and the limited

supply of water. Despite the apparent absence of a direct contribution to food production, the 4 roads projects and the two canal projects may have contributed indirectly to food production by facilitating the transport of produce to market and through flood control.

5. Project Completion Rate

Of the 18 terminated projects surveyed, 12 had been fully completed and 6 had been left in an unfinished or unsatisfactory state. Many of the projects lacked technical expertise at the design or implementation stage; others lacked materials sufficient to complete the project. Food production projects, more technically demanding than many construction and repair projects, had the highest rate of failure.

6. Food Commodities as an Incentive for Project Implementation and Community Participation

The data gathered do not suggest that Title II food commodities provide an incentive for the mobilization and execution of community development projects. Interviews indicate that while project proponents believe the food commodities may be helpful in obtaining workers' cooperation in completing the projects once they are underway, nineteen out of twenty proponents would have pursued the preparation of the project proposal even in the absence of the commodities. Survey findings indicate that 96 out of 100 recipients would continue working on FFW projects even in the absence of the provision of food commodities. These findings, consistent with the findings of the 1973 evaluation of FFW, do not suggest that Title II commodities play a critical role in mobilizing community initiative and participation.

D. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The FFW program is designed to generate income and employment for the poor and to contribute to overall community development through the provision of food commodities in exchange for labor on selected development projects. The FFW program is implemented by both CARE and CRS. The CRS program concentrates on food production and works through the administrative structure of the Catholic Church hierarchy. In CY 1980, CRS distributed a total of 873,100 pounds of commodities to 11,386 recipients. CARE implements its program through the administrative structure of the Ministry of Social Services and Development. In the past, the program's purpose was general disaster relief; more recently it has broadened its objectives to include local economic development. In FY 1978-1980, CARE distributed a total of 2,511,235 pounds to 79,237 recipients.

USAID/Philippines was particularly interested in whether the FFW program should be expanded, given the consistency between USAID's CDSS goals and the general objectives of the FFW program. The overall objectives of both are to increase income and employment among the poor. In this context, survey findings do not provide any evidence that warrant expansion or long-term maintenance of the program principally for two reasons: (1) the household income transfer effect appears to be minimal; and (2) employment generated is for very short time periods on an irregular basis. Despite the apparent success of FFW in executing some genuine economic or community development projects that are perceived by recipients and non-recipients alike to benefit equitably the community at large, the FFW program as presently implemented does not represent a viable long-term strategy in the Philippines for the sustained promotion of rural income and employment.

Recommendation: Although the general goals of the FFW program are consistent with the CDSS goals of USAID/Philippines -- to increase rural household income and employment--the Food for Work program does not represent the most effective and viable alternative for achieving these objectives. Because of competing demands for scarce resources for higher priority at-risk groups, the Food for Work program should be phased out and commodities allocated to it should be reprogrammed.

Part IX

COST ANALYSIS

A. PURPOSE

There are several levels of interest which ideally should be addressed in a cost-effectiveness analysis for this program. There is a need to consider the relative cost-effectiveness of the various programs: MCH, School Feeding, Day Care and FFW. There should also be consideration of the relative effectiveness of the implementing private voluntary agencies (CRS and CARE). Finally, there should be consideration of the cost-effectiveness of the various aspects of the program in the Philippines in comparison to programs in other Title II-assisted countries. This analysis should also be performed with respect to project outputs or purpose fulfillment. Since supplemental feeding is not the only means of achieving the nutritional purposes of the various programs, it would also be desirable to compare the relative cost effectiveness of alternative interventions such as immunization, nutrition education or sanitation. The FFW programs designed with employment or other non-nutritional objectives should be assessed accordingly.

Given the nature of the information and data available, this analysis will focus on the relative cost-effectiveness of the various components of the Philippines Title II program, and will analyze the results at the input level (food or calories) rather than outcome levels (nutritional improvement). Incompleteness, lack of temporal comparability and inconsistencies in the sample data generated for the outcome or beneficiary impact level analysis are of sufficient concern to make it highly doubtful that meaningful cost-effective analysis can be performed at the outcome level.

B. APPROACH

This analysis will cover the comparison of the costs per beneficiary, average costs to deliver food energy value as defined by an arbitrary chosen unit of 1000 calories, and will also compare the implicit costs to deliver food energy value to the targeted beneficiary population of children with second or third degree malnutrition. The time period reviewed is 1979-1981. For purposes of brevity the text will focus on 1981 while the tables present the data for 1979 and 1980. Since the total program costs also include some small amounts of locally purchased foods, calculations have also been made excluding these costs. Given the relatively small amount of locally procured food, these corrections are of small consequence in cost consideration and the text will discuss the cost-effectiveness including locally purchased foods. The tables cover the effects of excluding locally purchased foods from cost considerations.

C. ANALYSIS AND RESULTS

The estimates of cost per beneficiary (using total estimated costs) are presented in Table 27. ^{1/} The cost estimates include commodity costs, ocean freight, warehousing, inland freight, administrative costs of the government and private voluntary agencies, domestic food procurement, and other miscellaneous contributions. The usefulness of these data is limited, with the most obvious weaknesses being that they do not take into account the different amounts of food delivered in each program, the different purposes of each program or operational and implementation differences of CARE and CRS. The importance of these differences is indicated in Table 28 in which the caloric value delivered per beneficiary per year is shown to vary considerably from a low of 22,000 calories for CRS school feeding in 1979 to 410,000 for CRS food for work in 1980.

The costs per beneficiary in 1981 are lowest for the School Feeding programs at \$10.09 for CRS and \$12.55 for CARE. MCH program costs for 1981 are two to three times as large at \$22.86 for CRS and \$34.60 for CARE. The estimate for CRS Day Care is approximately equal to the 1980 estimate, but full cost information is not available for 1981. The Food for Work programs have the highest cost per capita at \$79.01 for CRS and \$136 for CARE. Table 29 presents computations of similar costs per beneficiary but subtracts out the costs of locally purchased foods in the various programs. This correction has a small effect on MCH, Day Care and School Feeding programs. Caution should be used in interpreting these results because of the lack of comparability at the input levels.

In order to approach a more uniform indicator of the project inputs, the PL 480 food inputs were converted to their food calorie value equivalents and then cost comparisons were constructed according to the average program costs based on an arbitrary standard unit of 1000 calories delivered in each of the programs. These results are presented in Table 30 based on total program costs and in Table 31 on total program costs excluding the costs of locally purchased foods. There are only small differences in the two tables; discussion will focus on Table 30 and 1981.

The MCH program exhibits the lowest cost per 1000 calories at 22 cents for CRS and 24 cents for CARE. (The cost of Day Care would be roughly equivalent although no estimate is available for 1981). The School Feeding programs had costs per 1000 calories, of 44 cents for CRS and 34 cents for CARE. The estimate for CRS is out of line with the estimates for earlier years and is probably an over-estimate

^{1/} The basic cost and beneficiary estimates were compiled by the Food for Peace Office of AID.

Table 27

Average Annual Total Program Costs Per Beneficiary

(U.S. Dollars)

<u>FY</u>	<u>MCH</u>		<u>Day Care</u>	<u>School Feeding</u>		<u>FFW</u>	
	<u>CRS</u>	<u>CARE</u>	<u>CRS</u>	<u>CRS</u>	<u>CARE</u>	<u>CRS</u>	<u>CARE</u>
1979	19.11	36.00	N.A.	3.80	9.29	53.47	137.90
1980	27.10	25.07	18.65	10.44	9.62	75.46	106.30
1981	22.86	34.60	N.A.	10.09	12.55	79.01	136.00

Table 28

Annual Allocations
1000 Calories Per Person, Per Year
 (Foods Converted to Calorie Value)

	<u>MCH</u>		<u>School Feeding</u>		<u>FFW</u>	
	<u>CRS</u>	<u>CARE</u>	<u>CRS</u>	<u>CARE</u>	<u>CRS</u>	<u>CARE</u>
1979	158	169	22	32	334	433
1980	188	122	37	33	410	341
1981	105	143	23	37	309	365

Table 29

Average Annual Total Program Costs Per Beneficiary
Excluding Local Food Purchases

(U.S. Dollars)

	<u>MCH</u>	<u>Day Care</u>	<u>School Feeding</u>	<u>FFW</u>
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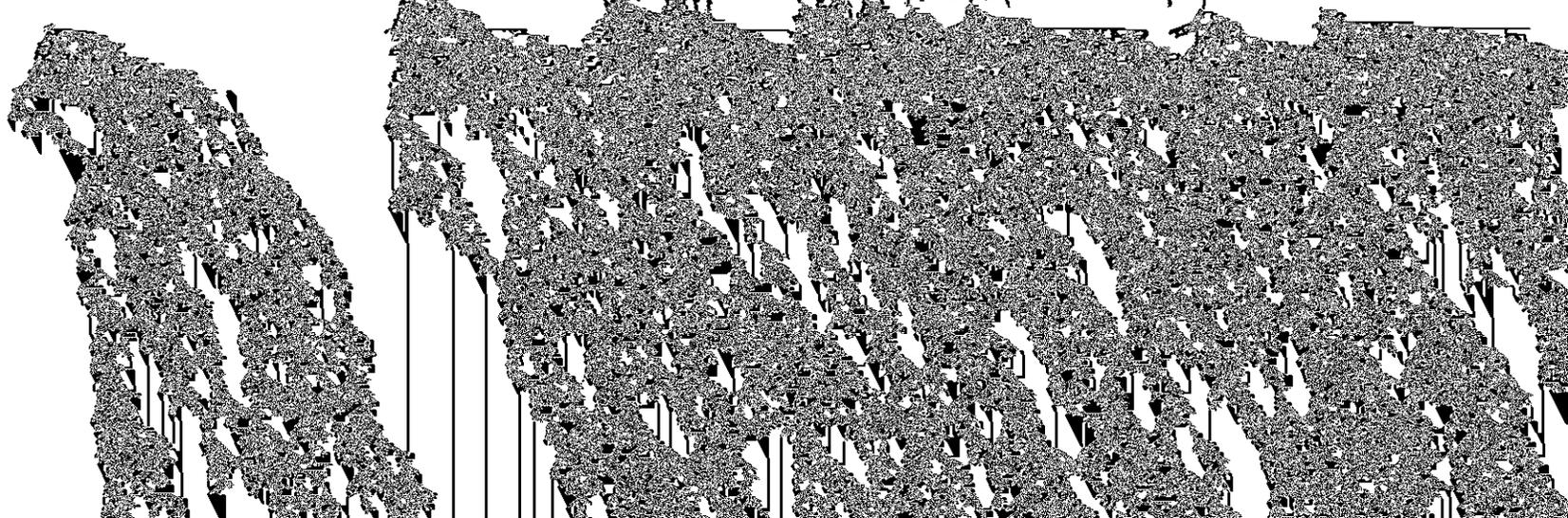


Table 30

Average Cost to Supply 1000 Calories of Food Value
 (Based on Total Program Costs)
 (U.S. Cents per 1000 Calories)

<u>FY</u>	<u>MCH</u>		<u>Day Care</u>	<u>School Feeding</u>		<u>FFW</u>	
	<u>CRS</u>	<u>CARE</u>	<u>CRS</u>	<u>CRS</u>	<u>CARE</u>	<u>CRS</u>	<u>CARE</u>
1979	12	21	N.A.	17	29	16	32
1980	14	20	19	28	29	18	31
1981	22	24	N.A.	44	34	26	37

Table 31

Average Cost to Supply 1000 Calories of Food Value
 (Excluding Local Purchased Foods)
 (U.S. Cents per 1000 Calories)

<u>FY</u>	<u>MCH</u>		<u>Day Care</u>	<u>School Feeding</u>		<u>FFW</u>	
	<u>CRS</u>	<u>CARE</u>	<u>CRS</u>	<u>CRS</u>	<u>CARE</u>	<u>CRS</u>	<u>CARE</u>
1979	12*	20	N.A.	17*	27	16*	32*
1980	14	19	18	28*	27,	18*	31*
1981	22	24	N.A.	44*	32	26*	37*

* No Locally Purchased Foods.
 NA: Not Available.

although at this time the cause has not been explained. The FFW programs' costs per 1000 calories are 26 cents for CRS and 37 cents for CARE. Since FFW has different objectives than the feeding programs, it is not clear what meaning should be given to these cost comparisons.

One interesting observation is that for all three years in all three programs (except School Feeding in 1981), CRS had lower unit costs than CARE. The most cost-effective program appears to be MCH, which is also the program that is targeted most intensively on the moderately and severely malnourished. Then on the basis of input cost-effectiveness there also appears to be greater efficiency in the CRS programs (acknowledging the exception of School Feeding in 1981).

The next step is to calculate the impact of targeting the program on moderately and severely malnourished beneficiaries--based on nutritional state of children in the various programs but not on the nutrition state of pregnant or nursing mothers in MCH. The methodology selected was to compare the costs of each program with the proportion of the target populations in each program that was moderately or severely malnourished (weight-for-age) at the beginning of the observation period. Table 32 presents the estimates of the moderately and severely malnourished in each program and Tables 33 and 34 present the revised estimates of cost per 1000 calories input weighted for targeting. The Day Care information is only available for 1980 but there is targeting information for urban (Manila) and rural programs.

D. CONCLUSIONS

The evidence indicates clearly that MCH is the most cost-effective program on the basis of this analysis. The costs per 1000 calories in the MCH program per targeted beneficiary were 28.6 cents for CRS and 25.3 cents for CARE. The CARE program is somewhat more cost-effective in 1981 but in 1979 and 1980 CRS had an edge. The CRS Day Care program had an average cost per 1000 calories of 48 cents. This average is not very helpful because the rural program is targeted at 57 percent and urban at only 13.6 percent. Accordingly the costs per 1000 calories in the urban program were 137.7 cents and 33.3 cents in the rural program (not much higher than for MCH). The School Feeding program is much less cost-effective on this basis. The School Feeding costs per 1000 calories were 191.3 cents for CRS and 96.6 cents for CARE.

Table 32

Targeting

Percent of Sample with 2nd and 3rd Degree Malnutrition

<u>MCH</u>		
CRS		77.0
CARE		95.0
<u>DAY CARE (CRS)</u>		
MSSD Sample		37.5
Urban		13.6
Rural		57.0
<u>SCHOOL FEEDING</u>		
CRS		23.0
CARE		35.2

Table 33

Implicit Average Cost to Supply 1000 Calories of Food
to Targeted Population (2nd and 3rd Degree Malnourished)
(U.S. Cents Based on Total Costs)

<u>FY</u>	<u>MCH</u>		<u>Day Care</u>			<u>School Feeding</u>	
	<u>CRS</u>	<u>CARE</u>	<u>Average</u>	<u>Urban</u>	<u>Rural</u>	<u>CRS</u>	<u>CARE</u>
1979	15.6	22.1	N.A.	N.A.	N.A.	73.9	82.4
1980	18.2	21.1	50.7	139.7	33.3	121.7	82.4
1981	28.6	25.3	N.A.	N.A.	N.A.	191.3	96.6

Table 34

Implicit Average Cost to Supply 1000 Calories of Food
to Targeted Population (2nd and 3rd Degree Malnourished)
(U.S. Cents Based on Program Costs Minus Non PL 480 Foods Supplied)

<u>FY</u>	<u>MCH</u>		<u>Day Care</u>			<u>School Feeding</u>	
	<u>CRS</u>	<u>CARE</u>	<u>Average</u>	<u>Urban</u>	<u>Rural</u>	<u>CRS</u>	<u>CARE</u>
1979	15.6	22.1	N.A.	N.A.	N.A.	73.9	76.7
1980	18.2	20.0	48.0	132.4	31.6	121.7	76.7
1981	28.6	25.3	N.A.	N.A.	N.A.	191.3	90.9

Part X

SNACK FOOD PROGRAM

A. BACKGROUND

It is generally agreed among most observers that in the Philippines there are available an unusual number of snack or "junk" foods. The local markets and school canteens are laden with sugar-heavy or starchy snacks and the taking of snacks has become a habit among Filipinos. But most of these snacks have a low nutrient content. In order, therefore, to improve the nutrient level of the snack foods available in the school canteens, CRS has developed an easy-to-prepare extruded snack food composed of soy-fortified cereal with seasoning and flavoring. The project has the endorsement of the National Nutrition Council of the Philippines. The objectives of the program are:

1. to promote consumption of a nutritious snack food, competitive with less nutritious commercial "junk" foods, made available through the school canteens;
2. to promote nutrition consciousness among school children, school officials and canteen operators;
3. to motivate commercial snack food processors into making available on the market a more nutritious snack food and;
4. to use proceeds of the program to defray its administrative costs as well as to eventually subsidize the main TMCH program which caters to malnourished pre-school children.

With the endorsement of the project by USAID, the concurrence of the National Nutrition Council, and the availability of Title II soy-fortified sorghum grits for conversion into the snack food known as "Puppets", CRS entered into an agreement with Leslie Corporation to produce the product. In addition, CRS also committed P150,000, about U.S. \$20,000, in launching this new product. This financial commitment represents, for example, an advance made to the processor for packaging, flavoring and fortifications, promotional costs through the use of puppetry, transport costs, salaries and fringe benefits.

B. PRODUCT DESCRIPTION

The extruded snack food is made almost entirely from soy-fortified cereals with some small amounts of seasoning and flavoring. The quantity of Title II food being provided to support this pilot

program is minimal in comparison to other programs. In 1981, for example, because of budget constraints only 63.5 metric tons of soy-fortified sorghum grits was approved. This represents less than 1 percent of the total tonnage of the CRS/Philippines program.

C. POTENTIAL SALES PROCEEDS

CRS has not accrued sufficient sales proceeds to recover its initial investment and start-up costs. Nevertheless, CRS maintains that the Snack Food program has the potential to generate a large amount of proceeds which could be put to useful purposes either in providing funds to purchase essential equipment for the TMCH, such as weighing scales and cooking utensils, or for nutrition education activities which would reduce the need to provide large quantities of PL 480 Title II commodities from abroad.

D. CONCLUSIONS

CRS maintains that the Snack Food program can achieve the following results:

1. The "Puppet" snack food can provide at low cost up to 9.5 percent of the recommended daily allowances of protein for a 7 year old school child.
2. The use of puppetry, posters and other related materials can promote nutritional awareness among school children.
3. The use of fortification and nutritional labeling in this project could be a first step in encouraging other local commercial producers of snack food items to undertake similar initiatives.
4. The project could generate sufficient sales proceeds to cover administrative costs and provide some additional funds which could be put to useful purposes in other program areas.

Despite the possible achievement of the foregoing objectives, the evaluation team has serious misgivings about providing commodities for the Snack Food program. Title II commodities are to be used to alleviate malnutrition in a developmentally-oriented strategy consistent with the Mission's broader CDSS objectives. The snack food program, however, is: (1) aimed only at middle and upper income children who can afford to purchase the food; (2) aimed at school children, a group correctly identified by the GOP as a lower priority; and (3) not designed directly to alleviate malnutrition among moderately and severely malnourished children.

Recommendation: In view of declining resources, Title II commodities should not be provided to the Snack Food program. For immediate programmatic purposes, the program should be accorded last priority.

Part XI

FLUCTUATING COMMODITY LEVELS

More than once in the course of this evaluation, the directors of the voluntary agencies complained to the team of problems arising from yo-yoing levels of available commodities which result in "on-again/off-again" program planning. Each director cited instances in which, on the basis of approved quantities of commodities, plans were made in conjunction with host government agencies to service a given number of beneficiaries, only to be told later that a change would have to be made in the amount of foodstuffs which could be obtained. Sometimes, the result of such change might be only some embarrassment in going back to host government officials to renege on plans to start a new project or expand an existing one. Sometimes, it meant significant cutbacks in staff, on the one hand, or, in the case of a sudden expansion of available commodities, the frustration of trying to service more beneficiaries with insufficient staff. In either case, a certain amount of turmoil and consequent inefficient use of resources was the outcome. Moreover, as the Director of CARE put it, "When commitments cannot be met, those involved lose enthusiasm and interest, and the credibility of the PVO and USAID suffers. Is it any wonder that one, including the host government, becomes cynical after a few years of this type of programming?"

The Director of CRS pointed out to the team that 2 months into FY 1981 they were informed that rations for one of their MCH programs would be cut by 19 percent for the year. CRS's options were either to supply much smaller rations to the same participants for the balance of the year or to maintain the same ration size and abruptly cut that number of participants out of the program. For various reasons, CRS decided that the least odious course was to combine those two options and reduce both ration size and number of participants. A corollary to any decline in the number of participants is a reduction in the number of trained parish nutrition aides who can be supported by the system. Once these people are lost, any subsequent loosening of commodity supplies entails training of new aides and suffering a certain amount of less-effective supervision at the field level while these new people gain experience.

Both voluntary agency directors were able to make convincing arguments for the benefits of a planning cycle longer than one year. Both the team and the voluntary agencies are aware of the difficulty the Office of Food for Peace would have in running against either the stream of the U.S. Government's 1-year budgeting cycle or the vagaries of the annual harvest, much less both simultaneously, but since in many years it appears that budget is a greater constraint than commodity availability, it would appear that OFFP might serve the program well by examining--or re-examining--the possibility of obtaining longer funding commitments which it could then pass on to the voluntary agencies.

Part XII

LESSONS LEARNED

A. IMMEDIATE VS. LONG-TERM EFFECTS OF SUPPLEMENTARY FEEDING

By investing a major share of nutrition resources in supplementary feeding programs, AID may not be contributing to maximum long-term impact on malnutrition or on malnutrition among the poorest households. A recent study ^{1/} of alternative nutrition interventions in the Philippines indicated that supplementary feeding had substantial immediate effects during the intervention period, but that these effects diminished sharply when the food was no longer given. These findings are consistent with the limited data collected by the team on the long-term effects of the MCH program. Supplementary feeding, according to the study, did not demonstrate the more lasting effects of the immunization or sanitation interventions. Also, it had a lower effect on lower socioeconomic households and greater effect on higher socioeconomic households, where the food was not needed as badly and was truly used as a supplement. These findings suggest the need for more comprehensive assessments of the long-term impact of the supplementary feeding programs AID is currently investing in.

B. INCREASED INVOLVEMENT OF NUTRITION PLANNERS AND NUTRITIONISTS IN THE TITLE II PROGRAM

The experience of this evaluation suggests that those programs (e.g., Day Care) which were designed, supervised and subsequently implemented at the grass roots level by individuals who had some nutrition background have greater effects than other programs (e.g., School Feeding) in which nutritionists, while not wholly absent, were less intensively involved in all phases of the operation, especially at the grass roots. In addition, many of the achievements of the Title II program in the Philippines can be attributed to the more than decade-long and intense involvement in the program of a long-term resident nutrition advisor. Both experiences--the long-term involvement of a dedicated nutritionist in broader program decision-making and the involvement of nutritionists in the planning and design and community-level implementation of the programs--suggest the need for increased and continuing involvement of nutritionists and nutrition planners in all aspects and at all levels of decision-making concerning Title II resources in both AID/W and field missions.

1/ Alternative Nutrition/Health Intervention Effects and Cost-Effectiveness, Contract AID/ASIA, C-1136 Philippines, Jesse C. Arnold and R. W. Engel, December, 1980.

C. THE FAMILY AS A UNIT FOR TARGETING IN NUTRITION INTERVENTION

The experience of this evaluation suggests that those programs (e.g., Day Care and MCH) which are designed to act as change agents to the family as a whole, rather than primarily as change-agents to the malnourished child (e.g., School Feeding), will have a greater likelihood for both immediate and longer-term impact and are not necessarily more expensive. Such programs have the potential to modify an entire family's food consumption habits. For example, of great interest in the future will be the impact of the newly mobilized component of the Day Care program which provides credit to participating families for at-home food production and food processing projects. In emphasizing the importance of the family as a unit for the targeting of Title II programs, there is an implicit recognition of the overriding importance of socioeconomic variables in determining nutrition status. Indeed, another major finding of the study cited above was that "none of the interventions show an impact as great as several of the socioeconomic variables considered in the analysis." The most important variables in determining a child's nutrition status, according to this study, were mother's education, household income, and father's education, in that order. The importance of mother's education and household income in combating malnutrition involve program and policy implications well beyond those directed more immediately to the Title II program.

APPENDIX I

GLOSSARY

Barangay	Village or neighborhood
BNS	Barangay Nutrition Scholars
CARE	Cooperative for American Relief Everywhere, Inc.
CRS	Catholic Relief Services
(Previous Page Blank	Corn soya milk--a fortified and blended food provided through the Title II program
FFW	Food for Work
MCH	Maternal and Child Health Program
MEC	Ministry of Education and Culture
MOH	Ministry of Health
MSSD	Ministry of Social Services and Development
NEDA	National Economic Development Authority
NFDM	Non-fat-dry-milk
OPT	Operation Timbang
RDA	Recommended Daily Allowance
RHU	Rural Health Unit (Ministry of Health)
TFA	Targeted Food Assistance
TMCH	Targeted Maternal and Child Health

APPENDIX II

EVALUATION APPROACH AND METHODOLOGY

The early planning for this evaluation began in the summer of 1980 and the subsequent evaluation field work was undertaken in two phases. Phase I lasting two, weeks began in November 1980. For this phase, Dr. Stewart [redacted] preliminary trip to the Philippines to consult with the [redacted] Previous Page Blank staff, the staff of the two voluntary agencies involved [redacted] officials of the several Philippine ministries and agencies who would be cooperating in the evaluation. A second purpose of this phase was to observe some typical field activities and to determine the nature of the data which already were available or could be developed in the short time the evaluation team would have in the field. During this phase, arrangements were made with the Asia Research Organization (a private Filipino consulting firm) to extract data from records of the cooperating Filipino agencies. On the basis of this trip, it was determined that, in contrast to the situation which existed in a number of other countries in which there are Title II programs, the Philippines offered a chance to move beyond the usual process-oriented evaluation and evaluate program outcome, which we defined for this purpose as change in nutrition status as measured by weight-for-age. (There was no possibility of gathering data for other anthropometric or clinical metrics.)

Originally, the team was to have included four people from AID/Washington. Unfortunately, at the last minute one was detailed to another assignment. Thus, in January 1981, a team of three proceeded to Manila for the Phase II fieldwork, to be joined by one person from USAID/Manila and one from the National Nutrition Council of the Philippines. These five, whose names appear on the front of this document, comprised the core evaluation team.

Following initial orientations and meetings with officials and staff of all of the agencies concerned and making arrangements for field site visits, the team spent three weeks gathering data and information. Findings and conclusions are based upon site visits, interviews, and analyses of the following sets of primary weight-for-age data collected and analyzed by the team for each separate program:

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- (1) Maternal and Child Health
 - (a) a sample of 100 participants collected by the team during site visits in Isabela, Ifugao, and North Leyte provinces;
 - (b) a sub-sample of 238 participants drawn from a larger CRS random sample of 28,000 participants.
- (2) Day Care
 - (a) a sample of 477 participants and 221 non-participants collected by the team during site visits in Manila, Tarlac and Pampanga provinces.
- (3) School Feeding
 - (a) a sample of 323 participants and 47 non-participants collected by the team during site visits in Ilocos Sur, the Bicol and Manila;
 - (b) a sample of 226 participants and 172 non-participants extracted from a Ministry of Education and Culture (MEC) study of 21,000 school children in the school year 1979/80.

Three weeks were spent in the Phase II data gathering effort.

It had been agreed that the evaluation team had its hands more than full in trying, in the few weeks available, to document the impact of Maternal and Child Health, Day Care, and School Feeding programs operated by two voluntary agencies. Therefore, evaluation of the Food for Work component of these programs was contracted to Sycip, Gorres, Velays and Company (SGV), a Filipino consulting firm. The guidance of Dr. Peter Thormann (AID/W), on TDY in Manila, was invaluable in establishing the scope of work for SGV in this effort. A field survey of 20 projects and 200 interviews were conducted. A summary and analysis of the data collected by SGV is contained in the evaluation report.

In early February the three Washington-based team members departed Manila. By the end of April, the data had been analyzed and a draft of the sections on MCH, Day Care, and School Feeding were made available to AID, the voluntary agencies and ministries for comment. Once these comments were received, additional data analyses were performed and some re-thinking done on the interpretation of data in light of some of the comments. A penultimate draft was ready in July for perusal by all concerned parties. All final comments were received from USAID/Philippines by October and in December this final version was completed.

APPENDIX III
PERSONS INTERVIEWED

CARE

Mr. H. Richards, Director
Mr. D. Neff, Assistant Director
Ms. A. Pineda
Mr. F. Antipolo
Mrs. R. Fontamillas
Dr. A. Tandez
Mr. E. Mella
Mr. J. DeDios
Mrs. Estanol
Mr. F. Aquende

CRS

Mr. T. Kirch, Director (former)
Mr. F. Carlin, Director (present)
Mrs. G. Boren
Ms. J. Baclig
Mrs. L. Soria
Miss C. Sabulas

National Nutrition Council

Dr. F. Solon, Executive Director
Mrs. D. Aguillon, Deputy Executive Director
Mrs. S. de Leon
Mrs. B. de los Santos
Mrs. E.F. Pamitan
Dr. R. Briones

Ministry of Education and Culture

Ms. Silvina Laya, Director of School Health
Dr. L. Alfiler
Dr. M. Ayllon
Dr. F. Bolinao
Mr. A. Manuel
Mrs. D. Rubio

Mrs. L. Abejo
Mrs. P. Ramos
Mrs. C. Bulayingan
Mr. L. Cruz
Mrs. R. Rondares
Mrs. R. Alcid
Dr. Montero
Mrs. A. Relcopiro
Miss N. Rodiris
Mrs. G. Mata
Mr. J. Rosales
Miss T. Regricira
Mr. O. Barba
Mr. R. Balderama
Ms. E. Lim
Mr. S. Tabaco
Mrs. V. Madrova
Mrs. Guillane
Mr. R. Habal

Ministry of Health

Dr. T. Gomez, Director, National Nutrition Service
Dr. A. Lopez
Dr. J. Madilla
Dr. D. Lim
Dr. M. Corocoro
Mrs. R. Paquirigan
Mrs. R. Sanchez
Miss E. Bernardo
Miss V. de la Cruz
Mrs. A. Cabal
Dr. A. Lopez (Ifugao)
Miss E. Bochini
Miss C. Pumihic
Dr. P. Escaye
Mrs. E. Gonzales
Mrs. M. Ramos

Ministry of Social Services and Development

Mrs. S. Montes, Acting Minister

Mrs. M. Llanes
Mrs. L. Moises
Mrs. A. Rivamonte
Miss P. Bravo

Clergy/Diocese Staff

Bishop C. Nugel
Fr. B. Bacierra
Fr. S. Florencio
Fr. J. Penananda
Mrs. R. Belar
Miss B. Pastor
Miss T. Casilan
Mrs. M. Farmillos
Mrs. M. Donato

USAID/Philippines

Mr. A. Schwarzwald, Director
Mr. D. Barrett, Deputy Director
Mr. W. Carter, FFP Officer
Mr. R. Delgado
Mr. E. Ploch
Mr. T. Mahoney
Mr. R. Potocki
Dr. S. Sinding

AID/W

Mr. R. Halligan
Mr. C. Johnson
Dr. B. Pillsbury
Mrs. J. Gilmore
Dr. C. Adelman

Office of Food for Peace (Washington)

Ms. P. Sheehan
Mr. R. Sears
Ms. C. Weiskirch

Others

Dr. R. Engel (former Nutrition Advisor, USAID/P)
Hon. O. Lingco, Mayor, Tacloban City
Dr. H. Quintero, Tacloban City Health Officer
Dr. L. Antonio, Marikina Municipal Action Officer
Mrs. P. Candenias, Marikina District Nutrition Coordinator
Mrs. S. Macopagol, Marikina BNS
Dr. Aguilar, Mayor, Las Pinas City
Mrs. R. Fortuno, BNS
Dr. C. Villamosa, Quezon City Action Officer
Miss M. Savin, Q.C. Nutrition Coordinator
Mrs. G. Tomayo, Malabon Municipal Action Officer
Mrs. C. Vilesco, Malabon Nutrition Coordinator
Mrs. C. Rabong

APPENDIX IV

EVALUATION OF PL 480 TITLE II IN THE REPUBLIC OF THE PHILIPPINES

JANUARY-FEBRUARY 1981

SCOPE OF WORK

I. Purposes of the Evaluation

- A. To assess the impact of the Title II program on beneficiaries;
- B. To compare actual impact with stated (and implied) goals and objectives for Title II of participating GOP, U.S., and PVO agencies and organizations;
- C. To determine cost-effectiveness of individual components of the Title II program; and
- D. To elucidate relationships between program factors, external factors, and program outcome in order to identify program modifications likely to enhance the impact of the Title II program. It is expected that the information gained in this evaluation will:
 1. permit U.S. and Philippine government agencies to maximize the effectiveness of the Title II program within the context of the overall nutrition program plan for the Philippines, and
 2. provide lessons learned which could be of use to improve Title II programs in other countries.

II. Scope of the Evaluation

The components of the PL 480 Title II program which will be studied in depth are Maternal and Child Health, School Feeding, Day Care, and Food for Work. Together, these constitute 98.4 percent of all beneficiaries of the Title II program. As resources permit, Other Child Feeding and the Snack Food Program also will be examined.

III. Approach to the Evaluation

While considering in detail the implementation process, this evaluation will emphasize the assessment of outcome and its determinants. (As implied in the statement of purpose, among major determinants of outcome are factors associated with program operations.) The evaluation team will comprise:

A. From AID/W

1. A nutrition intervention evaluation specialist (S. Blumenfeld)
2. An Asia Bureau program analyst (M. Norton)
3. A Food for Peace operations specialist (R. Pooley)
4. A labor economist (part-time, P. Thormann)

B. From USAID/P:

1. A program officer (E. Ploch)
2. A nutrition planner (M. Mack)

C. From the National Nutrition Council of the Philippines:

1. A nutritionist (B. Flores)

D. A Filipino economist (to be selected)

The team will work closely with the directors and staff of the two PVOs--CARE and CRS--concerned with the field implementation of the Title II program in the Philippines. Although not directly members of the evaluation team, CARE and CRS staff will be apprised of the progress of the evaluation on a continuous basis, and will be consulted regularly in order to elicit timely comments and input during the course of the evaluation. They will, of course, be requested to help with appropriate arrangements for visits to the field and to provide necessary data already in their files. (While the evaluation team desires maximum interaction with CARE and CRS staff, interference with program operations will be kept to a practical minimum.) The evaluation team also will work closely with the Ministry of Health, the Ministry of Education and Culture, the Ministry of Social Services and Development, the National Nutrition Council, and the Food and Nutrition Research Institute; each of these agencies will have a direct interest in the results of this evaluation, has technical expertise in one or more of its aspects, and has data in its files vital to its successful accomplishment. The data to be used in the evaluation consist of data sets already in the central files of the aforementioned organizations, some of which already have been analyzed, records maintained in the field, i.e., locally at schools and various service units, and, as necessary, new data to be generated in the field with the guidance of members of the evaluation team. Some of these data will be collected and collated by a Philippine contractor.

IV. Time Frame of the Evaluation

The evaluation will take place in three phases.

Phase 1: November, 1980. The team leader will be in Manila for approximately two weeks for the purpose of:

- (a) acquainting USAID/P, the PVOs and the Philippine agencies with the purpose and approach of the evaluation;
- (b) examining the types of data which will be available; and
- (c) helping USAID/P select a Philippine contractor and briefing the contractor on the details and timing of the data to be collected in advance of the second phase. In the period between Phases 1 and 2 (roughly mid-November to early January), the contractor will collect various reports and data for use by the evaluation team in Phase 2.

Phase 2: Approximately January 6 - February 5, 1981. The AID/W team members will be in Manila and the entire evaluation team will work on data and other information collected and collated by the local contractor, will collect additional data in the field as necessary, and will proceed with data analysis and interpretation. Prior to the departure of the TDY team from Manila (o/a February 5), the entire evaluation team will meet with senior mission, PVO, and Filipino agencies staff to discuss results to date and preliminary findings of the evaluation.

Phase 3: February - May, 1981. The AID/W staff, working in Washington, will complete the data analysis (especially those parts requiring computer-assisted statistical techniques) and draft the report of the evaluation, coordinating during the process to the maximum feasible extent with the Manila-based members of the team. It is expected that the final report will be finished in May.

V. Content of the Evaluation

A. Description of Philippine Nutrition Situation and Context

1. Demographics

Age/sex profile. Geographic distribution. Urban/rural. Economic, occupational characterization.

2. Foodstuffs availability

National production levels. Exports, imports. Staple commodities prices, price changes relative to disaggregated per capita income. Geographic differentials. Trends.

3. Nutrition levels and trends

By age, income, geography, education. Deficiency diseases (xerophthalmia, anemia, goiter).

4. Determinants of malnutrition in the Philippines

Inadequate resources (food, money, land, water). Improper use of available resources (inappropriate food purchases, inappropriate intra-household distribution). Degraded bio-utilization (specific illnesses). Continuity/intermittency of malnutrition.

B. GOP Food and Nutrition Policy and Programs

1. Policy re food production

Investment priorities for consumption versus export. Imported edibles--cost, food value.

2. Overview of food distribution network

Private commercial, private voluntary, government.

3. General price policy re foodstuffs

4. Recognition of, and provision for, demonstrably vulnerable segments of the population

Surveillance, remediation programs.

5. Summary of proposed National Food and Nutrition Plan

C. Title II Rationale

1. Stated goals and objectives of Title II program. GOP, USAID

2. Unstated goals and objectives, if any

3. Comparison with GOP policy re food and nutrition

4. Comparison with U.S.G. and USAID policy re food

D. Implementation of Title II

1. Relationship between cooperating parties
USDA, USAID, GOP agencies, CARE, CRS

2. Generalized logistical chain
CARE, CRS

3. Types of projects in which Title II foodstuffs are used
CARE projects, CRS projects

E. Evaluation of Individual Project Components

1. Targeted Maternal and Child Health (CARE and CRS)

- a. program objectives (CARE: malwards, peds wards, OB wards, RHU; CRS: dioceses-based centers)
- b. mode of implementation (staff, logistics, program elements (nutr. educ., suppl. feeding, health ed.)
- c. participants (selection criteria, at-risk population, SE characteristics)
- d. process analysis (inputs, costs)
- e. outcome assessment and causal analysis (nutrition status, input/output relationships, effect of exogenous factors, cost analysis)
- f. special issues (disposition of non-target-consumed foodstuffs; move toward independence from donated food; increased use of health services; breastfeeding)

2. School Feeding (CARE and CRS)

- a. program objectives (nutritional, educational)
- b. implementation (staff, logistics, program elements)
- c. participants (selection criteria and methods, at-risk population, SE characteristics)
- d. process analysis (inputs, costs, educative factors)
- e. outcome assessment and casual analysis (educational, nutrition, health outcomes; effect of exogenous factors; costs analysis; input/output relationships)
- f. special issues (dependency)

3. Day Care Center Supplementary Feeding (CRS)

- a. program objectives
- b. implementation (staff, logistics, procedure)
- c. participants (selection criteria and methods, SE characteristics, at-risk population)
- d. process analysis (inputs, costs, exogenous factors)
- e. outcome assessment and causal analysis (nutrition status, nutrition KAP, input/output relationships, effect of exogenous variables)
- f. special issues (economic role of women)

4. Food for Work (CARE and CRS)

- a. program objectives (economic, physical infrastructure development, nutritional)
- b. implementation (project selection criteria, staff, logistics)
- c. participants (numbers, selection criteria and methods, at-risk population, SE and demographic characteristics)
- d. process analysis (foodstuffs and other inputs, planning/operational control factors, costs)
- e. outcome assessment and causal analysis (calorie/protein contribution, economic contribution, nutrition promotion value of projects, other developmental contributions, cost analysis)
- f. special issues (economic role of women)

F. Summary and Conclusions with Regard to Impact of Title II

1. Cost-effectiveness of each component (MCH, SF, Day Care, FFW)
1. Non-costable--for this exercise--benefits (promotion of family stability, decreased morbidity-days, promotion of breastfeeding, improved school grades, promotion of civil stability)

G. Recommendations with Regard to Possible Changes in Program

1. Planning
2. Implementation
3. Management control
4. Evaluation

Appendix V

RESULTS OF ANALYSES OF RURAL DAY CARE CENTERS AND NON-DAY CARE CENTER BARANGAYS

	Imp.	% Change Decl.	No Change	Average Change ^{1/} in Nutrition Level ^{2/}		Wilcoxon Signed Rank Test	% Distribution of Nutrition Levels ^{2/}				
				Ave. Imp.	Ave. Decl.		Norm.	Mild	Mod.	Sev.	
Baraca Day Care Center N=48	72.9	12.5	14.6	0.69	0.75	Stat. Signif. Imp., p < .01	Jan. 80 Dec. 80	0 0	4.2 14.6	79.2 79.2	16.6 6.2
Barangay San Nicolas N=47	14.3	23.4	62.3	0.79	0.55	Not Signif.	Jan. 80 Dec. 80	2.1 0	10.5 10.6	42.4 42.6	44.7 46.8
Suizo Day Care Center N=41	92.7	0	7.3	0.79	0	Stat. Signif. Imp., p < .001	Jan. 80 Dec. 80	2.4 19.5	56.1 75.6	41.5 4.9	0 0
Barangay Sto. Cristo N=49	8.2	57.1	34.7	0.62	0.57	Stat. Signif. Decl., p < .001	Jan. 80 Dec. 80	0 0	2.0 0	53.1 36.7	44.9 63.3
San Jose I Day Care Center N=28	35.7	7.2	57.1	1.00	1.00	Stat. Signif. Imp., p < .05	Jan. 80 Dec. 80	3.7 0	42.8 57.1	53.5 42.8	0 0
Barangay Cafe N=45	2.2	37.8	60.0	0.60	0.24	Not Signif.	Mar. 80 Jan. 81	4.4 0	42.2 40.0	44.4 51.1	8.9 8.9
San Jose II Day Care Center N=29	44.8	3.4	51.8	1.46	2.00	Stat. Signif. Imp., p < .01	June 80 Dec. 80	0 3.4	44.8 55.2	48.3 31.0	6.9 10.3
Barangay Pitabuwan N=51	33.3	27.5	39.2	0.71	0.82	Not Signif.	Jan. 80 Dec. 80	2.0 0	13.7 15.7	35.3 41.2	49.0 43.1

RESULTS OF ANALYSES OF RURAL DAY CARE CENTERS AND NON-DAY CARE CENTER BARANGAYS (continued)

	Imp.	% Change Decl.	No Change	Average Change ^{1/} in Nutrition Level ^{1/}		Wilcoxon Signed Rank Test	% Distribution of Nutrition Levels ^{2/}				
				Ave. Imp.	Ave. Dec.		Norm.	Mild	Mod.	Sev.	
Daisy Hill Day Care Center, Morning. N=46	67.3	6.5	26.2	1.67	1.0	Stat. Signif. Imp., p < .001	July 80 Jan. 81	6.5 6.5	36.9 63.3	54.3 30.4	2.1 0
Daisy Hill Day Care Center, P.M. N=46	50.9	17.6	31.3	1.85	1.99	Stat. Signif. Imp., p < .05	Aug. 80 Dec. 80	11.7 3.0	43.1 58.8	43.1 38.0	1.0 0.0
Daisy Hill II Day Care Center, Morning. N=15	60.0	0	40.0	1.11	0	Stat. Signif. Imp., p < .001	June 80 Dec. 80	0 0	33.3 60.0	66.7 40.0	0 0
Daisy Hill II Day Care Center, P.M. N=15	66.7	20.0	13.3	1.80	2.00	Not Signif.	June 80 Dec. 80	0 6.7	40.0 66.7	60.0 26.7	0 0
Barangay Arangunan N=29	6.8	27.5	65.5	1.00	2.00	Not Signif.	Jan. 80 Oct. 80	48.2 31.3	17.2 27.5	13.7 20.6	20.6 20.6

^{1/}Per 6 months. Based on 1-10 scale used in Philippines.

^{2/}Normal: Level 1
Mild: Levels 2-4
Moderate: Levels 5-7
Severe: Levels 8-10

RESULTS OF ANALYSES OF MANILA DAY CARE CENTERS

	Imp.	% Change Decl.	No Change	Average Change ^{1/} in Nutrition Level		Wilcoxon Signed Rank Test	% Distribution of Nutrition Levels ^{2/}				
				Ave. Imp.	Ave. Decl.		Norm.	Mild.	Mod.	Sev.	
Manila											
Kabayanan											
Day Care Center N=19	36.8	0	63.1	1.85	0	Stat. Signif. Imp., p < .01	June 80 Dec. 80	42.1 57.9	42.1 31.6	15.8 10.5	0 0
Unang Sigau											
Day Care Center N=53	28.3	13.2	58.4	1.39	.85	Stat. Signif. Imp., p < .05	Sept. 80 Dec. 80	9.4 15.1	69.8 67.9	18.9 15.1	1.9 1.9
Minipark											
Day Care Center N=63	26.9	26.9	46.0	1.64	1.00	Not Signif.	June 80 Dec. 80	33.3 28.6	52.4 65.1	12.7 6.3	1.6 0
Batis											
Day Care Center N=33	39.3	9.1	51.5	1.15	1.66	Stat. Signif. Imp., p < .08	June 80 Dec. 80	45.4 51.5	54.5 48.4	0 0	0 0
Tenement											
Day Care Center N=32	15.6	12.5	71.9	1.2	1.2	Not Signif.	July 80 Dec. 80	31.3 21.9	56.2 68.8	12.5 9.3	0 0
F. Munoz											
Day Care Center N=9	55.5	0	44.4	2.00	0	Sample too small to test for signif. of change	July 80 Nov. 80	33.3 66.7	44.4 22.2	22.2 11.1	0 0

^{1/} Per 6 months. Based on 1-10 scale and used in Philippines.

^{2/} Normal: Level 1

Mild: Levels 2-4

Moderate: Levels 5-7

Severe: Levels 8-10

APPENDIX VI
 COMPARISON OF PROPOSAL SPECIFICATIONS WITH ACTUAL
 CRS AND CARE PROJECTS
 1978-1980
 RESULTS OF SURVEY OF TWENTY PFW

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Province	Municipality	Barangay/Barrio	Year Approved	Status of Project	Proposal	Location	Observations/Findings on Project Accomplishments
Catholic Relief Services							
Ilocos Norte	Vintar	Malasig	1978	Completed	Improvement of barangay road - Filling up of road with gravel		As at the time of inspection, only about 50% of the road had been filled. Work was suspended due to lack of materials.
Laguna	Binan	Timbao	1980	Completed	Repair of barangay road - Dispersal of filling materials along 3 km. x 5 m. barangay road - Digging of drainage canals along road		The barangay road has been repaired.
Albay	Lapu-lapu	Villa Hermosa	1980	Completed	Construction of feeder road - No project proposal with CRS, Manila		The completed feeder road is 1 km. long and 5 m. wide
Cavite	Carmona	San Jose	1978	Completed	Communal vegetable gardening - Cultivation of basketball court surroundings		As at the time of inspection there were no signs of vegetable gardening activities. It was claimed that the project lasted for only four months due to the shortage of water.

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COMPARISON OF PROPOSAL SPECIFICATIONS WITH ACTUAL PROJECT ACCOMPLISHMENT
CRS AND CARE PROJECTS
1978-1980 (continued)

RESULTS OF SURVEY OF TWENTY FFW PROJECTS

Province	Municipality	Barangay/Barrio	Year Approved	Status of Project	Proposal Specification	Observations/Findings on Project Accomplishments
Catholic Relief Services						
Laguna	Calauan	Bangyas	1979	Completed	Communal vegetable gardening - 400 m. x 10 m.	Actual gardening was done on the roadside fronting the house. Each family cleaned the area fronting their house and planted the area with vegetables. Vegetable gardening by family still continues.
Camarines Sur	Buhl	Tambo	1980	Completed	Installation of potable water system - Installation of pump, concrete water-tank 2 m. x 3 m. x 3 m. and slide pipes	The following activities were accomplished: - Installation of artesian pump - Construction of concrete water tank 2 m. x 1.5 m. with an elevation - Installation of pipes in 5 zones The artesian pump broke down during the start of operations. The system therefore failed to supply water to the community.
Cooperative for American Relief Everywhere, Inc.						
Cavite	Bacoor	Dulong-bayan	1979	Completed	Construction of barangay road - No proposal on file with CARE, Manila	The constructed road is about 200 m. long and 2 m. wide.

COMPARISON OF PROPOSAL SPECIFICATIONS WITH ACTUAL PROJECT ACCOMPLISHMENT
CRS AND CARE PRODUCTS
1978-1980 (continued)

RESULTS OF SURVEY OF TWENTY FFW PROJECTS

Province	Municipality	Barangay/Barrio	Year Approved	Status of Project	Proposal Specification	Observations/Findings on Project Accomplishments
Cooperative for American Relief Everywhere, Inc.						
Laguna	Sihiloan	Mendiola	1980	Completed	Repair of barangay road - Clearing of road 2.2 km. long and 4 m. wide - Filling of road with gravel - Digging of canals along road - Levelling and cementing	Cementing of only 56 m. of the 2.2 km. barangay road was completed.
Cavite	Imus	Barangay III	1979	Completed	Riprapping of road - No proposal on file with CARE, Manila	Riprapping of road was completed.
Sorsogon	Magallanes	Bacolod	1978	Completed	Construction of canals and filling of ditches - No details	The reclaimed or filled area is about 22 m. long and 8 m. wide. The constructed canals are approximately 30 m. long by 0.75 m. wide with water depth reaching 1 cm.
Laguna	San Pedro	Langgam	1979	Completed	Riprapping of dike and completion of Day Care Center	Both the riprapping of dike and repair of the Day Care Center were accomplished. However, the FFW commodities were distributed only to those who worked on the riprapping. Workers for the Day Care Center received rice and sardines.

COMPARISON OF PROPOSAL SPECIFICATIONS WITH ACTUAL PROJECT ACCOMPLISHMENT
CRS AND CARE PRODUCTS
1978-1980 (continued)

RESULTS OF SURVEY OF TWENTY FFW PROJECTS

Province	Municipality	Barangay/Barrio	Year Approved	Status of Project	Proposal Specification	Observations/Findings on Project Accomplishments
Sorsogon	Gubat	Gupi	1978	Completed	Installation of irrigation system - Installation of irrigation pump - Canalization - 528 m. long and 0.9 m. deep	Installation of the irrigation system was completed. The constructed canals measure 0.9 m. wide by 0.9 m. deep. The system was able to supply water to only three farmer families out of the 22 targeted beneficiary families. Usage of the system was temporarily stopped due to technical deficiencies in the system.
Albay	Bacacay	Napao	1980	Ongoing	Construction of irrigation canals - No proposal on file with CRS, Manila	As at the time of inspection, work on the 8 m. long by 0.3 m. wide by 0.3 m. deep irrigation canal was temporarily stopped because it was planting season. Diggings are expected to resume after the harvest.
Ilocos Sur	San Esteban	Poblacion	1979	Completed	Construction of multipurpose center - 18 m. x 8.5 m. x 2.5 m.	The project was only partly completed due to lack of materials. The hall had no wall on one side.
Cavite	Novelata	San Jose	1979	Completed	Concreting of canal - No proposal on file with CARE, Manila	The canal measured 500 m. long. 0.75 m. wide, and 0.75 m. deep.
Pangasinan	Cabitnungan	San Nicolas	1979	Ongoing	Riprapping of dike - No proposal on file with CARE, Manila	About 40% of riprapping work was accomplished (80 m. out of 200 m.) Work on the project has been suspended from time to time due to lack of materials.

COMPARISON OF PROPOSAL SPECIFICATIONS WITH ACTUAL PROJECT ACCOMPLISHMENT
CRS AND CARE PROJECTS
1978-1980 (continued)

RESULTS OF SURVEY OF TWENTY FFW PROJECTS

Province	Municipality	Barangay/Barrio	Year Approved	Status of Project	Proposal Specification	Observations/Findings on Project Accomplishments
Laguna	Siniloan	Padre Burgos	1980	Completed	Construction of barangay hall - Dimensions - 4 m. wide by 5 m. long - Construction of wall - Roofing - Cementing and levelling	The barangay hall is 3 m. by 2.5 m. concrete walls and galvanized iron roofing.
Ilocos Sur	Suyo	Man-atong	1979	Completed	Construction of community health center - No details	The health center, measuring 9.5 m. long, 4.5 m. wide, and 2.5 m. high, is servicing Sitlo Butac and neighboring sitios. However, the IBRD midwife assigned to the area seldom visits the center because of the poor condition of the Tagudin-Cervante road.
Ilocos Norte	San Nicolas	Bugnay	1979	Completed	Repair of Day Care Center - No proposal on file with CARE, Manila	Repairs on the 8 m. by 6 m. by 2 m. Day Care Center were completed
Ilocos Norte	Vintar	Cabisoculan	1978	Completed	Repair of school building - No proposal on file with CARE, Manila	Repair of school building was accomplished as a joint project of Barangays Columbia and Cabisoculan. The two barangays are sharing the schoolhouse.

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