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Impact Evaluation: CARE-India's Title II Program

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Final Report

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A

Abbreviations

ANM	Auxiliary Nurse Midwife
ARI	Acute Respiratory Infections
AWC	Anganwadi Center
AWW	Anganwadi Worker
BCG	Bovine tubercle bacillus of Calmette and Guerin
BIG	Bio-Intensive Gardens
CARE	Cooperative for Assistance and Relief Everywhere
CBR	Crude Birth Rate
CDPO	Child Development Project Officer
CHE	Continuing Health Education
CSG	Child Survival Grant
CTC	Central Technical Committee
DPT	Diphtheria, Pertussis and Tetanus
DWCD	Department of Women and Child Development
GFR	General Fertility Rate
GM	Growth Monitoring
GOI	Government of India
HBHR	Home-Based Health Record
ICDS	Integrated Child Development Services
IMR	Infant Mortality Rate
KAP	Knowledge, Attitude and Practice
LHV	Lady Health Visitor
MOH	Ministry of Health
NGO	Non-governmental Organization
NHE	Nutrition and Health Education
NIPCCD	National Institute of Public Cooperation and Child Development
NORAD	Norwegian Agency for International Development
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
PHC	Primary Health Center
PSE	Pre-school Education
PVO	Private Voluntary Organization
SEAD	Small Economic Activities Development
SC	Scheduled Castes
SLAs	Savings & Loan Associations
SSS	Salt-Sugar Solution
ST	Scheduled Tribes
TT	Tetanus Toxoid vaccine
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WFP	World Food Program
WHO	World Health Organization

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Glossary

Anganwadi Center	A center for delivery of package of services under ICDS in a village/ urban slum.
Anganwadi Worker	Principal functionary of an anganwadi who is responsible for delivery of services under ICDS.
Block	A unit for rural planning and development comprising approximately 100 villages and about 80,000 - 120,000 population.
Crude Birth Rate	Number of live births during the year per 1,000 estimated mid-year population. $\text{Birth Rate} = \frac{\text{number of live births during the year} \times 1,000}{\text{estimated mid-year population}}$
General Fertility Rate	Number of live births per 1000 women aged 15-49 years in given year.
Dai	Traditional birth attendant
Life Expectancy at Birth	Number of years newborn children would live, subject to the mortality risks prevailing for the cross-section of population at the time of their birth.
Low Birth Weight Babies	Infants at birth weighing 2,500 grams or less.
Mahila Mandal	Local women's organization
Maternal Mortality Rate	Number of deaths from puerperal causes per 1,000 live births. $\text{MMR} = \frac{\# \text{ of deaths directly due to pregnancy or child birth during pregnancy or within 42 days of delivery,} \times 1000}{\text{total live births in the year}}$
Multi-stage Random Sampling	Using a form of random sampling in each of the sampling stages where there are at least two stages. ??
Non-formal Education	Any organized, systematic, educational activity carried on outside the framework of the formal system to provide selected types of learning to particular sub-groups in the population, adults as well as children.

Nutritional Status The state of health of an individual as influenced by his intake and utilization of the essential food nutrients. As an individual progresses through the various stages of his life, his nutritional status is subjected to many physiological and environmental influences which may cause a fluctuation on the continuum between adequate nutrition and malnutrition.

Panchayat Village council

Perinatal Period beginning with completion of 28th week of gestation and variously defined as ending one to four weeks after the birth.

Perinatal Mortality Rate Mortality occurring during the period from 28 weeks of pregnancy to under seven days of the post-natal life, per 1,000 total births.

$$\text{PMR} = \frac{\text{late fetal deaths} + \text{deaths under one week of babies weighing over 1,000 grams at birth} \times 1,000}{\text{total number of babies weighing over 1,000 g at birth}}$$

Post-natal Period beginning after birth.

Pre-school Child A child aged 3-6 years. This period extends from about three years of age until entrance into formal school at five or six years of age.

Primary Health Center An institution for providing comprehensive (preventive, promotive and curative) health care services to people living in a defined geographical area.

A READER'S GUIDE TO THIS REPORT

The program examined during this evaluation is enormous in its scope and ambitious in its goals -- and the resulting report is very detailed. The following table is a road map designed to help readers find the section(s) of the report most relevant to their interests and needs.

<u>If You Are Interested In...</u>	<u>Turn To This Section.</u>
a summary of findings & recommendations	Executive Summary
background on the ICDS program and CARE/P.L.-480 assistance to it	Chapter II-A, II-D, and II-E
information on malnutrition and food security in India	Chapter I-C, Chapter II-B, Chapter VIII-A and VIII-B
details on the evaluation objectives and methodology	Chapter I, Annexes A and B
details on program mechanism and commodity choice	Chapter II-F, Annex C
community need for, perceptions of, and participation in ICDS	Chapter IV
impacts of ICDS in general on health and nutrition	Chapter III
impact of CARE activities on nutrition and health	Chapter VI
impacts of CARE activities on ICDS systems, including: health services for prevention case management nutrition knowledge and practice (KAP) training-supervision-quality intersectoral cooperation center management food delivery & logistics	Chapter V Section H Section G Sections E and F Section A Section B Section C Section D
supplementary monetization-funded activities	Chapter VII and Annex D
detailed recommendations for CARE, USAID, and GOI	Chapter VIII-E, VIII-F, and VIII-G
elements of a performance monitoring system	Chapter IX

EXECUTIVE SUMMARY

Key Points:

1. Of the estimated 190 million children in the world who are moderately or severely malnourished, at least 73 million (40%) are Indian children. BACKGR ✓
2. The Integrated Child Development Services (ICDS) scheme is a visionary system providing basic nutrition and health services to India's most disadvantaged poor (including scheduled castes and scheduled tribes). ICDS is now operational in 3066 out of 5000 blocks serving an estimated population of 270 million. BACKGR ✓
3. ICDS services are provided through 273,512 Anganwadi Centers (AWCs) staffed by an Anganwadi Worker (AWW); each AWW provides nutrition and health services to target groups in a community of approximately 1000 people. BACKGR ✓
4. CARE supports ICDS primarily by providing food to 141,101 AWCs. This food attracts mothers and children to the program. CARE's addition of "value-added" activities, such as nutrition and health education and training in case management of pneumonia, have improved the quality and effectiveness of ICDS interventions. finding
5. ICDS has many of the characteristics fundamental to sustainability. It is a visionary program with great potential. As India becomes more sufficient in a range of food resources, it will be increasingly able to provide the food required for ICDS. BACKGR ✓
6. An independent external evaluation of CARE support to ICDS was conducted in May-June 1994. The evaluation team visited over 80 AWCs in four states and documented a functioning system providing a wide range of nutrition and health services. BACKGR ✓
7. While current impact on nutrition appears to be modest, the ICDS system has the potential to address the major health and survival needs of 40% of the world's neediest children. finding
8. Achieving this potential will require a reallocation of priorities within ICDS to address five major determinants of undernutrition, illness, and death in Indian children: nutrition, timing of pregnancy, case management of illness & malnutrition, education, and immunization.
9. CARE, through its current effective working relationship with ICDS at the state and central government levels, has the potential to provide catalytic leadership in increasing the effectiveness and efficiency of ICDS.
10. Of all the opportunities in the world to address the issues of child survival and health, ICDS offers a unique opportunity for sustainable and measurable impact.

Abstract

The Government of India's Integrated Child Development Service (ICDS) Scheme is one of the largest child survival programs in the world; the program, begun in 1975, now reaches over 3066 blocks covering 270 million people through a network of *anganwadi* child care centers offering supplementary nutrition, primary health care services, and non-formal learning opportunities for pre-school children and their mothers. In 1984 CARE began to support a portion of ICDS through its supplementary nutrition program using PL-480 Title II food aid, and today CARE provides food in 141,101 *anganwadi* center (AWC) feeding sites.

This evaluation sought to assess the historical contributions of CARE's Title II resources to ICDS, evaluate the impact and effectiveness of CARE's ICDS interventions, and assess the future potential of CARE's contributions, with the purpose of refocusing CARE's program for greater impact within the context of the current strategies of USAID, CARE, and GOI.

Three analytical data sources were used as part of this study to explore the impacts of CARE's Title II food program in India. The first was data collected and analyzed in the 1992 National Evaluation of ICDS. This in-depth survey was conducted for the GOI by the National Institute of Public Cooperation and Child Development (NIPCCD). The second analysis, conducted by CARE-India in 1994, was a "re-analysis" of the NIPCCD dataset to try to distinguish between CARE-assisted and non-CARE-assisted ICDS projects. The third analysis was conducted on qualitative and quantitative data collected by the team during field site visits to over 80 ICDS villages, with assistance from CARE-India and USAID/Delhi.

Evaluation Findings

- ICDS is a visionary program with substantial potential for impact on the health and nutritional status of the vulnerable poor. The GOI is committed to the improved implementation of ICDS, and devotes considerable resources to the program.
- Food is very important to ICDS, but food alone is not enough for nutritional impact.
- ICDS is not effectively focused enough on the groups with the most dramatic opportunities for impact -- children under three and pregnant/lactating women.
- ICDS currently focuses more on rehabilitating the severely malnourished child than on identifying and preventing growth faltering -- and yet the resources available have limited potential to rehabilitate the most malnourished children.
- The available data and analyses show a modest positive nutritional impact for ICDS overall. Available analyses show little difference in nutritional impacts between CARE and non-CARE ICDS, except in children aged 0-3 who appear less malnourished in CARE areas. Full access to the NIPCCD database and further in-depth analyses (multi-variate regression, etc.) may reveal more dramatic and positive impacts.

- Immunization coverage is higher in ICDS areas supported by CARE than in non-CARE areas, but is still well below national targets.
- Knowledge and skills of AWWs in areas where CARE implements "value-added" programs ("CARE-Plus") are far better (especially in areas with Continuing Health Education) than in areas with food only ("CARE-Regular") or non-CARE ICDS areas.
- Certain value-added CARE interventions -- Continuing Health Education, Acute Respiratory Infections, and Bio-Intensive Gardens -- show a greater potential for enhanced health and *nutritional impact* than do CARE's "food only" activities.
- No significant differences were found between CARE and non-CARE areas on growth monitoring and case management.
- Community involvement and participation in AWC activities is low.
- Impact on health and nutritional status, as well as intermediate impact on service delivery and coverage, is markedly lower where the ICDS infrastructure is not functioning well.
- CARE has a greater differential impact (compared with non-CARE ICDS) in poorer states like Bihar and Orissa.

Constraints to Program Performance

During the evaluation fieldwork, the team identified several constraints which inhibit the effectiveness and performance of the ICDS program. Over the medium- to long-term, these constraints will continue to influence both the operations and the impact of ICDS unless specific actions are taken by the GOI and its development partners (PVOs, including CARE, and donors).

- There are distinct problems in the implementation of ICDS in some states, such as Bihar, which damage the program's effectiveness. The GOI and State Governments should make a commitment to *ensuring full functioning* of ICDS, with specific attention to resolving bottlenecks in transport and guaranteeing hiring and payment of workers.
- Improvement in intersectoral coordination is essential for *effective service delivery* and *increased nutrition and health impact*.
- Water and sanitation are universally inadequate in ICDS areas, and no priority is placed on investment in the *necessary physical infrastructure* or educational initiatives.
- Resources are limited, and currently targeting and need-based resource allocation is not happening -- this lack of targeting *dilutes the impact of those limited resources*.

- CARE's resources are not focused on areas of greatest need -- GOI and CARE must work to shift resources to neediest states and phase down in more prosperous areas.

Opportunities and Future Possibilities for CARE

The following observations and recommendations for CARE are based on the quantitative and qualitative analyses completed during both phases of this evaluation.

- Recognize that providing supplemental food alone is not enough for substantial impact.
- Maximize CARE's unique relationship with the ICDS program to achieve the objectives of the CARE-India Long Range Strategic Plan. Negotiate vigorously with state governments to focus resources where CARE has a comparative advantage.
- Expand CARE's successful monetization activities linked to ICDS in order to adequately and most effectively increase health and nutrition impact -- CHE, ARI, BIG.
- Introduce a new program orientation on impact, with a few key indicators that can be monitored by the community, field officers, and government staff counterparts. Pick a few key variables and mobilize the community leaders and women to track them: education, timing of births, nutrition, immunization, and case management.
- Focus more intensively on nutrition and health education, and expand it to strengthen ICDS in all states where CARE works.
- Reorient CARE's program to focus on vulnerable groups. Increase attention to growth faltering, and intervene at time of maximum need and potential impact.
- Pay increased attention to maternal health and birth spacing; build on AWWs current involvement in family planning and provide training in use of temporary methods.
- Expand CARE's role as a trainer of ICDS and MOH counterparts at all levels, building on existing mechanisms.
- Pursue with GOI creative ways to increase community participation, partnership, and ownership, especially involving women members of *Panchayat* and the *Mahila Mandals*.
- Consider developing a plan or system of criteria for when CARE enters or exits states/districts/blocks -- whereby there is a minimum requirement for ICDS infrastructure and functioning before CARE will assist, and a maximum standard of program performance at which a block or state "graduates" from CARE assistance".
- Make better use of current field staff; transform food monitors into multi-purpose field workers by cross-training, and rationalize geographic coverage.

- Upgrade technical skills and training capacity, including hiring staff with skills necessary for new program directions.

Opportunities and Future Possibilities for USAID

CARE's support to ICDS, and CARE's future directions as presented in its LRSP, are both consistent with and supportive of USAID/Delhi's program goals and objectives. USAID should maintain its commitment to the CARE program supporting ICDS. Specifically, USAID should:

- Carefully examine issues of commodity mix and program mechanism in light of cost-effectiveness, nutritional impact, sustainability, and developmental appropriateness, including the option of a phased shift to 100% monetization of vegetable oil.
- Require the establishment of simple information systems to monitor and report upon population-level impacts.
- Support expanded monetization resources for CARE, and focus monies strategically on those areas identified in this evaluation as having the most potential for impact.
- Support CARE efforts to increase policy dialogue between ICDS partner agencies and the Government of India and state governments.
- Facilitate communication between USAID/Delhi health & population staff and CARE.

ICDS Issues for Consideration by GOI

While this evaluation has focused on the contributions of CARE to ICDS, the team was impressed by both the strengths and the potential of the ICDS system.

ICDS Achievements

- ICDS is a visionary strategy directed at meeting the needs of the poor at the community level. The AWW is the key -- extremely competent, motivated, and hard-working.
- ICDS has increased coverage in areas of immunization and Vitamin A supplements.
- Incidence of neonatal tetanus, measles, and vitamin A-related eye disease has dropped.
- ICDS preschool education has been effective in increasing entry to and completion of primary school, especially dramatic for girls.
- ICDS has the potential to significantly improve its impact through focusing on those most at risk: adolescent girls, pregnant & lactating women, and children under three.

Issues

- Malnutrition rates remain high, especially among the poor. The ICDS program is not reaching highest risk groups for whom interventions are most likely to be effective.
- AWWs, being the most effective government presence at the village level, are being increasingly allocated administrative tasks to the detriment of her primary responsibility. They are overburdened with excessive paperwork (up to 19 registers), mostly focusing on inputs with little attention to impact or use of data to improve impact. Reducing the AWWs' administrative workload would allow them to concentrate on and expand activities in support of greater program impact.
- While monitoring of children's weight-for-age is carried out on all children aged 6 months to 6 years, expected improvements in nutrition are not always being achieved. The importance of the data collected, especially signals of growth faltering as a trigger for specific nutrition education, is poorly understood and sub-optimally used.
- Current training and supervision is disproportionately tilted toward records and reports instead of quality assessment, support, and continuing education.
- Cooperation between ICDS and the Ministry of Health is variable; availability of, access to, and quality of diagnosis and treatment is also variable.

Priorities

- Increase and focus attention on factors that affect low birth weight especially adolescent nutrition, timing of first births, interbirth intervals, and maternal nutrition.
- Use the monthly monitoring of nutritional status in 6-35 month children to identify growth faltering at a time that interventions are most likely to be effective.
- Develop training capacity at the block and sector levels; monthly sector meetings provide an unmatched opportunity for AWW continuing education. The effectiveness of these sessions can be increased through identifying and training a core group of trainers (Training of Trainers) at block or sector level.
- Alter the format of entries into the immunization register to one in which births are listed prospectively by month, thus increasing the AWWs' and ANMs' ability to identify and vaccinate those eligible for vaccination.
- Simplify and decentralize monitoring to the community, AWC, and block levels.
- Utilize the *panchayats* and their new women members as an entry point for increased community monitoring and ownership of ICDS and AWC activities.

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CHAPTER I. INTRODUCTION AND METHODOLOGY

This chapter provides an introduction to the program being evaluated and the objectives of the evaluation, explains the context of malnutrition in India, and outlines the methodology used for the evaluation.

A. INTRODUCTION

The Government of India's Integrated Child Development Service (ICDS) Scheme is one of the largest child survival programs in the world; the program, begun in 1975, now reaches over 3000 blocks through a network of 273,000 *anganwadi* child care centers offering supplementary nutrition, primary health care services, and non-formal learning opportunities for pre-school children and their mothers. The goals of the ICDS program, as articulated by the GOI, are to:

1. Improve the nutritional and health status of children in the age group of 0-6 years.
2. Lay the foundation for psychological, physical, and social development of the child.
3. Reduce the incidence of mortality, morbidity, malnutrition and school dropouts.
4. Achieve effective coordination of policy and implementation among various departments to promote child development.
5. Enhance the capability of the mother to look after the normal health and nutritional needs of the child, through proper health and nutrition education.

In 1984 CARE began to support a portion of ICDS through its supplementary nutrition program using PL-480 Title II food aid, and today CARE provides PL-480 food for 260 days a year in 141,101 *anganwadi* center (AWC) feeding sites. By fiscal 1993, CARE-India's Title II program in support of ICDS had grown to be the largest regular Title II program in the world -- more than \$69 million of Title II resources (21% of the regular Title II program budget).

In light of increasing USG budget pressures and questions regarding the sustainability and food security orientation of its large institutional Title II feeding programs, the Bureau for Humanitarian Response (BHR), in close collaboration with USAID/Delhi, CARE-USA, and CARE-India, has undertaken an evaluation of the CARE-India Title II program. The context of this evaluation is important: the Title II food commodities which CARE programs through ICDS are but one input in a very integrated approach to maternal and child health and nutrition. An increasing emphasis is being placed on the integration of essential health and nutrition components with more traditional supplemental feeding programs, as USAID and its cooperating sponsors realize from a wealth of field research worldwide that supplementary food alone cannot be relied upon to improve nutritional status, health, and survival.

A wide range of factors -- access to and use of preventative services (immunization), nutritional practices (breastfeeding, weaning, feeding), case management of acute child illness such as pneumonia and diarrheal dehydration, access to safe water and sanitary living conditions, timing of pregnancies -- influence an individual's nutrition and health status.

B. EVALUATION PURPOSES

This evaluation examined the historical contributions of CARE's Title II resources to ICDS, the impact and effectiveness of CARE's ICDS interventions, and the sustainability of CARE's contributions, with the purpose of refocusing CARE's program for greater impact within the context of the current development strategies of USAID, CARE, and GOI.

The specific objectives of the evaluation are both retrospective and prospective in nature; retrospective objectives include:

1. Assess the historical contributions (1984-1994) of CARE's program to GOI's ICDS policies, procedures, coverage, impact, and sustainability. Include as context a general assessment of the impact of ICDS based on secondary sources and previous evaluations.
2. Determine the incremental or differential impact of Title II activities in CARE-supported ICDS areas, on the following aspects of the ICDS program:
 - a. nutritional and health status of children
 - b. mortality and morbidity
 - c. primary school attendance
3. Determine the incremental or differential impact of CARE food and management support on the access of intended beneficiary groups to:
 - a. supplementary food and vitamin A supplementation
 - b. immunization of children and pregnant women
 - c. primary health check-ups and referrals
 - d. growth monitoring and nutrition education
4. Assess the past effectiveness and future potential of CARE's complementary interventions to improve household food security and child survival, including monetization-funded activities such as microenterprise development and health care, as well as other USAID grant-supported activities such as child survival projects.

The evaluation team will also examine CARE's program performance with the goal of providing suggestions for the future; prospective objectives include:

5. Recommend priority CARE interventions for Title II food aid, and possibilities for better integrating the range of interventions, in the context of:
 - a. USAID/India's 1994-2000 strategic framework for sustainable development;
 - b. CARE-India's long-range strategic plan for empowering women and improving household food security in India
 - c. USAID's policies and legislative mandates on food aid and food security
 - d. GOI's child survival and food security priorities and its capacity to sustain interventions and continue program impact.
6. For those priority interventions recommended in item #5, suggest the elements of a program performance monitoring system for regular assessment and periodic program impact evaluation of CARE's interventions in the future, including possible indicators and benchmarks.

C. MALNUTRITION IN INDIA: MAGNITUDE & EPIDEMIOLOGY

In any evaluation of a nutritional intervention in India, the striking magnitude of the nation's nutritional deficiencies must be considered. India accounts for more of the world's protein-energy deficiency than any other single country. Of an estimated 190 million children in the world who are moderately or severely malnourished, 73 million -- 40% -- are Indian children. The prevalence of moderate and severe forms of malnutrition in India is approximately 70% among children less than five years of age (measured using international standards), while the prevalence for the developing countries as a whole is less than 35%.

The magnitude of the nutritional problems of India are greater than those of even the poorest sub-Saharan African countries. This is the case for both protein-energy malnutrition and major micronutrient deficiencies such as iron, vitamin A and iodine. It is also important to note that malnutrition prevalence statistics reported by Indian agencies are based on different grading schemes -- a large number of children will be classified as normal or only mildly malnourished by the Indian scheme while they would be classified as mildly or moderately malnourished by commonly accepted grading schemes, and thus the nutritional situation will appear to be better than if internationally accepted schemes were used.

Although recent population-representative nutritional status data are not yet available at the level of the state, related measures such as infant and child mortality suggest that the levels of malnutrition vary greatly among the 25 states within India.

Figure 1 shows infant and child mortality data from the 1993 Family Health Survey for the four states covered in the evaluation team field visits, including percentage changes over time.

FIGURE 1: INFANT AND CHILD MORTALITY TRENDS IN FOUR INDIAN STATES						
State	Years Prior to Survey	Neonatal	Post Neonatal	Infant	Child	Under Five
Bihar	0 to 4	54.8	34.4	89.2	42	127.5
	5 to 9	59.3	44.8	104.1	45.7	145
	10 to 14	59.1	49.2	108.3	57	159.1
	%change from 5-9 years ago	-0.34%	8.94%	3.88%	-19.82%	8.86%
	%change from 10-14 years ago	7.28%	30.08%	17.64%	26.32%	19.86%
Orissa	0 to 4	64.7	47.4	112.1	21.3	131
	5 to 9	63.7	62.7	126.4	18.1	142.1
	10 to 14	69.5	74.7	144.1	21	162.1
	%change from 5-9 years ago	8.35%	16.06%	12.28%	13.81%	12.34%
	%change from 10-14 years ago	6.91%	36.55%	22.21%	-1.43%	19.19%
Karnataka	0 to 4	45.3	20.2	65.4	23.5	87.3
	5 to 9	54.4	29.3	83.7	35.3	116
	10 to 14	55.5	37.9	93.4	52	140.6
	%change from 5-9 years ago	1.98%	22.69%	10.39%	32.12%	17.50%
	%change from 10-14 years ago	18.38%	46.70%	29.98%	54.81%	37.91%
Maharashtra	0 to 4	36.3	14.0	50.3	20.9	70.1
	5 to 9	39.1	22.3	61.5	21.7	81.8
	10 to 14	40.7	24.9	65.6	42.1	105
	%change from 5-9 years ago	3.93%	10.44%	6.25%	48.46%	22.10%
	%change from 10-14 years ago	10.81%	43.78%	23.32%	50.36%	33.24%

Infant mortality rates range from a low value of less than 51 per 1000 in Maharashtra to a high of more than 113 in Orissa. These higher rates are very similar to those recently found through DHS surveys in Mali and Niger, two of Africa's least developed countries. Child mortality rates show similar patterns. Moreover, the magnitude of the protein-energy malnutrition problem is projected to grow during the next decade. Although there have been modest improvements in the prevalence of malnutrition during the past decade, the actual number of malnourished children is projected to increase by more than 10 % in South Asia by the year 2000 (see Figure 2).

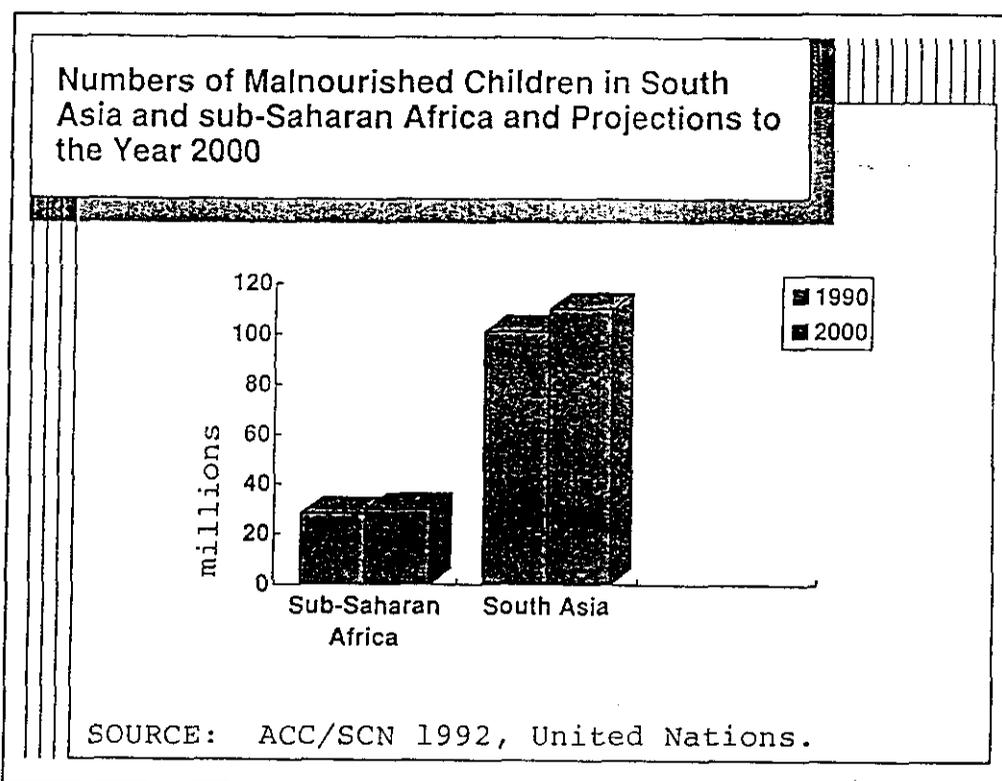


FIGURE 2

In summary, malnutrition is a tremendous obstacle to development in India. It represents a large share of the world's protein energy problem. Increasingly, scientific evidence is emerging in support of the complex and profound impact of protein-energy malnutrition on overall social and economic development (McGuire, 1992). A recent landmark work by Pelletier and his colleagues (1993) has shown that a much larger share of infant and child mortality is attributable to protein energy malnutrition than the scientific community had thought in the past. The magnitude of the problem also affects the likelihood of demonstrating impact, given the modest level of resources and the attempted widespread geographic coverage of ICDS as a whole and CARE-assisted areas in particular. This tremendous problem deserves high priority consideration by the development community. An important finding of this evaluation team was that because of the grading system used, the actual prevalence of malnutrition in India is even greater than previously believed.

D. METHODOLOGY

A detailed discussion of the methodology and analytical approach used in this evaluation is presented in Annex B. An important objective of this evaluation was to try to isolate the impact of the CARE-assisted ICDS program on the health and nutritional status of the beneficiary population. The table below shows the indicators used to assess health and nutritional impact.

MEASURES OF HEALTH AND NUTRITION IMPACT, AND AVAILABLE DATA SOURCES

MEASURES	DATA SOURCES	MEANING
Mortality -- components: Infant mortality Child mortality	Routine reporting systems, special studies, DHS	Result of nutrition/child survival interventions & prenatal nutrition; mortality segments reflect age-specific problems of early life
Child anthropometry: weight/age	NIPCCD, Special studies	Shows the summative effects of poor nutrition, morbidity incidence and severity, as well as intrauterine influences
Birthweight	NIPCCD	Reflects maternal health and nutrition.

These indicators were selected because they are the most commonly accepted measures in the scientific and development community, because they are the most closely tied with the CARE intervention program variables and finally because these data are the most readily available. It is important to keep in mind, however, that these indicators capture only a portion of the potential benefits of a program such as the ICDS or even the supplementary feeding program in particular (Beaton, 1992).

The indicators of impact used in this analysis all have been demonstrated in the literature to respond to improved dietary intake of these beneficiary demographic groups. Improvements in maternal nutrition should be reflected in improved birthweight and survival of her infants. Reduced infant and child mortality as well as improved growth should result from improved child diets.

Weight-for-age are the most frequently available data in the Indian context. Most of the surveys and data series have collected the requisite data for computing the weight/age index, in contrast to the height and arm circumference related indices which are rarely available in the literature (grey or published) characterizing all or subsets of the Indian population. Research has shown that each anthropometric index is not affected to the same degree by supplementation programs; also, other important impacts of the ICDS program have not been regularly measured. Therefore, the limited range of indices available for examination of program impact reduces somewhat the potential findings of this evaluation exercise.

Data Sources

Three analytical data sources were used as part of this study to explore the impacts of CARE's Title II food program in India. The first was data collected and analyzed in the 1992 National Evaluation of ICDS. This in-depth survey was conducted for the GOI by the National Institute of Public Cooperation and Child Development (NIPCCD). The second analysis, conducted by CARE-India in 1994, was a "re-analysis" of the NIPCCD dataset to try to distinguish between CARE-assisted and non-CARE-assisted ICDS projects. The third analysis was conducted on limited field data collected by the team as part of this impact evaluation, with assistance from CARE-India and USAID/Delhi. The characteristics of the two surveys which collected the data for the three analyses are summarized below:

Characteristic	<u>Survey Characteristics</u>	
	1992 NIPCCD	1994 CARE/USAID
Survey type	probability	non-probability
Sampling procedure	stratified random sample	purposive sample, matched pairs
Design	post-test only	post-test only
Geographic coverage	25 states	4 states
ICDS blocks covered	100	12
AWCs visited	700 ICDS 100 non-ICDS	80 ICDS (48 CARE, 32 non-CARE)
Mothers interviewed per AWC	20	3-5

(Recall that the NIPCCD Re-Analysis used a sub-set of the data collected for the NIPCCD 1992 evaluation.) Each survey or dataset, and the related analyses, is described briefly below.

NIPCCD 1992 Survey Data

The NIPCCD 1992 evaluation report summarized data collected during a national survey conducted in 1990-91. The NIPCCD survey was designed to examine the effects of the ICDS program across a wide range of variables using non-ICDS sites for comparison purposes. NIPCCD data were collected from a stratified (rural, urban, tribal) national probability sample of 100 ICDS blocks, which were selected from over 1100 blocks located in 25 states. The NIPCCD data allow for many comparisons on descriptive variables as well as on important impact variables such as nutritional status, growth monitoring, and immunization coverage. And, because of the use of random selection in the sampling, the NIPCCD findings are generalizable to ICDS sites nationwide. Non-ICDS sites were also selected, as controls, but their generalizability to the universe of non-ICDS areas in India is less clear.

In any event, since no tests of statistical significance were reported by NIPCCD, nor have the data been made generally available to the research community, confidence in the many positive differences between ICDS and non-ICDS found by NIPCCD must await further critical analysis.

NIPCCD Data Re-Analysis

NIPCCD researchers did not initially distinguish between CARE-assisted and non-CARE ICDS projects. To address the objectives of this evaluation, the evaluation team recommended that a statistical analysis of CARE versus non-CARE areas be conducted on the original NIPCCD dataset. NIPCCD allowed limited access to some of their data for CARE-India, and CARE's Program Evaluation Unit completed their analysis in early May 1994 -- although a number of in-depth analyses could not be executed without fuller access to the dataset. Nevertheless, the NIPCCD re-analysis remains a potentially rich database for analyses examining CARE versus non-CARE impacts, based on samples of at least 100 ICDS blocks.

CARE/USAID Field Study

As originally planned, the field study was to obtain more in-depth data of a qualitative nature from NIPCCD sites, so as to "nest" the field study within the much larger (n=100) NIPCCD sample. However, concerns raised from results of the two previous analysis, plus on-site logistical constraints, prompted the team to revise the field schedule to include a limited field survey which collected both quantitative and qualitative data. Data from the CARE/USAID field study was based on a sample of 80 ICDS AWCs spread across four states -- Bihar, Karnataka, Maharashtra, and Orissa. These states were purposively chosen jointly by CARE and by USAID to represent the range of states where CARE operates and where CARE and USAID are considering future program directions (reductions or increased resources).

Characteristics of Comparison Groups

Both the NIPCCD 1992 national evaluation and this evaluation are impact-oriented studies, and thus a primary concern was to select the most appropriate control group(s) for interpreting results. Picking the right comparison group was also important given the wide variation in ICDS project implementation at the *anganwadi* level -- which, in reality, is influenced as well by a number of variables at the state and block level. For example, the type of food(s) provided, the timeliness of food delivery, the types of management and administrative support offered, and the population being targeted may all play a role. Implementation and impact are also likely to be influenced at the village level by such factors as the AWW's training and knowledge, proximity to ICDS project headquarters and to primary health care services, food storage capacity, household poverty, and so on.

Given this range of variables, it was important to select appropriate comparison group(s) and to try to overcome some methodological barriers encountered in previous research which prevented more rigorous or meaningful interpretation of impact findings.

For example, NIPCCD notes in its 1992 report that caste, land ownership, and income may be critical "control" variables for understanding the operations and impact of ICDS, and these are often overlooked or difficult to control for in many smaller-scale studies. Selected methodological issues for each of the three studies are described in the three sections below:

NIPCCD 1992. To try and control for the many variables potentially influencing ICDS' operations and impact, NIPCCD sampled 100 "comparison" villages which were located geographically nearby to each of the sample's 100 ICDS blocks/projects. The relatively large sample size, and the initial random sampling selection process used by NIPCCD to choose the 100 ICDS blocks, should favor an unbiased selection of comparison sites. Random selection of ICDS sites is also associated with powerful probability and statistical theorems allowing for strong generalization to the entire ICDS program universe.

However, at the AWC level -- a key node for nutritional and health impacts -- it appears that the comparison sites were initially selected for geographic proximity to ICDS AWCs, rather than selected at random or "matched" to the 100 ICDS AWCs on specific variables through to influence impact such as caste. NIPCCD does report that the ICDS and non-ICDS projects and AWCs share a "very similar socio-economic profile", but this was apparently a post-selection observation rather than a planned comparison. Therefore, some unknown bias may have occurred -- for example, geographic proximity may be a good proxy for matching ICDS and non-ICDS AWCs on certain criteria, but field staff have pointed out that villages or hamlets only five kilometers apart can often have very different (and important) characteristics that could affect impact -- such as proximity to a primary health center which could well determine immunization and prophylaxis coverage.

NIPCCD Re-Analysis. Issues of control groups are less of a problem for the NIPCCD re-analysis, since all ICDS projects in the NIPCCD sample, both CARE and non-CARE alike, were selected randomly. However, anyone interpreting the statistical comparisons between CARE and non-CARE projects generated by CARE-India's re-analysis must proceed with caution. For example, in a number of reported analyses, sample size fluctuates; a number of observations from CARE and non-CARE AWCs were not analyzed, and because many invalid observations had to be dropped in the re-analysis, the sample size dropped considerably.

In other cases, CARE staff had to attempt to "clean" the original NIPCCD dataset, and in still other cases, especially at the "respondent" level (persons interviewed within each AWC), there was often a high degree of non-response which may have seriously biased the results. Finally, while the tests of statistical significance employed (multiple z-tests¹) are a major step forward towards deciding whether the reported CARE versus non-CARE differences are more than chance findings, results of these particular tests can sometimes be over-interpreted when many tests are conducted using means from different groups or sub-groups in an *ad hoc* way because the probability of error increases as the number of comparisons rises.

¹ Z-test is essentially the same as a T-test, with the "Z" used for larger samples.

Setting higher statistical significance thresholds, and allowing fuller access by researchers to the original NIPCCD dataset, would allow for more in-depth analyses and greater confidence in reported results.

CARE/USAID Field Study. Concerned with achieving good "matches" between CARE and non-CARE assisted AWCs in order to eliminate external effects and "noise", and faced with time and resource constraints, the evaluation team worked with CARE-India to design a field study and visit schedule that sent the team to a relatively small number of sites but which tried to exercise some control over a few key variables thought to influence ICDS operations and impacts. The design closely approximated an epidemiological case-control or "matched-pairs" study in which two AWCs are designated as a "pair" after having been chosen to be as similar as possible in the "matching variables" identified. Unlike the NIPCCD sample, the resulting non-probability sample for the CARE/USAID field study is limited in the degree to which one can generalize to the universe of ICDS. But, given a number of good matches across different operating contexts (wealthy and poorer villages, proximity to health services, access to food distribution points, type and kind of caste population, etc.) the team felt that the matched-pair design was the best choice possible.

To implement the design, the CARE/USAID study used a successive series of "screens" in which CARE and non-CARE ICDS AWCs were paired within each state, district, or block, as appropriate. Twenty-nine "matched pairs" of AWCs, each consisting of one CARE-assisted AWC and one ICDS AWC not receiving CARE assistance, were used for analysis purposes, spread across all four states visited. An explanation of this matched pairs analysis and the matching variables used at the district, block, and village level can be found in Annex B.

Aggregate district and block-level information was obtained first and was used to select AWCs for field visits and potential inclusion in the matched-pairs group, but in a number of cases this centrally-recorded information failed to accurately reflect or capture important characteristics of the AWC. When discrepancies of this nature occurred, more weight was given to local-level information. In spite of all due attention paid to the matching process, in the end a number of planned matches or villages simply did not "fit", and in those cases data from both CARE and non-CARE AWCs were excluded from the "matched pairs" analysis. As with the NIPCCD re-analysis, dropping individual sites or pairs may have introduced some unknown bias.

CHAPTER II. BACKGROUND AND PROGRAM OVERVIEW

This chapter presents an overview of the Government of India's Integrated Child Development Services (ICDS) Scheme and a discussion of the food security context in India. The chapter also provides a historical summary of CARE's contributions to ICDS, a discussion of recent program achievements and innovations, and a brief summary of relevant food programming issues including commodity choice and program mechanisms.

A. THE ICDS SCHEME

The Integrated Child Development Services (ICDS) Scheme was begun in 1975 on an experimental basis in 33 community development blocks -- 17 rural, 12 tribal, and 4 urban.¹ By 1993, ICDS (in its eighteenth year) reaches 3066 blocks (out of a total of 5000 country-wide), assisting 18.6 million children and mothers, with most project sites located in rural or tribal areas (91.5%) and a small proportion in urban slum areas (8.5%). At the national level, ICDS is managed through the GOI Department of Women and Child Development.

The specific objectives of ICDS were cited in Chapter I. ICDS seeks to provide a combined package of services to children under six and pregnant and lactating women in poor and rural areas primarily inhabited by scheduled tribes and scheduled castes; in addition, emphasis is given to drought-prone areas and those areas where health and nutrition is poorest. The program is centered within the target communities through a local or village center called the *anganwadi* (courtyard). The package of services provided through ICDS *anganwadi* centers (AWCs) includes:

1. supplementary nutrition
2. immunization
3. health check-ups
4. nutrition and health education (NHE) for girls and women
5. health care referral services for children and mothers
6. non-formal education for children aged 3-6

The role of the supplementary nutrition component within this multifaceted approach to improved maternal and child health is critical. The ICDS approach is based on the GOI's belief that the targeted distribution of food will 1) provide an essential element in an intensive nutritional rehabilitation program for malnourished children; and 2) attract poor children and their mothers to the AWC where they have access to other services (immunization, health services, referrals, education) which are also essential to improved nutritional status.

¹ The community development block is one of the smallest administrative units in GOI development planning and activities, and is also the practical node of ICDS administration. The population of a block is estimated to be 100,000 in rural areas.

ICDS programs are centered around a locally-recruited woman whose activities are based in the AWC in project villages. ICDS is a centrally-sponsored program managed through the GOI Department of Women and Child Development; the GOI at the national level provides financing for 100% of the program inputs with the exception of the supplemental nutrition component, which is financed by the state governments. Individual state governments also have the hands-on responsibility for implementation of the project sites in their state, and thus there is great variation in ICDS management and service quality from state to state.

Selection Criteria for ICDS Projects and Beneficiaries

ICDS project sites are selected based on the following criteria:

- 1) tribal development blocks
- 2) slums in towns and cities with populations of 200,000 or more
- 3) backwards and rural areas with large scheduled caste populations
- 4) drought-prone areas
- 5) areas deficient in nutrition and in social welfare services

GOI guidelines specify that selection of ICDS beneficiaries be based on the following criteria. It is important to note that the GOI gives no guidelines as to which criteria should be used as priority determinants in selecting participants.

Children Aged 0-6 Years

- a) nutritional status of children in group
- b) children attending AWC pre-school
- c) children in "at-risk" categories:
 - birth weight under 2.5 kg
 - twin births
 - grade III and IV malnutrition
 - birth order 4 or later
 - 2 or more siblings dead
 - birth spacing less than 2 years
 - recurrent diarrhea, measles, TB, or whooping cough
 - parent dead or father unemployed or alcoholic
 - only child after long married life
 - failure to gain weight in 3 successive months
 - identified as an Integrated Rural Development target family

Pregnant and Lactating Women

- a) pregnant women from the time they are identified as pregnant (priority given to vulnerable groups such as landless laborers, marginal farmers, scheduled castes/tribes).
- b) pregnant women "at-risk":
 - first pregnancy, or fourth or beyond
 - aged over 35 or below 18
 - history of still births, miscarriage, cesarean
 - heart disease, TB, diabetes, anemia
 - observed complications like toxemia, swelling, high blood pressure
 - conception after infertility treatment
 - history of neonatal deaths
 - pre-pregnancy weight of 38 kg or less
 - weight of 40 kg or less in 20th week
 - height of 145 cms or less
 - possible twin pregnancy
 - too frequent pregnancies
- c) nursing mothers for up to 6 months

In 1991, the GOI also decided to include three adolescent girls per AWC in the ICDS program to receive supplementary nutrition in an effort to improve their nutritional status.

Ration Size

Single rations are provided to children in nutritional grades I and II; double rations are targeted to malnourished children (grades III and IV), pregnant and lactating women, and adolescent girls. Single rations include 65 grams of grain and 8 grams of oil which provides 12 grams of protein and 300 calories.

Resources Provided to ICDS by GOI and Donors

State governments are responsible for financing the supplementary nutrition component of ICDS in their states, which constitutes roughly 50-60% of the total cost of the ICDS package. Seven international donor agencies provide assistance to ICDS through either state or central government channels:

1. CARE provides Title II food commodities to ICDS centers in 10 states, providing supplementary nutrition to approximately 8 million beneficiaries.
2. USAID (outside of Title II channelled through CARE) has provided development of mobile in-service training systems (MIST), improved communications, and the development of a management information system in two districts.
3. WFP provides food commodities to ICDS centers in 5 states, reaching 2.1 million beneficiaries with supplementary food.
4. UNICEF funds equipment, vehicles, educational materials, and training costs and supports monitoring and communications.
5. NORAD provides support for building AWCs, and in the past provided 100% of the costs associated with centers in one district.
6. SIDA provides assistance to one district in Tamil Nadu.
7. World Bank has signed agreements to support ICDS in four states providing a range of assistance not including supplementary nutrition.

U.S. Assistance to ICDS

In addition to the large volumes of food commodities provided to ICDS by the U.S. government through cooperating sponsor CARE, USAID provided bilateral assistance to ICDS through Project #386-0476 from 1983 to 1992. The project's purpose was to expand and improve ICDS in order to regularly reach at-risk pregnant/nursing women and malnourished children under-3 with supplementary food, nutrition and health education, and selected health services, and to determine the feasibility and cost of increasing birthweights of children. Project activities provided additional inputs in 21 blocks in two Indian states (Gujarat and Maharashtra).

B. FOOD SECURITY IN INDIA

To understand the contributions of CARE's and USAID's assistance to ICDS, and the impacts (both past and potential) of those programs, it is important to understand the food security constraints operating in India. These are briefly summarized below.

National Food Availability -- The Benefits of Production Technologies. Over the past four decades India's food sector has seen a tripling of foodgrain production driven by the spread of access to irrigation and the application of improved inputs and "Green Revolution" technology, resulting in an average annual food production growth rate of 2.7% at the national level. The dryland areas of the center and south were not sufficiently affected by the production gains, and although linkage effects were anticipated the food production gains have not in actuality had a substantial impact on the structural problem of poverty. In fact, the intensification of production has been associated with environmental degradation and increased pressures on rural energy resources. The role of external food aid in India's food security equation has changed dramatically over the years, evolving from massive humanitarian and emergency shipments destined for traditional feeding programs to more targeted maternal and child nutrition and health interventions. Concurrently, the national government's capacity for managing food deficits has grown, to the point where India's management of national buffer stocks of foodgrains allowed them to withstand the severe drought of 1987 without interruption of food supplies to even the most devastated regions.

Per Capita Food Availability -- The Costs of Population Growth. Unfortunately, the impressive growth in India's aggregate food production has only barely kept pace with her population, still growing at an estimated 2.1% per year. The population dynamic in India is a critical factor in the ongoing cycle of poverty, hunger, and malnutrition -- in spite of the Green Revolution's production gains, and the more recent economic and fiscal progress generated by policy reforms and liberalization, significant improvement in per capita food availability is restricted by the growing population. Although UNICEF estimates that the annual number of births in South Asia will reach a peak in approximately ten years, and then decline, the "mathematics" of demographics mean that India's population, currently 850 million, will reach more than 1 billion by the year 2000 and will double by 2027, ensuring relentless pressure on domestic production and foreign exchange for imports.

Recent FAO estimates of per capita food availability show a total of 2187 kcal per person per day for the 1992/93 season, up only marginally from the 1989/91 estimate of 2179 and the 1984/86 estimate of 2142. In general, India's food self-sufficiency is calculated at a relatively low level of caloric intake; "self-sufficiency" at these low levels, with the corresponding low worker productivity levels, may be a misnomer. Increasing per capita income, coupled with this low starting point for per capita consumption, will lead to rapid near-term increases in demand for food. For example, India's per capita consumption of edible oils is currently 7.4 kg per annum, compared to developed country averages of 40 kg per year.

Household Food Access -- Claiming a Piece of the Pie. Complicating the food security dimensions of the production-population dynamic is the issue of household income and access to food. While estimates of the percentage and number of people in absolute poverty vary, conservative assessments indicate that approximately one-third of India's people have incomes below the minimal level² needed to access sufficient food for a healthy and productive life. India's poor, 70% of whom live in rural areas, are increasingly concentrated in northern, eastern and central states, facing serious developmental constraints and burdened with high fertility and low literacy rates.

Individual Utilization -- A Complex Interaction of Factors. Research on determinants of nutritional status have shown repeatedly that adequate consumption of calories and protein are critically necessary *but not sufficient* factors in improved nutritional status. The effective utilization of food consumed is affected by other critical factors in a complex interactive system: access to sanitation, safe water, immunizations, and health services; micronutrient content of foods consumed; nutrient losses due to poor food preparation and illness; and sociocultural practices that affect intra-household food distribution and limit consumption by certain family members. In India, deficiencies in all of these factors are observed.

Vitamin A deficiency, while decreasing in prevalence from the mid-1970s, still affects an estimated 6 million Indians; iodine deficiency, while varying markedly by region, has resulted in 54 million people suffering from goiter and 8.8 million affected by mental/motor handicaps. Iron deficiency is still widely prevalent, especially among pregnant and lactating women who have the most critical need for iron; in villages outside of Calcutta an estimated 90% of the village population is anaemic. Access to safe drinking water is considerably improved although still not universal, but access to effective sanitation services remains extremely low and contributes to the high level of infectious disease in poor and rural areas. Wide regional variations in access to and usage of health services is also reflected in nutritional status; states with small health service "catchment areas" show better infant and maternal health status.

Finally, the extensive and well-documented discrimination against females in India has undeniable negative effects on the health of girls and women, beginning often before birth with antenatal sex determinations and differential abortions, continuing through infancy with differential access to health services and lower levels of breastfeeding and less food consumed, through early marriage and poorly-spaced childbearing, to lower food consumption and differential use of health services as adult women.

Differences in Food Security Status Between States and Regions. As in many countries, both industrialized and developing, national statistics in India mask a wide variation between individual states and regions within states. An analysis of food security constraints in India is inevitably much more effective when taking into account these state-specific variations from national norms, especially when the analysis serves as the basis for proposed interventions.

² Government of India data published in the 1991 Census and other official publications show 29.9% of India's population living below the government-defined poverty line.

Figure 3 on the next page provides an illustration of the differences among India's states in selected developmental indicators, showing several key indicators with the individual states positioned in relation to the national average for each indicator. As the figure illustrates, India's states vary considerably with respect to the national average on many developmental and food security indicators.

An additional factor to be considered is that regional variations in the food security situation are exacerbated by infrastructure and human resource differentials between states. For example, weak states like Uttar Pradesh and Bihar have structural problems in many areas, from transportation to warehousing to distribution of food, in spite of being located so near to India's food baskets. Other factors that hamper effective coverage by the social safety net programs in certain states include poor management, lack of accountability, poverty, and illiteracy -- for example, large numbers of rural poor do not have access to the Public Distribution System fair price shops simply because they cannot obtain a ration card!

C. CARE's TITLE II PROGRAM IN INDIA

CARE has been active in India since signing the Indo-CARE Agreement, signed between the GOI and CARE on March 6, 1950. CARE-India currently operates in ten states: Andhra Pradesh, Bihar, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Uttar Pradesh, and West Bengal. Fiscal year 1994 Title II programs include provision of 168,480 metric tons of food commodities for the supplementary nutrition component of ICDS in 150 districts and 1,049 CD blocks within those districts, reaching 140,274 AWCs and more than 8.2 million beneficiaries for 260 feeding days.

ICDS (formerly the Special Nutrition Program and MCH)

CARE's involvement in Maternal and Child Health programs began in 1967 with a modest effort reaching 275,000 beneficiaries; in addition to providing food, these SNP projects also included nutrition and health education components. The program focused on tribal blocks and tribal areas within rural blocks, and coverage rose to 6.3 million beneficiaries by 1978. After that point, SNP projects were "upgraded" and changed into the ICDS model; all SNP blocks were converted to ICDS by 1990. ICDS is now the largest element of CARE-India's portfolio, and includes tribal, rural, and urban blocks in the poorest areas of ten Indian states.

School Feeding Programs

CARE's School Feeding (SF) Program (popularly known as Mid-Day Meals or MDM) started in 1961-62 with a beneficiary level of 2.4 million schoolchildren. The program supported state government's efforts to increase and maintain enrollment for primary school children, particularly for disadvantaged groups and for girls. The program coverage rose to 11 million in 1970 and remained relatively stable until 1981, with an average beneficiary level of 9 million for 11 years. CARE gradually phased School Feeding out, ending food assistance in 1993.

FIGURE 3: DEVELOPMENT INDICATORS (state rankings in relation to national averages)

TOTAL FERTILITY RATE (high to low)		PERCENT IN POVERTY (high to low)		INFANT MORTALITY RATE (high to low)	
Uttar Pradesh	4.7	Orissa	44.7%	Orissa	112
Arunachal Pradesh	4.3	Bihar	40.8%	Uttar Pradesh	99.9
Bihar	4	Madhya Pradesh	36.7%	Assam	89
Haryana	4	Uttar Pradesh	35.1%	Bihar	89
Madhya Pradesh	3.9	Tamil Nadu	32.8%	Madhya Pradesh	85
All India	3.9	Karnataka	32.1%	All India	80
Meghalaya	3.7	Andhra Pradesh	31.7%	West Bengal	75
Rajasthan	3.6	All India	29.9%	Rajasthan	73
Assam	3.5	Maharashtra	29.2%	Haryana	73
Nagaland	3.2	West Bengal	27.6%	Andhra Pradesh	70
Jammu & Kashmir	3.1	Rajasthan	24.4%	Gujurat	69
Gujurat	3	Assam	22.8%	Tamil Nadu	68
Himachal Pradesh	2.97	Gujurat	18.4%	Karnataka	65
Orissa	2.9	Kerala	17.0%	Himachal Pradesh	56
Karnataka	2.9	Jammu & Kashmir	13.9%	Maharashtra	50
West Bengal	2.9	Haryana	11.6%	Jammu & Kashmir	45.4
Maharashtra	2.8	Himachal Pradesh	9.2%	Goa	32
Tripura	2.7	Punjab	7.2%	Kerala	24
Manipur	2.7				
Andhra Pradesh	2.6				
Tamil Nadu	2.5				
Mizoram	2.3				
Kerala	1.99				
Goa	1.9				

PER CAPITA FOODGRAIN PRODUCTION (low to high)		PERCENT SCHEDULED CASTE OR COUPLE PROTECTION % SCHEDULED TRIBE (high to low) (low to high)			
Kerala	38	Mizoram	93.5%	Nagaland	4.8%
Meghalaya	86	Nagaland	84.0%	Meghalaya	5.0%
Gujurat	105	Meghalaya	81.0%	Arunachal Pradesh	10.5%
Mizoram	116	Arunachal Pradesh	70.3%	Tripura	17.6%
Goa	121	Tripura	43.5%	Sikkim	20.6%
Bihar	133	Orissa	37.1%	Jammu & Kashmir	21.1%
Tamil Nadu	138	Madhya Pradesh	36.3%	Bihar	26.0%
Maharashtra	143	Rajasthan	29.2%	Assam	28.2%
Assam	145	Himachal Pradesh	29.2%	Rajasthan	29.0%
Karnataka	159	Sikkim	29.1%	West Bengal	33.7%
Nagaland	161	Manipur	28.5%	Goa	34.0%
Manipur	162	West Bengal	27.6%	Uttar Pradesh	35.5%
Jammu & Kashmir	174	Punjab	26.9%	Madhya Pradesh	40.3%
West Bengal	175	All India	22.8%	Orissa	41.0%
Tripura	179	Bihar	22.8%	Manipur	41.0%
Andhra Pradesh	186	Uttar Pradesh	21.4%	Mizoram	41.4%
All India	203	Gujurat	21.4%	All India	44.1%
Rajasthan	208	Andhra Pradesh	20.8%	Andhra Pradesh	44.3%
Madhya Pradesh	242	Karnataka	20.0%	Karnataka	46.9%
Orissa	245	Tamil Nadu	19.4%	Himachal Pradesh	52.1%
Arunachal Pradesh	250	Haryana	19.1%	Kerala	55.6%
Uttar Pradesh	251	Maharashtra	16.3%	Maharashtra	56.2%
Himachal Pradesh	268	Kerala	11.0%	Haryana	56.6%
Sikkim	310	Jammu & Kashmir	8.3%	Tamil Nadu	57.3%
Haryana	553	Goa	3.4%	Gujurat	57.8%
Punjab	951			Punjab	75.8%

Food for Work

From 1972 to 1980 CARE supported government-sponsored public works programs, primarily focused on creating agricultural assets through improved irrigation, soil conservation, and afforestation. CARE supported FFW through distribution of foodgrains as partial payment of workers' wages.

Relief and Emergency Programs

Over the years CARE has provided relief assistance, mostly in the form of food, temporary shelter, and blankets, in emergency situations. These emergency programs have included assistance to refugees in the late 1950s, famine victims in the 1960s, displaced persons and cyclone victims in the 1970s; and victims of floods and droughts in the 1980s. During the September 1993 earthquake in Maharashtra, CARE provided water storage tanks, water purifying tablets, blankets, clothing, eating/cooking utensils, farm tools, and hand tools.

Monetization and Related Activities

During fiscal years 1987 and 1989 CARE-India imported 8,300 metric tons of PL-480 edible oil and sold it through the National Dairy Development Board; this "monetization" generated a rupee fund of more than US\$7.6 million which is being used to support activities in the same communities where CARE assists ICDS -- nine projects in primary health care (PHC), four in small enterprise activity development (SEAD), and one in agriculture and natural resources (ANR). All of these activities are scheduled for evaluation during the current five-year MYOP period (1993-97); CARE-India was one of the first CARE country offices to establish a unit solely for project monitoring and evaluation purposes.

Child Survival Project

CARE has benefited from an institutional strengthening grant (1987) to increase its capacity to implement primary health care projects as well as a centrally-funded USAID grant for a Child Survival Project (known variously as CSG III or the Care for the Child Project) covering 18 blocks in Orissa (Bolangir and Dhenkanal districts) and Madhya Pradesh (Surguja district).

The CSG III project was completed in 1993, and upon its conclusion a rapid knowledge and practice (KAP) survey was conducted using an instrument designed by Johns Hopkins for use in all USAID-funded child survival activities. Major findings of the evaluation included: 1) low rate of retention of growth monitoring cards; 2) more than 75% of cards showed children weighed at least once in previous 4 months; 3) high percentage of mothers gave breast milk to infants during diarrheal episodes, but amount given was same or less than normal; 4) amount of fluids, semi-solids, and solid foods given during diarrhea was also either same or less than normal; 5) 25% of mothers gave some sort of ORT to children during diarrhea, while a larger number used antibiotics or some other treatment; 6) very few mothers mentioned the anganwadi worker as a source of advice during diarrheal episodes;

7) large number of mothers reported that their children received shots; 8) low rate of BCG vaccination indicates possible low access rate; 9) complete vaccination coverage for all antigens together is low; and 10) vitamin A administration rate is poor.

Based on these CSG III evaluation findings, the following recommendations were made for consideration in the follow-on CHE project: promotion of maternal responsibility for home-based health records; training of AWW to take more active role in advising on diarrheal episodes; emphasis on messages regarding importance of increased fluids during diarrhea, and fewer antibiotics; stronger advocacy needed to increased effective immunization coverage.

In a related child health initiative, CARE implemented an operations research project in Karnataka focused on the reinforcement of ICDS efforts to communicate critical health messages through the AWW. Evaluations of previous ICDS interventions had uncovered problems in the AWW's ability to communicate information effectively to the village mothers, and this project sought to field-test two approaches to training and outreach -- one of which involved the use of mass-media and other innovative audio-visual tools, and the other which placed a greater emphasis on the AWW's role as a trainer and increased her participatory communication skills. The most important findings were: no consistent difference between the two training approaches in the KAP of the AWW herself; significant differences in the AWW's success in communicating key messages -- mothers demonstrated more knowledge when their AWW had training using the participatory non-mass-media approach; none of the various mass-media or audio-visual training tools tested had any measurable effect on the mothers' knowledge and practice.

At the request of state governments and communities, CARE is implementing a "maintenance phase" transitional activity through their Continuing Health Education (CHE) project, working in Karnataka, Orissa, and Madhya Pradesh, which seeks to establish a sustainable program using CARE's health training strategies which will allow the state governments and local communities to assume responsibility for the programs.

D. CARE & ICDS TODAY: PROGRAM HIGHLIGHTS

Two of the most significant elements of CARE's future programming are presented in the recently-completed Long Range Strategic Plan (LRSP): 1) a new focus on women, with the final goal "to increase women's control over their productive and reproductive lives", and 2) a staff reorganization including a merger of the Food and Primary Health Care units into an Integrated Nutrition and Health unit. Past program highlights and future plans include:

Food Programming:

- participation in the experimental initiative to include adolescent girls as new ICDS beneficiaries through adding three girls per AWC per year to the feeding roster (a total of 109,000 girls have been included as recipients to date)

- expansion of a formal training program in food logistics, management, and monitoring techniques for CARE staff and GOI-ICDS field workers, including basic commodity accountability, proper record maintenance, emphasis on counting actual beneficiaries rather than target numbers, proper storage procedures, proper measurement of rations, documentation of losses/damages
- counterpart training activities with GOI to assist AWWs in empowering beneficiary mothers and helping to organize women's groups

Primary Health Care:

- reinforcement of ICDS efforts to educate mothers of children aged 0-3 in child nutrition and health; operated in 15 blocks in four districts of Karnataka ending 1992; follow-on under CHE in 4 blocks (see description of Child Survival)
- renewed focus of Primary Health Care activities on children under three through focused activities seeking to improve case management of acute respiratory infections and diarrheal disease in six states -- Andhra Pradesh, Bihar, Gujarat, Maharashtra, Rajasthan, and West Bengal. Current ARI activities are scheduled to be completed by the end of FY. 1996 and then evaluated for replication and expansion
- primary health care training for ICDS and Ministry of Health field staff personnel of GOI, especially communications skills

Small Economic Activities Development and Agriculture/Natural Resources:

- SEAD projects including beekeeping (Bihar), savings-&-loan-associations (Orissa, Uttar Pradesh, Andhra Pradesh), and dairying (Uttar Pradesh)
- nutrition education in all SEAD groups to help women identify ways to use their increased income to improve their families' nutritional status
- bio-intensive gardening (BIG) in Karnataka provides technical guidance and nutrition education to ICDS mothers; now reaches 2400 women

Urban and Population Programs:

- pilot projects in women's reproductive health will be implemented in Uttar Pradesh and Madhya Pradesh, in addition to design and implementation of a large-scale population project with USAID central grant funds
- situational analyses of urbanization issues in cities in Gujarat, Karnataka, Madhya Pradesh, and Uttar Pradesh.

E. STATE-LEVEL PROGRAMMING AND CONTEXT

CARE-India supports ICDS in ten states with Title II commodities donated by the US Government and complimentary activities financed with the proceeds from the sale of Title II vegetable oil. The CARE contribution to ICDS in FY94 was quite significant in both tonnage and value.

Complementary development activities designed to strengthen ICDS have been implemented in all ten states supported by CARE. In addition, CARE utilized PL-480 Section 202(e) funds to support a comprehensive Counterpart Training program to improve the management of food commodities at the state, district and block levels. CARE's support to the ICDS program is summarized in Figure 4 on the next page.

The evaluation team visited four of the ten states supported by CARE: Bihar, Maharashtra, Karnataka and Orissa. The four states represent a wide range of both development indicators and program performance. CARE recently ranked the states in which it works from most needy to least needy according to five development indicators: female literacy, incidence of poverty, infant mortality, female life expectancy, and fertility rate.

This ranking indicates that Bihar and Orissa are two of the poorest states with high infant mortality and fertility rates and low levels of female literacy and female life expectancy. The other two states visited, Karnataka and Maharashtra, are less needy in all indicators.

The poorer states like Orissa and particularly Bihar have difficulty ensuring the regular flow of food and guarding against losses. The GOI does not produce information on average number of feeding days by state although the annual national standard is set at 300 days. Average feeding days for CARE-supported ICDS in the four states visited is shown below:

FEEDING DAYS ACCOMPLISHED PER RECIPIENT

	Indian FY93 (Apr-Mar)	Indian FY94
Bihar	187	203
Maharashtra	285	296
Orissa	253	222
Karnataka	261	250

FIGURE 4 :

CARE ICDS PROGRAM AT A GLANCE

CARE SUPPORTED STATES -- ICDS PROGRAM	# CARE SUPPORTED AWCs	BENEFICIARIES RECEIVING TITLE II RATIONS	TONNAGE TOTAL	BUDGET		COMPLIMENTARY ACTIVITIES						
				C&F VALUE TITLE II	GOI CONTR. TO CARE	ARI	CHE	SLA	BEE	DAIRY	BIG	
ADHRA PRADESH	12,566	650,000	14,805	7,316,700	227,800	X		X				
BIHAR	10,701	525,000	11,958	5,909,775	210,598	X			X			
GUJURAT	17,907	977,350	22,260	11,000,808	245,729	X						
KARNATAKHA	17,909	1,163,775	26,506	13,098,856	292,597		X					X
MADHRA PRADESH	15,822	765,000	17,424	8,610,943	230,297		X					
MAHARASHTRA	11,804	1,006,500	20,382	10,118,417	194,995	X						
ORISSA	14,945	870,000	19,814	9,791,352	300,567		X	X				
RAJASTHAN	9,177	350,000	7,971	3,938,700	129,537	X						
UTTAR PRADESH	6,741	305,000	6,948	3,433,973	128,973			X			X	
WEST BENGAL	22,702	957,375	21,806	10,776,269	336,605	X						
TOTALS	140,274	7,570,000	169,874	83,995,794	2,297,698							

STATES	CARE SUPPORTED ICDS			CARE TITLE II C&F CONTRIBUTION	NON-CARE ICDS	
	GOI CONTRIBUTION -- FOOD	GOI PERSONNEL & OPERATING COSTS	GOI CONTRIBUTION TO CARE'S P&O**		COST OF GOI FOOD	NON-CARE P&O
BIHAR	1,612,064	3,032,264	210,598	5,909,775	11,829,451	4,554,612
MAHARASHTRA	3,854,741	164,709	194,995	10,118,417	7,661,387	7,674,225
ORISSA	-----	1,681,598	300,567	9,791,352	6,752,032	1,038,774
KARNATAKA	2,252,467	6,782,258	292,597	13,098,856	4,818,548	3,287,096

*P&O -- REPRESENTS ALL PERSONNEL AND OPERATING COSTS FOR GOVERNMENT IN THE CARE SUPPORTED ICDS BLOCKS

**CARE P&O -- THIS FIGURE REPRESENTS THE GOI PAYMENT TO CARE FOR PERSONNEL AND OPERATING COSTS

***C&F -- REPRESENTS TOTAL COST OF COMMODITIES AND OCEAN FREIGHT PAID BY U.S. GOVERNMENT

STATES	TOTAL BLOCKS /AWCs*	CARE BLOCKS /AWCs	TOTAL BENEFICIARIES	CARE-SUPPORTED BENEFICIARIES	CARE TITLE II FOOD (MT)	CARE SUPPORTED ICDS (C&F)		NON-CARE ICDS
						GOV'T INPUTS (FOOD, CARE P&O)	CARE FOOD	GOV'T INPUTS (FOOD, P&O)
BIHAR	226/19,065	115/10,701		525,000	11,958	4,822,000	5,909,775	16,384,000
MAHARASHTRA	165/25,516	73/11,804		1,006,500	20,382**	4,154,032	10,118,417	15,335,612
ORISSA	178/15,522	127/14,945		870,000	19,814	1,935,451	9,791,352	7,790,806
KARNATAKA	112/20,314	97/17,509		1,163,775	26,205	9,281,000	13,098,856	8,105,645

*JUNE 1993 -- STATUS REPORT OF ICDS-GOI

**IN MAHARASHTRA, TITLE II CSB AND OIL ARE MIXED WITH SUGAR AND PROCESSED IN TWO REGIONAL PLANTS TO A READY-TO-EAT (RTE) MIXTURE CALLED SUKHADA

Inland commodity losses were kept to a minimum -- 0.91% of total availability in FY93 and 0.47% in FY94. (GOI and the state governments do not report their losses.)

SUMMARY OF CARE-INDIA LOSSES

	India FY93			Indian FY94		
	Quantity (kg.)	% of Total	Value (\$)	Quantity (kg.)	% of Total	Value (\$)
Bihar	123,907	6%	63,027	78,825	8%	37,663
Maharashtra	224,597	11%	111,150	23,498	2%	13,072
Orissa	435,994	22%	278,289	183,751	18%	83,180
Karnataka	209,128	10%	159,142	96,138	10%	51,839

CONTRIBUTIONS TO ICDS

As mentioned, the GOI provides 100% of the funding to the state governments for the non-food costs of operating ICDS -- including personnel and operating costs. Even in the case of CARE -supported ICDS blocks, the personnel and operating costs are paid by the GOI. The following table presents a comparison of the value of CARE vs. state government commodity contributions to ICDS in dollars. (These figures are in dollars only because tonnage totals for state government commodity purchases are not available.) The CARE figure includes the cost of ocean freight which represents approximately 25% of the total value. It is clear from these figures that the four state governments visited depend upon the CARE food commodities. In all four states, these figures certainly highlight the question of state governments' ability to sustain the feeding portion of ICDS without external support.

	CARE Title II Contribution	% of Total CARE	Overall State Food Contribution
Bihar	\$5,909,775	30%	\$13,441,515
Maharashtra	10,118,417	47%	11,516,128
Orissa	9,791,352	59%	6,752,032
Karnataka	13,098,856	65%	7,071,015

In meetings with state government officials, three of the four registered their opposition to the idea of any reduction of CARE Title II commodities. The exception was Maharashtra where the ICDS State Administrator believes the state has a comfortable budgetary position for ICDS activities..

In Karnataka, the state government's ICDS Director was very clear that the state government was not prepared to assume any additional costs for the program, and indeed she was critical of CARE for not providing the full amount of food promised. However, in the same meeting the Director admitted that 15 new blocks will be added this year as a part of the GOI plan to continue to expand ICDS. The CARE State Administrator for Karnataka also believes that the ICDS program in Karnataka would have great difficulty continuing without the support of CARE. He further pointed out that CARE has moved from just providing food to supporting innovative activities that are improving the quality and impact of ICDS services.

It did appear to the team that CARE makes the most dramatic difference in the poorer states like Orissa and Bihar in terms of ensuring the flow of food to the Anganwadi Centers. Ongoing monitoring, counterpart training and the delivery of food from port to regional godowns on a regular basis provide a consistency that is otherwise lacking. Even with this support in Bihar, only 12,000 metric tons of the 23,000 programmed actually gets through for distribution. Inadequate state government management and the inability to resolve bottlenecks are responsible for the poor performance in the state of Bihar.

In the state of Orissa, food delivery is much better than in Bihar, but the team found that State Government does not always provide the necessary funds for the food to be delivered from the block level to the Anganwadi Centers. What this means then is that the Anganwadi Worker is forced to, in many cases, use her own resources to transport the food from the block godown to her village -- this in spite of a GOI memorandum to all states that specifically assigns the responsibility of transport of food to Block Government.

It is clear that the commitment of state governments to ICDS varies considerably. In Maharashtra the team found a state government with ample resources and a creative approach to utilizing locally produced food to support the AWCs. Maharashtra has also benefitted from the USAID India ICDS Bilateral Program and other external inputs over the years. In Karnataka, the state has more severe budgetary constraints than Maharashtra but benefits from a good institutional capacity to implement ICDS and to encourage local innovations. The poorer states like Bihar and Orissa not only have much larger scheduled tribe/scheduled caste groups to serve through ICDS, but also considerably fewer resources.

The team did find enough evidence in all four states to be very concerned about regular interruptions in the flow of food to AWCs, infrequent payment of Anganwadi Workers, and numerous block-level ICDS positions sanctioned but not filled. These circumstances mean that the AWW is often put in a position of having to maintain a program without regular supplies of food, not receiving her honorarium (approximately \$12 a month) regularly, and not having the support system in place at the block level. It appears that state governments have difficulty paying AWWs on time and filling block level positions in a timely way.

It was apparent from field visits and meetings with state government officials that CARE has established strong working relationships with state governments. What was not clear is to what extent CARE participates actively in a dialog with state governments and in efforts to solve operational problems in ICDS. The team felt that CARE, with its substantial resources, should be more involved in policy discussions with state governments.

F. COMMODITY CHOICE & PROGRAM MECHANISMS

This impact evaluation comes at an important juncture for the program, a time where several factors are working to shape the future directions and scope of CARE and USAID support to ICDS. At the request of USAID, the evaluation team considered these factors as "cross-cutting themes" throughout their field work in order to provide insights and suggestions, which are summarized below and presented in detail in Annex C.

Program levels. The early 1990s brought severe resource constraints to bear on all food-assisted programs, especially the very large ones like India, and it is no longer reasonable to plan for an increasing or even static flow of Title II food to India.

Focusing on impact. The current resource constraints coincide with increasing pressures to focus the shrinking resources which are available to programs with the greatest potential for impact. CARE's future programming must include possible responses to static or reduced program levels which seek to make maximum efficient use of Title II food to enhance food security and have real people-level impact.

Commodity choice. The resource constraints on program levels discussed above provoked a debate on commodity choice for the India Title II program; CARE-India considered and rejected a commodity switch from Corn Soya Blend (CSB) to the less expensive Soy Fortified Corn Meal (SFCM). The team looked at some issues of nutritional content and usage, and concurs with the CARE decision not to change commodities.

Program sustainability and developmental appropriateness. A particular program mechanism has historically driven CARE-India's activities -- moving large volumes of blended grain from processing centers in the U.S. thousands of sea miles on U.S. ships to Indian ports. Today, it is likely that other options may be more developmentally appropriate and sustainable, as well as more cost-effective. The current U.S. budgetary constraints which are placing so much pressure on Title II program levels and future directions may appear to be a problem, but they can also be viewed as a challenge -- an opportunity to re-design the program to create a vision of assistance to ICDS which is more developmentally appropriate and sustainable, with a clear plan for transition away from massive infusions of donor food. To inform the discussions within/between USAID and CARE on this important and sensitive issue, the team prepared a preliminary set of models, or "scenarios", illustrating the advantages of a range of options; details on all scenarios modelled in the team's preliminary work can be found in Annex C. These are illustrative only, and are designed to serve simply as a stimulus for future discussions and more detailed policy modelling.

CHAPTER III. COMMUNITY NEED FOR ICDS

This chapter discusses the need for integrated health and nutrition services among poor Indian communities -- the community need for ICDS -- by providing an overview of nutrition and health practices at the community level as well as a description of community perceptions of and support to ICDS currently.

A. NUTRITION & HEALTH PRACTICES IN THE COMMUNITY

Nutrition and health knowledge and practices (KAP) have been shown to dramatically affect the nutritional status of infants and children, acting as strong determinant factors along with access to safe water and sanitation, and household income and access to food. Knowing the important messages about maternal and child health and nutrition, and acting properly based on that knowledge, are personal and family issues which can be very effectively addressed at the community or village level through programs such as ICDS and CARE's special interventions. Mothers, adolescent girls, and AWWs are, in essence, "nodes" for nutritional status improvement.

Efforts to improve maternal nutrition (calorie, protein, micronutrient) benefit both the woman and the child. Protein-calorie malnutrition and deficiencies of iron, iodine and vitamin A during pregnancy are related to both maternal and neonatal mortality. The ICDS program addresses the problem of maternal malnutrition found in rural India by feeding enrolled pregnant women. Efforts to expand that by educating mothers about quantity and quality of diets in pregnancy offers the potential of improving maternal nutritional status even more.

There are several reasons for poor nutritional status in pregnancy. First pregnancies occur early, before girls are fully developed. Maternal depletion occurs when women experience many pregnancies with short periods of time between pregnancies. Women's diets during pregnancy are affected by seasonality of foods. Cultural beliefs about quantity and quality of food intake during pregnancy, greatly affect balance and adequacy of nutrition of the mother.

In Asia, problems of low birth weight are related to low pregnancy weight gain. Communities recognize that improved maternal nutrition increases an infant's birth weight, but fears of obstructed labor often form the basis of strong cultural beliefs against increased calorie and protein intake during pregnancy. Efforts to improve maternal nutrition must include messages to mothers and the community that stress the benefits of improved birth weight to infant survival and improved diet in pregnancy to maternal survival. This includes the importance of appropriate weight gain, increased caloric and protein intake, adequate work and rest, and adequate iron, folic acid and vitamin A intake.

A number of infant and child feeding practices are relevant to these efforts: exclusive versus predominate breastfeeding; frequency and length of each feed, night feeds; supplemental liquids; timing of introduction of semi-solid and solid foods for the child; dilution, amount of food; number of daily feedings; foods that should not be given in special circumstances (illness,

or certain ages), etc. Available literature suggests there are positive breastfeeding and weaning practices in India: the vast majority of village mothers breastfeed their infants and continue breastfeeding for at least a year or longer. But, the same literature also identifies suboptimal feeding practices in Indian villages: delayed initiation of breastfeeding; discarding of colostrum; and late introduction of appropriate weaning foods.

Infants and young children need to maintain adequate nutrition during an illness or fever in order to meet the increased needs for fluids and calories, and to promote rapid recovery and return to normal growth and development. Infants have little nutrient storage to withstand reduced feeding. Similarly, children with nutritionally inadequate diets do not have much nutritional reserves. Significant malnutrition can develop if nutrient restrictions continue through repeated bouts of illness.

For these reasons, it is extremely important that the anganwadi worker correctly recommend feeding a sick child. The specific suggestions differ slightly according to the common childhood illness. In the case of diarrhea, the mother should know that she is to continue breast feeding for young infants, offer an oral rehydration solution to prevent dehydration, and continue feeding the child the regular diet. If the infant/child also has nausea or vomiting, the mother should try small frequent feedings.

Mothers of malnourished children need counseling and education on 1) giving more quantity of locally available food, 2) giving food with high caloric density, and 3) giving small frequent feedings to children who poorly tolerate food. (These strategies are referred to as: food quantity, food quality, and food frequency). Mothers should also know the importance of taking the malnourished child to a doctor.

Currently, mothers are seriously lacking in knowledge of optimal practices regarding weight gain during pregnancy, breastfeeding, weaning, or feeding of the sick child. The evaluation team confirmed that the majority of mothers in ICDS areas do not know or practice the key behaviors that would prevent malnutrition in their infants. This "KAP gap" reflects the urgent need at the community level for an integrated health and nutrition intervention such as ICDS.

B. COMMUNITY PERCEPTIONS OF ICDS

Community involvement in and support for the *Anganwadi Worker* (AWW) and the *Anganwadi Center* (AWC) was of interest to the evaluation team because it is considered by most development professionals to be essential to sustainable development, and because most recent evaluations of the ICDS program have been critical of the lack of community involvement with the AWC. In theory the AWC is a community-centered node for essential service delivery, and the job description of the *Anganwadi Worker* lists as one of her primary responsibilities "elicit community support and participation in running the program." Developing community support for the AWC is among the many tasks expected of the AWW.

In order to understand more of the dynamics of community perceptions of and involvement in the AWC activities, the team included a series of questions in field interviews with *Anganwadi Workers*, mothers, and other community members. In most cases, we found that the *Anganwadi Center* is perceived by the villagers as a guaranteed government service - an entitlement program. This attitude persists throughout at the grass-roots level and seems to reflect a complacency on the part of rural villagers. In the same vein, the AWW is regarded by the community as a government employee (even though she receives only a small monthly honorarium). The GOI, on the other hand, explicitly states that the AWW is a "voluntary worker", "not a civil servant and never will be one", and "she is the community's contribution to ICDS".

One very interesting and revealing result from the field interviews was an unexpected response to an open-ended question about community support to the AWC; when the AWW was asked "how do the villagers support the AWC?", more than 80% said "they send their children to the AWC". This interpretation of parents' allowing their children to participate as "support to the AWC" reveals once again the perception of ICDS as a government-mandated entitlement program; parents' sending their children to the AWC for food, pre-school, and related health services is seen as a contribution to the AWC -- or a favor to the AWW -- rather than as an access node for valuable services.

C. COMMUNITY SUPPORT AT THE VILLAGE LEVEL

It is clear that the Anganwadi Worker is a stable presence in the rural communities served by ICDS; the great majority of villages visited had AWWs who had served in their role since the inception of the center. This was consistently true in virtually all centers visited regardless of age of operation -- the AWW position seems to be considered a job for life. The following table shows the average length of time the AWCs have been in existence and the average length of time the AWW has worked in the center, by state. The analysis showed that constancy of the AWW in her position does not vary between CARE and non-CARE blocks.

AVERAGE YEARS ANGANWADI CENTER (AWC) IN OPERATION, and AVERAGE YEARS ANGANWADI WORKER (AWW) IN POSITION				
	BIHAR	ORISSA	KARNATAKA	MAHARASHTRA
AWC	8.0	9.62	5.73	6.5
AWW	7.8	8.46	4.80	6.14

In 75% of the villages visited the AWW resides in the village; there is little difference between CARE and non-CARE villages with respect to residency. The non-resident AWWs were most often found in villages closer to urban centers that allow for greater mobility. Neither AWW residency nor constancy in the village appear to have much influence over the level of community support for the AWC. Community involvement as it relates to village-

level development -- and, specifically, support for the AWW and the successful functioning of the AWC -- can be viewed as a continuum from participation to partnership to ownership (the ultimate goal). At present, the team found scant evidence of the first step, participation, and virtually no partnership nor ownership on the part of rural villages.

The team found that 69% of the villages visited reported some level of community involvement with the functioning of the center. In some cases, as with the donation of a building, the support is constant. In other cases though, like the donation of firewood for the preparation of the daily ration, the support is infrequent. Finally, there are instances of support on a one-time-only basis, for example the purchase of toys for pre-school education. The most common type of support was the provision of fuel, followed by labor for construction of the AWC and the donation of a building. The donation of a building is considered to be temporary until the government supports the construction of a new center. (Government construction can take years, however, and communities are not motivated to build their own AWC without external support.) The CARE India *Anganwadi Worker Handbook* states, "Normally, it is expected that the local community should provide accommodation for the *Anganwadi* Center free of rent. This is the best way of involving the community in the ICDS Scheme right from the beginning." In fact, field visits showed that 21% of villages actually donate space and in several cases the building belongs to the AWW.

The GOI is in the midst of a decentralization plan that will place more governing responsibility and control of resources in the hands of local government through the *panchayats*, which are village-level governing structures which were established after independence. It is interesting to note that the Gandhian constitution for a free India drafted in 1948 stated "keep the Government to a minimum, and what you must have, decentralize."¹ This did not happen, and in fact a highly centralized system that marginalized the *panchayat* was developed instead. Nevertheless, today possible structures and mechanisms for developing community involvement and direct support for the AWC do exist but again the practical responsibility for catalyzing this community involvement falls on the shoulders of the AWW.

The village-level mechanism with the greatest potential for supporting AWCs is the *mahila mandal* (MM) - an organization of village mothers that is organized by and for mothers to address their own development needs. Of the 80 villages visited, 45 have organized *mahila mandals* and 43 of these conducted meetings in the month of April. Further, it was found that 64% of the 45 MMs do make some contribution to the *Anganwadi* Centers in their villages.

In many cases the AWW is actively involved in forming the MM and working to sustain it as a viable community organization. From the AWWs interviewed, it appears that she most

¹ 'Decentralization and Development Effort', *The Hindu*, May 24, 1994, courtesy of Mr. M. Aslam, Professor of Rural Development, IGNOU.

commonly uses the MM to motivate parents to send their children to the AWC. In a few cases, the AWW uses the MM as a forum for health and nutrition education, and MM has been a key component in CARE's "value-added" education activities.

While it is impossible to measure the qualitative interpersonal dynamics involved, it appeared to the team that the more dynamic and "activist" AWWs seemed to have more success in developing and sustaining community support for the AWC. Again, this is a major task in and of itself and just one more undertaking for an already overburdened AWW. One AWW told the team that she goes to the community members to raise funds whenever she has a particular need at the center and is always successful in doing this.

The team also found that community interest in and support for the AWC is heightened by the CARE complementary health activities. For example, in the case of Acute Respiratory Infection (ARI) project areas, the AWW's knowledge of ARI treatment techniques was empowering and improved her interaction with the community. (In part this seems to be due to status gained from successfully providing a curative service.) Another complementary project, Continuing Health Education (CHE), provides a regular forum for the AWW to interact with the most vulnerable mothers and mothers of malnourished children. Again, the AWW is providing a valuable service directly to the community and enhancing her credibility.

D. OPPORTUNITIES FOR INCREASING COMMUNITY SUPPORT

1. The GOI decentralization plan, which requires that 30% of all members of the *panchayat* be women, provides an important opportunity for engaging these women in overseeing the services of the AWC and primary education. By being directly responsible for the functioning of the AWC, female *panchayat* reps can use their new status in the community to mobilize villagers in support of the AWW and the AWC.

One means of developing community interest might be to identify a few key health indicators for community groups/members like the *panchayat* or the *mahila mandal* to monitor on a regular basis. These might include a community growth chart maintained by the AWW, monitoring the number of children gaining weight, the number receiving the complete cycle of immunizations, etc.

2. Increased community support is best approached from the inception of a center; once an AWC has been established it is hard to change the perceptions and expectations of the community involved. The GOI has identified changes needed in the "Plan of Introduction of Services" which is the protocol for opening new AWCs, but any proposed changes, implemented through a centrally-mandated circular, will take time.

In the case of CARE support to ICDS, most CARE-assisted AWCs are already well established -- but, to the extent that CARE is charged with supporting any new blocks or AWCs, developing the base for true community involvement must be an essential prerequisite to the opening of a new CARE-assisted AWC.

3. Given CARE's broader commitment to empowering women, the *mahila mandal* and the female members of the *panchayat* represent opportunities for more effective linkages between the AWW and the women in the community. Innovative pilot schemes for working with MMs and *panchayats* and even training MM members need to be explored. Again, potential mechanisms for developing community involvement do exist and should be built upon.
4. CARE field officers and block level officials have a keen understanding of village level dynamics. In each district where CARE is operating, CARE could pick a block with an energetic CDPO and group of supervisors to test out innovative approaches to developing community involvement.
5. CARE should expand and experiment with complementary activities like CHE and ARI as means of encouraging community support and strengthening the AWWs' links with the community.
6. CARE should engage in substantive dialogue with and learn from the experiences of other national and international NGOs in attempting to develop greater community ownership of ICDS.

This chapter summarizes the known impact of ICDS on health and nutritional status and the possible effects of ICDS on infant and child mortality, and then discusses.

A. IMPACT OF ICDS ON INFANT AND CHILD MORTALITY

There is no ongoing longitudinal study which attempts to track the causal relationship between ICDS program interventions and changes in infant and child mortality among ICDS target groups. However, the Family Health Surveys (FHS) provide a picture of secular change in infant and child mortality during the past 15 years; and because there are recent FHS in all 25 states, these data provide a wealth of trend data on mortality. In addition, because child anthropometric data were also collected (but have not yet been analyzed), the FHS could serve as a vehicle for more in-depth quantitative evaluation of ICDS and of CARE.

Figure 5 illustrates the rather impressive gains in survival that Indian children have experienced in the past 15 years. While the table only includes the four states visited by the survey team, the patterns are typical for all states. With only one exception (child mortality in Orissa), substantial improvements in infant and child mortality rates are seen.

State	Period	Neonatal	Post-Neonatal	Infant	Child	Under-Five
Bihar	%change from 5-9 years ago	-0.34%	8.94%	3.88%	19.82%	8.86%
	%change from 10-14 years ago	7.28%	30.08%	17.64%	26.32%	19.86%
Orissa	%change from 5-9 years ago	8.35%	16.06%	12.28%	13.81%	12.34%
	%change from 10-14 years ago	6.91%	36.55%	22.21%	-1.43%	19.19%
Karnataka	%change from 5-9 years ago	1.98%	22.69%	10.39%	32.12%	17.50%
	%change from 10-14 years ago	18.38%	46.70%	29.98%	54.81%	37.91%
Maharashtra	%change from 5-9 years ago	3.93%	10.44%	6.25%	48.46%	22.10%
	%change from 10-14 years ago	10.81%	43.78%	23.32%	50.36%	33.24%

Infant mortality has declined by between 17.6 and 30 percent during the past 15 years. With the exception of Orissa, child mortality declined at even a greater rate, ranging from over 50% in Maharashtra and Karnataka to 26.3% in Bihar. Although the gains were clearly greater in developmentally high performing states, declines also were notable in the state of Bihar, where overall development has not progressed nearly as much during the past fifteen years as it has in richer states. The peculiar findings in Orissa can be explained by the epidemic levels of chloroquine-resistant malaria. Orissa contributes more than 50% of all malaria cases in the entire country, and this problem could easily swamp other efforts to improve child survival. Thus, although not direct evidence for causality, the trend data on mortality do demonstrate impressive gains since ICDS has been initiated.

Supporting evidence for a mortality effect can be found in a study by Tandon and his colleagues (1984) which compares infant mortality rates in ICDS program areas with those of the nation as a whole. They found mortality rates to be approximately 25% lower in program areas as compared to national averages (86/1000 versus 114). Obviously, given the extraordinary variability in mortality rates across the country, the national norms were probably not a solid comparison group, particularly earlier in the program when coverage rates of ICDS were very low and blocks selected by the program may not have been the most socio-economically disadvantaged. It is interesting to note, however, that the magnitude of infant mortality declines are in the same range as those found in the FHS survey data.

B. IMPACT OF ICDS ON BIRTHWEIGHT

Of all the potential impacts examined, improvements in birthweight as a result of the ICDS would appear to be of the greatest magnitude; NIPCCD data are shown in Figure 6

FIGURE 6: BIRTH WEIGHT OF MOST RECENT LIVE BIRTHS

Type of Project	ICDS				NON-ICDS			
	No. of Babies	Weight Known	Weight		No. of Babies	Weight Known	Weight	
			>2500g	<2500g			>2500g	<2500g
Rural	3699	886 (24.0)	554 (62.5)	332 (37.4)	519	93 (18.0)	36 (38.7)	57 (61.7)
Tribal	2050	385 (18.8)	218 (56.6)	167 (43.3)	292	26 (8.9)	5 (19.2)	21 (80.8)
Urban	1285	380 (29.6)	202 (53.1)	178 (46.8)	183	49 (26.8)	16 (32.6)	33 (67.3)
All	7034	1651 (23.5)	974 (58.9)	677 (41.0)	994	168 (16.8)	74 (44.1)	94 (55.9)

Note: Based on mothers' recall; figures in parentheses are percentage of newborns

These data, excerpted from the NIPCCD 1992 evaluation report, show that among the rural and tribal samples included in the study reported levels of low birthweight (LBW) are greater in non-ICDS as compared with ICDS areas (1.6 times greater in rural areas, and nearly 3 times greater in tribal areas). It should also be noted that the relationship is reversed in the urban sample where non-ICDS births were of higher weight. However, as mentioned earlier, these data are the most questionable from a methodological standpoint because of the large number of missing observations and the very small sample size of valid tribal birthweights (26 observations). Still, these data are consistent with other observations, and the relationship between birthweight and mortality risk is well established in the literature. Therefore, an impact on birthweight would be consistent with an overall infant mortality decline.

C. IMPACT OF ICDS ON CHILD MALNUTRITION

The relationship between child nutritional status and ICDS program status is summarized on the following pages in Figures 7, 8, 9, and 10. Among children less than three years of age, there is very little difference between ICDS and non-ICDS in nutritional status, except for the urban sample where the ICDS children are apparently advantaged compared with the non-ICDS sample. As Figures 7 and 9 show, the younger children in the ICDS sample are quite similar in nutritional status to the non-ICDS sample, except in the urban sample. (It may be worth noting that the urban non-ICDS sample is small, thus the urban finding could easily be an artifact of the sampling design used by NIPCCD. A cluster sample was used, and only 18 *anganwadis* accounted for the 153 children included in this sample.) Figures 8 and 10 show a slightly more favorable picture for older children (3 to 6 years) who resided in ICDS program areas. Figure 11 presents the combined picture. Overall, ICDS show a 11-15% advantage over non-ICDS. Thus, the NIPCCD analyses suggest a limited nutritional impact for ICDS.

There are several caveats that should be kept in mind. First, the NIPCCD analysis used only simple stratified contingency tables; no techniques were used to control potential confounding variables. Next, although the authors of the NIPCCD report state that the ICDS and non-ICDS samples were similar on socio-economic status and other background characteristics, there is virtually no substantiating data presented. Another concern relates to constraints of the sampling design itself. In many ways the sampling design was quite strong for a cluster sample design (the number of AWCs was maximized and the number of households within villages was minimized). However, although the overall sample size of the NIPCCD survey is large, the strata sizes of the non-ICDS samples (urban, rural and tribal) do not contain a large enough number of AWCs to permit accurate statistical comparisons. The sampling design was not constructed to support the stratified analyses presented throughout the report.

This situation is common -- and thus in the future it is important that state-of-the-art statistical techniques be used to analyze large-sample cross-sectional survey data like these. However, even given all the limitations mentioned here, there is clearly consistency in the findings of a modest positive ICDS effect, particularly relating to mortality differentials.

**FIGURE 7: NIPCCD ANALYSIS OF WEIGHT/AGE DATA:
NUTRITIONAL GRADES (WEIGHT/AGE, 0-3 YEARS)**

Type of Project	ICDS					NON-ICDS				
	No. of Children Assessed	Nutritional Status				No. of Children Assessed	Nutritional Status			
		Normal	Grade I	Grade II	Grade III & IV		Normal	Grade I	Grade II	Grade III & IV
Rural	3209	1164 (36.3)	1164 (36.3)	677 (21.0)	204 (6.3)	375	130 (34.7)	140 (37.3)	71 (18.9)	34 (9.0)
Tribal	1771	582 (32.9)	601 (33.3)	466 (26.3)	122 (6.9)	208	65 (31.2)	67 (32.2)	60 (28.8)	16 (7.6)
Urban	1202	448 (37.3)	414 (34.4)	242 (20.1)	98 (8.1)	153	34 (22.2)	61 (39.8)	44 (28.7)	14 (9.1)
All	6182	2194 (35.5)	2179 (35.2)	1385 (22.4)	424 (6.8)	736	229 (31.1)	268 (36.4)	175 (23.7)	64 (8.6)

Note: ICDS Sample N = 7034, Rural 3699, Tribal 2050, Urban 1285
 Non-ICDS N = 994, Rural 519, Tribal 292, Urban 183
 Figures in parentheses are percentage of children weighed.

**FIGURE 8: NIPCCD ANALYSIS OF WEIGHT/AGE DATA:
NUTRITIONAL GRADES (WEIGHT/AGE, 3-6 YEARS)**

Type of Project	ICDS					NON-ICDS				
	No. of Children Assessed	Nutritional Status				No. of Children Assessed	Nutritional Status			
		Normal	Grade I	Grade II	Grade III & IV		Normal	Grade I	Grade II	Grade III & IV
Rural	3069	1113 (36.3)	1211 (39.5)	629 (20.5)	117 (3.8)	338	102 (30.2)	139 (41.1)	74 (21.9)	23 (6.8)
Tribal	1762	628 (35.6)	655 (37.2)	409 (23.2)	70 (3.9)	219	68 (31.1)	79 (36.1)	60 (27.4)	11 (5.0)
Urban	1161	411 (35.4)	460 (39.6)	237 (20.4)	53 (4.6)	132	30 (22.7)	62 (47.0)	36 (27.3)	4 (3.03)
All	5992	2152 (35.9)	2326 (38.8)	1275 (21.3)	240 (4.0)	689	200 (29.0)	280 (40.6)	170 (24.7)	38 (5.5)

Note: ICDS Sample N = 6992, Rural 3662, Tribal 2055, Urban 1275
 Non-ICDS N = 994, Rural 518, Tribal 297, Urban 179
 Figures in parentheses are percentage of children weighed.

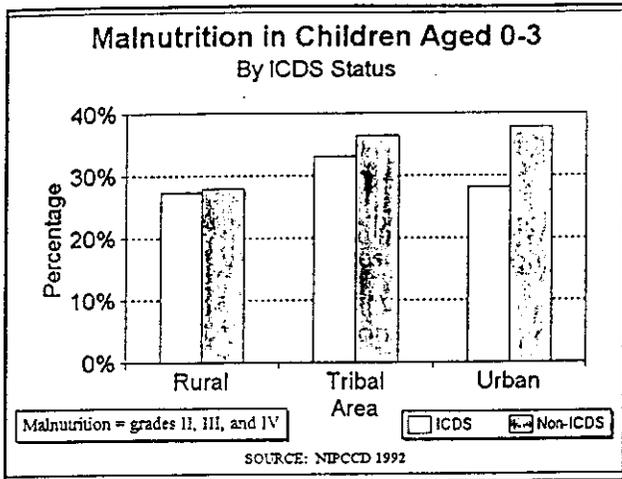


FIGURE 9

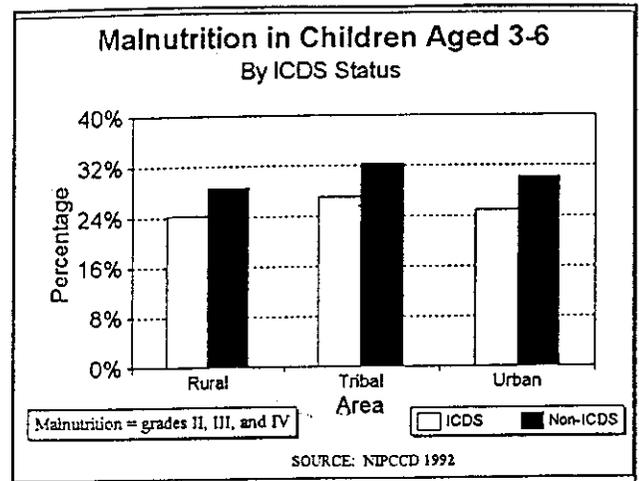


FIGURE 10

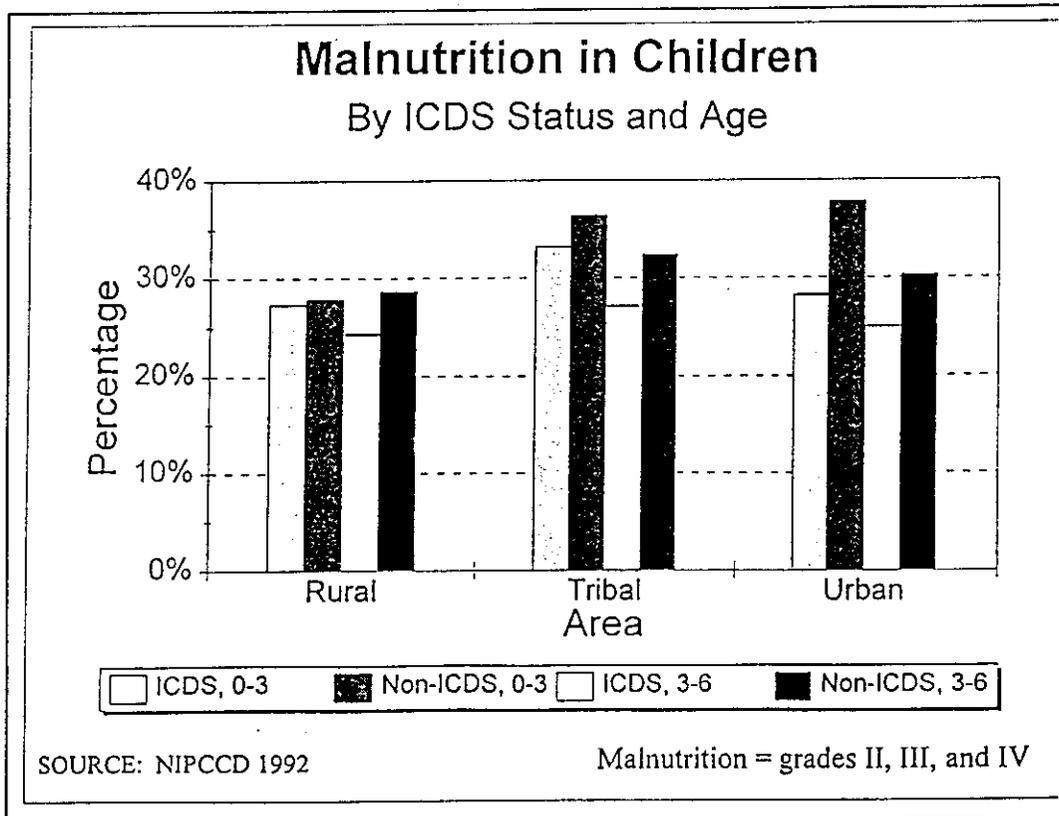


FIGURE 11

D. REVIEW OF PREVIOUS EVALUATION STUDIES ON ICDS

The ICDS Program has been the subject of numerous evaluation studies, largely planned and executed by local professional academic and private sector groups. A literature database search of published and grey literature uncovered more than 25 citations that directly address the evaluation of ICDS. Available studies range from process to impact oriented, and the methodologies employed are highly variable. A wide range of evaluation designs have been used include pre-test and post-test designs, control group designs, and comparison of statistics from project sites with national norms.

The purpose of this section of the report is to provide a context for the specific evaluation findings of the USAID/CARE effort. Summary statements are made about the literature data base as a whole. Then, the stronger research studies (those that have been reviewed and published in international journals, and those that are the result of focused donor efforts such as Tamil Nadu and the USAID bilateral) are summarized. The 1992 NIPCCD evaluation is not discussed in this section as it is covered in earlier sections of the report.

Summary of the Literature Base

Taken as a whole, the literature is disappointing in that few studies are methodologically strong enough, on their own, to assess the impact of the ICDS program on health, nutrition and development of the Indian population. The studies represent a mosaic of information. Other authors have summarized these numerous studies (Kennedy, 1993; Bailey, 1994), drawing similar conclusions.

An important characteristic of the evaluation literature is the geographic coverage of the studies. Most of the studies focus on a small number of districts, blocks and villages. Indeed, only two of the studies(excluding NIPCCD) attempted national coverage. To the extent that the national program is implemented unevenly, findings from these small geographic areas cannot be extrapolated to the program as a whole.

A related characteristic of the literature is the overall weakness in describing sampling procedures employed. None of the studies outlines the approach taken to sampling in enough detail to assess the validity of the sample for examining the cause and effect relationship between participation in the ICDS program and impact.

Most of the studies are characterized by small sample sizes (less than 200 per comparison group). Only five studies include samples of over 1000 in each of the comparison groups.

Only a minority of the studies include impact assessment measures -- process evaluations are more common. These studies attempt to measure program coverage, knowledge, attitudes and practices of program staff, intermediate impact measures such as vaccination prevalence, maternal KAP related to child health and nutrition, and school attendance rates.

A smaller number of studies examine health and development impacts such as child anthropometry, infant and child mortality rates, morbidity incidence, prevalence and severity, as well as psychological/intellectual development.

With one exception (one evaluation of the Tamil Nadu Integrated Nutrition Program), state-of-the-art multi-method research has not been employed. That is, survey research is not complemented by focus group, ethnographic and other qualitative research techniques that confirm and enhance quantitative findings.

Finally, one of the more important drawbacks of the literature is the lack of in-depth analysis of data collected. The use of regression techniques was not mentioned in any of the studies. Most of the studies assumed that having a control group was adequate to establish comparability. However, in no case was it clear that control groups were in fact comparable on characteristics such as socio-economic status, educational level and initial pre-program health and nutritional levels. In the few cases where authors state that such techniques were employed, there are no supporting data provided.

The most frequently employed design, the pre-test post-test design, is a very weak design, particularly as used in the Indian context. Baseline and follow-up surveys were frequently several years apart. It is well known that India has experienced a precipitous positive trend in income and food availability. Thus these reflexive (one group) designs are inherently flawed in this case. The studies that employed this design rarely addressed this analytical problem. In the few cases where confounding factors were measured and assessed, it was found that they did in fact threaten the validity of the supposition that ICDS did, indeed, unequivocally result in population impacts.

In summary, despite the large number of studies that were fielded to study the impact of ICDS, the literature can be characterized as relatively provincial and uncritical. It should be noted that all but five of the studies published remained in regional journals, as opposed to the more highly scrutinized international refereed journals.

Key Findings from the Literature

The literature findings are consistent with the conclusions of the evaluation team. The finding of a modest effect is mirrored by a collection of studies with conflicting findings -- the stronger of these, and those with the greatest geographic coverage, showing an effect. The fact that the numerous studies focused on localized population find highly conflicting results is consistent with the well-recognized uneven implementation of the ICDS program at the state, district, block and AWC levels.

In the two cases where substantial donor assisted projects were implemented (see the summary matrix on pages 40 and 41) -- that is, Tamil Nadu and the AID bilateral project -- impacts on child and mortality were notable and substantial. These areas represent programs that had substantial management and technical support.

Aside from the NPCCD study, the three field studies reported by Tandon and colleagues were the only studies of national scope. The first study attempted to assess impact on child mortality. A large sample of the population was sampled and mortality monitored. The IMR in this sample was compared to national data available through a sample vital registration system. The sample data resulted in an IMR of 86 which is unexpectedly low given the overall evolution of mortality in India during the past 15 years. It compared favorably with the 114/1000 rate found from the sample registration system. A key issue in interpreting this study is understanding the sample represented by both the study and the vital statistics system. India is well known for the dramatic variability in IMR and level of development from state to state. Thus, although the results are suggestive, they are difficult to interpret.

The second study in this series represents a pre-test post-test design. Measurements were only separated by 21 months in time and a large sample of children were included (17,000+). Levels of malnutrition were decreased by more than 50% in all three areas; that is, urban, tribal and rural. Again, the study is encouraging but little is known about the specific samples selected and their exposure to other intervention programs. Also, seasonality may be important but is not discussed.

Finally, Tandon and his colleagues reported results from a more recent comparison group design in which control groups were measured at two different time points (1976, 1985) and treatment groups included more and less mature programs. The findings of this study showed that secular change in the control group was far greater than any contrast between ICDS and non-ICDS groups. Thus, the most rigorous of the designs was the least promising.

When taken as a group, the larger data base, the wider coverage studies and indicator trend data (nutrition, mortality, economic status), health and nutrition have substantially in India during the period of ICDS program. ICDS is likely to have contributed to this change to some degree; however, the magnitude of this contribution is not known and is likely to be modest.

More important is the potential of the program as demonstrated by more evenly implemented demonstration projects. Monitoring and evaluation systems that permit evaluation are clearly critical elements of any future program strategy.

The matrix presented on the following pages summarizes the results of the key ICDS evaluation studies discussed above.

Study citation	Geographic coverage	Sampling design	Sample size	Comparison strategy	Analysis approach	Outcome measures	Findings	Conclusions
Gujral, 1991	11 blocks Panchmals, 8 blocks Chandrapur	3-7 AWC's selected randomly in each block	Panch=5045 0-5 years, 294 preg, 567 lact. Chand=4343 0-5 years, 352 preg, 490 lact at base and similar number at follow-up	multiple survey round design. However, only baseline and final utilized in analysis in control groups	simple bivariate	coverage, mortality, anthropometry, lab for anemia	panch = IMR reduction 9% TMR 35%, 25% severe malnutrition. Chand. = IMR = 27%, TMR = 38%, severe malnutrition 53%	study suggestive of program impact, however, great improvements seen in sample SES during study period. Should be adjusted using regression
Tandon, 1981	15 blocks throughout country, locations not specified	stratified sample including 15 blocks. Other information not available	17,904 children	longitudinal, baseline and follow-up surveys 21 months apart on same children	simple bivariate tables	vitamin A, supplementation, immunization coverage, anthropometry	immunization up slightly, vitamin A coverage up substantially. Supplement coverage up from approx. 15 to more than 50%. Grades III and IV malnutrition reduced from approx. 22% to 11, 5.5 and 6.1% in rural, tribal & urban respectively	Study findings suggestive of change; findings somewhat incredibly positive. Sampling and seasonality are two issues that are important in interpreting findings
Tandon et al, 1989	12-18 states	27, 28, 30 and 13 blocks included in control 1, control 2, 3-5 year program and 8+ year program groups. No detail beyond this given	more than 20,000 children measured in each group	2 non-ICDS groups (1976 and 1985) where selected from blocks that were selected but for which program not yet implemented. These compared to groups with 3-5, 8+ years experience	bivariate only	coverage of food and vitamin/mineral/ supplements	coverage data didn't change in control groups but dramatically higher in ICDS groups (greater than 70% higher for all items). Malnutrition declines greatest between 1976 and 1985 in control groups. Similar rates in ICDS and 1985 control	Study does not suggest program impact but, rather, secular improvements in target populations.

Study citation	Geographic coverage	Sampling design	Sample size	Comparison strategy	Analysis approach	Outcome measures	Findings	Conclusions
Tandon et al, 1981	nationwide	stratified sample, 20% blocks selected and 6% villages within blocks. 230,000 population represented	230,000 population surveyed	surveyed population compared to national data from vital registration system	univariate comparisons only of sample versus norms	IMR only	IMR in sample = 86(1982-83) versus 114 from sample registration data	given high variability in IMR between states, knowledge of sampling frame critical to interpretation
Thankappan et al, 1990	three districts in Kerala state	districts grouped into three zones. One district randomly selected in each. One ICDS and one control block selected from each district. 30 clusters of 210 children selected in each block	1260 1-2 years. 1260 mothers with children less than 1 year.	control group design	bivariate, comparison of groups only on key indicators	immunization status, antenatal care	No significant difference between ICDS and non-ICDS, except possibly for measles vaccinations where ICDS may do somewhat better	Findings consistent with no identifiable impact.
Gokhale et al, 1992	Poona City	not described	less than 100 children per group, except for ICDS group during round 2 surveys(158)	control group and three survey rounds, 1981, 1987, 1991	bi-variate comparisons of key background and impact measures	anthropometry, morbidity	no statistical association between ICDS status and outcomes	findings uninterpretable due to small samples and lack of comparison on background characteristics

CHAPTER V. IMPACT OF CARE ACTIVITIES ON THE ICDS SYSTEM

This chapter discusses the quantitative and qualitative findings of the evaluation team with regards to CARE's impact on the ICDS system, in areas such as training and supervision, education, quality control, center management, food logistics, intersectoral coordination, nutrition knowledge and practices, preventative services and coverage, and case management.

A. TRAINING, SUPERVISION, EDUCATION, & QUALITY

The single most powerful observation from the evaluation team's visits to 80 Anganwadi Centers was the commitment, motivation, and dedication of the Anganwadi Workers (AWWs). The AWWs represent a national treasure and are one of the most important potential resources for effective rural development. As indicated in the table below, the AWW represents for many a long term commitment. Most, but not all, AWWs had gone through the initial three month "job course training" which is run at regional training centers using standardized curriculum developed by NIPCCD. Exposure to refresher training has been variable.

A recent priority of CARE's specialized training interventions (e.g. ARI) has been the joint training of Health and ICDS staff. This is an effective strategy for increasing coordination and cooperation and directly addresses ICDS objectives. The most important (and potentially fruitful) opportunity for continuing education occurs at the monthly sector meeting where ICDS and health staff (CDPO and Medical Officer) meet at the Primary Health Center.

ANGANWADI WORKER (AWW) CHARACTERISTICS				
		Responses	Mean	Range
AWW age		70	30.7	21-45
AWW years in service		78	6.97	1-13
AWW # refresher courses		77	0.9	0-5
AWW # refreshers (AWW yrs>5)		53	1.1	
AWW years since last refresher course		65	3.3	1-10
AWW had CARE Training	CARE Non-CARE	35 of 36 8 of 35		

The importance of training rests not in the number of courses given or the number of persons trained but in the quality and appropriateness of the work. Correct performance -- "doing the right things right" -- requires training. Incorrect performance may be due to lack of training, but it may also relate to other factors such as lack of proper functional equipment or lack of motivation. The following table on two important ICDS skills (weighing and plotting) illustrates how periodic field observations focused on quality -- the type of visits which supervisors should be making on a regular basis -- will identify needs for training.

FIELD CHECKING OF AWW WEIGHING* AND PLOTTING**				
	CARE AWCS		NON-CARE AWCS	
	NUMBER	#, % CORRECT	NUMBER	# % CORRECT
WEIGH	26	17 (65%)	8	4 (50%)
PLOT	40	27 (68%)	19	8 (42%)

Weighing*

Balance scale, read weight correctly to nearest 0.1kg

Plotting**

Record age and weight correctly on growth chart

Considering the importance of weighing to the ICDS interventions, **quality in weighing and plotting, as well as the far more important aspect of interpretation followed by active counselling and nutrition education, is essential.** Achievement of improved quality requires a reorientation away from the written records and reporting to performance. Supervisors need to work with AWWs to be sure their techniques are correct. Sector meetings need to include sessions of demonstration and practice by trained trainers. Practice and follow-up on quality is essential; training alone does not ensure quality. Continuous quality assessment as a trigger for commendation and continuing education provides an exciting opportunity.

CARE's ARI training was observed and found to be well planned and participatory. Trained AWWs in the field were knowledgeable and had acquired most skills. CARE has traditionally done an excellent job in logistics planning and monitoring. Expansion of that role to quality assurance of nutrition and health interventions would provide a major contribution to ICDS.

B. INTERSECTORAL COOPERATION

Maximum achievement of ICDS objectives requires the coordination and cooperation of both ICDS and health staff. In AWWs where there was relative proximity of the ANM to the AWW and where rapport was good, team effectiveness was high. Contact rates are high, with AWWs reporting an average of 5.5 ANM visits since January 1; 21 of 74 had had fewer than 0-3 visits. CARE joint training and interventions which focus on the sector meeting have been effective in increasing coordination. **Reorientation of this relationship to focus on key issues of coverage (measles vaccine, vitamin A, family planning) and impact (faltering, interbirth interval, appropriate weaning) has the potential to significantly increase the impact of ICDS.**

C. CENTER MANAGEMENT

During the field visits, the team collected data on a range of AWC-specific variables through observation, questioning, and review of AWW registers.

AWC Structure. There was no significant difference in structure type or condition between CARE and non-CARE *anganwadí* centers. This commonality was consistent both overall and in analyses disaggregated by state.

AWC Storage Capacity. Storage capacity and practices were marginally better in CARE AWCs than in non-CARE centers; 61.4% CARE centers had adequate storage, compared with 56.3% on non-CARE AWCs. Results are slightly different in the state-specific analysis: in Bihar and Orissa, the poorer-functioning states, CARE AWCs' storage was significantly better than that in non-CARE centers.

Maintenance of Registers. CARE-supported AWCs proved to be slightly more likely to have the required registers filled in by the AWW, although there was no detailed check on data quality or validity (with the exception of weights and nutritional grades, discussed earlier).

Supervisory Visits. AWWs in CARE-supported areas reported a higher mean number of supervisory visits from their Supervisor and/or CDPO -- 4.3 from January to April, as compared to an average of 2.8 in non-CARE AWCs.

Home Visits by AWW. AWWs in CARE-supported areas reported making an average of 18.6 visits per month to beneficiaries' homes, compared with an average of 13 per month reported by AWWs in non-CARE AWCs.

D. FOOD DELIVERY & LOGISTICS

The timely and uninterrupted delivery of food is an essential first step in increasing nutritional impact under ICDS or any alternative supplementary feeding program. The working hypothesis of the evaluation team was that in many areas, especially those experiencing administrative problems and/or budgetary constraints, CARE would be better able to facilitate food delivery in a timely and consistent manner - and, as a result, AWCs in CARE-assisted blocks and districts would experience considerably fewer feeding interruptions. In fact, data from the field study revealed a somewhat mixed picture, as shown below:

**MEAN NUMBER OF
INTERRUPTED FEEDING WEEKS (in 80 AWCs*)**

	BIHAR	ORISSA	KARNATAKA	MAHARASHTRA
CARE				
MEAN	13.4	9.71	2.20	0.27
(range)	(9-20)	(1-23)	(0-8)	(0-1)
number	10	13	9	11
NON-CARE				
MEAN	32.0	9.18	0.62	2.22
(range)	(8-40)	(4-14)	(0-2)	(0-17)
number	8	14	5	10

*NOTE: analyses based only on matched pairs reveals essentially the same pattern.

When the total number of weeks of interrupted feeding was compared across states and between CARE and non-CARE-assisted blocks, there was a striking difference in the state of Bihar, where CARE was associated with a dramatically lower number of feeding interruptions (13.4 weeks) compared with non-CARE (32.0 weeks), supporting the team's original hypothesis on the potential CARE advantage. In Maharashtra and Karnataka, however, the difference between CARE and non-CARE feeding interruptions were only slight -- about two weeks or less, with neither CARE nor non-CARE showing a systematic advantage. And, in Orissa, there were virtually no differences in food interruptions between CARE and non-CARE AWCs (9.71 versus 9.18).

It should be noted that in all states where it operates CARE is charged only with facilitating food transport to the block-level food distribution site. The state government, in turn, is responsible for financing and managing the transport of the food to the village or AWC, usually moving it from the block ICDS office to the AWC by truck, bullock cart, or even headload. In actual practice, however, in some areas the AWW and/or her Helper must collect the food themselves (sometimes without reimbursement for transport costs).¹

Thus, it is quite possible that the failure to find a pronounced and positive impact by CARE on food delivery in all states may rest more with how food is transported from the block godown to the AWC -- a factor which is entirely outside of CARE's control, and one which is most problematic in the poorer states.

Based on AWW interviews and records examined in the four states visited, the evaluation team concluded that CARE was generally associated with only modestly enhanced or equivalent food delivery rates when compared to non-CARE assisted feeding sites. Where there are frequent breakdowns or bottlenecks in the delivery of supplementary food to the district or block level, however, such as in Bihar, CARE provides a decided advantage.

E. NUTRITION KNOWLEDGE, ATTITUDES, & PRACTICE (KAP)

To improve the health and nutritional status of preschool children, especially those in the first years of life, mothers must have knowledge of the key maternal, infant, and child health and nutritional behaviors that can prevent malnutrition, and put that knowledge into practice.

The evaluation team collected a range of information about key nutrition and health knowledge and practices. One important area was infant and child feeding practices: exclusive/predominate breastfeeding; frequency and length of feed; night feeds; supplemental liquids; timing of introduction of semi-solid and solid foods; dilution, amount of food; number of daily feedings; foods not to be given in special circumstances (illness, certain ages).

¹ This pressure on the AWW and her Helper is most common in the poorer states, in spite of a 1993 directive from ICDS-GOI mandating that the state governments and block ICDS office manage and finance and transport of food to the AWC instead of forcing the AWW to come collect the food.

Another key area examined in the evaluation was maternal nutrition: appropriate weight gain in pregnancy, and knowledge and practices regarding the quantity of women's diets during pregnancy. The data generated by the interviews with AWWs and mothers were analyzed according to a range of criteria: first by the type of CARE intervention (CHE, SLA, BIG, etc.),- and then CARE-Plus versus CARE-Regular versus non-CARE.

Pregnancy Weight Gain and Quantity of Women's Diets. Efforts to improve maternal nutrition (calorie, protein, micronutrient) benefit both the woman and the child. Protein-calorie malnutrition and deficiencies of iron, iodine and vitamin A during pregnancy are related to both maternal and neonatal mortality. There are several reasons for poor nutritional status in pregnancy. Maternal depletion occurs when women experience many pregnancies with short periods of time between pregnancies. Women's diets during pregnancy are affected by seasonality of foods -- and cultural beliefs about food intake during pregnancy, greatly affect the balance and adequacy of nutrition of the mother. Efforts to improve maternal nutrition should include messages to mothers and the community about the importance of appropriate weight gain, increased caloric and protein intake, adequate work and rest, and adequate iron, folic acid and vitamin A intake.

For purposes of this evaluation, the team selected to assess knowledge of AWWs and mothers affecting quantity of women's diets during pregnancy. The team asked whether the woman should eat more/less during pregnancy. Overall, 78% of anganwadi workers responded that a woman should eat the same/more quantity of food during pregnancy. There were no significant variations noted in the knowledge of AWWs in the CARE assisted centers. The evaluation team also assessed knowledge of appropriate weight gain in pregnancy (if the interviewee was uncertain about the weight in kilos, the interviewer probed regarding mother's weight gain in relation to baby's birthweight. There was poor knowledge about the appropriate weight gain in pregnancy -- only about a third of all AWWs and 28% of mothers interviewed knew the correct answer to this question. CARE-Plus assistance was associated with more correct knowledge among both AWWs (72%) and mothers (69%).

Initiation of Breastfeeding and Giving of Colostrum. Breastmilk provides unequalled nutrition for infants up to six months of age. It actually changes in composition to meet the needs of the growing child. Breastmilk contains anti-bacterial and anti-viral agents which significantly lower rates of childhood illness. It enhances child spacing. Placing the infant to the breast immediately postpartum strengthens the suckling reflex, promotes mother-child bonding, and gives the child increased protection against bacteria and viruses. Withholding colostrum from the newborn deprives the child of a highly nutritionally valuable fluid, rich in anti-bacterial and anti-viral agents, and threatens normal growth. Feeding messages should urge the mother to breastfeed soon after birth. Because timing of first breastfeeding and use of colostrum are important to a child's nutritional status, the evaluation queried anganwadi workers and mothers on these topics. The data analysis found that AWWs in the CARE Plus villages had a better knowledge of the importance of early breastfeeding. This finding was echoed in the data on mothers' practices, showing that mothers in the CARE Plus villages were more likely to give colostrum to their last baby.

Introduction of Foods. Many factors are important in the introduction of semi-solid and solid foods. These include appropriate ages the child should be given certain types of food, and the ingredients, texture, amount of food, and number of daily feedings. The World Health Organization recommends that nutrition programs routinely assess complementary feeding, defined as child being given breast milk plus water, milks and/or other liquids and/or semisolids. WHO also recommend monitoring the mean or median age of introduction of water, milks, other liquids; semi-solids; and solid foods. The WHO indicator tracks the percentage of infants receiving complementary foods in addition to breastmilk.

The evaluation team chose to examine knowledge and practices regarding only one aspect, that of age of introduction of semi-solid and solid foods. Late introduction of foods was a known sub-optimal practice in many Indian villages. The evaluation team sought to determine whether such knowledge and practices were better in CARE-assisted villages. Although the evaluation data showed no statistically significant difference in the knowledge of AWWs regarding optimal age for introduction of foods, the CARE Plus villages clearly had a greater proportion of AWWs with the correct knowledge. There was a definite difference found in mothers' practices; more mothers in CARE Plus villages reported introducing foods between 4-6 months (91%) than did mothers in CARE Regular (59%) and Non-CARE (71%) villages.

F. EFFECTS OF CARE'S INTERVENTIONS ON KAP

Not all ICDS areas received CARE assistance which included a special focus on training AWWs or mothers in optimal health and nutrition practices. However, the evaluation team posited that in villages where the CARE assistance included such training, the knowledge and practice of AWWs and mothers would be better than in other villages in the sample. Among the villages visited by the team, there are the following training and technical inputs:

- ICDS counterparts training on CARE food handling practices and management systems
- Bio-intensive Gardening (BIG) - Training of grassroot-level functionaries and project beneficiaries on BIG technology, nutrition and health regarding home production and consumption of fresh fruits and vegetables
- Continuing Health Education (CHE) - A non-formal, participatory training of health and ICDS personnel and mothers in a core primary health care curriculum (topics chosen as per the needs of the community and based on the seasonality of disease)
- Acute Respiratory Infection (ARI) - Training of health and ICDS personnel and mothers on case management of pneumonia and related issues
- Savings and Loan Associations (SLA) and Beekeeping Projects -- non-formal group training of AWWs and mothers in basic nutrition education

CARE's inputs were categorized as: "CARE Plus" (BIG, ARI, SLA, CHE) or "CARE Regular"

(including ICDS counterpart training). Villages in the two CARE categories, CARE Plus and CARE Regular, were then compared to non-CARE ICDS (i.e., ICDS villages not assisted by CARE). Special note needs to be taken of the primary health care project, "Continuing Health Education" (CHE), which built upon the training of over 176,600 mothers and 2,000 AWWs with USAID Child Survival Grant funding. CSG projects were implemented in 15 ICDS blocks of 4 districts, several of which fell within the evaluation sample. CHE consisted of: 1) ORT training by campaign and non-campaign methods; 2) non-formal training in growth promotion, immunization, & vitamin A supplementation; and 3) non-formal, participatory curriculum for growth promotion, immunization, vitamin A supplementation, ORT, and other pertinent topics.

AWW Knowledge and Practice

There were structured questions in the AWW interview relating to key messages about optimal practices to improve health and nutritional status. As discussed above, those messages are: 1) when to initiate breastfeeding; 2) when to introduce foods other than breastmilk; 3) continue feeding child during diarrhea; 4) give malnourished child double rations; 5) refer malnourished child to doctor; 6) counsel mother of malnourished child; 7) expected weight gain in pregnancy; and 8) need to eat same/more food during pregnancy.

Ideally, the AWW should know and transmit all these key messages affecting the nutritional status of the child --they emphasize actions that are within the control of the mother. (Note that certain types of AWW training can be assumed to be more effective at conveying these messages than others.) The following table shows responses from AWWs from all villages visited. It illustrates the relative effectiveness of different CARE-GOI interventions in giving the AWW correct knowledge of the core set of nutrition questions.

<u>Type</u>	<u>Correct Answers</u>	
CHE	53/56	95%
BIG	33/40	82%
SLA	17/24	71%
ARI	16/24	67%
CARE REG	140/240	58%
NON-CARE	140/156	55%
BEEKEEPING	7/33	21%

The table shows that the enhanced training given in the CARE Plus villages had a much greater impact on nutritional knowledge of AWWs than did any other type of training. In particular, CHE AWWs showed excellent levels of knowledge, which in part reflects the solid base of *child survival training* given to this set of workers under the CSG project. One type of monetization project, the bee-keeping activity, had the poorest showing of all. Only about a fifth of the AWWs knew the basic practices to protect a child's nutritional status.

There were little differences between the nutritional knowledge found in AWW in non-CARE assisted areas and that found in CARE Title II assisted *anganwadi* centers. Slightly more than half of the AWWs in the two types of areas knew the optimal nutritional practices to protect the health and nutritional status of a child under age six.

Impact on Knowledge and Practices of Anganwadi Workers. CARE's training approach employed in the CHE project (joint training, participatory methods, sector meetings), has resulted in *anganwadi* workers with better knowledge of breastfeeding practices, expected pregnancy weight gain, and feeding during diarrheal episodes. This is true, (although to a lesser extent) for two other value-added projects which included some form of nutrition education, BIG and SLA, but not for Beekeeping, which also tried nutrition education..

CARE's training in the CHE and ARI projects has resulted in *anganwadi* workers with better knowledge of case management for common, but serious, childhood infections. Specifically, AWWs in CHE and ARI village have greater knowledge of fluid management of diarrhea, and of correct actions to take for child with rapid respirations and cough. In all areas, *anganwadi* workers have similar levels of knowledge about two key actions to take for malnourished children -- giving double rations to the child, and referring to the doctor. But, CARE's training approach in the CARE Plus areas has resulted in *anganwadi* workers who are more cognizant of the need to counsel mothers of the malnourished child.

Impact on Knowledge and Practices of Mothers. Except for in the CARE Plus villages (chiefly due to the CHE village data), mothers are seriously lacking in knowledge of optimal practices regarding weight gain during pregnancy, breastfeeding, weaning, or feeding of the child with diarrhea. The evaluation found that the majority of mothers do not know or practice the key behaviors that would prevent malnutrition in their infants.

Mothers have much better knowledge of optimal health and nutrition practices in villages where CARE has enhanced its Title II program with non-formal participatory health and nutrition education, coordination with the government's health sector, and frequent home visits to motivate mothers and follow up childhood illness and poor growth.

This effect is seen most dramatically in CHE areas. CARE's educational approach to mothers in the CARE Plus villages has resulted in significantly better practices regarding giving colostrum, timely introduction of foods other than breastmilk and dietary management of childhood diarrhea. Mothers in the CHE and other villages which emphasize nutrition education are also more knowledgeable about desirable weight gain in pregnancy.

These findings about the knowledge and practices of mothers are consistent with the findings regarding the knowledge of *anganwadi* workers. However, the levels of reported practice are lower than the levels of knowledge of the AWW, indicating that AWW training is resulting in incomplete message transfer to mothers.

Managing CARE and ICDS Interventions for Greater Impact. The evaluation findings have immediate implications for achieving future impact, with two key recommendations:

- Incorporate CARE's training methodology in a broader core health and nutrition curriculum in every CARE assisted ICDS project.
- Incorporate CHE's non-formal, participatory approach to education for mothers and other community child caretakers in a basic primary care curriculum covering optimal actions to prevent the significant causes of child mortality and morbidity in India.

The evaluation also identified specific areas which need enhancement in the AWW training curriculum. Three common illnesses account for the majority of child deaths; early recognition and treatment of pneumonia, diarrhea, and malaria will decrease mortality and increase health, and education should stress strategies such as food and fluids, home treatment, and referrals. Since almost 15% of mothers report they did not give colostrum, it would be advisable for CARE to work with the GOI to give further emphasis to ways in which the AWW can overcome cultural barriers to giving colostrum. Across all CARE-assisted ICDS projects, AWW training about introduction of weaning foods needs to be refined in terms of the type of foods and optimal time of introduction. Training about the expected weight gain in pregnancy also needs further explication and focus, and more attention needs to be given to this in beneficiary and community education programming.

AWW training also needs improvement in stressing the most important messages to give to the mother about feeding the malnourished child. The strategy should be very specific about the messages regarding food quantity, food quality, and food frequency. Focus group research should be used to develop the most appropriate and understandable way to state the messages. Special attention needs to be given to further refining the messages to mothers about feeding the child with diarrhea. Because the sick child usually cannot tolerate foods well, optimal messages must be given about food quantity, quality and frequency, and attention also needs to be given to replacement "catch up" feeding following diarrhea illness.

Training materials developed by CARE's previous Child Survival project, and in current use in the CHE project, seemed to be very appreciated by the AWWs in Orissa. These materials appear to be essentially correct in their formulation, but will need periodic, regularly scheduled updating to make certain the technical messages are the ones considered to give the greatest impact, and are understandable to mothers.

G. HEALTH SERVICES FOR PREVENTION

Three prevention strategies have the potential to have a significant impact on under-five morbidity and mortality: tetanus toxoid immunization for pregnant women; immunization for infants; and vitamin A supplementation at 9 months and every 6 months thereafter. The following table summarizes data from NIPCCD 1992 and the CARE re-analysis of the same data.

PERCENT COVERAGE FOR TETANUS TOXOID, MEASLES VACCINE, & VITAMIN A			
	CARE	NON CARE	NON ICDS
TT 2-3	27	31	26
Measles (0-3)	48.0	43.7	34.9
Vitamin A (0-3)	33.8	14.5	13.5

Availability of immunization data at the AWC varied significantly according to the proximity of the AWC to other facilities (ANM, PHC, hospitals), coordination between ICDS and health staff, and AWW understanding of the priority of immunization.

The next table presents the results of the matched pair analyses of data on coverage:

PREVENTIVE SERVICES, MATCHED CARE & NONCARE CENTERS DIFFERENCES IN COVERAGE (C = CARE, NC = non-CARE)					
	C>NC >30%	C>NC 15-30%	C=NC +/-14%	NC>C 15-30%	NC>C >30%
TT	6	1	3	1	2
MEASLES	7	2	2	0	1

Immunization coverage is clearly higher in the CARE versus the non-CARE blocks. Both levels are, however, below the national targets of 80% coverage. Of all the interventions available to ICDS, the three prevention interventions are the easiest, most effective, and lowest cost. Use of a single register where pregnancies and birth are recorded along with TT, Measles, and Vitamin A would enable the AWW, working together with the Supervisor and ANM, to identify and vaccinate all individuals in the target populations. **Provided there is the motivation and the vaccine, 90% or greater coverage is achievable in all ICDS areas.**

Vitamin A Supplementation & Treatment of Night Blindness. Vitamin A coverage was very low, with only 13% of the doses expected to be delivered to 9 month to 3 year old children reportedly delivered. While hospital data and field observations indicate a major decrease in Vitamin A related eye disease and blindness, night blindness is still being reported. Of 54 AWWs responding, 21 reported cases of night blindness in their villages (28%). Two villages had acute episodes of night blindness following outbreaks of measles. During field interviews, 64 of 79 (81%) AWWs gave an appropriate response regarding treatment of night blindness (vitamin A, green leafy vegetables, or refer to PHC). While there is debate as to the appropriateness of Vitamin A supplementation versus diet, the Institute of Health Management in Paithan described seasonal absences of food for which they felt Vitamin A supplementation was essential.

H. CASE MANAGEMENT

Faltering, frailty, and death among children frequently results from the synergistic interaction of undernutrition and infection. Appropriate case management of infections can not only reduce immediate morbidity and mortality but can also decrease the probability of long-term morbidity leading to frailty and death. In ICDS villages where the population has access to a source of quality care (Primary Health Center or Auxiliary Nurse Midwife), the role of the AWW should primarily be that of education and referral. In villages without access to care (remote rural areas), the AWW is frequently the only source of care available. Because of their close contact with mothers, AWWs can potentially carry out key functions regarding case management of the three conditions associated with severe morbidity of children: diarrhea, pneumonia, and (in certain areas) malaria. These functions include:

- 1) Providing mothers with information on appropriate home treatment for the ill child -- ORS, fluids, and food for diarrhea; fluids and local herbs for fever and cough; and sponging for fever.
- 2) Making mothers aware of the signs of severe illness requiring medical attention -- high fever, cough and/or difficulty breathing, diarrhea with signs of decreased activity.
- 3) Providing referral and/or care for the acutely ill child.
- 4) Supporting the mother and family of the sick child to ensure that the recommended treatment is understood and carried out.

During the evaluation field visits, each AWW interviewed was presented with three case histories -- one of diarrhea, one of pneumonia, and one of severe (III and IV degree) malnutrition -- and asked what actions she would take and what advice she would give. Unprompted responses were recorded. This information was considered key because these crises are highly influential determinants of a child's ultimate nutritional status and survival.

Pneumonia and Acute Respiratory Infections (ARI). For pneumonia, treatment with cotrimoxazole and referral were both identified as appropriate responses. Sixty-two percent of 79 respondents correctly identified an appropriate response to pneumonia. In the CARE ARI blocks, workers were fully cognizant on methods of diagnosis, counting of respirations, and age appropriate dosage. Counting of respirations was done correctly. Home visits by the evaluation team identified good home knowledge of what to do for cough and cold (fluids and fever) and what to do for cough and rapid breathing ("go to AWW for medicine to be taken twice a day for five days").

An additional observation, based on several reports and noted first-hand in one AWC, was the increased prestige and self-image of the AWW and the increased respect and participation of the community following the initiation of ARI activities. In non-ARI AWCs, inadequate or non-therapeutic doses of cotrimoxazole were often being supplied, e.g. one-fourth tablet twice a day for a child who should have received two tablets twice a day. If the AWWs are to receive drugs, they need to get adequate supplies and have the training and knowledge to use them correctly.

Management of Diarrheal Episodes. In response to questions about treatment of the child with diarrhea, 48 out of 54 AWWs (89%) identified oral rehydration salts (ORS) and/or salt sugar solution (SSS) as appropriate treatment. The critical questions of appropriate mixing (concentration of sodium) and volume of administration were, however, not addressed.

Of concern to the team was the lack of AWW understanding of the importance of continued feeding in the treatment of diarrhea. Half of the respondents (34 of 67) indicated that less food or stopping feeding was appropriate for the child with diarrhea. Also of concern was the apparent focus of AWW on problem identification late in the cycle of diarrhea and dehydration; many AWWs understood the significance of decreased skin elasticity (the "knuckle pinch" test) and dryness (the "no tears" test), but few understood the value of early use of home-available fluids as soon as diarrhea starts, to prevent the dehydration.

Continuing education on appropriate case management of diarrhea, timed to anticipate the increased incidence of diarrhea during the rainy season, would increase AWW ability to treat this common condition. In this topical training, priority should be given to: 1) prevention, including hand washing; 2) early use of home-available fluids at first signs of diarrhea; 3) importance of fluids plus continued feeding for the child with diarrhea; 4) recognition of the signs of dehydration (dryness, decreased skin turgor, decreased activity levels); and 5) appropriate mixing and use of ORS and/or SSS.

Case Management of Malnutrition. The AWW was expected to know that the correct strategy for treatment of a child classified in grade III and IV includes: giving double rations; referring to doctor; and counseling mothers about feeding practices. The data indicate that anganwadi workers in the CARE Plus villages have a better awareness of the need to counsel mothers of malnourished children. There was no significant difference in the knowledge of AWWs regarding the other two strategies -- giving double rations, and referring the child and mother to the doctor.

There were disappointing results regarding the anganwadi worker's knowledge of the essential messages to be covered when counseling mothers. The analysis showed 65% of all AWWs knew to counsel about food quantity, 56% cited need for giving mothers messages about food quality, while only 22% mentioned food frequency as being an important message to give to mothers. Since these were open-ended questions, it is possible that the results were affected by variations in the extent of probing of interviewers. The respondent may have known the message, but forgotten to cite it, unless probed by the interviewer.

CARE needs to work with GOI and USAID Office of Nutrition to identify calorie-dense and nutrient-rich foods that could possibly be available locally, and promote frequent feedings of such "treatment foods". Currently the nutrition strategy used by AWWs stresses the importance of increasing the quantity of food, with much less attention to the quality or frequency of feedings. With regards to messages on food quality, the team found many instances of AWWs who said they counseled mothers of sick or faltering children to "feed nutritious foods", but when probed on what types of foods are "nutritious" the AWW usually

specified only green leafy vegetables. Clearly the message on micro-nutrient value of fruits and vegetables has been received by the AWWs, but they are not as aware of the importance of calorie-dense and nutrient-rich foods.

Interactions Between Malnutrition and Disease. Because diarrhea is a frequent cause of illness in children in the areas where the evaluation took place, knowledge and practices related to the malnourished child should be taken together with that about management of diarrheal episodes. (Recall that AWWs in CARE Plus villages had a better knowledge of correct feeding during diarrhea than did those in CARE Regular and NON-CARE villages.)

Role of AWW in Curative Services. This analysis of the current AWW knowledge and practice in essential case management raises the broader question of the role of the AWW in curative services. There is not a consensus of opinion as to the appropriate role of the AWW in case management, but there are some clear practical issues. Currently, based on 44 responses during field interviews, AWWs are treating an average of 4.8 patients per week for ailments including cuts, bruises, and diarrhea. While many of the AWWs had been provided with health kits containing as many as 16-18 drugs, replenishment of those kit supplies was infrequent, with an average of only 5.3 drugs in stock at the time of the visit. Only 14 of 64 (21%) AWWs had ORS in stock; 25 of 68 (37%) had cotrimoxazole in stock. Increased quantities and more consistent supplies of a minimum core of essential drugs to provide care for cuts, fever, diarrhea, and pneumonia will be needed if the AWW is to play an effective role in case management. In areas where there are readily available curative services, there is less need, but in isolated areas where AWWs are the only source of care, her effective treatment of diarrhea and pneumonia will increase the health impact of ICDS.

Managing CARE Interventions for Greater Impact. A narrowly specific intervention, such as the model used to date for ARI, does not make a lot of sense within an integrated system which seeks to affect health and nutritional status. ARI Field Officers were not checking weight registers and Food Field Officers were not checking on ARI diagnosis and treatment. Should the Government of India and CARE agree on an increased role for CARE, three suggestions are offered: 1) CARE expand its staff of medical professionals, 2) CARE consider cross-training of all their field officers for broader skills base, 3) CARE reallocate its field officers with a target of one to each district.

Each Field Officer would spend one week a month in intensified activities in one block, one week in monitoring in other blocks, and one week in participating in sector meetings. The intensified block activities, if successful and appropriately followed with impact monitoring (see chapter 9), would then provide a model of success and impact which district authorities might choose to replicate. Over the next 12 months, WHO will be providing training materials for a more integrated approach to the sick child. Although these materials are likely to be too complex for the AWW, the concept of a standard approach to the sick child (with clear key messages for the mother) has great merit. AWWs serving in isolated areas have the potential to enhance their impact in the community through appropriate response to the child sick with diarrhea, fever (which in some areas includes malaria), and pneumonia.

CHAPTER VI. IMPACT OF CARE ACTIVITIES ON NUTRITION AND HEALTH

This chapter presents the available data on the impact of CARE's activities on health and nutritional status, in the context of current knowledge about the dynamics and impacts of supplementary feeding programs in general.

A. IMPACT ON HEALTH AND NUTRITION

The CARE re-analysis of the NIPCCD data provided limited insights into the health and nutritional impacts of CARE's standard package of interventions, constrained by several factors. First, this effort to "tease out" the health and nutritional impacts in CARE areas was largely limited to the NIPCCD survey data, in which the only impact indicators examined were birthweight and nutritional status. In addition, the CARE re-analysis was unfortunately unable to address the methodological and analytical limitations discussed in Chapter I, including the problem of potential confounding variables. In addition, the limited accessibility of the NIPCCD dataset prevented further clarification of some methodological issues. The CARE versus non-CARE comparison required a further breakdown of the ICDS strata in the NIPCCD sample; however, sample sizes are less of a problem in this analysis due to the larger size of the ICDS compared with the non-ICDS strata. Figure 12 illustrates findings related to birthweight, most importantly a lower incidence of low birthweight among the sample of villages covered by the CARE program.

FIGURE 12: BIRTHWEIGHT FOR CARE AND NON-CARE ICDS SAMPLES

	< 1000 g	1000-2500 g	> 2500 g	DNK
RURAL				
CARE	12 (1.1%)	94 (9.0%)	69 (6.6%)	844 (83.3%)
NON-CARE	99 (7.5%)	141 (10.7%)	44 (3.3%)	1033 (78.4%)
NON-ICDS	8 (2.4%)	25 (7.4%)	18 (5.3%)	287 (84.9%)
TOTAL	119 (4.4%)	260 (9.6%)	131 (4.8%)	2195 (81.1%)
TRIBAL				
CARE	9 (0.9%)	133 (13.6%)	69 (7.0%)	768 (78.4%)
NON-CARE	3 (0.7%)	3 (0.6%)	9 (2.1%)	417 (96.5%)
NON-ICDS	7 (1.5%)	12 (6.0%)	3 (1.5%)	181 (90.9%)
TOTAL	15 (0.9%)	148 (9.2%)	81 (5.0%)	1366 (84.8%)
URBAN				
CARE	1 (0.3%)	52 (18.5%)	49 (17.4%)	179 (63.7%)
NON-CARE	7 (1.6%)	66 (15.5%)	37 (8.7%)	315 (74.7%)
NON-ICDS	1 (1.0%)	12 (11.8%)	10 (9.8%)	79 (77.4%)
TOTAL	9 (1.1%)	130 (16.1%)	96 (11.9%)	573 (70.9%)
ALL				
CARE	22 (0.1%)	279 (12.1%)	187 (8.1%)	1822 (78.9%)
NON-CARE	109 (5.0%)	210 (9.6%)	90 (4.1%)	1765 (81.2%)
NON-ICDS	12 (1.9%)	49 (7.7%)	31 (4.8%)	547 (85.6%)
TOTAL	143 (2.8%)	536 (10.5%)	308 (6.0%)	4134 (80.7%)

Reliable findings are limited to those from rural and urban areas where the CARE sample was 1.8 and 1.4 times more likely to be of acceptable birthweight than were non-CARE; due to a large number of missing data among non-CARE tribal areas, tribal findings cannot be used.

Another interesting finding is the comparative superiority of children's nutritional status in the CARE areas among the younger children (ages 0-3). Figure 13 presents these findings.

FIGURE 13: CARE RE-ANALYSIS OF NIPCCD DATA ON NUTRITIONAL STATUS

TYPE OF PROJECT	PROGRAM EXPOSURE STATUS	0-3 yr. children						3-6 yr. children					
		N	I	II	III	IV	TOTAL	N	I	II	III	IV	TOTAL
RURAL	CARE	N 331 34.5	387 40.0	213 22.3	23 2.4	3 0.3	957	265 26.8	467 47.2	239 24.1	17 1.7	2 0.2	990
	NON-CARE	291 27.4	349 32.9	297 28.0	96 9.0	29 2.7	1062	324 33.9	345 36.1	216 22.6	57 6.0	14 1.5	956
	NON-ICDS	64 28.6	94 42.0	45 20.1	20 8.9	1 0.4	224	59 27.8	76 35.8	60 28.3	16 7.5	1 0.5	212
	TOTAL	686 30.6	830 37.0	555 24.7	139 6.2	33 1.5	2243	648 30.0	888 41.1	515 23.9	90 4.2	17 0.8	2158
TRIBAL	CARE	N 251 27.2 S	340 36.8	277 30.0	45 4.9	10 1.1	923	263 28.6 S	363 39.4	249 27.0	41 4.5	5 0.5	921
	NON-CARE	90 22.0	134 32.8	132 32.3	36 8.8	17 4.2 @	409	89 22.8	171 43.8	112 28.7	15 3.8	3 0.8	390
	NON-ICDS	34 23.0	54 36.5	47 31.8	11 7.4	2 1.4	148	31 20.3 S	57 37.3	53 34.6 S	11 7.2	1 0.7	153
	TOTAL	375 25.3	528 35.7	456 30.8	92 6.2	29 2.0	1480	383 26.2	591 40.4	414 28.3	67 4.6	9 0.6	1464
URBAN	CARE	N 97 35.1	103 37.3	55 19.9	19 6.9	2 0.7	276	77 28.1	112 40.9	67 24.5	18 6.6	-	274
	NON-CARE	135 33.5	136 33.7	92 22.8	32 7.9	8 2.0	403	111 31.9	148 42.5	73 21.0	13 3.7	3 0.9	348
	NON-ICDS	13 18.1	39 54.2	11 15.3	7 9.7	2 2.8	72	13 20.3	55 54.7	14 21.9	2 3.1	-	64
	TOTAL	245 32.6	278 37.0	158 21.0	58 7.7	12 1.6	751	201 29.3	295 43.0	154 22.4	33 4.8	3 0.4	686
ALL	CARE	N 679 31.5 #	830 36.5 @	545 25.3	87 4.0	15 0.7	2156	605 31.4 S	942 43.1 #	555 25.4	76 3.5	7 0.3	2185
	NON-CARE	516 27.5	619 33.0	521 27.8 S	184 8.6	54 2.9 @	1894	524 30.9	664 39.2	401 23.7	85 5.0	20 1.2@	1694
	NON-ICDS	111 25.0 #	187 42.1	103 23.2	38 8.6	5 1.1 @	444	103 24.0	168 39.2	127 29.6 S	29 6.8	2 0.5#	429
	TOTAL	1306 29.2	1636 36.6	1169 26.1	309 6.5	74 1.7	4494	1232 28.6	1774 41.2	1083 25.1	190 4.4	29 0.7	4308

S p<0.05
p<0.01
@ p<0.001

Figure 13 shows a small but consistent advantage for CARE as compared to non-CARE samples, ranging from approximately 14% to 20% greater than non-CARE. Note that the difference between sample areas is smaller and less consistent among older children (aged 3-6), where the non-CARE urban sample is even superior in status to the CARE sample. Key findings are illustrated graphically in Figures 14 and 15.

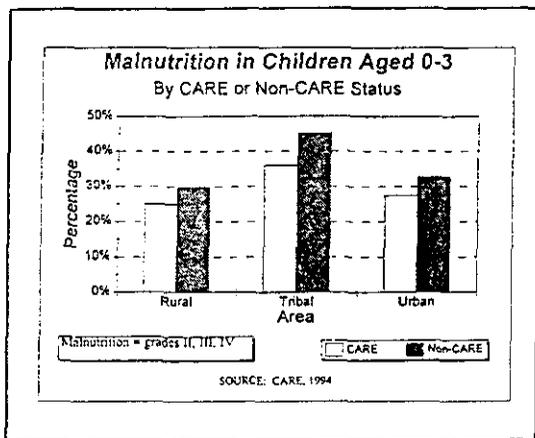


FIGURE 14

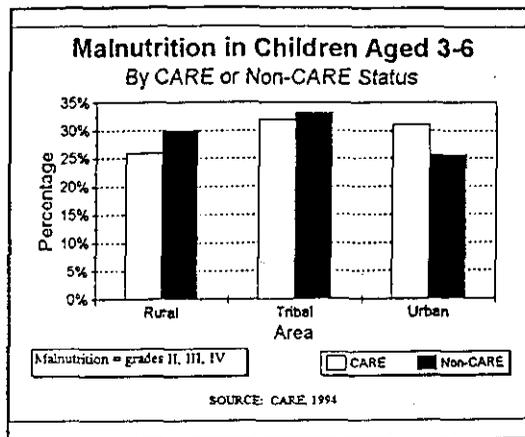


FIGURE 15

A different re-analysis of the data suggest that particularly among the rural and younger age groups, the CARE sample children have a lower probability of being severely malnourished than do the non-CARE children. Figure 16 shows the probability, or "odds", of having severe malnutrition (grades III and IV) between CARE/non-CARE status, by age group and place of residence. Note that the odds of being severely malnourished are over four times greater among the rural sample, 2.4 times greater among the Tribals and approximately equal in the urban areas. The non-CARE areas only outperform the CARE areas among the older children in the urban sample.

	CHILDREN 0-3	CHILDREN 3-6
RURAL	4.8 : 1	4.1 : 1
TRIBAL	2.4 : 1	0.9 : 1
URBAN	1.3 : 1	0.7 : 1

In summary, these findings support some advantage in nutritional status within the CARE areas. Also, the birthweight data, while weak, show consistent patterns. However, given the inconsistency of certain effects ("flip-flopping" of advantage between CARE and non-CARE in different strata), the accuracy of the NIPCCD data and/or analyses generally are in enough question that statistical hypothesis testing and quantification of effects may be inappropriate.

Multiple studies have been carried out to assess the impact of ICDS on mortality and morbidity. There are adequate data to document that participation in ICDS is associated with increased levels of coverage of three priority preventive services: tetanus toxoid to pregnant mothers, measles vaccine at nine months, and Vitamin A supplementation. Efficacy studies have clearly documented that each of these interventions is effective in reducing disease-specific mortality. Both measles vaccine and Vitamin A are associated with increased levels of survival. While surveillance and anecdotal data document decreased neonatal tetanus and measles incidence, studies of infant and child mortality show limited effect on overall mortality. Part of the answer lies in data presented in the GOI national nutrition policy (1991), which states that 90% of the infant deaths occur in the 30% of infants that are low birth weight at birth. Such data clearly point to LBW risk factors (age of first pregnancy, interbirth interval, perinatal infection) as important determinants for action.

B. IMPACTS OF SUPPLEMENTARY FEEDING PROGRAMS IN GENERAL

The findings of this evaluation are not inconsistent with those expected based on the current knowledge of the effects of supplementary feeding programs and the conditions under which they are particularly effective in improving health and nutritional status. ICDS is one of the largest national programs of its kind in the world. It is unique in that the philosophy of the program recognizes the multi-factoral nature of the problem of malnutrition, and as such ICDS is visionary in its understanding of the concepts which must guide effective interventions to address the tremendous problem of malnutrition in India. In less than twenty years, the program has achieved approximately 50% coverage of all development blocks in the country. This expansion of infrastructure is laudable and provides great promise for one of the world's more successful efforts to combat malnutrition.

It is easy to understand why ICDS would not be able to demonstrate more dramatic or substantial aggregate gains in population health and nutritional status. First is the issue of program focus on measuring and achieving health and nutritional improvements. At the risk of seeming trite, if managers are not currently evaluating themselves and their programs in relation to health and nutrition outcomes, positive results would be largely a pleasant surprise. Indeed, feedback is required at all levels of the system and most notably must include program beneficiaries.

Literature in both the developed and developing world show that large scale supplementation programs are elusive when examined for impact. More recent refined analyses of existing data provide clues to why programs are lackluster in performance at the aggregate level.

First is the issue of what to measure. Martorell and colleagues (1993) suggest that the mortality effects of supplementary feeding programs may be substantial. His analysis reviews studies from around the world, pointing to consistent moderate gains in infant and child mortality that appear to be attributable to nutritional supplementation programs even in the absence of other health care interventions. His analysis is consistent with the secondary data analyses that suggest a greater role of nutritional status in rendering children vulnerable to

mortality risk. Other authors argue (Beaton, 1992) the need to consider other effects (more difficult to measure) such as household food security, mental/psychological development, and social program participation. However, given the magnitude of the Indian nutritional status problem, India's programs must focus on demonstrating nutritional status improvements.

Another dimension involves the importance of program targeting in demonstrating efficacy and efficiency. Several recent reviews and new field studies show that supplementation is particularly effective when properly targeted. One of the earliest targeting criteria identified was that of nutritional need (Habicht and Butz, 1985). Their literature synthesis showed that those most in need of supplementary food (as indicated by initial nutritional levels or growth faltering) were the most likely to show nutritional gains as a result of supplementation.

Most recently, age targeting is seen as critical. Beaton (1992) synthesized data into three lines of reasoning on why age targeting is important, two of which are particularly germane here. First is the natural evolution of growth velocity and malnutrition -- consistently, the period between six and twelve months has been shown as the period of vulnerability to nutritional stress. Figure 17 illustrates this phenomenon with data collected by the team in 80 ICDS villages. Note that prevalence levels of malnutrition are largely reached by one year of age.

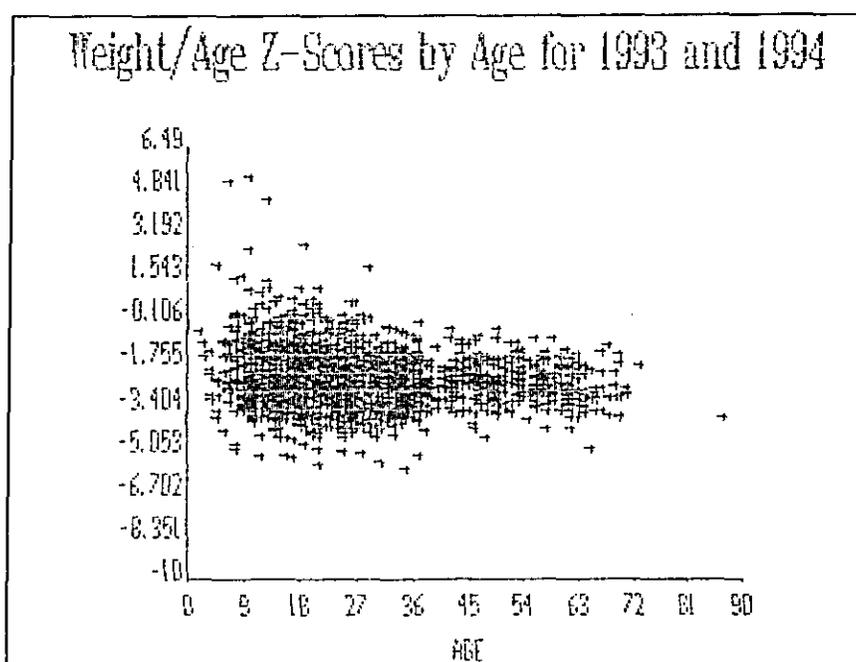


FIGURE 17

A second body of evidence relates to age-specific analyses of supplementary feeding programs in impact evaluations. Results of these analyses mirror the importance of the first year of life when nutritional gains (centimeters per year) may be two to three times greater than those found later in childhood. Indeed, some studies have shown that no achievements can be seen in height after three years of age.

Another type of targeting relates to dietary management of the sick child. More recent studies (Lutter et al, 1989, 1990) show the dramatic effect that supplementation has in mitigating the nutritional consequences of morbidity. The findings suggest the importance of new sick child protocols which incorporate special nutritional management of illness and recuperation, *including early rapid response*, as a strategy for combatting malnutrition and growth faltering.

These newer findings also relate to a final and critical element to the explanation of the modest impact of national programs such as the ICDS. Both the *scientific and programmatic* research point to the **need to use integrated prevention-oriented approaches** to attacking nutritional problems -- almost all of the nutritional success stories were of this type. Recent scientific findings underscore the important interactions between nutrition, morbidity and mortality. Development planners have demonstrated both the efficacy and cost effectiveness of *interventions that aim to prevent rather than mitigate* public health problems such as morbidity and malnutrition (WDR, 1993). Although ICDS incorporates this philosophy into its overall mission statements, it is not yet a mature program that has operationalized these abstract ideas into simple preventive strategies in the field.

CHAPTER VII. IMPACT OF MONETIZATION NON-HEALTH INTERVENTIONS

CARE has supported a range of non-feeding interventions financed through a rupee fund generated by monetization. The impact and potential of two of these monetization-funded interventions, ARI and CHE, were discussed earlier in this report (chapters V and VI). This chapter first presents a food security perspective on CARE-India monetization activities, and then discusses three of the four non-health interventions which CARE has initiated -- Beekeeping, Savings and Loan Associations, and Bio-Intensive Gardens. (The team did not visit the Dairying project which CARE is currently piloting in Uttar Pradesh.)

A. Food Security Perspective on CARE-India Monetization Activities

The "monetization" of PL-480 food commodities has evolved as a useful and flexible tool which provides resources for development projects and programs consistent with the goals of the PL-480 program. The goal of Title II of the PL-480 program, as amended in the 1990 Farm Bill, is to "enhance the food security of the developing world", and Title II seeks to achieve that goal through a wide and diverse range of programs supporting six objectives:

- 1) famine and other relief
- 2) combat malnutrition, especially in children and mothers
- 3) alleviate causes of hunger, mortality, and morbidity
- 4) promote economic and community development
- 5) promote sound environmental practices
- 6) carry out feeding programs

All of the activities historically undertaken or proposed for monetization support by CARE-India fit into one of the objectives listed above, and thus could be said to be consistent with the food security goals of PL-480 and Title II. The wide scope of the legislation was not meant to encourage over-ambitious or unfocused country programs, but rather sought to provide the needed flexibility to respond to the wide and diverse range of food security needs and opportunities around the world. For an organization like CARE-India, which has historically been increasingly and intensively involved in one particular institutional intervention (ICDS), it is essential to constantly balance the desire to diversify the program portfolio and address multiple development challenges with the need to focus limited resources on areas where CARE can make the greatest difference and achieve impact.

Historically CARE-India has been very dependent on Title II resources - first food, and later rupees generated by monetization sales -- and thus has been largely driven by the priorities and politics of Title II food aid. In addition, the Government of India has historically placed very close constraints upon CARE-India's efforts to diversify and refine its field activities. As the program has evolved, CARE-India has sometimes met GOI resistance to initiatives which have sought to focus field activities outside of the traditional "feeding program" which is covered in the original Indo-CARE agreement of 1950.

Within this context, it is easy to understand how the resources available through monetization were an appealing way for CARE-India to broaden its scope of activities. However, with CARE-India's current efforts to diversify its funding base, and with the newly-identified program goals of their LRSP, it seems critical for CARE-India to take this opportunity to critically re-examine each current and proposed monetization activity to determine its potential contribution to ICDS impact and its relevance to the goals of the PL-480 Title II legislation as well as its appropriateness for monetization funding. Although many activities could conceptually be linked in some way to the six Title II objectives presented earlier, the developmental challenge is to identify only those activities which are tightly focused on food security and thus logically should be funded by monetization.

B. Impact and Potential of Bio-Intensive Gardens (BIG)

CARE's Bio-Intensive Gardens project in Kudligi block in northern Karnataka is designed to provide selected ICDS mothers with technical assistance and support in creating and sustaining home gardens. As the project has evolved, the focus of support for the gardens has been shifted to the AWW, who receives help in managing her own garden as a demonstration and in return reaps the garden's produce as benefit. (The team noted with interest that among the many additional or supplementary responsibilities which innovations to ICDS seem to add to the AWW's workload, the BIG gardens are the only one which provides an explicit tangible benefit in return for her added time and effort!)

The crops promoted by the project share several characteristics: 1) horticulturally suited to bio-intensive cultivation in arid climates; 2) acceptable to and compatible with local diets; 3) good sources of vitamin A and other micronutrients; and 4) sufficiently broad crop mix to ensure production across seasons and mitigate against seasonal food insecurity. A mid-term evaluation was conducted by CARE-India on the Bio-Intensive Gardens in November 1992. That evaluation report included some interesting findings on the impact of the gardens on household food security:

1) Per capita availability in households with gardens was 1.27kg in demonstration gardens and 0.93kg in home/mother gardens.

2) Consumption patterns of vegetables (% of families, BIG\control)

	monsoon	winter	summer
green leafy vogs	91 \ 76	78 \ 52	75 \ 50
roots+tubers	50 \ 39	69 \ 65	75 \ 59
other vogs	100 \ 98	98 \ 96	96 \ 91

In the non-BIG control group households, consumption of all vegetables drops during the summer ("hungry") season, whereas in BIG households consumption stayed strong. BIG protected households from seasonal/ transitory food insecurity by ensuring stable access to vitamin-rich foods.

- 3) Knowledge about reasons for consuming vegetables was better in BIG areas than control areas; this phenomenon can only be attributed to informal transmission of nutrition information by BIG animators while working with mothers, since the formal education through the AWC had not yet started.

Annex D provides a summary of the BIG activities which the evaluation team reviewed in Karnataka. During the field site visits, the team visited gardens and conducted individual interviews with field staff and participating mother-gardeners. Interviews with mother-gardeners were used to elicit qualitative recall-based information about the impact of the garden on the household's diet, consumption, food expenditures, and nutrition/health status. Many of the findings from these interviews validated and supported the findings of the mid-term evaluation described earlier.

Most mothers interviewed had participated in the BIG project since its inception in their village, and most of their gardens had produced all four types of crops (green leafy vegetables, roots and tubers, fruits and other vegetables, and legumes) continuously across seasons since inception. Green leafy vegetables were rated by far the "best" producing crops by most mothers. Most mothers had help from other household members in garden work, and in all cases the entire family eats the produce from the garden (sometimes sharing with neighbors if harvest is large).

Most mothers report that before they had the gardens they purchased the same types of vegetables from the market (but less variety), and now they save an average of 56 rupees per month by growing their own vegetables. Mothers report that they spend the savings on mostly food items (and some non-food such as medicine and school costs). Mothers in poorer villages reported that most of their savings were spent on higher cost food items like oil, of which their families were now able to consume more because of savings on vegetables.

Mothers systematically reported that their entire families (including the children) consumed more food and a greater variety of food now that they have the garden, and they cited a range of perceived benefits including more access to food, greater variety, better quality, fresher, and more tasty (listed in decreasing order of response frequency). More than half of the mothers interviewed reported that their children's nutritional status had improved with the garden, while one-third said that the entire family's status had improved.

Mothers also validated the finding from the mid-term evaluation which found that BIG households were protected from some of the seasonal transitory food insecurity associated with the pre-monsoon "dry-hungry" season. Mothers observed that they were motivated to maintain their gardens year-round in spite of the labor involved in carrying water in this arid region because the crops they were growing were very appealing to them and their families. A separate analysis of the responses of ICDS mothers in BIG villages with regards to nutrition and health KAP shows that they have significantly better nutrition and health knowledge than ICDS mothers in both "CARE-regular" and non-CARE villages; this, in spite of the fact that formal nutrition education sessions tied to BIG mothers' groups are less than one year old.

The Bio-Intensive Garden project, while having experienced its own "growing pains" during Phases I and II, clearly enhances household food access and individual consumption and protects against seasonal food insecurity. Based on the evaluation team's field observations, and in an effort to conceptualize future programming with a food security focus in the light of CARE-India's comparative advantage, the BIGs should be considered a priority for monetization funding and for expansion through other possible funding sources (OMNI).

C. Impact and Potential of Savings & Loan Associations (SLAs)

Annex D provides a summary of the SLA activities which the evaluation team reviewed in Orissa. These savings and loan associations are formed with assistance from CARE field staff and careful attention to developing the women's capacity to identify profitable income-generating activities, assess risks and returns of a proposed loan, and manage the financial aspects of the SLA. During the field site visits, the team observed SLA meetings, conducted individual interviews with field staff and village members, and conducted group interviews with participant women. Recognizing that this pilot program is still in its early stages, preliminary observations on the impact to date of the SLAs and their future potential are as follows:

1. The SLAs are effective in empowering the 300+ women who are currently group members: increasing their literacy and numeracy, boosting their confidence as active members of the village economy and society, teaching them management and problem-solving skills for their income generation activities, and developing a powerful group cohesion which supports each woman. This empowerment is developmentally appealing.
2. SLAs increase household income and that money is managed and controlled by the women. They report minimal interference in the allocation of profits and they also report that profits which are not reinvested in the business are used primarily for additional food, health and medical expenses, and education.
3. CARE's technical assistance to the SLAs is both labor- and capital-intensive, and it remains to be seen whether CARE and the SLAs can successfully co-manage the transition to sustainable self-managed SLAs functioning without CARE support.
4. If they do successful transit to self-management, the high costs of the initial grant and CARE technical assistance can be measured against a longer "life" of benefits to the participating women, and the project may be justifiably judged as cost-effective. However, if the SLAs do not make the transition to long-lived self-management, then the cost ratio is high.
5. Whether or not the SLAs evolve into highly sustainable self-governing units who generate benefits for years after the initial CARE investment, CARE's priority need is for a program mechanism which can be replicated on a much larger scale in order to have significant national or regional impact.

The SLA model being used in Orissa, while powerful and appealing in its empowerment of the women who participate, has not yet demonstrated any built-in economy of scale. This may be due to the institutional and skills development which CARE-India had to undertake in preparation for this pilot effort, and it may also be due to the high fixed institutional and staff costs associated with CARE's direct involvement as the project implementor.

Any plan to replicate the SLA project and broadly expand its scope using the CARE field staff and management structure as it is currently configured seems unlikely to be cost-effective. In order to expand SLAs in a cost-effective manner, CARE-India would need to identify partner organizations (indigenous national NGOs) with whom it can work so that those NNGOs can be the direct field implementors with CARE providing training and acting as a conduit for seed capital. This is the approach planned for in CARE-India's new SEAD Strategy (in draft form as of June 5, 1994), which specifically states that expansion of SLA activities will only occur if 1) CARE believes it can be done on a large scale, and 2) CARE can collaborate with effective and compatible NNGO partner(s). However, even if these conditions are realized, the SLAs do not represent the most effective and focused food security intervention among CARE's portfolio of current monetization-funded activities. **Based on the evaluation team's field observations, and in an effort to conceptualize future programming with a food security focus in the light of CARE-India's comparative advantage, the SLAs should not be considered a priority for monetization funding.** If CARE-India judges that the SLAs are a sustainable opportunity for empowering women in a manner consistent with their LRSP, they should be better supported by non-monetization non-food resources.

D. Impact and Potential of Beekeeping

Annex D provides a summary of the beekeeping activities which the evaluation team reviewed in Bihar. Initial progress in the project has been slow due to a variety of factors ranging from the long time taken to get GOI approval and guidelines to work with State Government counterparts, the long period of time needed for group formation and some technical difficulties with the beekeeping. By the end of FY1993, 15 groups had been formed and two hundred sixty two women had been training in beekeeping. It is too early for a conclusive evaluation of the project, and this field visit was not intended as such. The following observations are based on discussion with the CARE beekeeping field officers as well as interviews with the AWWs and a sample of 12 mothers in three villages (Fudi I, Fudi II, and Kalamati II).

Positive Findings

1. The project is an innovative effort to address two of the key constraints to improved nutritional status: poverty (through beekeeping) and nutritional knowledge and practice (through the nutritional education component of the project).
2. The project's targeting of women in very poor tribal areas is admirable.

3. The project is conceptually well integrated with ICDS, both through the targeting of the mothers of children enrolled in the ICDS program, as well as training of the AWWs and involving them in the nutrition and health education of the mothers.
4. CARE made an effort to identify an activity that is appropriate for the women of the region. Beekeeping is an activity that was practiced traditionally in the region previously, and it requires little additional time by the mothers. The honey also has high caloric value and is a valuable supplement to the children's diet.
5. The focus on introducing basic concepts of savings and loans, and linking women with the formal banking system is positive.
6. CARE has conceptualized a systematic and sound approach to nutrition education in the project, starting with a nutritional KAP survey and designing locally appropriate nutrition education materials.
7. Some of the women participants interviewed had correct knowledge of breast feeding practices, women's weight gain during pregnancy, and introduction of solid foods. There was extreme variability across villages with regards to mothers' KAP -- and, where mothers did have good KAP, they attributed this knowledge directly to the CARE field officers from the bee project, and not to the AWWs.
8. CARE has made an effort to utilize local institutions such as the Agricultural University, and KHADI for training, and to coordinate with local counterpart in project implementation.

Problems & Challenges

1. The cost per beneficiary is very high. The four-year budget is \$314,000. With a target of 600 beneficiary families, this is a planned cost per family of more than \$500. Actual cost per family may be considerably higher since the project is behind schedule; only a year before PACD fewer than 400 families have been reached.
2. There are serious questions about the economic viability of the project. CARE overestimated the potential honey production initially and earnings are far below projections.
3. In this project CARE is promoting a highly subsidized model for income generation. CARE donates a 1300-bee hive to each participant family, and extends a loan for the other beehive which is interest-free. In the 20% of the cases where problems have been encountered, CARE has resupplied the beneficiaries at little cost to the beneficiary (for example, in resupplying bees for the hives CARE has paid 650 rupees, and asked the beneficiaries to contribute only 100 rupees).

4. CARE has encountered serious technical problems in the start-up phase of the project. As a result more than 50% of the original swarms had to be replaced at considerable extra cost.
5. There appears to be some confusion about the savings and loan concepts. Participants talk about "savings" to pay off their beehive loan, and "savings" in the group fund. Very few of the women interviewed had begun to take out loans from the savings.

CARE-India's SEAD Unit has already recognized many of the problems and challenges identified above, and is working to improve the technical elements of the project and to de-link the beehive loan repayment component from the group-managed savings-and-loan component. However, even with the planned project refinements, bees will continue to be a high-cost, heavily subsidized activity with a seemingly limited scope for expansion or replication. Thus, the beekeeping project is not as cost-effective and focused a food security intervention as CARE needs in its portfolio of monetization-funded activities. **Based on the evaluation team's field observations, and in an effort to conceptualize future programming with a food security focus in the light of CARE-India's comparative advantage, the beekeeping project should not be considered a priority for monetization funding.**

CHAPTER VIII. RECOMMENDATIONS FOR FUTURE PROGRAM APPROACH AND INTERVENTIONS

This chapter provides a strategic framework for understanding the future potential of ICDS and identifying the best opportunities to maximize its impact on health and nutritional status. The chapter also summarizes the evaluation team's findings and discusses program constraints. Specific recommendations are presented for consideration.

A. ICDS - An Epidemiologic Perspective

ICDS is a visionary strategy which seeks to provide a package of integrated services at the community level and thus achieve specific nutrition and health objectives. Achievement of those objectives first requires an understanding of current nutritional status, morbidity, mortality, and health status indicators in the target population. Maintaining an accurate and updated picture of these status indicators assists in the identification of vulnerable groups. Using preliminary National Family Health Survey (NFHS) data, and data from the 1992 National Evaluation of ICDS by NIPCCD, we assembled a table of key indicators for the four states visited by the evaluation team. Figure 17 demonstrates the substantial variability in the nutrition, disease, and health status indicators among the states. Similar differences, though less well documented, are found within states, with the ICDS blocks (as shown by the NIPCCD data) having the highest rates of undernutrition, morbidity, and mortality.

	NIPCCD	Bihar	Orissa	Karnataka	Maharashtra
Population (millions)		86	32	45	79
Pop Growth Rate		2.35	2.01	2.68	2.45
% Urban		13	13		
Females per 1000 Males		912	971	960	934
Literacy (%)		38.5	49.1	56	65
Births per 1000		30.5	28.8	26.8 SRS	26.2 SRS
IMR/USMR		89/127	112/131	65/87	50/70
% Couples Using FP		24	36.3	51.6	56.9
TT Cov Preg	52.5	37	63	76.5	81.6
Measles Cov	50.4	15	40.2	54.9	70.2
Malnutrition %	III/IV 4 II 21.3				

Growth faltering and sickness in the first 6-18 months of life are critical negative determinants of child survival and of ultimate health and nutritional status. Figure 18 (adapted from Mosley & Chen 1992 and Becker Black & Brown 1992) portrays the multiple determinants of increased mortality risk.

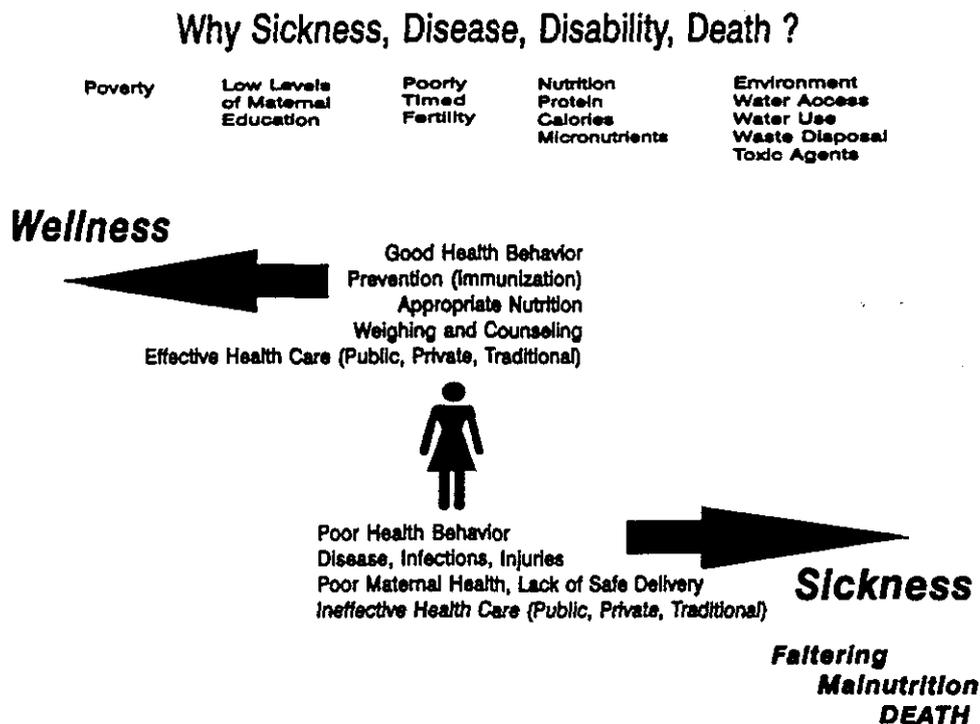


FIGURE 18

Important factors such as poverty and lack of maternal education are presented as proximal determinants of sickness, disease, disability, and death. Superimposed on this dynamic are health behaviors, diseases, and health care factors which are constantly repositioning the individual between wellness and sickness. Through the cumulative interaction (frequently synergistic) of these proximal determinants -- especially undernutrition, infection, and lack of care -- sick children become frail and falter, become malnourished, and die. **ICDS will achieve its greatest potential and reach maximum effectiveness when the available resources are efficiently targeted in those areas with the following operational characteristics:**

- 1) strategies target high risk groups (primarily pregnant and lactating women and children between 6 and 18 months of age),
- 2) strategies address major risk factors for which technically feasible and effective interventions exist, and
- 3) the interventions are understood as important by the consumer (mothers and families) and providers (ICDS and Health Workers).

Using survey observations and a review of the literature, Figure 19 identifies major risk factors, the magnitude of those risks, potential interventions, and their feasibility and impact..

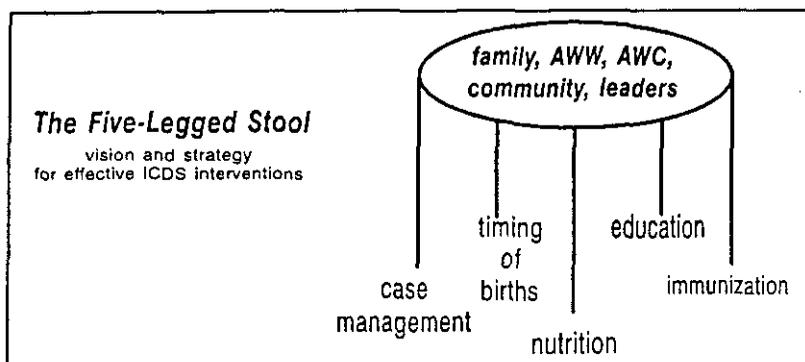
FIGURE 19

Risk Factors Affecting Maternal and Child Health					
Code: +++++ Very High ++++ High +++ Moderate ++ Uncertain + Low					
RISKS	RISK FACTOR	MAGNITUDE	INTERVENTION	FEASIBILITY	IMPACT POTENTIAL
ECONOMIC	Poverty	++++	Development	++	++++
EDUCATION-Adult	Illiteracy	+++	Adult Literacy	**	**
3-6 Years	Maternal Knowledge	+++	PreSchool	****	***
6-10 Years			Primary	***	****
10-14 Years			Secondary	**	****
CONCEPTION Adolescents	First Pregnancy (TOO EARLY)	++++	Marriage =>18, Contraception	+	++++
Post Partum	Interbirth Interval <24 months (TOO QUICK)	+++++	Breastfeeding, Contraception	+++ +++	+++ +++++
Older Mothers	Unwanted (TOO MANY, TOO LATE)	++++	Sterilization	++++	+++++
NUTRITION Adolescent Girls	Iron Deficiency, Lack of Food	++++	Nutrition Counseling	***	***
			Iron folate +/-food)	**	**
Pregnant Women	Iron Deficiency, Undernutrition	++++	Counseling, Iron Folate, +/-Food	***	***
Lactating Women	Undernutrition	+++	Counsel, Iron Folate	+++	+++
Newborn	Late Breastfeeding	+++	Counseling	+++	++++
0-4 Months	Inc Food to Mother	++++	Counseling	+++	++++
5-9 Months	Inappropriate Weaning	++++	Counseling	+++	++++
10-36 Months	Growth Faltering	+++++	Weigh & Counsel Targeted Feeding	+++	++++
9-60 months	Vitamin A Deficiency	++++	Nutrition Education Vit A Supplements	+++	++++
IMMUNIZATION	Neonatal Tetanus	+++	TT X 2 doses Safe Delivery	++++ +++	++++ ++++
	Measles	+++++	Measles vaccine	+++++	+++++
CASE MANAGEMENT 0-60 MONTHS	Pneumonia	+++++	ARI Diagnosis and Treatment	+++++ +++	+++++ ++++
	Diarrhea	+++++	Prevention: Treatment	+++ ++++	++++ ++++

NOTE: The magnitude and weightings presented above are illustrative and meant to emphasize the complexity of the issues being addressed by ICDS.

B. Strategies for Success -- The Five-Legged Stool

Based on a review of the epidemiology, a partial review of the extensive literature on ICDS, discussions with service providers (AWWs, CPDOs, health staff, government officials), and the observations of the field team, five areas of intervention emerge as critical to the achievement of the ICDS objectives.



When these issues were discussed with AWWs in the field during evaluation field visits, they were most understandable when presented as a "five-legged stool", each "leg" of which is critical in its importance to the health of the child, family, mother, and community.

While the AWWs are not responsible for all the components, they are well-placed to provide an essential component of service delivery to each of the five legs, shown below:

CHILD, MOTHER, FAMILY, COMMUNITY, AWW (ICDS), & ANM (HEALTH)				
(AWW services are marked with an asterisk *, areas for coordination with ANMs are marked **)				
EDUCATION	NUTRITION	IMMUNIZATION	TIMING OF PREGNANCY	CASE MANAGEMENT
Preschool*	Adolescent Girls* Nutrition Education Iron Folate	TT in pregnancy**	Age of Marriage	Fever*
Primary	Pregnant Moms* Iron Folate Nutrition Education Increase Food	DPT and Polio**	Spacing** greater than 24 months	Diarrhea*
Secondary	Lactating Moms* Nutrition Education Immed BreastFeeding Increase Food	Measles**	Sterilization	Pneumonia*
Adult Literacy	Weaning Education* Timing, Foods			
	Weigh & Counsel * +/- Supplementation			
	Vitamin A ** Ed and Supplementation			

In the long-term, household food security -- access to sufficient resources for food and health services -- is the enabling environment for all interventions shown in the "five-legged stool".

C. Evaluation Findings

- ICDS is a visionary program with substantial potential for impact on the health and nutritional status of the vulnerable poor.
- The GOI is committed to the improved implementation and expansion of ICDS, and devotes considerable resources to the program.
- Food is important to ICDS, but food alone is not enough for nutritional impact..
- Available data and analyses show a modest positive nutritional impact for ICDS.
- Little difference in nutritional impacts between CARE and non-CARE based on available analyses , except in children aged 0-3 who are less malnourished in CARE areas.
- Full access to the NIPCCD database and further in-depth analyses (multi-variate regression, etc.) may reveal more dramatic and positive nutritional impacts.
- ICDS is not effectively focused enough on the groups with the most dramatic opportunities for impact -- children under three and pregnant/lactating women.
- ICDS as currently implemented focuses more on rehabilitating the severely malnourished child than on identifying and preventing growth faltering -- and yet resources available at the AWC are not effective for rehabilitation of the most malnourished children.
- Immunization coverage is higher in CARE areas than in non-CARE areas, but still well below national targets.
- Knowledge and skills of AWWs in CARE-Plus areas (especially CHE) are far better than in CARE-Regular or non-CARE ICDS areas.
- Certain value-added CARE interventions -- CHE, ARI, and BIG -- show a greater potential for enhanced health and nutritional impact than CARE "food only" activities.
- No significant differences between CARE and non-CARE areas on growth monitoring and case management.
- Community involvement and participation in AWC activities is low.
- Impact on health and nutritional status, as well as intermediate impact on service delivery and coverage, is markedly lower where the ICDS infrastructure is not functioning well.
- CARE has a greater differential impact (compared with non-CARE ICDS) in poorer states like Bihar and Orissa.

D. Constraints to Program Performance

During the evaluation fieldwork, the team identified several constraints which inhibit the effectiveness and performance of the ICDS program:

- There are distinct problems in the implementation of ICDS in some states, such as Bihar, which damage the program's effectiveness. The GOI and State Governments should make a commitment to ensuring full functioning of ICDS, with specific attention to:
 - resolving bottlenecks in transport
 - guaranteeing hiring and payment of workers.
- Improvement in intersectoral coordination is essential for effective service delivery and increased nutrition and health impact.
- Water and sanitation are universally inadequate in ICDS areas, and no priority is placed on investment in the necessary physical infrastructure or educational initiatives.
- Resources are limited, and currently targeting and need-based resource allocation is not happening -- this lack of targeting dilutes the impact of those limited resources.
- Currently CARE's resources are not focused on areas of greatest need -- GOI and CARE must work together to shift resources to the neediest states and phase down in more prosperous areas.

Over the medium- to long-term, these constraints will continue to influence both the operations and the impact of ICDS unless specific actions are taken by the GOI and its development partners (PVOs and donors).

E. Opportunities and Future Possibilities for CARE

The following observations and recommendations for CARE are based on the quantitative and qualitative analyses completed during both phases of this evaluation.

- Recognize that provision of supplemental food alone is not enough for substantial impact.
- Maximize CARE's unique relationship with the ICDS program to achieve the objectives of the CARE-India Long Range Strategic Plan.
 - Pursue key LRSP objectives through ICDS, including family planning, birth timing spacing, and work with adolescent girls.
 - Ensure that the primary focus of CARE's efforts and monetization resources is on activities linked to ICDS.

- Expand CARE's successful monetization activities linked to ICDS in order to adequately and most effectively increase health and nutrition impact -- CHE, ARI, BIG.
- Introduce a new program orientation on impact, with a few key indicators that can be monitored by the community, field officers, and government administrators/counterparts.
 - People focus on what they are asked to report on -- "you get what you INSPECT, not what you EXPECT". Pick a few key variables and mobilize the community leaders and women to track them: education, timing of births, nutrition, immunization, and case management.
- Focus more intensively on nutrition and health education, and expand it to strengthen ICDS in all states where CARE works.
 - Adapt and expand CHE.
 - Focus messages on key issues such as maternal nutrition, breastfeeding, weaning, diarrhea management, etc.
 - Sequence messages to optimize impacts (i.e. deliver messages linked in time to seasonal health problems).
 - Continue development of appropriate health education materials for AWW.
 - Stress a renewed emphasis on weighing & counseling; communication of nutritional messages through home visits.
- Reorient CARE's program to focus on vulnerable groups within ICDS.
 - Focus on children under three, particularly those under 18 months.
 - Focus on pregnant and lactating mothers.
 - Increase attention to growth faltering, and intervene at time of maximum potential impact -- 6-36 months. The resources available at the AWC will be more effective in prevention of malnutrition than in rehabilitation. There is also a gender bias in growth faltering -- three times more girls 0-3 are likely to falter in growth than boys.
- Pay increased attention to maternal health and birth spacing.
 - Build on AWWs current involvement in family planning and provide training in use of temporary methods.

- Expand CARE's role as a trainer of ICDS and MOH counterparts at all levels, building on existing mechanisms.
 - Expand counterpart training.
 - Utilize sector meetings.
 - Expand *joint training for ICDS and MOH* functionaries as piloted under ARI and CHE programs.
- Pursue with GOI creative ways to increase community participation, partnership, and ownership.
 - New approach to introduction of ICDS services (tie CARE expansion in high-priority states to new AWCs).
 - Involve women members of *Panchayat*.
 - Involve the villages' *Mahila Mandals*.
- Consider developing a plan or system of criteria for when CARE enters or exits states/districts/blocks -- perhaps a "floor and ceiling" plan, whereby there is a minimum requirement for ICDS infrastructure and functioning before CARE will assist, and a maximum standard of program performance at which a block or district or state "graduates" from CARE assistance and is "grown up and on its own".
- Make better use of current field staff.
 - Transform PNP food monitors into *multi-purpose field workers* by cross-training.
 - Rationalize the *geographic coverage of current field staff*.
- Upgrade technical skills and training capacity, including hiring staff with skills necessary for new program direction.

F. Opportunities and Future Possibilities for USAID

CARE's support to ICDS, and CARE's future directions as presented in their LRSP, are both consistent with and supportive of USAID/Delhi's program goals and objectives. USAID should maintain its commitment to the CARE program supporting ICDS given the following:

- The unique features of ICDS and its potential to meet major health and nutrition needs of 40% of the world's neediest children through modest increases/reorientation of resources.

- The potential for CARE to provide catalytic leadership to increase ICDS effectiveness.
- Excellent long-term prospects for sustainability (given GOI political commitment to the ICDS program and its gradually increasing ability to provide resources to it.)
- The synergy between CARE's objectives for the Title II program and USAID/Delhi's country program strategy.

Specifically, USAID should:

- Carefully examine issues of commodity mix and program mechanism in light of cost-effectiveness, nutritional impact, sustainability, and developmental appropriateness.
 - Specifically, explore the option of a phased shift to 100% monetization of vegetable oil with local currencies supporting the purchase of locally-produced blended grain as well as the rupee costs of health, nutrition, and family planning programs.
- Require the establishment of simple information systems to monitor and report upon "people-level" impacts.
- Support expanded monetization resources for CARE:
 - Invest in pilot programs to test new interventions and identify strategies for new program directions (such as family planning, population, girls' formal education)
 - Focus monies strategically on those areas identified in this evaluation as having the most potential for health and nutritional impact.
- Support CARE efforts to increase policy dialogue between ICDS partner agencies and the Government of India and state governments.
 - Continue to facilitate communication between CARE, World Food Program, UNICEF, and the World Bank, discussing areas of joint concern with the GOI, especially specific topics where concerns of the different agencies converge.
 - Support CARE's requests for improved program operations in "problem" states (Bihar) by facilitating high-level policy discussions with GOI and state governments.
- Re-establish role as liaison between USAID/Delhi health and population staff and CARE.
 - Help develop communications and technical exchange between CARE and project staff for the USAID-funded Innovations in Family Planning Services (IFPS) project.
 - Facilitate connections between CARE and PVOs involved in PVO-Health II project.

G. ICDS Issues for Consideration by GOI

While this evaluation has focused on the contributions of CARE to ICDS, the team was impressed by both the strengths and the potential of the ICDS system. These are shared for consideration by the responsible officials of the Government of India and state governments.

ICDS Achievements

- ICDS is a visionary strategy to meet the needs of the poor at the community level.
- The AWW is the key component of the ICDS; they are extremely competent, motivated, and hard-working. Their qualities are well captured in the words of Anganwadi Worker Ms. Khairounissa Inamdar in answer to a question about why she believes her job is important: "Serve the people; improve the health of children, the future pillars of the country; and implement a government program".
- ICDS has been effective in providing services to an estimated 45 million people.
- ICDS has increased coverage with immunization and Vitamin A supplements.
- The incidence of neonatal tetanus, measles, and vitamin-related eye disease has been reduced.
- ICDS preschool education has been effective in increasing entry to and completion of primary school, especially dramatic for girls.
- ICDS has the potential to significantly improve its impact through focusing on high risk groups: adolescent girls, pregnant women, and children under three.

Issues

- Malnutrition rates remain high, especially among the poor.
- The ICDS program is not targeting highest risk groups for which interventions are most likely to be effective.
- AWWs, being the most effective government presence at the village level, are being increasingly allocated tasks to the detriment of her primary responsibility.
- AWWs are overburdened with excessive paperwork (up to 19 registers), mostly focusing on process and accountability with minimum attention to impact or use of data to improve impact (see suggestions for monitoring in Chapter IX.)

- While monitoring of children's weight-for-age is carried out on all children aged 6 months to 5 years, expected improvements in nutrition are not always being achieved. The importance of the data collected, especially signals of growth faltering as a trigger for specific nutrition education, is poorly understood and sub-optimally used.
- Current training and supervision is disproportionately tilted toward records and reports instead of quality assessment, support, and continuing education.
- Cooperation between ICDS and Health is variable; availability of, access to, and quality of diagnosis and treatment is also variable.

Priorities

- Increase and focus attention on factors that affect low birth weight especially (adolescent nutrition, timing of first births, interbirth intervals, and maternal nutrition), in view of the continuing high levels of low birth weight (26-57% in urban slums and 35-41% in rural villages) and the fact that 90% of infant deaths occur among LBW babies.
- Use the monthly monitoring of nutritional status in 6-35 month children as a superb opportunity to identify growth faltering at a time that interventions available to the AWW and the mother are likely to be effective. (Delay in action until the appearance of moderate/severe malnutrition decreases the probability of rehabilitation and nutritional improvement.)
- Develop training capacity at the block and sector levels; monthly sector meetings provide an unmatched opportunity for AWW continuing education. The effectiveness of these sessions can be increased through identifying and training a core group of trainers (Training of Trainers) at block and or sector level; this "TOT" model has much more promise than the current "cascade" model of information transmission and re-training.
- Alter the format of entries into the immunization register to one in which births are listed prospectively by month, thus increasing the AWWs' and ANMs' ability to identify and vaccinate those eligible for vaccination.
- Simplify and decentralize monitoring to the community, AWC, and block levels.
- Utilize the *panchayats* and their new women members as an entry point for increased community ownership of ICDS and AWC activities.

CHAPTER IX. ELEMENTS OF A PERFORMANCE MONITORING SYSTEM

This chapter provides suggestions on developing an effective performance monitoring system, with an emphasis on monitoring for action and impact. Special attention is given to possible systems and indicators for community-level monitoring. Finally, as an example of monitoring for results and using feedback to increase impact, a strategy for reaching children under three is offered for consideration by CARE.

A. Principles of Monitoring for Action and Impact

Strengthening of information systems in order to maximize impact requires an understanding of several basic principles:

1. Each level (community, AWC, block, district, state, nation) has its own specific needs for data.
2. Data collection should give priority to information that are useful at level of collection.
3. Use of data should justify work involved in its collection and use.
4. Priority should be given to indicators measuring health status and impact over indicators of inventory or process.
5. Methods (survey, register, growth chart, sample of records) and frequency of collection should be based on maximizing return (information for action) on investment (time expended).
6. Every written report merits a response with at least three positive comments and constructive suggestions where appropriate.
7. Time spent on records is time not spent in personal interactions.

Much has been written about the excessive record-keeping involved in ICDS. Some progress has been made in rationalizing this burden, reducing the number of registers from 27 to 19. Much of the remaining record workload is related to donor-imposed requirements for accountability (stock registers) and measures of inputs and outputs (records of feeding days).

Recordkeeping workload is one serious issue; another is data quality and usefulness. As ICDS program data are successively aggregated at block, district, state, and national level, they often take on a sense of validity and reliability not justified by the initial recording. ICDS has some excellent systems, but those systems should be continuously scrutinized to make sure that data collection serves the program, and not the reverse.

This section of the report seeks to stimulate the thinking of those involved in ICDS program operation to assess and test data needs. It is easy to recommend change, but such change frequently adds another layer to the requirements that already exist. A policy decision -- for example, that no new form or register would be added unless two current ones were discontinued -- would, if implemented, be a major step forward. The most useful information systems are based on a "need to know" (data for action) rather than nice to know. Listed below are some thoughts arising out of the evaluation team's site visits, presented for consideration by those responsible for ICDS program implementation.

B. Community Needs and Use of Data

One of the biggest challenges to ICDS is to change the image of ICDS from that of participation in a government program to that of community ownership where the community has a stake in what is done and how it is done. A key part of community ownership is community involvement in identifying needs, setting goals, and monitoring progress.

Using the five legs of the stool, listed below are potential indicators for each leg.

Indicators for Use at Community Level		
Area	Indicator	Frequency
Education	Percent of girls entering and completing primary school	Annually by Panchayat
Timing of Births	% of deliveries with inter-birth interval greater than 24 months % of first pregnancies to moms older than 18	Annually by Panchayat
Nutrition	% of 6 -35 month olds gaining weight on a monthly or quarterly basis	Monthly or quarterly, posted on AWC outside wall
Immunization	% of 12-24 month olds immunized for measles	Quarterly joint report of AWW and ANM to Panchayat
Case Management	% of mothers who know three key messages about diarrhea and pneumonia	Annual data from AWW home visits

While the system suggested above may seem like an idealized "fantasy", it represents the kind of urgently needed fundamental change that must take place over the next decade if ICDS is to reach its full potential. And in many other developing nations around the world, recent experience has shown that in fact community based monitoring is incredibly effective once community leaders have taken an interest in performance.

C. AWW and ANM Records

Unnecessary duplication of data collection and recordkeeping exists within the ICDS and Health systems -- household surveys by AWW, household surveys by ANMs, immunization records by AWW and ANM, AWW recording of weights in registers and on growth cards, AWW separate recordings of preschool feeding and preschool attendance. Rationalization and streamlining of these duplicative efforts is an essential first step in freeing the community-level workers (AWW and ANM) to focus on a few essential performance measures.

The format of the entries in the immunization register maintained by the AWW with inputs from the ANM does not facilitate accurate and complete immunization coverage. Altering the format to one in which births are listed prospectively by month will increase the AWWs' and ANMs' ability to identify and vaccinate all children eligible for vaccination. Similarly, the birth registers and the immunization/vitamin A registers should be modified to provide a simple way of accounting for women who go temporarily to another village (such as their mother's) for confinement and birth, and then move back to their usual village -- currently, both mothers and children are falling through the cracks.

ANM monitoring needs to focus on key issues related to birth spacing, immunization, and vitamin A administration. It would be especially helpful if the PHC staff revised their current use of immunization targets which are now random numbers set by the state -- the current "targets" are always less than the total eligible population, such that PHCs routinely report "104% immunization coverage". Replacing those "targets" with the actual number of eligible children and mothers, based on AWW records, would facilitate and motivate a more vigorous effort at full immunization and prophylaxis.

D. Block Level and Higher

Block monitoring needs to focus on quality as well as quantity. From the block perspective, asking certain key questions will identify the needs for support and continuing education for individual AWWs and for sector meetings:

- | | |
|--|---|
| ✓ Are AWWs doing the right things? | ✓ Are they weighing all children in community 6 months to 6 years? |
| ✓ Are AWWs doing the right things right? | ✓ Are they balancing scales correctly? |
| | ✓ Are they weighing correctly? |
| | ✓ Are they recording and plotting weights correctly? |
| ✓ Are AWWs using the data they collect? | ✓ Are they looking for children who falter (fail to grow for 3 months)? |
| | ✓ Are they focusing on those children and counselling their mothers? |

Taking the community-monitored indicators mentioned earlier and aggregating them at the district level would, especially in the many districts with talented public executives, raise health and nutritional status on the political agenda.

At the state and national levels, monitoring should focus on quantitative achievement of impact related targets, such as: percent of 6-35 month old children who are malnourished, percent measles vaccine coverage, percent of women with interbirth interval greater than 24 months, and percent of girls completing primary school

E. An Operational Strategy to Improve Under-Three Nutrition

This evaluation's findings have reinforced previous beliefs that ICDS is a program with great potential for positive nutrition and health impact which is currently not reaching those most at risk. The outline below provides one approach for targeting children under three years of age -- those who are most at risk, at the time when they are most vulnerable to malnutrition and disease -- who are not being effectively reached by ICDS as it currently operates.

<u>Key Question</u>	<u>Indicator</u>	<u>Action</u>
1. Does AWW recognize importance of faltering?	appropriate substantive records in home visit log	discussion and continuing education at sector meetings
2. Does AWW have a functioning scale?	observation of AWW weighing during supervisor visit	supply and/or repair scale
3. Does AWW balance scale correctly?	observation of AWW during supervisor visit	demonstration and practice
4. Does AWW weigh correctly?	observation of AWW weighing during supervisor visit	demonstration and practice
5. Does AWW plot weight on growth chart?	observation of AWW during supervisor visit	demonstration and practice
6. Does AWW identify faltering and malnutrition?	review growth charts	continuing education and supervisor review
7. Does AWW provide information to mothers?	home visits by supervisor to mothers of faltering kids	continuing education and supervisor review
8.. Are mothers using the information from AWW?	home visits by AWW to families whose kids faltered last month	continuing education and supervisor review
9. Are children identified as faltering now improving?	review of growth charts	continuing education and supervisor review

ANNEX A: EVALUATION PLAN

BACKGROUND

The Government of India's Integrated Child Development Service (ICDS) Scheme is arguably the largest child survival program in the world and currently covers over half of the administrative blocks in India. The program, begun in 1975, now reaches over 2600 blocks and over 20 million recipients through a network of anganwadi child care centers offering supplementary nutrition, primary health care services, and non-formal education for pre-school children and their mothers.

The goals of the ICDS program are to:

1. Improve the nutritional and health status of children in the age group of 0-6 years.
2. Lay the foundation for proper psychological, physical, and social development of the child.
3. Reduce the incidence of mortality, morbidity, malnutrition and school dropouts.
4. Achieve effective coordination of policy and implementation among various departments to promote child development.
5. Enhance the capability of the mother to look after the normal health and nutritional needs of the child, through proper health and nutrition education.

In 1982 CARE began to support a portion of ICDS through its supplementary nutrition program using PL-480 Title II food aid, and today CARE provides PL-480 food for 260 days a year in 140,000 anganwadi center (AWC) feeding sites. In fiscal 1993, CARE-India's Title II program in support of ICDS had grown to be the largest regular Title II program in the world, using more than \$69 million of Title II resources (21% of the regular Title II program budget).

In light of increasing USG budget pressures and questions regarding the sustainability and food security orientation of its large institutional Title II feeding programs, the Office of Food for Peace in the Bureau of Humanitarian Response (BHR/FFP) approved CARE's Multi-Year Operational Plan for 1993-1996 with the condition that an evaluation of its program be done. CARE and USAID/Delhi have been very responsive to this request; both are rethinking the program in terms of their own strategic planning and have, after discussion with each other, drafted separate but largely compatible objectives and suggestions for the scope of work for the evaluation.

All partners agree that a full-scale field survey evaluation for this vast program would be an enormous and costly undertaking. Consequently, BHR (in discussion with USAID/Delhi and CARE-USA) has contracted for technical assistance in support of the evaluation in two phases: Phase I (undertaken from February 22 to April 9, 1994) reviewed the existing ICDS evaluation studies and performance monitoring data and prepare a detailed evaluation plan that will cost-effectively gather only the additional data that may be necessary to meet the evaluation objectives; while Phase II will mobilize an evaluation team, undertake data analysis and field visits, and prepare the evaluation report.

The Title II food commodities which CARE programs through ICDS are but one input in a very integrated approach to maternal and child health and nutrition. An increasing emphasis is being placed on the integration of essential health and nutrition components with more traditional supplemental feeding programs, as USAID and its cooperating sponsors realize from a wealth of field research worldwide that additional food alone cannot be relied upon to improve nutritional status. The importance of a wide range of factors -- immunization, access to health services, freedom from acute respiratory disease and diarrheal dehydration, access to safe water and sanitary living conditions -- clearly influences the impact of supplementary calories on nutrition and health. Ironically, however, as Title II food is programmed in more integrated interventions it becomes more and more difficult to separate out the "portion" of the resulting nutritional and health impact which is solely attributable to the additional food. This is the context in which CARE's Title II food in India must be viewed; as an essential part of an ambitious and integrated program which has had a demonstrably positive impact on the health and nutrition of the very poor mothers and children which it serves.

I. OBJECTIVES

The evaluation shall assess the historical contributions of CARE's Title II resources to ICDS, evaluate the impact and effectiveness of CARE's ICDS interventions, and assess the sustainability of CARE's contributions, with the purpose of refocusing CARE's program for greater impact within the context of the current strategies of USAID, CARE, and GOI.

The specific objectives of the evaluation are both retrospective and prospective in nature; retrospective objectives include:

1. Assess the historical contributions (1984-1994) of CARE's program to GOI's ICDS policies, procedures, coverage, impact, and sustainability. Include as context a general assessment of the impact of ICDS based on secondary sources and previous evaluations.
2. Determine the incremental or differential impact of Title II activities in CARE-supported ICDS areas, on the following aspects of the ICDS program:
 - a. improvement of the nutritional and health status of children under 6 years of age and of pregnant and lactating mothers
 - b. reduction of the incidence of mortality and morbidity
3. Determine the incremental or differential impact of CARE food and management support on the access of intended beneficiary groups to:
 - a. supplementary food and vitamin supplementation
 - b. immunization of children and pregnant women
 - c. primary health check-ups and referrals
 - d. growth monitoring and nutrition education

4. Assess the past effectiveness and future potential of CARE's complementary interventions to improve household food security and child survival, including monetization-funded activities such as microenterprise development and primary health care interventions, as well as other USAID grant-supported activities such as child survival projects.

The evaluation team will also examine CARE's program performance with the goal of providing suggestion for the future; prospective objectives include:

5. Recommend priority CARE interventions for Title II food aid, and possibilities for better integrating the range of interventions, in the context of:
 - a. USAID/India's 1994-2000 strategic framework for sustainable development;
 - b. CARE-India's long-range strategic plan for empowering women and improving household food security in India
 - c. USAID's policies and legislative mandates on food aid and food security
 - d. GOI's child survival and food security priorities and its capacity to sustain interventions and continue program impact.
6. For those priority interventions recommended in item #5, suggest the elements of a program performance monitoring system for regular assessment and periodic program impact evaluation of CARE's interventions in the future, including possible indicators and benchmarks.

II. EVALUATION APPROACH

Methodology

The evaluation team will approach each of the objectives outlined above using a set of data collection methodologies and analytical tools which employ a combination of both primary and secondary data sources generating both quantitative and qualitative data. Primary data collection will focus primarily on programmatic and institutional issues requiring qualitative data, while secondary data analysis will primarily generate quantitative data results on program coverage and impact.

To the maximum extent possible given constraints on data quality and availability, indicators and relevant data *generated or collected using identical methods* should be used to describe the two "comparison groups" of interest -- CARE-supported ICDS areas and non-CARE ICDS areas -- in addition to general comparisons to non-ICDS areas. In addition, wherever possible, data on trends in the key indicators in each of these three comparison groups should be gathered and analyzed.

In gathering and collecting data on ICDS and CARE program components, the team will pay special attention to data available on program costs, and to the extent possible will analyze that data and report any appropriate conclusions or findings related to the cost-effectiveness of program components or interventions.

Secondary Data Analysis

The bulk of the quantitative data analysis for this evaluation relies upon a dataset developed by the National Institute of Public Cooperation and Child Development during a large-scale survey conducted in 1990-91 in the course of its national evaluation of ICDS. This study was based on a multi-stage random sample that resulted in the selection of 100 ICDS blocks around the nation and seven anganwadi centers (AWCs) in each block, plus an additional sample of 40 individuals from each center representing target beneficiary groups. One non-ICDS area or village in each block, adjacent to one of the sampled centers, was also sampled as a control group. A wide range of quantitative data was collected on more than 50 indicators associated with the implementation, delivery, and impact of ICDS program activities.

Because CARE's Title II food is an integrated part of the GOI's ICDS program, much of the impact of those Title II resources are captured as some undetermined portion of the overall ICDS impact. Therefore, the evaluation team will first review the NIPCCD evaluation, to provide a concise summary of the effectiveness and impact of ICDS on the nutritional status and food security of the target groups.

The evaluation team will then take the next logical analytical step and work with CARE-India and NIPCCD to disaggregate the NIPCCD survey data results into two sub-groups under "ICDS" -- CARE-ICDS and non-CARE ICDS. Other secondary data sources, including an extensive array of literature on ICDS, are available -- academic studies, program evaluations, etc. Much of this information was summarized during Phase I of this evaluation, and will be made available to the team for their use in assessing the overall impact of ICDS and CARE's institutional influences on the program. Data and results from these other studies may also be used to directly strengthen and support results and team findings based on the NIPCCD data analysis and/or field site visits. Secondary data should also be reported which provides the context of food security and development in India -- national and state-level indicators and trends in maternal and child health, development, and food security.

Primary Data Collection and Analysis

The team will collect primary data, both quantitative and qualitative, at the central, state, and center/community levels. Central-level information will come from USAID-Delhi, CARE-India, GOI Department of Women and Child Development, and other relevant institutions. Regional-level information will be gathered from regional public health and welfare officials, CARE and ICDS project workers, community block development officers, and Anganwadi supervisors. At the center/community level, information will be gathered from Anganwadi workers, ICDS beneficiaries, and community members. Much of the information generated from these sources will be qualitative; a range of low-cost rapid data collection techniques will be used.

Field Sample and Site Visits

The field sample for primary data collection and site visits will be based on the national population of ICDS projects (blocks), both CARE-supported and non-CARE.

The sampling procedure will include the following steps:

- 1) Eliminate from the NIPCCD survey sample blocks in those states where CARE has not/is not programming food in support of ICDS.
- 2) From the remaining sample, select four states that are representative of program variations and for which data is available. To the maximum extent possible, select four states which display both high and low logistical performance (as defined by CARE) and high- and low priority for future programming (as defined by USAID).
- 3) Stratify the blocks in those states into two categories:
 - blocks with CARE food support for ICDS programs
 - ICDS blocks without CARE support
- 4) Select two blocks from the CARE strata and one or two blocks from the non-CARE strata in each state. To the maximum extent possible, select blocks which are well matched on selected socio-economic parameters; in addition, ensure that the CARE blocks selected will provide exposure to the full range of complementary non-food interventions programmed by CARE.
- 5) The CARE blocks selected in each state will include both "CARE-regular", in which CARE programs food in the standard ICDS program, and "CARE-super", in which CARE provides supplementary monetization-funded inputs. From each "CARE-regular" block select eight to ten *anganwadi* centers for visits, and match those centers by selecting eight to ten AWCs in a matched non-CARE block; this matching is to be based on selected socio-economic parameters. Visits to "CARE-super" AWCs should be planned to maximize exposure to special technical inputs. Visits to AWCs will generally be "surprise" visits, although a few visits with advance notice may be made to ensure access to community leaders and women's groups not feasible with surprise visits.

The final sample thus consists of four states, 12-16 blocks, and 80 *anganwadi* centers (AWCs). Steps 1 through 3 above have now been completed, based on data obtained in the field from USAID/Delhi and CARE-India. Annex B provides a detailed profile of the sample selected in the four targeted states -- Bihar, Karnataka, Maharashtra, and Orissa.

Small Survey Record Review (Optional)

USAID/Delhi and CARE-India are currently assessing the feasibility of undertaking a small survey of AWC and block-level ICDS records which would be done in the sample area to up-date elements of the NIPCCD survey data analysis. Ideally, this record review would collect data from all of the 26 blocks which were sampled by NIPCCD in these four states. (See Annex C for a list of the data desired.) Data from the block records would be collected by CARE field staff, and organized and tabulated by USAID/Delhi staff and then analyzed by the evaluation team. This record review would be completed before the evaluation team arrives in-country, and will provide an additional base of quantitative information on ICDS activities in the sample blocks and AWCs.

There are two important constraints which affect the feasibility of this Small Survey Record Review and the reliability of any resulting data. The first is logistics; although in theory the ICDS bureaucracy should allow easy access to AWC records through the block offices, in fact experienced CARE and USAID professionals who review CARE's ICDS activities are skeptical about how much AWC-level data is actually available at the block levels; more likely, the block officer will have aggregated all of the AWC records into block totals and discarded or returned the original AWC registers. This would mean that data collected at the block level would include not only the AWCs which were part of the NIPCCD sample but also all other AWCs, thus degrading the desired relationship between NIPCCD findings and newly collected data.

The second constraint is data integrity; it is generally agreed among all donors and cooperating sponsors that the AWC- and block-level ICDS records are "inflated" in terms of coverage, attendance, and feeding, and field staff caution against explicitly collecting these unreliable data and using them statistically without first validating them through a field validation survey. This argument is very compelling, and yet the time constraints on this Phase II evaluation do not allow for the six weeks which would be needed to conduct a field validation of the data. Given these constraints, USAID/Delhi will be making a final recommendation on the advisability of this Small Survey Record Review.

Field Site Visits

Primary data, both qualitative and quantitative, will be collected by the field team during site visits using several rapid low-cost methods, including:

Key informant interviews. Key informants at each level of the ICDS program will be interviewed, including USAID, CARE, GOI, and various institutes supporting ICDS. For each type of informant, an interview topic list will be prepared to guide questioning.

Focus group interviews. At the AWC and community level, focus group interviews will be held with beneficiaries in an effort to assess beneficiary perspectives on ICDS services and family/household needs. Again, a topic guide will be prepared for stimulating responses during the interview.

AWC observation protocol. A brief AWC observation checklist will be prepared that will be used to record a set of standard observations at each AWC.

Cost and commodity review. To the extent possible with data available from GOI, CARE, USAID, and other donors, an analysis of the material and operating costs of ICDS program support in CARE and non-CARE areas will be attempted. Of primary interest are the cost implications of various program and commodity options.

Synthesis and Findings

Based on the body of data collected during both phases of the evaluation, the team will conduct an analysis of the quantitative and qualitative findings pertinent to each evaluation objective. Wherever possible, quantitative findings should be reported in tabular form supported by qualitative results from interviews and observations made by the team during field site visits. Information and analysis should be explicitly displayed in support of all conclusions, and recommendations should in turn be carefully linked with the conclusions.

The evaluation team's report shall follow the following format:

- 1) Executive Summary -- a review of major conclusions and recommendations not more than five pages in length.
- 2) Introduction and Methodology -- evaluation purposes, methods used, limitations, and preview of the contents of the chapters in the report.
- 3) Background -- summary of the CARE/India activities and the GOI ICDS program.
- 4) Analysis -- six chapters addressed to each of the six evaluation objectives.
- 5) Conclusions and Recommendations -- a synthesis of the analysis results and their implications for future CARE programming.
- 6) Annexes -- Detailed annexes specifying the methods and sampling, data analyses not included in the body of the report, the scope of work, bibliography.

III. EVALUATION TEAM PERSONNEL REQUIREMENTS

The evaluation team will include a range of expertise relevant to this evaluation, including specialists with skills in: food aid program evaluation, food security analysis, maternal and child health, nutrition, survey design and data collection, data analysis.

Team Leader/Program Analyst	Laura Bailey
Team Leader/BHR Representative	John Grant
CARE Food Program Representative	Curt Schaeffer
USAID/Delhi FFD Representative	Madhu Gujral
Nutrition Specialist	Nancy Beth Mock
Public Health Specialist	Stan Foster
Child Survival Specialist	Dory Storms
Program Evaluation Specialist	Steven Gale

IV. EVALUATION SCHEDULE & LOGISTICS

Phase I of this evaluation, which produced an overview of previous ICDS evaluations and this detailed evaluation implementation plan, took place February 22 through April 9. Phase II of the evaluation will take place April 10 to August 15 according to the following schedule:

<u>DATE</u>	<u>ACTIVITY</u>
3/1 - 4/20	NIPCCD Data Analysis
5/9 - 5/10	Team Arrival in India
5/11 - 5/14	Planning Meetings, Review of Data Analyses, Interviews and Briefings in New Delhi
5/16 - 5/31	Team splits into two sub-teams for field site visits; each sub-team visits two states, 7-9 days per state. During each week the team spends one day on interviews with state government officials, two days per block in block and AWC visits, and one day in team de-briefing and synthesis.
6/1 - 6/3	Team synthesizes findings and recommendations, and agrees upon writing responsibilities.
6/3	Sub-set of team conducts participative workshop with USAID-Delhi and CARE-India staff to discuss issues and ideas generated by site visits.
6/6 - 6/8	Debriefing and preliminary reporting in Delhi.
6/24	All team members' report inputs (chapters and sections) due to Team Leader/Program Analyst.
8/8	Evaluation team report submitted to BHR/PPE.
8/20	Comments received from USAID/Delhi, CARE, BHR.
9/15	Final report edited and submitted to BHR/PPE.

V. COOPERATING AGENCIES

Although this evaluation is being financed and managed by USAID/Washington (Bureau for Humanitarian Response, Office of Program, Policy, and Evaluation BHR/PPE), there will be active participation by all of the agencies involved in the Title II program in India, including:

CARE-USA will provide one member of the field team, from CARE's Food Security Unit.

USAID/Delhi will provide one full-time and one part-time member of the evaluation team; access to background documentation on Title II; a briefing package for the team upon arrival in Delhi to include copies of the most recent Title II field reviews conducted by USAID staff; logistical and administrative support for scheduling the team's site visits; and liaison with the Government of India.

CARE-India will provide one full-time member for each of the evaluation team's sub-teams; a briefing package and briefing sessions for the team including specific sessions on CARE's strategy, food programming, primary health care, and SEAD; and logistical and administrative support for scheduling the site visits.

ANNEX B: METHODOLOGY & SAMPLING

DEFINITION OF TERMS & CONCEPTS

An important objective of this evaluation was to try to isolate the impact of the CARE-assisted ICDS program on the health and nutritional status of the beneficiary population. The table below summarizes indicators used to assess impact.

TABLE 2

These indicators were selected because they are the most commonly accepted measures in the scientific and development community, because they are the most closely tied with the CARE intervention program variables and finally because these data are the most readily available. It is important to keep in mind, however, that these indicators capture only a portion of the potential benefits of a program such as the ICDS or even the supplementary feeding program in particular (Beaton, 1992). Figure 2 shows the relationship among the CARE program variables and health and nutritional outcomes.

FIGURE 2

Note that except in the areas where CARE is implementing its complementary activities, CARE's primary intervention is nutrition supplementation -- food delivery. CARE supplies corn soya blend (CSB) and oil to ICDS blocks which then supply *anganwadi* centers for distribution to their beneficiary population.

The indicators of impact used in this analysis all have been demonstrated in the literature to respond to improved dietary intake of these beneficiary demographic groups. Improvements in maternal nutrition should be reflected in improved birthweight and survival of her infants. Reduced infant and child mortality as well as improved growth should result from improved child diets.

Nutritional status of children, as reflected by anthropometric indices, is the most commonly used impact measure for programs with a supplementary feeding component, and there are several anthropometric indices commonly used. These most typically include weight in relation to age (weight/age), height in relation to age (height/age), weight in relation to height (weight/height), and arm circumference. Weight/height reflects the soft tissue mass of a child and is called an index of thinness along with arm circumference. These two are volatile measures that are easily influenced by temporal changes in diet and health. Height/age captures linear growth or the height of the child; linear growth is affected when nutritional or health deficiencies are a chronic problem in a child's life. Meta-analyses show that height is more sensitive to dietary supplementation than is weight (Habicht and Butz, 1985; Beaton, 1992), suggesting that indices incorporating height would have a stronger chance of detecting program impact if it is present.

Weight/age are the most frequently available data in the Indian context. Most of the surveys and data series have collected the requisite data for computing the weight/age index, in contrast to the height and arm circumference related indices which are rarely available in the literature (grey or published) characterizing all or subsets of the Indian population. As mentioned above, each anthropometric index is not affected to the same degree by supplementation programs; also, other important impacts of the ICDS program have not been regularly measured. Therefore, the limited range of indices available for examination of program impact reduces somewhat the potential findings of this evaluation exercise.

APPROACH

The evaluation team sought to isolate and describe the contrasts in key areas between ICDS and non-ICDS, and between CARE- and non-CARE. The methodologies employed in constructing these contrasts include specific examination of a few key datasets, as well as a quasi-meta analysis of data from the myriad of more localized or focused special studies that are available in the published and grey literature. Through these analyses, we employed a "convergence of evidence" strategy that depends not on any one specific study or set of findings, but rather on the analytical picture that emerges when data on several indicators from numerous studies are viewed as a whole.

In part, the team was forced to utilize this approach because primary data for applying more state-of-the-art approaches were not available for re-analysis. The various data sets relevant to the ICDS/CARE evaluations question are severely underanalyzed -- although numerous studies were commissioned to evaluate the ICDS program, including the massive 1992 national evaluation by the National Institute of Public Cooperation and Child Development (NIPCCD), analyses of the resultant data are inadequate for answering impact questions. No studies were found to have employed multi-variate statistical techniques which are essential for analyzing these types of largely cross-sectional studies. This is surprising given the cadre of trained Indian social research specialists. Indeed, the evaluators find this to be a very exaggerated obstacle to development evaluation and planning in the Indian context and one which should be confronted in the development of new initiatives.

SURVEY CHARACTERISTICS

The table below shows some of the general characteristics of the 1992 NIPCCD SURVEY compared to the CARE/USAID FIELD EVALUATION.

SURVEY CHARACTERISTICS

CHARACTERISTICS	1992 NIPCCD	1994 CARE/USAID
TYPE	PROBABILITY	NON-PROBABILITY
Procedure	stratified random sample	purposive sample, matched pairs
Design	post-test only	post-test only
Geographic coverage	25 states	4 states
ICDS projects covered	100	12
Anganwadi Centers (AWCs)	700 ICDS 100 non-ICDS	80 ICDS 48 CARE 32 non-CARE
Mothers interviewed per AWC	20	3-5

The NIPCCD data represent a probability sample in that each ICDS site has a theoretically "known" probability of being included in the sample. Further, the NIPCCD sample was obtained by first assigning each ICDS site to a group or stratum (eg. tribal) and then randomly selecting within each stratum (stratified random sample). In short, probability samples allow for the findings to be generalized to the population or universe under study and stratification enhances precision or efficiency.

In contrast, the CARE/USAID data represent a non-probability sample--where CARE and non-CARE assisted villages were selected based on the team's best judgements after consultation with CARE and USAID Mission staff. First, states were selected -- states where ICDS programs are running smoothly as well as those where logistical

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and programmatic problems exist; other states were selected which are a high-priority for USAID support in the future, along with other states which might be candidates for reduced program activity. The decision to restrict field visits to a sub-set of states and a limited number of ICDS blocks/projects was a practical necessity given the time and resources available to the evaluation team, and because the team expected to utilize the more extensive dataset from NIPCCD 1992 and the NIPCCD re-analysis.

The sampling strategy for the CARE/USAID study was a hybrid, involving both similar and critical case sampling. That is, samples were selected that were judged to represent comparable conditions (similar cases) throughout the 10 states where CARE operates and to also include villages in tribal and predominantly high caste areas where CARE intends to expand operations such as in Bihar (critical cases). Once a site was selected, it was matched to a similar site. Thus the CARE/USAID sample was purposively chosen and systematically matched. Both studies used a post-test only research design in which baseline data were assumed to be equal between ICDS and non-ICDS sites (in the case of NIPCCD) and between CARE and non-CARE assisted sites (in the case of the CARE/USAID Field Study).

With regards to geographic and block/project coverage, NIPCCD data come from all 25 states compared to only four for the CARE/USAID data. At the project level, NIPCCD data surveyed 700 ICDS and 100 non-ICDS projects compared to only 80 ICDS projects in the CARE/USAID study (CARE/USAID did not sample any non-ICDS projects). Finally, NIPCCD conducted 20 interviews with participating mothers at each village visited, compared to between 3 and 5 interviews in the CARE/USAID survey.

The NIPCCD evaluation study, while the most methodologically rigorous of the ICDS evaluations from a perspective of sampling and overall quality control of field collection, is limited in the type of impact information collected. Only weight/age and birthweight data were collected during the survey; no other anthropometric or mortality measures were included. The birthweight data collected are of marginal utility; the survey measured mother's recall and very few mothers were able to respond to the question about birthweight of their child (less than 20%). Examination of the distribution of birthweights reported suggest that the data are not highly accurate. This is reflected at least in part by the high percentage of reported birthweights of living children under 1000 grams, a weight which is generally non-viable. However, even given the limitations of birthweight data, the team maintained it in the analysis, not as a centerpiece but as a supporting piece of information.

MATCHING VARIABLES

The CARE/USAID Study employed a matched-pairs design which yielded 29 pairs across four states. The initial step in the matching procedure involved selecting a pair of CARE and non-CARE districts (or blocks) in close proximity to one another. This data was obtained on-site in the district or block office or with assistance from the CARE Office of the State Administrator. From this pool, two convenient district (or block) "pairs" were selected and matched according to the following variables:

- Percent scheduled caste/scheduled tribe
- Average time to Primary Health Center
- Average time to food distribution point
- Percent landless
- Literacy rate

Other district matching variables included the similarity of crops, estimates of the degree of poverty, and participation of other donors. Districts were not chosen if ICDS had not been in existence for more than 2.5 years.

If the districts or blocks were roughly comparable, the next step was to identify two adjacent villages or *anganwadis* within the district which had similar characteristics to those cited above. A number of back-up village "pairs" were also identified for those cases where the Anganwadi worker was not available or other circumstances required a replacement. Anganwadi size was also used as matching variable at the village level. When critical data obtained at the district or block office level was not confirmed by the evaluation team at the village level, replacement villages were substituted.

ANALYTIC COMPARISONS

The next page presents an overview of the basic types of analyses conducted using the data generated by the CARE/USAID Field Study. At the *anganwadi* level, CARE-assisted sites were divided into two major groupings, which the team referred to as "CARE-Regular" and "CARE-Plus".

CARE-Regular consisted of some 30 villages in all four states where CARE operates in its more traditional role, focused primarily on food logistics. The CARE-Plus group includes sites where CARE has a number of other technical activities, such as training, health education, income-generation, and functions in an expanded role.

- **All-Village Analysis (80 Anganwadis)**
 - CARE Regular (N=30)
 - CARE Plus (N=18)
 - Continuing Health Education (n=7)
 - Savings and Loan Associations (n=3)
 - Bio-Intensive Gardening (n=5)
 - Acute Respiratory Infections (n=3)
 - Non-CARE (N=32)

- **Matched-Pairs Analysis By State (29 Anganwadi Pairs)**
 - Bihar (N=5)
 - Karnataka (N=5)
 - Maharashtra (N=8)
 - Orissa (N=11)

ANALYTICAL CONTRASTS

Several analytical contrasts were used in the evaluation exercise to synthesize the team's findings regarding the health and nutritional impacts of the CARE program.

First, CARE's programming strategy was predicated on the assumption that the ICDS program has demonstrable health and nutrition impacts on the beneficiary populations. (Historically CARE has focused on the food supply segment of the ICDS program and currently assists approximately 40% of ICDS blocks, covering 10 states.) Therefore, it is important to establish if and to what degree the ICDS program does result in these impacts.

One set of analyses attempts to characterize the health and nutritional impacts attributable to the ICDS program itself. Three basic approaches were used: comparing ICDS with non-ICDS, comparing ICDS with national norms, and examining trends in health indicators over time.

The second set of analytical contrasts attempts to capture the health and nutritional benefits attributable to the CARE program specifically. Here, CARE-assisted ICDS areas were compared with ICDS areas not served by CARE. Only limited data were available to examine this issue. The NIPCCD dataset was reanalyzed by grouping blocks into CARE, non-CARE and non-ICDS areas.

Finally, the analysis attempts to evaluate special forms of the ICDS program that have been implemented in localized areas of the country. For the purpose of this analysis these are referred to as complementary interventions in comparison to the "standard" package of interventions that are implemented by the ICDS program nationwide. These experimental programs, which were donor assisted efforts, provide useful information for future programming efforts by CARE and AID.

LOGICAL LINKAGES

One of the early analytic exercises conducted by the evaluation team was to develop a preliminary "logic tree" to serve as a framework for examining CARE-mediated impacts--both ongoing and future oriented. The exercise began with a very narrow focus--food delivery and logistics--but soon expanded into a broader range of possible CARE interventions.

The "tree" was developed to help the team focus on the what CARE could provide to strengthen various ICDS components beyond food logistics. Each subsequent branch of three outlines what likely outcomes would result--with the final branch showing the range of beneficiary impacts.

Logical Linkages Tree

1. RANGE OF POTENTIAL INPUTS from CARE to strengthen ICDS infrastructure:

- o Improve food quality
- o Improve food logistics
- o Provide management training
- o Provide quality assurance/training and supervision
- o Support continuing education and in-service training
- o Build linkages between sectors such as MOH and ICDS
- o Develop and disseminate training/educational materials
- o Promote donor coordination

2. AS A CONSEQUENCE, one or more of the following outcomes are likely:

- o Improved food logistics
- o Improved coverage
- o Better management
- o Improved nutrition/health knowledge of worker
- o Better targeting to at risk population
- o More community support/involvement

3. THIS SHOULD over a reasonable time period result in:

- o Greater preventive health coverage
- o Improvements in mother's nutritional knowledge

4. WE SHOULD SEE changes in impact measures showing:

- o Decreased morbidity and mortality
- o Improved nutritional status
- o Enhanced ICDS and AWC infrastructure and signs of sustainability

HYPOTHESES ABOUT INTERMEDIATE IMPACT OF CARE INPUTS

CARE's partnership with the ICDS program seeks to strengthen the food logistics, food management, quality of operations, intersectoral linkages (health and ICDS), and community outreach in the states in which they work. Ultimately the purpose of this cooperation is to improve the nutritional and health status of pre-school children, and pregnant and lactating women -- by avoiding food interruptions; improving immunization coverage; improving case management of common childhood diseases greatly affecting nutritional status; and by improving nutrition practices at the family level.

Although CARE's Title II program primarily provides food and counterpart training, CARE contributes to many other ICDS strengthening efforts. CARE's assistance includes a range of inputs: in-service training, supervision, networking to build inter-sectoral linkages, educational materials development, training-of-trainers (TOT), and community health and nutrition education. Not all inputs are in every CARE-assisted ICDS area -- the inputs vary across states and blocks.

In the short term, these inputs should result in improved food management and logistics; better AWC operations management, improved nutrition/health knowledge of the AWW; improved growth-monitoring and counseling skills for the AWW; and improved case management skills of the AWW.

In the intermediate term, one would expect these efforts to bring about correction of growth faltering; rehabilitation of children identified as grades III and IV malnourished; greater preventive health coverage (measles, TT); and improvements in mothers' nutritional knowledge and practices. This, in turn, should lead over time to a decrease in morbidity and mortality, improved nutritional status of the population, and yield a sustainable ICDS program with solid infrastructure.

To establish whether intermediate (or proximal) impacts had resulted from the CARE-ICDS partnership, the evaluation team used interviews and data collection protocols to establish whether in the CARE-assisted ICDS villages there was:

- a) Greater preventive health coverage, as judged by measles, tetanus toxoid, and vitamin A capsule coverage.
- b) Better knowledge and practice of mothers regarding appropriate case management of childhood diarrheal diseases, acute respiratory infections, and malnutrition.
- c) Better knowledge of optimal nutritional practices, including breastfeeding and weaning practices; feeding during illness; pregnancy weight gain and diet.

ANNEX C: COMMODITY CHOICE & PROGRAM MECHANISMS

This impact evaluation comes at an important juncture for the program, a time where several factors are working to shape the future directions and scope of CARE and USAID support to ICDS. At the request of USAID, the evaluation team considered these factors as "cross-cutting themes" throughout their field work in order to provide insights and suggestions.

Program levels. For most of the 1970s and 1980s, Title II assistance to India grew rapidly, "supply-driven" by the requirement to ship a fixed percentage of Title II regular food in processed and bagged form (like the CSB which has historically been the mainstay of the CARE-India program.) However, the early 1990s brought severe resource constraints to bear on all food-assisted programs, especially the very large ones like India, and it is no longer reasonable to plan for an increasing or even static flow of Title II food to India.

Focusing on impact. The current resource constraints coincide with increasing pressures to focus the shrinking resources which are available on programs with the greatest potential for impact. CARE's future programming must include possible responses to static or reduced program levels which seek to make maximum efficient use of Title II food to enhance food security and have real people-level impact.

Commodity choice. The resource constraints on program levels discussed above have already provoked a debate on commodity choice for the India Title II program; in response to signals from USAID/Washington on probable reduced program levels (total tonnage and dollar value), CARE-India considered a change in commodities from Corn Soya Blend (CSB) to the less expensive Soy Fortified Corn Meal (SFCM).

The evaluation team did not conduct a focused nutritional analysis of SFCM *vis-a-vis* CSB, but they did look at some of the issues with regards to nutritional content and usage, and concurs with CARE's decision not to change commodities for the following reasons:

- * processing of SFCM produces a blended grain which is roasted but not extruded (unlike CSB) and is therefore *not as digestible for children under three who represent a very vulnerable target group* -- and one of the most stubborn problems currently is how to use blended grain effectively for those 0-3s who are now not easily consuming the food as typically prepared.
- * *although higher in calories than CSB (392 vs. 380), a 100-g ration of SFCM is lower in protein (13 vs. 18) and has only half of the micronutrients*

	SFCM	CSB
vitamin A	882 IU	1700 IU
riboflavin	0.26 mg	0.5 mg
iron	2.9 mg	18.0 mg
lysine	29 mg	45 mg

- * Vitamin A in SFCM is unstable during storage, as it is in CSB, and thus SFCM's low A content drops even lower over time. *In addition*, an important finding of the team's field visits was that Vitamin A prophylaxis through ICDS is only available in theory -- in actual fact, very few children or mothers receive Vitamin A supplements through ICDS ever.
- * The team's field visits also revealed very infrequent and unstable provisioning of iron and folic acid supplements for pregnant women through ICDS referrals, and no evidence at all of supplementation for anemic children. *Thus, the drastically lower iron content in SFCM is a cause for serious concern.*

Program sustainability and developmental appropriateness. India's food security situation has changed dramatically in the past three decades, from a time when aggregate availability of basic foodgrains was not secure to the present day when aggregate production of certain foodgrains is both stable and secure at a moderate level. However, the changing food security picture in India has not yet resulted in *household food security* -- although aggregate food availability is improving, access to food at the household and individual level is still very much a problem, as are adequate health, sanitation, and nutrition services to ensure efficient individual utilization of calories consumed.

ICDS is a visionary and ambitious attempt to provide a safety net for the most vulnerable groups in poor rural India whose circumstances have not yet allowed them to benefit from economic growth. In supporting ICDS, Title II food is being used to protect the most vulnerable groups from hunger while other structural developmental efforts seek to transform India's economy and eliminate poverty, the root cause of much hunger. Historically, one program mechanism has driven CARE-India's activities -- moving large volumes of blended grain from processing centers in the U.S. thousands of sea miles on U.S. ships to Indian ports. Today, however, there may be other more developmentally appropriate and sustainable and cost-effective options, for the following reasons:

- 1) At a national aggregate level, **India's food availability problems no longer lie in basic foodgrains**, where she is now close to self-sufficient, **but rather in higher-value, higher-calorie edible oils**, where domestic production capacity is far outstripped by growing demand fueled by population growth and increasing middle-class incomes.
- 2) Sparked by the past several years' economic reforms and deregulations, **India's domestic food transformation agroindustries are increasingly well-positioned to handle grain processing and transformation locally** -- generating local jobs and strengthening the "value-added" links in the agricultural sector at a fraction of the cost of processing in the U.S and then shipping. For India, a country on the brink of economic transformation, **it is developmentally more appropriate to facilitate domestic processing than to import massive volumes of U.S.-processed grain**. India is still a food-insecure country at the household level, with more malnourished children than all of Sub-Saharan Africa, but developing sustainable local processing capacity can help.

- 3) **The context of Title II shipments of blended processed grain is no longer one of a constantly growing or seemingly "unlimited" supply. U.S. fiscal and budgetary constraints, along with changes in agricultural price and crop policies sparked by such events as the Uruguay Round GATT agreement, combine to create a new perceived environment of scarcity for blended processed Title II foods like CSB and SFCM.**
- 4) **Certainly the fortified blended grains like CSB and SFCM are better commodities for CARE-India's purposes than raw grains such as wheat or rice -- the blended grains are self-targeting and allow flexible preparation strategies. However, within the fixed level of Title II resources which are available in the current budget, there may be countries and programs where blended processed grains are a more valuable option than in India, where they may no longer be the best choice.**
- 5) **And, within the reality of diminishing PL-480 resources, there may be better commodity choices and/or program mechanisms for CARE's India program which can produce greater targeted impact at a lower cost.**
- 6) **There is little opportunity for building sustainability into a food assistance program of such massive scope where a unique processed food is imported and used for direct feeding. India will continue to need an ICDS-type social safety net for many years into the future, given the large numbers of rural and urban poor and the pressures of rapid population growth. However, the developmental goal for both India and her donors/development partners must be to support ICDS in ways which can facilitate, and not impede, the gradual shift of responsibility for managing and funding the entire program to the GOI and state governments.**

The current U.S. budgetary constraints which are placing so much pressure on Title II program levels and future directions may appear to be a problem, but they can also be viewed as a challenge -- an opportunity to re-design the program mechanism and re-create a vision of assistance to ICDS which is more developmentally appropriate and sustainable, with a clear plan for transition away from massive infusions of donor food. To inform the discussions within and between USAID and CARE on this important and sensitive issue, the evaluation team has assembled a very preliminary set of models, or "scenarios", which illustrate cost advantages of a range of options involving combinations of the following factors:

- * a change in commodity and/or ration
- * a shift (either immediate or phased) to 75%-100% monetization
- * reduction or close-out of CARE programs in better-off states where ICDS is working relatively well
- * expansion of programs in states with greater need and potential for CARE to act as a catalyst for ICDS.

The two following pages summarize the results of the cost comparisons from the scenarios modelled during the team's preliminary work.

SCENARIO RESULTS

FIXED PARAMETERS

	Feeding days	Single Ration		
		Grain (g/day)	Oil (g/day)	
Maharashtra (RTE)	300	48.75	7.5	
Other states	260	65	8	
Beneficiary Growth Factor	1.05	1.075	1.1	1.15
Commodity Cost Increase Factor	1.03	1.04	1.05	
Commodity Costs (\$/MT)	fas	of	cif	
Corn Soya Blend (CSB)	285	144	429	
Soy Fortified Corn Meal (SFCM)	208	144	352	
IndiaMix			283	
Vegoil in pails)	896	174	1070	
Vegoil in drums	808	174	982	
Vegoil in bulk	604	74	678	
Vegoil sold at Delhi auction				
<i>auction prices</i> 21,000-27,000 Rs/MT			774	
<i>market prices</i> 18,000-29,000 Rs/MT			758	

PLANNING VARIABLES

Commodity Requirements	FY95 AER	Beneficiary Levels
Maharashtra, quantity GRAIN (MT/year)	9,214	525,000
Maharashtra, quantity OIL (MT/year)	1,418	
Gujurat, quantity GRAIN (MT/year)	10,210	503,500
Gujurat, quantity OIL (MT/year)	1,257	
Other 8 states, quantity GRAIN (MT/year)	145,151	7,157,300
Other 8 states, quantity OIL (MT/year)	17,864	

SCENARIO RESULTS

(assume all commodity costs increase 3% per year)

	FY1996	FY1997	FY1998	FY1999	FY2000
BASELINE: SFCM, FY1995 AER Levels	\$82,175,816	\$84,641,091	\$87,180,324	\$89,795,733	\$92,489,605
<i>Immediate Shift to Monetization and IndiaMix:</i>					
A: Shift to IndiaMix, Monetize for non-RTE	\$65,416,467	\$67,378,961	\$69,400,330	\$71,482,339	\$73,626,810
B: Shift to IndiaMix, Change Ration, Monetize	\$53,690,897	\$55,301,624	\$56,960,673	\$58,669,493	\$60,429,578
C: Shift to IndiaMix, Monetize, Close 2 States	\$57,532,537	\$59,258,513	\$61,036,269	\$62,867,357	\$64,753,377
D: IndiaMix, Monetize, Close 2, Others up 5%	\$60,409,164	\$62,221,439	\$64,088,082	\$66,010,725	\$67,991,046
E: IndiaMix, Monetize, Close 2, Others up 7.5%	\$61,847,477	\$63,702,902	\$65,613,989	\$67,582,409	\$69,609,881
F: IndiaMix, Monetize, Close 2, Others up 10%	\$63,285,791	\$65,184,365	\$67,139,896	\$69,154,092	\$71,228,715
G: IndiaMix, Monetize, Close 2, Others up 15%	\$66,162,418	\$68,147,290	\$70,191,709	\$72,297,460	\$74,466,384
<i>Phased Shift to Monetization and IndiaMix:</i>					
H: Three-Year Shift to IndiaMix, Close 2 States	\$67,386,753	\$64,333,434	\$61,036,268	\$62,867,357	\$64,753,377
I: Five-Year Shift to IndiaMix, Close 2 States	\$69,357,596	\$68,393,371	\$67,308,871	\$66,097,747	\$64,753,377

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Baseline Scenario: FY95 Proposed AER with SFCM
8.2 million beneficiaries

	grain	vegoil	cif Delhi
Maharashtra	\$3,243,328	\$1,392,476	
Gujarat	\$3,593,920	\$1,344,990	
Other 8 States	\$51,053,152	\$19,114,480	
Total Program Commodity Cost in FY94 dollars			\$79,762,346

Scenario A: Immediate Shift to 100% Monetization

Assumptions:

- Beneficiary levels remain same as proposed in FY1995 AER
- Non-RTE rations stay at 65g grain mixed with 8g oil.
- Oil for non-RTE states imported in pails.
- Locally-processed "IndiMix" substituted for SFCM/CSB.
- IndiMix is purchased by importing bulk vegoil and selling at average market price.

8.2 million beneficiaries	grain	vegoil	cif Delhi
Maharashtra	\$2,607,562	\$1,392,476	
Gujarat	\$2,859,430	\$1,344,990	
Other 8 States	\$41,077,733	\$19,114,480	
resource cost of IndiMix grain equivalent # of MT bulk vegoil	\$48,574,725		
equivalent # of MT bulk vegoil		61,444	
cif cost of those MT of bulk vegoil		\$41,659,167	
Total Program Commodity Cost in FY94 dollars			\$63,511,133

Scenario B: Immediate Shift to 100% Monetization and Ration Change

Assumptions:

- Beneficiary levels remain same as proposed in FY1995 AER
- Non-RTE rations change from 65g grain mixed with 8g oil to 80g grain only.
- Oil for RTE states continues to be imported in drums.
- Locally-processed "IndiMix" substituted for SFCM/CSB.
- IndiMix is purchased by importing bulk vegoil and selling at average market price.

8.2 million beneficiaries	grain	vegoil	cif Delhi
Maharashtra	\$2,607,562	\$1,392,476	
Gujarat	\$3,656,222	0	
Other 8 States	\$50,557,210	0	
resource cost of IndiMix grain equivalent # of MT bulk vegoil	\$48,720,993		
equivalent # of MT bulk vegoil		74,830	
cif cost of those MT of bulk vegoil		\$50,754,609	
Total Program Commodity Cost in FY94 dollars			\$52,127,065

Scenario C: Immediate Shift to 100% Monetization and Close-Out of 2 States

Assumptions:

- Programs in Maharashtra and Gujarat close in FY1995.
- Beneficiary levels for other states remain same as proposed in FY1995 AER
- Rations for non-RTE remain at 65g grain mixed with 8g oil.
- Locally-processed "IndiMix" substituted for SFCM/CSB.
- IndiMix is purchased by importing bulk vegoil and selling at average market price.

7.16 million beneficiaries	grain	vegoil	cif Delhi
Maharashtra	\$0	0	
Gujarat	\$0	0	
Other 8 States	\$41,077,733	\$19,114,480	
resource cost of IndiMix grain equivalent # of MT bulk vegoil	\$41,077,733		
equivalent # of MT bulk vegoil		54,192	
cif cost of those MT of bulk vegoil		\$36,742,352	
Total Program Commodity Cost in FY94 dollars			\$55,856,832

Scenario D: Immediate Shift to 100% Monetization; Close-Out of 2 States; Increase Other States 5%

Assumptions:

- Programs in Maharashtra and Gujarat close in FY1995.
- Beneficiary levels for other states increase 5% from those proposed in FY1995 AER
- Rations for non-RTE remain at 65g grain mixed with 8g oil.
- Locally-processed "IndiMix" substituted for SFCM/CSB.
- IndiMix is purchased by importing bulk vegoil and selling at average market price.

7.52 million beneficiaries	grain	vegoil	cif Delhi
Maharashtra	\$0	0	
Gujarat	\$0	0	
Other 8 States	\$43,131,620	\$20,070,204	
resource cost of IndiMix grain equivalent # of MT bulk vegoil	\$43,131,620		
equivalent # of MT bulk vegoil		58,902	
cif cost of those MT of bulk vegoil		\$38,579,470	
Total Program Commodity Cost in FY94 dollars			\$58,649,674

Scenario E: Immediate Shift to 100% Monetization; Close-Out of 2 States; Increase Other States 7.5%

Assumptions:

- Programs in Maharashtra and Gujarat close in FY1995.
- Beneficiary levels for other states increase 7.5% from those proposed in FY1995 AER
- Rations for non-RTE remain at 65g grain mixed with 8g oil.
- Locally-processed "IndiMix" substituted for SFCM/CSB.
- IndiMix is purchased by importing bulk vegoil and selling at average market price.

7.7 million beneficiaries	grain	vegoil	cif Delhi
Maharashtra	\$0	0	
Gujarat	\$0	0	
Other 8 States	\$44,158,563	\$20,548,096	
resource cost of IndiMix grain equivalent # of MT bulk vegoil	\$44,158,563		
equivalent # of MT bulk vegoil		58,257	
cif cost of those MT of bulk vegoil		\$39,498,029	
Total Program Commodity Cost in FY94 dollars			\$60,046,095

Scenario F: Immediate Shift to 100% Monetization; Close-Out of 2 States; Increase Other States 10%

Assumptions:

- Programs in Maharashtra and Gujarat close in FY1995.
- Beneficiary levels for other states increase 10% from those proposed in FY1995 AER
- Rations for non-RTE remain at 65g grain mixed with 8g oil.
- Locally-processed "IndiMix" substituted for SFCM/CSB.
- IndiMix is purchased by importing bulk vegoil and selling at average market price.

7.87 million beneficiaries	grain	vegoil	cif Delhi
Maharashtra	\$0	0	
Gujarat	\$0	0	
Other 8 States	\$45,185,506	\$21,025,928	
resource cost of IndiMix grain equivalent # of MT bulk vegoil	\$45,185,506		
equivalent # of MT bulk vegoil		59,611	
cif cost of those MT of bulk vegoil		\$40,416,567	
Total Program Commodity Cost in FY94 dollars			\$61,442,515

Scenario G: Immediate Shift to 100% Monetization; Close-Out of 2 States; Increase Other States 15%

Assumptions:

- Programs in Maharashtra and Gujarat close in FY1995.
- Beneficiary levels for other states increase 15% from those proposed in FY1995 AER
- Rations for non-RTE remain at 65g grain mixed with 8g oil.
- Locally-processed "IndiMix" substituted for SFCM/CSB.
- IndiMix is purchased by importing bulk vegoil and selling at average market price.

8.23 million beneficiaries	grain	vegoil	cif Delhi
Maharashtra	\$0	0	
Gujarat	\$0	0	
Other 8 States	\$47,239,393	\$21,981,652	
resource cost of IndiMix grain equivalent # of MT bulk vegoil	\$47,239,393		
equivalent # of MT bulk vegoil		62,321	
cif cost of those MT of bulk vegoil		\$42,253,705	
Total Program Commodity Cost in FY94 dollars			\$64,235,357

Scenario H: Phased Three-Year Shift to Monetization

Assumptions:

- Programs in Maharashtra and Gujarat close in FY1995.
- Non-RTE rations stay at 65g grain mixed with 8g oil.
- Oil for non-RTE states imported in pails.
- Locally-processed "IndiMix" substituted for SFCM in a phased transition.
- IndiMix is purchased by importing bulk vegoil and selling at average market price.

7.16 million beneficiaries	grain	vegoil	cif Delhi
Other 8 States, 33% of tonnage	\$17,031,051	0	
Other 8 States, 33% of tonnage	\$17,031,051	0	
Other 8 States, 33% of tonnage	\$13,692,578	\$19,114,480	
resource cost of IndiMix grain equivalent # of MT bulk vegoil	\$13,692,578		
equivalent # of MT bulk vegoil		18,064	
cif cost of those MT of bulk vegoil		\$12,247,451	
Total Program Commodity Cost in FY94 dollars			year1 \$65,424,032
			year2 \$60,640,432
			year3 \$55,856,832

Scenario I: Phased Five-Year Shift to Monetization

Assumptions:

- Programs in Maharashtra and Gujarat close in FY1995.
- Non-RTE rations stay at 65g grain mixed with 8g oil.
- Oil for non-RTE states imported in pails.
- Locally-processed "IndiMix" substituted for SFCM in a phased transition.
- IndiMix is purchased by importing bulk vegoil and selling at average market price.

7.18 million beneficiaries	grain	vegoil	cif Delhi
Other 8 States, 20% of tonnage	\$8,215,547	0	
Other 8 States, 20% of tonnage	\$8,215,547	0	
Other 8 States, 20% of tonnage	\$8,215,547	0	
Other 8 States, 20% of tonnage	\$8,215,547	0	
Other 8 States, 20% of tonnage	\$8,215,547	\$19,114,480	
resource cost of IndiMix grain equivalent # of MT bulk vegoil	\$41,077,733		
equivalent # of MT bulk vegoil		54,192	
cif cost of those MT of bulk vegoil		\$36,742,352	
Total Program Commodity Cost in FY94 dollars			year1 \$67,337,472
			year2 \$64,467,312
			year3 \$61,597,152
			year4 \$58,726,992
			year5 \$55,856,832

ANNEX D: COMPLIMENTARY MONETIZATION-FUNDED PROJECTS

A: Bio-Intensive Gardens Project, Karnataka

CARE's Bio-Intensive Gardens (BIG) project in Kudligi block in northern Karnataka is designed to provide selected ICDS mothers with technical assistance and support in creating and sustaining home gardens in this arid rural areas whose population is largely poor and food insecure. Started in 1989, the BIG project has been expanded through three phases: Phase I, with 14 villages, began in June 1989; Phase II, with 16 villages, began in June 1991; and Phase III, with 64 villages, began in June 1993. By the end of 1993, 382 BIGs had been established in the 30 villages of Phases I and II, and an additional 1361 gardens started in Phase III villages. The total project budget is \$370,000 for a six-year period covering all three phases.

Phases I and II of the BIG project used two national NGOs -- Indian Rural Reconstruction Movement (IRRM) and Leading Organization for Rural Development (LORD) -- to implement the project and provide ongoing technical assistance and training in support of the gardens. As the project has evolved into the current Phase III, the focus of support for the gardens has been shifted to the AWW, who receives help in managing her own garden as a demonstration or "model garden" and in return reaps the garden's produce as benefit. The evaluation team noted with interest that among the many additional/supplementary responsibilities which innovations to ICDS seem to add to the AWW's workload, the BIG gardens are the only one which provides an explicit tangible benefit in return for her added time and effort!

The crops promoted by the project share several characteristics: 1) horticulturally suited to bio-intensive cultivation in arid climates; 2) acceptable to and compatible with local diets; 3) good sources of vitamin A and other micronutrients; and 4) sufficiently broad crop mix to ensure production across seasons and mitigate against seasonal food insecurity. A mid-term evaluation was conducted by CARE-India on the Bio-Intensive Gardens in November 1992. That evaluation report included some interesting findings on the impact of the gardens on household food security:

1) Per capita availability in households with gardens was 1.27kg in demonstration gardens and 0.93kg in home/mother gardens

2) Consumption patterns of vegetables (% of families, BIG\control)

	monsoon	winter	summer
green leafy vgs	91 \ 76	78 \ 52	75 \ 50
roots+tubers	50 \ 39	69 \ 65	75 \ 59
other vgs	100 \ 98	98 \ 96	96 \ 91

In the non-BIG control group households, consumption of all vegetables drops during the summer ("hungry") season, whereas in BIG households consumption stayed strong. BIG protected households from seasonal/ transitory food insecurity by ensuring stable access to vitamin-rich foods.

- 3) Knowledge about reasons to consume vegetables was better in BIG areas than control areas; this phenomenon was attributed to informal transmission of nutrition information by BIG animators while working with mothers, since the formal education through the AWC had not yet started.

During the field site visits, the team visited gardens and conducted individual interviews with field staff and participating mother-gardeners. Interviews with mother-gardeners were used to elicit qualitative recall-based information about the impacts of the garden on the household's diet, consumption, food expenditures, and nutrition/health status. Many findings from these interviews validated the findings of the mid-term evaluation described earlier. Details of the responses to these interviews are found in the attached table.

Most mothers interviewed had participated in the BIG project since its inception in their village, and most of their gardens had produced all four types of crops (green leafy vegetables, roots and tubers, fruits and other vegetables, and legumes) continuously across seasons since inception. Green leafy vegetables were rated by far the "best" producing crops by most mothers. Most mothers had help from other household members in garden work, and in all cases the entire family eats the produce from the garden (sometimes sharing with neighbors if harvest is large). Most mothers report that before they had the gardens they purchased the same types of vegetables from the market (but less variety), and now they save an average of 56 rupees per month by growing their own vegetables. Mothers report that they spend the savings on mostly food items (and some non-food such as medicine and school costs). Mothers in poorer villages reported that most of their savings were spent on higher cost food items like oil, of which their family was now able to consume more because of savings.

Mothers systematically reported that their entire family (including the children) consumed **more food and a greater variety** of food now that they have the garden, and they cited a range of perceived benefits including more access to food, greater variety, better quality, fresher, and more tasty (listed in decreasing order of response frequency). More than half of the mothers interviewed reported that their children's nutritional status had improved with the garden, while one-third said that the entire family's status had improved. Mothers also validated the finding from the mid-term evaluation which found that **BIG households were protected from some of the seasonal transitory food insecurity associated with the pre-monsoon "dry-hungry" season**. Mothers observed that they were motivated to maintain their gardens year-round in spite of the labor involved in carrying water in this arid region because the crops they were growing were very appealing to them and their families.

Nutrition education has been an important component of the project from the outset, although implementation was delayed because of problems with the two local NGOs. NUTED has always been implemented through the AWW. A separate analysis of the responses of ICDS mothers in BIG villages with regards to nutrition and health KAP shows that they have significantly better nutrition knowledge than ICDS mothers in both "CARE-regular" and non-CARE villages; this, in spite of the fact that formal nutrition education sessions tied to BIG mothers' groups are a recent phenomenon.

MOTHER-GARDENER INTERVIEW DATA TABULATION

Bio-Intensive Gardens: Mother-Gardener Interview Results
 Kudligi Block, Karnataka
 May 18-22, 1994

Question	village BIG Phase	Gundu	Gundu	CJ Halli	CJ Halli	Huli Kunte	Huli Kunte	Ammankere	KK Hatti	KK Hatti
		2	2	2	2	3	3	3	1	1
		RESULTS								
1	How many years have you participated in the garden program?	4	4	3	4	1	1	1	4	4
2	Has your garden produced <i>continuously</i> throughout that time period?	89%	Y	Y	Y	Y	Y	Y	Y	Y
3	Has your garden produced all four types of crops (green leafy, roots, fruits/vegs, legumes)?	85%	Y	Y	Y	Y	Y	Y	Y	Y
4	What were your best producing crops last year?									
	greens	78%	1	1	1	1	1	1		
	beans	44%			1			1	1	1
	radishes	33%				1		1		1
	roots	11%					1			
	beetroot	11%						1		
	papaya	11%			1					
	squash	11%							1	
5a	Who works in the garden?									
	mom alone	11%						1		
	mom with kids	33%		1				1	1	
	mom with other adult(s)	22%	1			1				
	all family	22%			1	1				
5b	Who eats the food from the garden?									
	just children	0%								
	all the family	78%	1	1		1	1	1	1	
	family + neighbors	11%			1					
6a	What vegetables did you buy from the market before the garden?									
	same as grown	78%	1	1	1	1		1	1	
	less variety	22%					1			1
6b	Does the garden save you money?	100%	Y	Y	Y	Y	Y	Y	Y	Y
	How many rupees/month?	56	25	50	15	80	80	20	40	44
	Is your savings spent on food?	100%	Y	N	Y	Y	Y	Y	Y	Y
7	What are the benefits to your family from the garden?									
	better quality	22%						1		1
	more access	67%	1	1		1	1	1		1
	fresher	22%			1					1
	greater consumption	22%	1							1
	greater variety	33%		1				1		
	more tasty	11%			1					
	savings	22%				1		1		
8	Does your child eat MORE food or the SAME amount now that you have the garden?									
	MORE	89%	1	1	1	1	1	1		1
	SAME	0%								
	DO NOT KNOW	11%							1	
9	Does your child's diet have a GREATER variety or does s/he eat the SAME types of food?									
	GREATER	89%	1	1	1	1	1	1		1
	SAME	0%								
	DO NOT KNOW	11%							1	
10	Has the nutritional status of your child and/or family improved with your garden?									
	child	56%			Y	Y	Y	Y		
	family	33%	Y	Y						Y
11	Have the mother-gardeners in your village formed a women's group?	89%	Y	Y	Y	Y	Y	Y	Y	
	How has it helped?									
	BIG technical assistance/support	44%	1			1			1	
	NUTED	22%					1	1		
	group organization	11%					1			

B. Savings & Loan Associations Project, Orissa

The Savings & Loan Associations (SLA) Project in Orissa is similar in approach and scale to projects being implemented CARE in Andhra Pradesh and Uttar Pradesh. The projects seek to work with very poor women who are eligible for ICDS services in rural areas, women who are often from backward castes or tribes and are often neither literate nor numerate. The project was started in late in 1991, beginning in each focus village with group formation, selection of a group animator, training in literacy and numeracy, election of officers, and establishment of group rules for savings and for loan disbursement and repayment.

The women, with the help of their animator and technical guidance from the CARE field officer, manage monthly savings, assess membership fees to cover group costs, evaluate loan applications, decide upon loan amounts and periods, enforce repayment schedules, and assess late fees and penalties. Initial time required to establish the groups was substantial, as the target women had no previous experience with loans or finance and much care was taken to ensure that their skills were adequately developed before launching into full SLA operations. The project has a budget of \$317,000 over an initial time period of four years (which will have to be extended if the target of 600 women is to be met and all project monies used.)

These savings and loan associations are formed with assistance from CARE field staff and careful attention to developing the women's capacity to identify profitable income-generating activities, assess risks and returns of a proposed loan, and manage the financial aspects of the SLA. During the field site visits, the team observed SLA meetings, conducted individual interviews with field staff and village members, and conducted group interviews with participant women. Interviews with participating women included questions on the financial benefits of the loans received, management and control of the profits from the economic activities supported by the loans, use of those profits with regards to household nutrition and health needs, perceived benefits of the group outside of the loans, and plans for sustaining the SLAs without CARE support in the future.

Recognizing that this pilot program is still in its early stages, preliminary observations on the impact to date of the SLAs and their future potential are as follows:

1. The SLAs are effective in empowering the 300+ women who are currently group members: increasing their literacy and numeracy, boosting their confidence as active members of the village economy and society, teaching them management and problem-solving skills for their income generation activities, and developing a powerful group cohesion which supports each woman. This empowerment is very appealing.
2. SLAs increase household income and that money is managed and controlled by the women. They report minimal interference in the allocation of profits and they also report that profits which are not reinvested in the business are used primarily for additional food, health and medical expenses, and education.

3. CARE's technical assistance to the SLAs is both labor- and capital-intensive, and it remains to be seen whether CARE and the SLAs can successfully co-manage the transition to sustainable self-managed SLAs functioning without CARE support.
4. If they do successfully transit to self-management, the high costs of the initial grant and CARE technical assistance can be measured against a longer "life" of benefits to the participating women, and the project may be justifiably judged as cost-effective. However, if the SLAs do not make the transition to long-lived self-management, then the cost ratio is high.
5. Whether or not the SLAs evolve into highly sustainable self-governing units who generate benefits for years after the initial CARE investment, CARE's priority need is for a program mechanism which can be replicated on a much larger scale in order to have significant national or regional impact. The SLA model being used in Orissa, while powerful and appealing in its empowerment of the women who participate, has not yet demonstrated any built-in economy of scale. This may be due to the institutional and skills development which CARE-India had to undertake in preparation for this pilot effort, and it may also be due to the high fixed institutional and staff costs associated with CARE's direct involvement as the project implementor.

Any plan to replicate the SLA project and broadly expand its scope using the CARE field staff and management structure as it is currently configured seems unlikely to be cost-effective. In order to expand SLAs in a cost-effective manner, CARE-India would need to identify partner organizations (indigenous national NGOs) with whom it can work so that those NNGOs can be the direct field implementors with CARE providing training and acting as a conduit for seed capital.

CARE-India's new SEAD Strategy (in draft form as of June 5, 1994) clearly recognizes this issue, and specifically states that expansion of SLA activities will only occur if 1) CARE believes it can be done on a large scale, and 2) CARE can collaborate with a effective and compatible NNGO partner. However, even if these conditions are realized, the SLAs do not represent the most effective and focused food security intervention among CARE's portfolio of current monetization-funded activities. **Based on the evaluation team's field observations, and in an effort to conceptualize future programming with a food security focus in the light of CARE-India's comparative advantage, the SLAs should not be considered a priority for monetization funding.** If CARE-India judges that the SLAs are a sustainable opportunity for empowering women in a manner consistent with their LRSP, they should be better supported by non-monetization non-food resources.

C: Beekeeping Project, Bihar

In July 1991 CARE initiated an innovative beekeeping activity with monetization funds in the Khunti block of Ranchi district, Bihar. The goal of the project is to improve the health and nutritional status of children in the age group of 0-6 years in 600 families participating in the ICDS program in Khunti block. The project is designed to provide the mothers in these 600 families with a home based income generating activity, beekeeping, which can be used to supplement their income. Part of the income from the beekeeping activity is expected to be used by the mothers to improve the nutritional status of their children. The project includes an important nutrition education component designed to increase the knowledge, attitudes and practices of mothers regarding the nutritional needs of children. It also places a strong emphasis on the formation of women's groups in the target villages, and on helping the women to learn savings and lending practices.

The budget for this four year activity (7/91-6/95) is \$314,000 and CARE has organized a 7 person team to implement the project including a Project Officer, 3 field officers, a market assistant, office assistant and driver. After the initial baseline survey, selection of Khunti block and training of the CARE field officers in beekeeping, CARE's strategy has been to form groups of up to twenty interested women in selected villages and to start a modest group savings program. The women begin by accumulating individual savings, then pooling the savings in a group fund, and opening a bank account. The women are encouraged to save 2-5 rupees a week, and to learn that they can borrow from the group fund to help finance income generating or other activities.

The formation of the women's group and initiation of a group savings program serves as the foundation for the initiation of beekeeping activities. A literate woman is selected from each village to serve as the "Animator" for beekeeping activity. She was trained in beekeeping and then paid a stipend of 200 rupees a month by CARE. The Animator and CARE field officer together train the women in beekeeping, and each participant is provided with two beehives, at an approximate cost of 2,600 rupees. One of the beehives is a grant from CARE; the 1,300 rupees for the other is to be repaid (interest free) into the group fund from the beekeeping earnings. Additional costs such as sugar for sugar water to feed the bees can be borrowed from the group savings fund if necessary. As the mothers generate income from the beekeeping activity they can use the funds to repay the loan, increase their savings, meet ongoing operating expenses of the beekeeping activity or meet household consumption needs.

The project includes an important nutrition education component. The CARE field officers coordinate with the ANMs to provide nutrition education training to the AWWs in the selected villages. This training includes topics such as food groups, dietary requirements of expectant mothers and children breast feeding, malnutrition, night blindness, anaemia, hygiene, sanitation and supplementary nutrition. The CARE field officers and AWWs then educate the mothers during the weekly meetings of the women's groups. CARE has designed its own nutrition education materials for this activity.

Initial progress in the project has been slow due to a variety of factors ranging from the long time taken to get GOI approval and guidelines to work with State Government counterparts, the long period of time needed for group formation and some technical difficulties with the beekeeping. By the end of FY 93 15 groups had been formed and 262 women had been training in beekeeping.

It is too early for a conclusive evaluation of the project, and this is not intended as such. The following observations are based on discussion with the CARE beekeeping field officers as well as interviews with the AWWs and a sample of 12 mothers in three villages Fudi I, Fudi II, and Kalamati II.

Positive Findings

1. The project is an innovative effort to address two of the key constraints to improved nutritional status: poverty (through beekeeping) and nutritional knowledge and practice (through the nutritional education component of the project).
2. The project's targeting of women in very poor tribal areas is excellent.
3. The project is conceptually well integrated with ICDS, both through the targeting of the mothers of children enrolled in the ICDS program, as well as training of the AWWs and involving them in the nutrition and health education of the mothers.
4. CARE made an effort to identify an activity that is appropriate for the women of the region. Beekeeping is an activity that was practiced traditionally in the region previously, and it requires little additional time by the mothers. The honey also has high caloric value and is a valuable supplement to the children's diet.
5. The focus on introducing basic concepts of savings and loans, and linking women with the formal banking system is positive.
6. CARE has conceptualized a systematic and sound approach to nutrition education in the project, starting with a nutritional KAP survey and designing locally appropriate nutrition education materials.
7. Some of the women participants interviewed had correct knowledge of breast feeding practices, women's weight gain during pregnancy, and introduction of solid foods. There was extreme variability across villages with regards to mothers' KAP, however; where mothers did have good KAP they attributed this knowledge directly to the CARE field officers from the bee project, and not to the AWWs.
8. CARE has made an effort to utilize local institutions such as the Agricultural University, and CADI for training, and to coordinate with local counterpart in project implementation.

Problems & Challenges

1. The cost per beneficiary is very high. The four-year budget is \$314,000. With a target of 600 beneficiary families, this is a planned cost per family of more than \$500. Actual cost per family may be considerably higher since the project is behind schedule; only a year before PACD fewer than 400 families have been reached.
2. There are serious questions about the economic viability of the project. CARE overestimated the potential honey production initially and earnings are far below projections.
3. In this project CARE is promoting a highly subsidized model for income generation. CARE donates a 1300-bee hive to each participant family, and extends a loan for the other beehive which is interest-free. In the 20% of the cases where problems have been encountered, CARE has resupplied the beneficiaries at little cost to the beneficiary (for example, in resupplying bees for the hives CARE has paid 650 rupees, and asked the beneficiaries to contribute only 100 rupees).
4. CARE has encountered serious technical problems in the start-up phase of the project. As a result more than 50% of the original swarms had to be replaced at considerable extra cost.
5. There appears to be some confusion about the savings and loan concepts. Participants talk about "savings" to pay off their beehive loan, and "savings" in the group fund. Very few of the women interviewed had begun to take out loans from the savings.

ANNEX E: REFERENCE LIST

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ANNEX G: ANNOTATIONS OF PREVIOUS ICDS EVALUATIONS

In the following pages, the results and findings of selected ICDS evaluations are summarized, with a special emphasis on 1) findings related to **impact of ICDS on nutritional status and/or household food security** and 2) findings related specifically to **CARE's contributions through Title II and USAID contributions through related projects**.

The ICDS in India: Lessons Learned and Implications for Future Policies, Kennedy and Slack, International Food Policy Research Institute, Washington D.C., June 1993.

This detailed review of 27 evaluations/studies and their key findings regarding implementation and impact provides a useful summary of ICDS in general. Specifically with regards to "health and nutrition effects", the authors summarize the findings of the evaluations they reviewed as follows:

1) **ICDS has a positive effect on health and nutritional status:** IMR was 20% lower in ICDS areas than in non-ICDS areas (CTC 1990); percentage of severely and moderately malnourished preschoolers declined faster in ICDS areas than in non-ICDS areas (CTC 1990); percentage of low birth weight babies born to ICDS program participants is lower than that of infants born to non-ICDS women, and the difference between ICDS and non-ICDS is even more dramatic when we examine the incidence of low birth weight in higher risk tribal areas (NIPCCD 1992).

Comments and Caveats: India's recent economic growth has probably contributed to an overall improvement in nutritional status country-wide, but this would not explain the faster rate of improvement in ICDS areas, and, since ICDS centers tend to be located in poorer areas one might expect malnutrition rates in general to be higher than in comparable non-ICDS areas. Few of these studies used any type of statistical testing and this it is difficult to determine how many of the reported differences between ICDS and non-ICDS are significant.

2) Most studies reviewed (representing a wide variety of research designs) documented a trend showing improvement in nutritional status of ICDS participants. NIPCCD 1992 suggests that the positive effects of ICDS are greater for the 3-6 age group than for the under-3s. Comments and Caveats: The conclusions presented about the significance of these improvements are based mostly on introspection rather than on explicit statistical testing.

3) Most problematic is the issue of ascertaining the reasons for observed improvements in nutritional status. Comments and Caveats: Many of the studies reviewed made the assumption that it was the supplementary food that is bringing about the positive nutritional change; however, none of the studies unambiguously established that link.

4) In general, supplementary feeding programs have not been associated with incremental increases in caloric intake on significant improvements in nutritional status of preschool children -- except when there is explicit targeting of food to malnourished individuals or those whose growth falters, and when the food is coupled with a strong and effective education component which stresses the link between increased food intake and growth/health status. **Several of the studies reviewed suggest that ICDS has not been very successful in targeting individuals nor has the nutrition and health education component resulted in high participation or information dissemination.** The most successful improvements in nutritional status associated with supplementary feeding have been noted for pregnant women and younger pre-schoolers, exactly those groups who have not been effectively reached by ICDS.

Review-cum-Appraisal Mission of WFP: Preliminary Finding and Recommendations, Sol Chafkin et al for the World Food Programme, May 1993.

WFP currently provides food aid to support ICDS in five states: Assam, Kerala, Rajasthan, Madhya Pradesh, and Uttar Pradesh. The current WFP programme provides food for 2.12 million beneficiaries in those states.

This review and appraisal mission found that ICDS is "an appropriate vehicle for delivery of supplementary nutrition..as a package for improving health, nutrition, and education of children and mothers, ICDS has considerable potential". However, the review team cited numerous problems and shortcomings, ranging from management, staffing, and training to ineffective targeting and inadequate nutrition and health education and referrals. No specific data is provided on the impact of ICDS in general or WFP inputs in particular, although the report does cite the NIPCCD 1992 results on NHE.

The review recommends that WFP consolidate future assistance to ICDS in four states, phasing out of Uttar Pradesh because of the "recurrent problems experienced (there) which limit the impact of food assistance." The problems cited include feeding interruptions, weak staffing, inadequate provisioning and construction of AWCs, and inadequate accounting and commodity management. The mission used the following criteria for proposing resource allocation: performance, need for food assistance, GOI plans to add new ICDS projects where WFP currently provides support, possibilities of synergism with other WFP projects, and opportunities for donor coordination to improve impact on beneficiaries.

Mid-Term Review of Child Development, joint GOI-UNICEF paper, UNICEF-India, New Delhi, May 1993.

This joint GOI-UNICEF paper provides a summary of ICDS and UNICEF's assistance to the program, briefly summarizes other donor support for ICDS, and cites results of surveys reviewed elsewhere in this paper (CTC 1990, NIPCCD 1992, M.S. University

1991, etc) to support conclusions that ICDS is a successful program. The report also provides some aggregated cost information about various components of ICDS.

National Evaluation of ICDS, National Institute of Public Cooperation and Child Development (NIPCCD), New Delhi, May 1992.

This GOI-managed evaluation of ICDS on a national scale collected data on a wide range of programmatic and performance issues; these data and associated analyses will be fully examined and reported upon in Phase II of this evaluation.

Final Evaluation: USAID-Assisted ICDS Project, Alfred Zerfas et al for Pragma Corporation, Falls Church VA, May 1992.

This evaluation reviews the USAID bilateral ICDS project implemented from 1983 to 1992, in which USAID provided additional inputs in 21 blocks in two Indian states (Gujurat and Maharashtra) where ICDS was already functioning. The project (AID #386-0476), comprising a USAID loan of \$7 million, a USAID grant of \$8.4 million, and GOI contribution of \$9.5 million, included the following components:

- * improving MIS to monitor service delivery and impact;
- * strengthening workers' skills through mobile in-service training (MIST);
- * expanding nutrition & health education (NHE) through social marketing;
- * making more effective use of Title II food commodities by targeting children under 3 and pregnant/lactating women.

CARE continued to provide Title II food commodities to the project areas at the same level as in other districts and blocks, to ensure that no overall increase in food would obscure marginal progress in these target areas. Thus, any comparisons between target blocks and other ICDS blocks in the same districts would be attributed to the inputs described above. Emphasis was placed on increasing the regular participation of those most at risk, on identifying those most at risk from malnutrition and providing double rations, and on improving delivery of the non-food services to those at-risk groups. This evaluation reports upon many institutional and implementation aspects of the project; specific findings about nutritional and food security impacts are mostly taken from two impact surveys (which are better summarized in the M.S. University 1991 and CSF 1990 reports cited next). **The key nutritional impact findings were:**

- 1) In both target districts there was a consistent reduction in the prevalence of **grade III and IV malnutrition** (when considered either separately or in combination) in all age groups at the end of the project compared to baseline.
- 2) The impact was greater in Chandrapur than in Panchmahals, where three consecutive years of severe drought probably worked against the nutritional gains sparked by the project.

3) Toddler mortality rates were reduced by more than the targeted 33% in both districts (35% in Panchmahals and 38% in Chandrapur); infant mortality rates in Chandrapur were reduced by the targeted 25% while there was no reduction in Panchmahals, a finding which may partially reflect the relative inefficiency and limited scope of rural health services in Gujarat.

4) The presence of larger socioeconomic factors, such as the three-year drought, must be considered as when attributing causality -- poverty also decreased dramatically in Chandrapur over the project time period, probably improving household food security, while the same did not occur in Panchmahals.

Summary Report of the USAID-Assisted ICDS Impact Evaluation Project in Gujarat and Maharashtra 1984-1990, Sunder Gujral and Tara Gopaldas, M.S. University of Baroda, 1991.

This report summarizes the findings of a series of impact evaluation surveys conducted over a 6-year period from 1984-1990 in the two states whose ICDS activities received targeted bilateral support from the USAID ICDS Project. The baseline survey (B) was conducted in 1984/85, and the third follow-up/final survey (F-3) was completed in 1989-90 (and preceded by three years of severe drought, most extreme in Gujarat). (See the CSF 1989 report summarized below for a detailed presentation of impact between B and F-2.) Results cited in this report included:

- 1) immunization coverage improved in both districts but remains far below the targeted universal coverage
- 2) coverage of children by health check-ups doubled in both districts and for all age groups
- 3) vitamin A supplements to children increased in both districts but most dramatically in Chandrapur
- 4) participation by children in supplementary nutrition increased in Panchmahals but not significantly in Chandrapur
- 5) malnourished children were not better covered by supplementary nutrition than normal children
- 6) participation of pregnant and lactating women in supplementary nutrition increased in both districts but remains far below the target of 85%
- 7) IMR was reduced by 9% in Panchmahals and 27% in Chandrapur; TMR was reduced by 35% in Panchmahals and 38% in Chandrapur. IMR goal was met in Chandrapur and TMR goals were met in both districts.
- 8) Severe and moderate malnutrition (combined) in children aged 0-3 was reduced by 13% in Panchmahals and 28% in Chandrapur; for children aged 3-6, it declined again by 13% in Panchmahals and 32% in Chandrapur.

Audit Report on CARE Title II Program in India, Price Waterhouse for Regional Inspector General, Singapore, Agency for International Development, April 1991.

This audit examined the CARE Title II programs in India, including ICDS and Mid-Day Meals; the report concluded that "CARE had established a comprehensive system for distributing the commodities and that the commodities were reaching the needy". The report stated that commodity statements could be more reliable, internal controls could be improved, compliance with requirements could be increased, and known problems could be more fully corrected.

An important audit finding related to ICDS was the observation that "no oversight was being provided by USAID/Delhi or CARE to the non-feeding aspects of ICDS"...instead, complete reliance was placed on various Indian governmental elements to adequately accomplish the other health aspects". The audit team stated that "if the Mission is going to continue to report ICDS as a MCH program, arrangements should be made to provide the necessary oversight or at least occasional evaluations of all health aspects provided." One of the four formal recommendations is that "USAID/India either arrange for oversight and evaluation of the important ICDS program aspects, or report that neither the Mission nor CARE is involved in the non-feeding aspects of the program."

(NOTE: During the comment and follow-up period, CARE and USAID/Delhi reported that indeed neither of them had sufficient involvement in the non-food aspects of ICDS to oversee them, and thus would not be providing oversight to those ICDS program aspects.)

ICDS Evaluation and Research 1975-1988, Central Technical Committee Report on ICDS, Department of Women and Child Development, Government of India, 1990.

This GOI report seeks to summarize the results of ICDS-specific research undertaken under supervision of the ICDS Central Technical Committee located at the All-India Institute of Medical Science (AIIMS) in New Delhi, which serves as the GOI-designated "external investigator" for ICDS evaluation and research. The editor of this report, and the AIIMS staff investigator responsible for ICDS, is Professor B.N. Tandon, widely regarded as an expert on ICDS.

The reports cites annual surveys and infant/child mortality surveys initiated by the CTC, special CTC research investigations, and individual research projects often conducted as post-doctoral thesis research. Of particular interest are the results cited on health and nutrition coverage of and impact on mothers and children:

- 1) **Coverage of pregnant women by antenatal services was almost double in ICDS groups (71.9%) when compared with non-ICDS control groups (40.3%).**

- 2) Home delivery is uniformly the favored birth practice in both ICDS and non-ICDS groups; however, a significantly higher proportion of ICDS-project pregnant women utilize trained paramedical personnel for their home deliveries (76.3%) compared to those in non-ICDS groups (49.4%).
- 2) Lactating mothers in ICDS groups have better access to and use of postnatal services than both non-ICDS groups and pre-ICDS baseline data; however, the overall coverage remains very low -- below 50% in rural areas and only 30-40% in tribal areas.
- 4) ICDS contributed significantly to increased immunization coverage for children in all three types of ICDS blocks (urban, rural, & tribal); the pre-ICDS baseline showed fewer than 21% of eligible children covered by three vaccines, while by 1985 children in ICDS groups showed coverage of almost 50%. Immunization for pregnant women similarly increased. A comparative study of immunization coverage in ICDS and matched control non-ICDS groups corroborated the conclusions of the earlier annual surveys.
- 5) ICDS has improved the nutritional services coverage of children (supplementary food and micronutrient supplements) in urban blocks much more effectively than for children in rural and tribal areas. Furthermore, coverage of children aged 3-6 is much superior to that for children under 3.
- 6) Various analytical approaches (both longitudinal studies and matched control samples) have confirmed that ICDS has a positive impact on the nutritional status of preschool children, supporting a decline in moderate and severe undernutrition and an increase in the proportion of children graded normal or grade I. Again, impacts were more impressive for children aged 3-6 than for those under 3.
- 7) Studies of the effects of the 1987 drought in ICDS districts showed that protein-energy malnutrition was more prevalent during the drought than in samples from the same districts before the drought, with children under 3 appearing most vulnerable and experiencing the most decline.

Consultancy Report February 3 - March 4 for USAID-Assisted ICDS Project, Mary Ann Anderson, Community Systems Foundation, March 1989. Includes "Summary of Findings of USAID-Assisted ICDS Impact Evaluation: Second Follow-Up Survey 1987-88".

As a part of the USAID-financed bilateral project assisting ICDS from 1983 to 1992, Baroda and Nagpur Medical Colleges were contracted to collect data using the AIIMS proforma annual survey questionnaire (see CTC 1990 above) as a base with additional questions on performance/impact vis-a-vis the USAID project's goals and objectives. The objective was "an overall evaluation of the impact of ICDS on the nutritional status of children, with some questions on the delivery of services and socioeconomic status".

Three sets of data were gathered in each of the randomly-selected blocks and AWCs: baseline, after 1-2 years of implementation (F-1) and after 3-4 years of project implementation (F-2). Baseline and F-2 AWCs were the same to "assure maximum comparability in socio-economic and demographic characteristics", while F-1 AWCs were a different sample drawn from the same blocks in order to avoid studying the same villages too often.

The evaluation report specifically states that "given the integrated nature of the ICDS program, and the many factors which may contribute to improved nutritional status, the intent (of the impact surveys) was not an in-depth study of individual components or an effort to partition impact between the various contributing services, but rather a general impact evaluation of improvements in child nutritional status."

Effects of USAID bilateral project on improved coverage of children by essential health and nutrition services:

Growth monitoring of children covered by project increased from 28% to 42% in Panchmahals and 4% to 63% in Chandrapur. Improvements were also measured in accurate AWW interpretation of growth charts. Vitamin A/folic acid supplements reached significantly more children in both districts, and as a consequence the percentage of children observed with clinical eye signs of vitamin A deficiency fell (although the prevalence remained unacceptably high). There was also a marked decline in the prevalence of pallor signs of iron deficiency anemia, probably due to greater accessibility to the supplement tablets, which are now distributed by the AWW.

Immunization coverage improved (most dramatically in Chandrapur) probably because of the introduction in the two project districts of the GOI Universal Immunization Programme, although the majority of children were still not fully immunized by F-2. CARE's special campaign in Panchmahals district on knowledge of ORT dramatically increased the proportion of AWW who could correctly make the sugar-salt solution (from 0-63%) and the number of mothers who knew how (eight-fold increase), although mothers' usage remained low.

Nutrition and health education, one of the weakest components of ICDS, was targeted for social marketing assistance through the bilateral project, but the NHE activities were late and had not been introduced at the time of F-2 survey. Coverage of malnourished children under three who benefitted from home visits by AWWs increased dramatically, from 7% to 37% in Panchmahals and from 41% to 54% in Chandrapur, while the percentage of malnourished under-threes who had received a health check-up by a health staffer doubled (although malnourished children did not have priority status over normal children).

Effects of USAID bilateral project on improved coverage of pregnant/lactating women by essential health and nutrition services:

Coverage of pregnant/lactating women with iron/folic acid supplements increased substantially -- both in the greater number of women receiving supplements and the increased average number of tablets per woman -- and as a result, there were fewer pregnant women with anemia. However, the total coverage remains substandard and anemia remains a problem. Provision of antenatal health services and tetanus immunization to pregnant and lactating women improved by between 4% and 13%, although most women still were not receiving essential services. The proportion of pregnant women at-risk to deliver low-birth weight babies changed very little in either district; nearly all pregnant women had one or more of the risk factors. Regular visits to AWC by health workers improved significantly in Chandrapur but not in Panchmahals, probably due to greater coordination between ICDS and health services there.

Effects of USAID bilateral project on supplementary nutrition coverage of children under 6 and pregnant/lactating women:

Supplementary food was available at the AWCs in the two project districts on a much more regular basis (93% of feeding days in Panchmahals and 96% in Chandrapur) than before the project, when the food supply was highly irregular. However, to achieve any substantive nutritional impact coverage of the target groups by this food must be almost universal -- and **the 85% supplementary nutrition coverage target was far from fulfilled for either malnourished children or pregnant/lactating women**, but rather coverage was 45% in Panchmahals and 60% in Chandrapur. The problem appeared to be due more to lack of enrollment of the target groups rather than irregular attendance once enrolled. The highest supplementary nutrition coverage was for non-malnourished children aged 3-6; **the least covered groups were those most at risk -- pregnant women, lactating women, and malnourished under-threes (in that order)**. An equal proportion of malnourished and normal children aged 6-36 months received supplementary nutrition. On the positive side, there was an **observed convergence between participation of the under-threes in supplementary nutrition and their receipt of other ICDS health and nutrition services**, including vitamins, check-ups, ORT, and home check-ups.

Impact of ICDS and drought on nutritional status of children:

Severe malnutrition (grades III and IV) declined by only 5% in Panchmahals during the three-year period measured; this lower-than-expected change is probably due to drought-driven increases in food insecurity, which decreased agricultural incomes and increased both food prices and scarcity; **it is likely that ICDS actually protected nutritional status from the further degradation which the drought would have caused in the absence of ICDS.**

In sites in Chandrapur where the drought was much less severe, severe malnutrition was reduced by 37% -- statistically a very significant improvement. Knowing that some blocks within Panchmahals were more affected by the drought than others, the impact survey conducted a disaggregated review of block-wise changes in nutritional status. In blocks less severely hit by the drought, improvements in nutritional status surfaced in reductions between 31-49% in severe grades of malnutrition.

Program Review of CARE Maternal and Child Health (ICDS and SNP) Title II Program in India, Joyce King, Hope Sukin, et al for USAID/Delhi, New Delhi, October 1986.

This program review produced an issues paper which took as its starting point the findings from the predecessor 1979 CSF evaluation of Title II in India. Specific conclusions were reached regarding trends in food programming, coverage and targeting, food management and coordination, the role and use of food within ICDS, and program effectiveness, including:

- 1) The targeting mechanisms specified within ICDS, including geographical targeting and beneficiary selection, are appropriate and effective when applied according to plan.
- 2) The most effective cohort targeted is children 3-6 years old; representation of children 2-3 is improving but still sub-optimal; enrollment and attendance of children 1-2 is low; participation of children aged 0-12 months is "very minimal".
- 3) In centers where only moderately and severely malnourished children below three are enrolled, the program risks de-evolving into an "unsuccessful" rehabilitation project rather than an effective preventative program. Little attention is given to better-off children whose growth begins to falter.
- 4) Participation of pregnant and lactating women is too low, and greater flexibility in program management might improve that by responding to time constraints with expanded AWC schedules or take-home food. Pregnant women should also be enrolled in their trimester.
- 5) Malnourished children under three can rarely finish their special targeted double ration in one sitting, and more flexible arrangements must be made.
- 6) The supplementary nutrition (food) plays an important incentive role in attracting children and mothers to the program.

Mid-Project Evaluation of USAID-Assisted Integrated Child Development Services (ICDS) in India, Tina Sanghvi et al, Pragma Corporation for AID Office of Nutrition, September 1986.

This mid-project review sought to assess progress in achieving the purposes of the bilateral project assistance, and to identify implementation problems faced during the first three years of the project and provide recommendations for achieving the project goals. The three-person external evaluation team found that a large and effective infrastructure of AWCs had been established, reaching a target population of 2.4 million in rural areas of Chandrapur and Panchmahals. The team found that: enrolment of high-priority groups was beginning to occur, as was regular child growth monitoring; in-service training and orientation of personnel has led to an improvement in the quality of services; food distribution was regular in Panchmahals but remained problematic in Chandrapur; health service improvements failed to materialize as planned; administrative delays in filling requisite GOI positions led to slower-than-planned implementation.

Key lessons learned: innovations and operational improvements take more time than envisioned, especially when projects must first establish the infrastructure; by working in existing AWCs, future follow-on projects could focus more attention on the innovations in training and operations; greater use should be made of informal skills-oriented in-service training. No quantitative impact findings related to food security or nutritional status were reported in this mid-term evaluation.

Operations Research & Innovative Activities to Improve Growth Monitoring in USAID-Assisted ICDS Activities, USAID/Delhi paper by Mary Ann Anderson presented at UNICEF conference in New Delhi, May 1986.

This short paper cited some of the findings generated by the bilateral USAID project baseline survey as context for proposals for operations research projects and innovative pilot activities. No impact data had yet been collected on the project's activities, and so no impact findings.

Integrated Child Development Services: An Assessment, Krishnamurthy and Nadkarni, UNICEF, Delhi, May 1983.

This assessment and overview of ICDS by UNICEF sought to:

- 1) review the overall functioning of ICDS at the village level;
- 2) assess the effectiveness of the delivery of services;
- 3) determine the effect of services on attitudes, general awareness, and daily practices in the local community; and
- 4) assess the benefits against resources invested in the program.

Nine teams were used to collect data from 124 villages in 16 blocks in nine states. Five beneficiary families in each village were interviewed (620 total respondents) plus a

representative of the Panchayat (village council). The surveys conducted by these teams did not generate any impact data related to nutritional status or food security. The report does, however, cite results from two of the earlier ALIMs annual ICDS surveys managed by Professor B.N. Tandon which showed higher coverage of children by immunization and nutrition services, and the greater coverage of poor children by the ICDS non-formal education for pre-schoolers.

These results are presented in the context of a non-quantitative "analysis of benefits and resources" which also points to the "indirect but significant benefit of the nutrition program...in breaking down social barriers for children from scheduled castes" and to the "socially productive employment" provided by the creation of some 190,000 direct ICDS jobs. The report then suggests that since the "cost of AWCs alone is calculated by Tandon et al to be only 12 rupees per beneficiary per year, over and above the cost of health services infrastructure, ...considering the extra benefits generated by ICDS the extra costs invested appears quite meager."

Audit Report on CARE Title II Program in India, Agency for International Development, Regional Office of the Inspector General for Audit, Karachi, June 1982.

This audit report on CARE's Title II program in India examined program impact, losses/damages, program implementation, internal review systems, commodity accountability, monitoring, and reporting, and includes a total of 37 recommendations that "detail a broad range of serious problems", including the following findings on program impact: **a satisfactory levels of program impact has not been achieved; the SF and MCH programs have made very little progress towards achieving their objectives; and "various studies and other data show that there has been a distinct lack of nutritional impact in the MCH program...similarly, the SF program has had virtually no impact on increasing school enrollment or reducing the drop-out ratio."**

The audit team also noted serious problems relating to non-impact issues of management and accountability, due to "negligence, lack of management follow-up, poor planning, and excessive program size." The audit report makes several recommendations, including a determination of "effective program size", better targeting of beneficiaries, nutritionally adequate rations, and negotiation of formal agreements with the GOI which will provide for a progressive phase-out of the entire PL-480 Title II program to GOI support from indigenous resources.

Towards a Monitoring and Evaluation System for PL-480 Title II Maternal and Child Health Programs in India, Miller and Pyle, Community Systems Foundation, June 1981.

This report seeks to provide the framework for a "Monitoring/Built-In Evaluation" system to provide a quantitative assessment of Title II MCH programs in India using "impact and process data routinely in the management of the MCH programs". The report reviews previous and existing monitoring/evaluation systems in CARE and CRS

Title II MCH programs in India, and provides detailed suggestions for a future system which would, among other products, generate continuing data on nutritional impact at the beneficiary and community level for the more sophisticated MCH programs.

The Integrated Maternal and Child Nutrition Project in India: Recommendations Based on a Review of Past Experiences, David Sahn, Community Systems Foundation, November 1980.

This report provides a comprehensive overview of issues involved in conceptualizing and designing an integrated MCH program to replace the previous "feeding-only" activities such as SNP. In providing this excellent overview of issues to be addressed when designing such a program, the author also provides a checklist of issues which might be considered as questions in an evaluation of an integrated MCH program.

(NOTE: Although the official USAID "paper trail" does not explicitly show the connections between this report and the development of the USAID project #386-0476, it seems likely that the "India Integrated Maternal & Child Nutrition Project" discussed in this 1980 report evolved into the ICDS bilateral project of 1983.)

An Evaluation Report on the PL-480 Title II Program in India, Community Systems Foundation, June 1979.

This report summarizes the results of an evaluation of the use of Title II food by four PVOs in India, examines the (often conflicting) objectives of the Title II program, proposes criteria for the review of future Title II requests, and suggests a strategy for future Title II program monitoring and evaluation. The evaluation team recommended elimination of the Title II priority guidelines which rank MCH first, Food for Work second, and School Feeding third (these priority rankings were established in 1972 as a result of Checchi & Company's global assessment of Title II for AID/Washington), and throughout the report the evaluation team explicitly challenged the emphasis of Title II programming for an measuring changes in nutritional status.

Which regard to the impact of previous Title II MCH programs in India, the evaluation team concludes that **the objective of improving health and nutritional status of the target groups "is largely not achieved"** based on their observation that "the conditions necessary for the achievement of those health and nutrition objectives are not consistently fulfilled" -- the team believes that "a much larger ration would be necessary to counteract the effects of sharing substitution, and losses due to poor health", citing research done by Indian institutions which "in most cases fails to find any marginal nutritional impact of MCH programs". The team also concludes that **"food does have the potential to act as an incentive for receiving other health services"**, but will only have impact if the other services are consistently available. The team recommends that "food be prepared and eaten on-site", "beneficiaries should be selected based on nutritional and economic need", and that "greater consideration be given to the need for improved sanitation to reduce infection and infestation".