UNCLASSIFIED

DEPARTMENT OF STATE

AGENCY FOR INTERNATIONAL DEVELOPMENT

Washington, D.C. 20523

PROJECT PAPER

INDIA

INTEGRATED CHILD DEVELOPMENT SERVICES

(386-0476)

USAID/INDIA

JUNE 1983

UNCLASSIFIED

PDAAN558

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE: A (A = Add, C = Change, D = Delete) — Amendment Number: ____ — DOCUMENT CODE: 3

2. COUNTRY/ENTITY: INDIA

3. PROJECT NUMBER: 386-0476

4. BUREAU/OFFICE: ASIA [04]

5. PROJECT TITLE (maximum 40 characters): Integrated Child Development Services

6. PROJECT ASSISTANCE COMPLETION DATE (PACD): MM 09 DD 30 YY 89

7. ESTIMATED DATE OF OBLIGATION (Under "B." below, enter 1, 2, 3, or 4): A. Initial FY 83 B. Quarter 4 C. Final FY 86

8. COSTS ($000 OR EQUIVALENT $1 =)

A. FUNDING SOURCE	FIRST FY 83 B. FX	C. L/C	D. Total	LIFE OF PROJECT E. FX	F. L/C	G. Total
AID Appropriated Total						
(Grant)	( )	( )	( )	(8,000)	( )	(8,000)
(Loan)	(2,000)	( )	(2,000)	(7,000)	( )	(7,000)
Other U.S. 1.						
Other U.S. 2.						
Host Country		620	620		9,500	9,500
Other Donor(s)						
TOTALS	2,000	620	2,620	15,000	9,500	24,500

9. SCHEDULE OF AID FUNDING ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE 1. Grant	2. Loan	D. OBLIGATIONS TO DATE 1. Grant	2. Loan	E. AMOUNT APPROVED THIS ACTION 1. Grant	2. Loan	F. LIFE OF PROJECT 1. Grant	2. Loan
(1) 103	384	340	330	-0-	-0-	8,000	7,000	8,000	7,000
(2)									
(3)									
(4)									
TOTALS				-0-	-0-	8,000	7,000	8,000	7,000

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)

11. SECONDARY PURPOSE

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code	BMW	R/H	NUTR	TNG			
B. Amount							

13. PROJECT PURPOSE (maximum 480 characters)

1. To expand and improve the Integrated Child Development Services program in 19 rural and tribal blocks.

2. To determine the technical feasibility and costs of improving the birth weights of children.

14. SCHEDULED EVALUATIONS: Interim MM YY 07 86 — Final MM YY 07 89

15. SOURCE/ORIGIN OF GOODS AND SERVICES: ☐ 000 ☒ 941 ☒ Local ☐ Other (Specify) ____

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a ____ page PP Amendment)

17. APPROVED BY — Signature: Priscilla Boughton — Title: Priscilla Boughton, Director, USAID/India — Date Signed: MM 06 DD 30 YY 83

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION: MM DD YY

AID 1450-4 (8-70)

PROJECT PAPER

INTEGRATED CHILD DEVELOPMENT SERVICES PROJECT

	Page
I. Project Data Sheet	
II. Draft Project Authorization	1
III. Project, Summary Rationale and Description	4
A. Summary Description	4
B. Background and Rationale	9
1. Child Mortality, Nutritional Status, and Foodgrain Supply and Demand	9
a. Child Mortality and Nutritional Status b. Foodgrain Supply and Market Demand: A Precarious Balance	11
2. GOI Policies and Programs	11
a. History of Direct Nutritional Intervention Programs in India	11
i. Special Nutrition Program	11
ii. CARE's MCH Feeding Program	12
iii. Integrated Child Development Services	12
b. Current GOI Nutrition Policies and Plans	16
3. Relationship of Project to AID Development Strategy	18
4. Other Donor Assistance	19
5. Project States, Districts, and Blocks	19
C. Detailed Project Description	19
1. Goals and Purposes	19
2. Purpose 1: Expansion and Improvement of ICDS Program	20
a. Overview	20
b. Improvement in Supplementary Feeding at Anganwadis	22
c. Improvement in Nutrition and Health Education Services at Anganwadis	28

	Page
d. Improvement in Primary Health Care Services in Support of Anganwadis	30
e. Improvement in Management Support Systems	32
i. Staffing Pattern and Filled Posts	32
ii. Management Skills	38
iii. Management Information System	38
f. Improvement in Training Support Systems	41
i. Management, Coordination and Technical Assistance at NIPCCD, ICCW, and State Governments	41
ii. Syllabi and Training Materials	44
iii. Basic Training	45
iv. In-Service Workshops	46
v. Continuing Education	47
vi. Orientation of District and State Officials and Health Staff	47
g. Improvement in Nutrition and Health Education (NHED) Support Systems	49
i. Strengthening Planning, Management and Technical Capacity for NHED	49
ii. Strengthening NHED Skills of Project Staff	51
h. Innovative Research and Development to Improve ICDS	51
3. Purpose 2: Low Birth Weight Research	52
i. Research Approach and Timetable	53
ii. Collaboration with U.S. Research Institutes	55
4. Outputs	55
5. Inputs	55
IV. Cost Estimate, Financial Plan, and Disbursement Procedures	60
A. Cost Estimate & Financial Plan	60
B. Disbursement Procedures	63
V. Implementation Plan	64
VI. Monitoring Plan	66

		Page
VII.	Summaries of Analyses	70
VIII.	Evaluation Arrangements	74

TABLES

1.	Interface of Workers and Services in the ICDS System	17
2.	ICDS Staffing Pattern Compared to Staffing Pattern Recommended for AID Assisted Areas	33
3.	Number of Trainees and Mobile Teams Needed for In-Service Workshops in AID Assisted ICDS Blocks	46
4.	Illustrative Sequence of Training Activities for an ICDS Block	48
5.	ICDS Project Outputs	57

ANNEXES

1. PID Approval Message and Discussion of Project Issues

2. Logical Framework Matrix

3. Statutory Checklist

4. GOI Request for Assistance

5. List of Project Blocks and Districts and Number of Anganwadis Required

6. Analysis of Supplementary Feeding at the Anganwadi

7. Analysis of Food Requirements and Delivery Systems

8. Analysis of Nutrition and Health Education (NHED) Services in ICDS

9. Role of Various Agencies in Nutrition and Health Education (NHED) in ICDS

10. Analysis of Primary Health Care Services in Support of the Anganwadi

11. Analysis of ICDS Training Support Systems

12. List of Training Centers of Mukhya Sevikas and Anganwadi Workers in Gujarat and Maharashtra

13. Analysis of the Low Birth Weight Problem in India and Research Needs

14. Cost Estimates

15. Economic Analysis

16. Social Soundness Analysis

17. Section 611(e) Certification

18. ICDS Management Information System

19. Evaluation Arrangements

20. UNICEF Inputs in AID Assisted ICDS Blocks

21. Critical Performance Indicators

22. References

ABBREVIATIONS

AER - Annual Estimate of Requirements for Title II Foods

AIIMS - All-India Institute of Medical Sciences

AIR - All-India Radio

AMUL - Anand Milk Producers Union, Ltd.

ANM - Auxiliary Nurse Midwife now called Female Health Worker (FHW)

AWW - Anganwadi Worker

BDO - Block Development Officer

BEE - Block Extension Educator, also called BEO (E)

BEO(E) - Block Extension Officer, Education also called BEE

CARE - Cooperative for American Relief Everywhere

CDPO - Child Development Project Officer

CEO - Chief Executive Officer, District Level

CHEB - Central Health Education Bureau

CMC - Christian Medical College, Vellore

CSM - Corn Soy Milk

CWC - Central Warehousing Corporation

DAVP - Directorate of Advertising and Visual Publicity

DEMO - District Education and Media Officer

DHO - District Health Officer

DPT - Diptheria, Pertussis and Tetanus Immunization

FCI - Food Corporation of India

FFD - Food for Development Office of USAID/India

FHA - Female Health Assistant formerly called Lady Health Visitor (LHV)

FHW - Female Health Worker formerly called Auxiliary Nurse Midwife (ANM)

FLAW - Functional Literacy for Adult Women

FO - Field Officer, CARE

FY - U.S. Fiscal Year, October 1 - September 30

GOG - Government of Gujarat

GOI - Government of India

GOM - Government of Maharashtra

GOMP - Government of Madhya Pradesh

HPN - Health, Population, and Nutrition Office of USAID/India

I/CSM - Instant Corn Soy Milk

ICCW - Indian Council of Child Welfare

ICMR - Indian Council of Medical Research

ICDS - Integrated Child Development Services

IFY - Indian Fiscal Year, April 1 - March 31

IMCN - Integrated Maternal and Child Nutrition Project

INHAP - Integrated Nutrition and Health Action Program

INCS - International Nutrition Communication Service

ISRO - Indian Space Research Organization

JIPMER - Jawaharlal Nehru Institute of Post-Graduate Medical Education and Research, Pondicherry

KEM - King Edward Memorial Hospital, Pune

LBW - Low Birth Weight < 2500 grams

LHV - Lady Health Visitor now called Female Health Assistant (FHA)

LOP - Life of Project

MCH - Maternal & Child Health

MEMO - Mass Education and Media Officer, State Level

MIB - Ministry of Information and Broadcasting

MIS - Management Information System

MO - Medical Officer, Primary Health Center, Block Level

MOHFW - Ministry of Health and Family Welfare

MOSW - Ministry of Social Welfare

MS - Mukhya Sevika or Supervisor

MSSIDC - Maharashtra Small Scale Industrial Development Corporation

MT - Metric Ton

NCERT - National Council for Educational Research and Training

NHED - Nutrition and Health Education

NIAID/NIH U.S. National Institute of Allergy and Infectious Diseases of the National Institutes of Health

NIN - National Institute of Nutrition

NIPCCD - National Institute for Public Cooperation and Child Development

NNMB - National Nutrition Monitoring Bureau at NIN

NORAD - Norwegian Agency for International Development

O/T - Ocean Transport Costs on Title II Foods

ORT - Oral Rehydration Therapy

PASA - Participating Agency Support Agreement

PEO - Program Evaluation Organization, Planning Commission

PER - Protein Efficiency Ratio

PGI - Post Graduate Institute of Medical Education and Research, Chandigarh

PHC - Primary Health Center

PID - Project Implementation Document

PL 480 - Public Law 480 Title II Food Assistance

POL - Petrol, Oil, and Lubricant Allowance

PP - Project Paper

RDD - Rural Development Department

RTE - Ready-to-eat Food

Rs. - Indian Rupees ($1.00 = Rs.9.97)

SCCW - State Council of Child Welfare

SER - Supply Efficiency Ratio = Food Delivered - Food Required

SFB - Soy Fortified Bulgur

SFCM - Soy Fortified Corn Meal

SHEB - State Health Education Bureau

SNP - Special Nutrition Program

TA/DA - Travel Allowance/Daily Allowance

TT - Tetanus Toxoid Immunization for Pregnant Women

TWD - Tribal Welfare Department, Madhya Pradesh

UNICEF - United Nations Children's Fund

USAID - United States Agency for International Development or AID

USDA - United States Department of Agriculture

VHAI - Voluntary Health Association of India

VHG - Village Health Guide

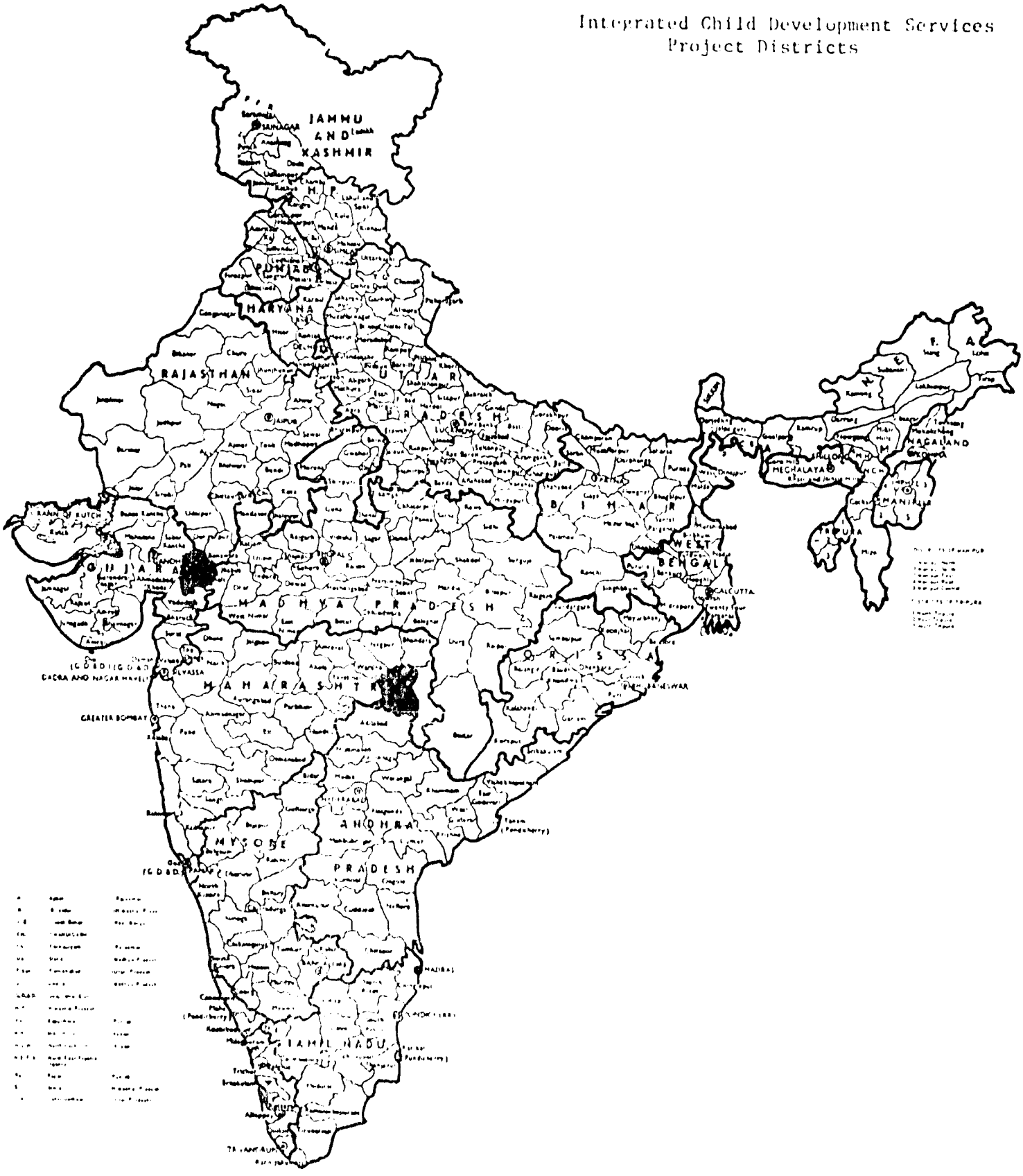
WFP - World Food Program

INDIAN TERMS

ANGANWADI	-	Village child care center, literally a courtyard
BAL AMUL	-	Therapeutic food for severely malnourished children made by Amul Dairy, Gujarat
BLOCK	-	Community Development Block - lowest administrative unit within a district. Average rural block has population of 100,000
DAI	-	Traditional Birth Attendant or Midwife
GODOWN	-	Warehouse
JAGGERY	-	Unrefined brown sugar
MAHILA MANDAL	-	Women's Club
MATRUAHAR	-	Mother's food
PANCHAYAT	-	Elected body of the village
PANJEERI	-	A roasted ready to eat food usually in the form of powder made from wheat or corn, brown sugar, and oil
SARPANCH	-	Village Chief
SUKHADA	-	A roasted ready to eat food usually in the form of a cake made from wheat or corn, brown sugar and oil.

USAID/INDIA

Integrated Child Development Services
Project Districts



The boundaries shown do not imply any judgement on the part of the U.S. Government on the legal status of any territory or any endorsement or acceptance of su ndaries.

II. PROJECT AUTHORIZATION

INDIA

Integrated Child Development Services
Project No. 386-0476
A.I.D. Loan No. 386-

1. Pursuant to Sections 103 and 104 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Integrated Child Development Services (ICDS) Project for India (the "Cooperating Country") involving planned obligations of not to exceed Eight Million United States Dollars ($8,000,000) in Grant funds and Seven Million United States Dollars ($7,000,000) in Loan funds over a five year period from date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the project commencing April 1, 1983.

2. The Project is intended to assist the Government of India develop a comprehensive approach to alleviate child malnutrition and mortality in Indian villages through supplementary feeding programs and the delivery of nutrition education and health services to those children and pregnant and nursing women most at-risk. Loan and Grant funds will finance technical assistance, training, research, minimal assistance to food processing plants, project monitoring and evaluation, furniture and equipment and an annually diminishing percentage of staff and operating costs.

3. The Project Agreement, which may be negotiated and executed by the officer to whom such authority is delegated in accordance with A.I.D. Regulations and Delegations of Authority, shall be subject to the following essential terms, covenants, and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate.

a. Interest Rate and Terms of Repayment

The Cooperating Country shall repay the Loan to A.I.D. in U.S. dollars within forty (40) years from the date of the first disbursement of the Loan, including a grace period of not to exceed ten (10) years. The Cooperating Country shall pay interest to A.I.D. in U.S. dollars from the date of first disbursement of the Loan at the rate of (a) two percent (2%) per annum during the first ten (10) years, and (b) three percent (3%) per annum thereafter, on the outstanding disbursed balance of the Loan and on any due and unpaid interest accrued thereon.

b. Source and Origin of Goods and Services

Goods and services, except for ocean shipping, financed by A.I.D. under the project shall have their source and origin in the Cooperating Country or the United States in the case of Grant funds and in the Cooperating Country or countries included in A.I.D. Geographic Code 941 in the case of Loan funds, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the Project shall be financed only on flag vessels of the United States and the Cooperating Country, except as A.I.D. may otherwise agree in writing.

c. Conditions Precedent to Disbursement

1) Prior to the first disbursement of Assistance for any purpose other than for the low birth weight research component of the Project, or to the issuance by AID of documentation pursuant to which such disbursement will be made, the Cooperating Country shall, except as the parties may otherwise agree in writing, furnish in form and substance satisfactory to AID:

a) Evidence that a Project Manager within MOSW, supported by adequate statistical staff, has been designated to act as liaison for the purpose of implementing the project.

b) Documentation of approvals from the GOI and the governments of Gujarat and Maharashtra for use of CARE supplied Title II food in the AID assisted ICDS project areas for the purposes specified in Annex 1 of the Project Agreement.

c) Evidence that the District Health Education and Media Officers in AID assisted districts have been designated as ICDS Nutrition and Health Education (NHED) Coordinators.

d) Evidence that the state governments of Maharashtra and Gujarat have each designated personnel to act full time as an ICDS Nutrition and Health Education Coordinator, an ICDS Training Coordinator and an ICDS Management Information System (MIS) Coordinator respectively.

2) Conditions Precedent to Disbursement for Specific Blocks

Prior to any disbursement under the project for a specific block or to the issuance by AID of documentation pursuant to which such disbursement will be made, the Cooperating Country shall, except as the parties may otherwise agree in writing, furnish in form and substance satisfactory to AID, evidence that the block has adequate food commodities to meet nutritional specifications as identified in Annex 1 of this Agreement.

d) Covenants

Except as AID may otherwise agree in writing, the Cooperating Country will:

1. assure that CARE supplied Title II foods are assigned and delivered to AID assisted ICDS projects.

2. cause the state governments of Maharashtra and Gujarat to designate personnel to act full time as an ICDS Nutrition and Health Education Coordinator, and ICDS Training Coordinator and an ICDS Management Information System (MIS) Coordinator respectively by December 31, 1983.

3. assure that the District Health Education and Media Officers in AID assisted districts are designated as ICDS Nutrition and Health Education (NHED) Coordinators by December 31, 1983.

4. make available to AID data and reports generated by the management information system and impact evaluations in AID assisted ICDS project areas.

5. fill posts for health workers in AID assisted ICDS project areas to the level of the GOI's Model Plan on a priority basis.

Owen Cylke
Director
USAID/India

Date: 9/15/83

Clearances: FFD:HHouck (in draft)
PRO:FYoung (in draft)
PD :RWNachtrieb (in draft)
CO :DEHickson
HPE:WBRBeasley
DD:RMBrown
RLA:SSpielman

PD:DSwain:sg:09/06/83

III. PROJECT SUMMARY, RATIONALE AND DESCRIPTION

A. Summary Description

The project proposes to test a comprehensive approach to alleviating young child malnutrition and mortality in Indian villages through delivery of supplementary feeding, nutrition education and health services to those children and pregnant and nursing women most at-risk. This will be accomplished by expanding and improving the Integrated Child Development Services Scheme (ICDS) of the government of India (GOI) and by making more effective use of Title II food commodities provided through CARE. The project will establish 4,000 improved village child care centers known as "anganwadis" at which an integrated package of services will be provided. These centers will be located in 19 blocks in Panch Mahals district, Gujarat and Chandrapur district, Maharashtra. It should be noted that Panch Mahals is one of the districts in which health services are being upgraded through USAID's Integrated Rural Health and Population Project. Over the six year life of the project, $15 million in Development Assistance (DA) Funds will be needed and Title II food costing an estimated $18 million plus $7 million for ocean transport. The Government of India will contribute $9.5 million or approximately 36% of the total cost of this project. Some inputs will be provided by UNICEF through its agreement with GOI, e.g. weighing scales, jeeps and training stipends for some of the workers.

The project has been designed to address the recommendations of numerous evaluations of supplementary feeding programs in India and elsewhere, including Title II assisted programs and ICDS, which have found that a much greater reduction in malnutrition could be achieved if certain improvements were made. Improvements will be made through this project in targeting of appropriate food rations to pregnant and nursing women and moderately and severely malnourished children under three years of age along with enhanced nutrition and health education and health services. Improvements will also be made in training, monitoring and evaluation. To accomplish these improvements, supervisory and technical staff will be added at various levels of project management and given special training. Village level workers' training will be strengthened to impart the skills needed to reduce malnutrition and mortality. Substantial technical assistance from the U.S. and from within India will be provided to make these improvements and to adapt systems and techniques that have been found effective elsewhere. The project will also include a major research activity to enhance the capacity of Indian research institutes to investigate the antenatal factors which lead to low birth weight and to test interventions to increase birth weight.

A kev element of the project is support for an improved management information system (MIS) within ICDS to monitor the implementation of new techniques and skills for growth monitoring, supplementary feeding, nutrition education, and selected health services. This system will be coupled with continuous impact evaluation surveys in a sample of villages to analyze the effects of the project on the nutritional status of the target group. Data generated from the monitoring and evaluation systems will be used as a basis for assessing potential policy and procedural changes throughout ICDS. The extent to which the project's management staff respond to data from the monitoring and evaluation systems to make necessary adjustments during implementation will be an indicator of the effectiveness of these improved systems.

The project will also test new management and nstitutional approaches in support of the GOI's and CARE's interest .n increasing the nutritional impact of supplementary feeding. This means that priority will be given to feeding children under 3 years of age who are moderately and severely malnourished (identified by weight or arm circumference for age criteria) and to feeding at-risk pregnant or nursing women. Each anganwadi will seek to feed 85% of this target group in the community it serves. Applying baseline malnutrition and birth rates, there will be an average of 54 individuals in the target group enrolled at each rural anganwadi (38 in tribal anganwadis) or 177,000 in all the anganwadis by the fifth project year. A lower priority group of children 3-6 years of age who attend these anganwadis for preschool education will also be fed (approximately 131,000 children enrolled in all anganwadis by the fifth project year). Title II food allotments will be adjusted quarterly to insure coverage of the target group with adequate rations based on actual malnutrition rates. An upper limit will be fixed for the number of rations provided for the lower priority group (average 40 per rural anganwadi). In cases where the total number of beneficiaries seeking enrollment exceeds the amount of Title II food available, the state governments will provide additional food inputs.

Each targeted beneficiary will receive a minimum daily ration in accordance with ICDS standards. Feeding will be done on-site for 300 days a year. All beneficiaries will receive a daily ration of 300 calories (kcal) and 8-10 grams (g) protein except severely malnourished children (600 kcal) and pregnant or nursing women (500-600 kcal). These rations are considered by nutritionists to be the minimum necesary for the nutritional rehabilitation of the target group. Approximately 46,000 MT of Title II foods (CSM, Oil, and SF Bulgur) and 7,500 MT local foods (brown sugar) will be needed over the life of this project. For Maharashtra, these commodities will be re-processed locally into ready to eat foods, using an existing, well run system. Midway through the project similar local processing of Title II commodities will also take place in Gujarat with assistance provided by USAID to equip the processing plants.

In addition to supplementary feeding, each anganwadi will also provide selected health services and nutrition education for mothers and children 0-72 months of age, stressing such things as prolonged breastfeeding, appropriate weaning foods, oral rehydration, and immunization. The health services in the project blocks will be upgraded to the level of the GOI's Model Plan, using central and state government resources and AID funding through the Integrated Rural Health and Population Project in Panch Mahals district.

The anganwadis to be set up under this project will represent a significant improvement in the GOI's continuing efforts to eliminate malnutrition in the following ways:

- There will be much more sharply focused targeting on malnourished children under three years of age and pregnant or nursing women who are most at-risk;
- A much higher, regular coverage of the target group with supplementary feeding will be attempted, i.e., 85%;
- The anganwadi worker (AWW) will actively seek out malnourished under-threes and at-risk women in a carefully designed and supervised community survey conducted on a quarterly basis;
- Mothers will receive higher quality nutrition and health education;
- The daily ration for the severely malnourished child and pregnant or nursing woman will be higher and fed for more days, in many cases double the previously approved ration in non-ICDS, CARE-assisted feeding centers. These rations will be the minimum required for nutritional rehabilitation of each targeted individual if consumed regularly as a supplement to the home diet;
- Traditional midwives (trained dais) will be paid incentives to help the AWW enlist and ensure regular attendance by pregnant women.

A carefully designed and implemented monitoring and evaluation system will measure the effectiveness of this upgraded effort to see whether these improvements have taken place and have led to significant reduction of malnutrition and thus whether they should be applied beyond the 4,000 project villages to other Title II assisted feeding centers and ICDS projects throughout India. A major follow-on project, drawing on the findings, will be considered beginning in the fourth year of this project's implementation.

To establish these 4,000 anganwadis as truly effective facilities capable of reaching 85% of a carefully defined target population and thereby reducing malnutrition and mortality, will require improved support systems for training, nutrition and health education, management, monitoring and evaluation. Improvements to be made in these support systems are discussed briefly below.

The project will also include innovative research and development activities to further improve ICDS. Some activities to be conducted in this category are a task analysis and time and motion study of the AWW, regular weighing of pregnant women and recording on weight gain charts, and the measuring of birth weight by trained dais.

TRAINING

Basic training will be provided to AWWs at some of the 36 established and operating training centers. While this training is underway, the curriculum (and training methods) will be reviewed and improved. AWWs will be trained in identification and follow-up of malnourished children and at-risk women, proper child feeding practices, and primary health care. Training will also be provided at other centers for the immediate supervisor of the AWW, the Mukhya Sevika (MS), and at the National Institute of Public Cooperation and Child Development (NIPCCD) for the Child Development Project Officer (CDPO) who is the project manager at the block level.

In addition to the introductory, basic training, all the above mentioned workers will attend mobile, in-service workshops, specially designed to provide intensive field practice to reinforce the basic skills needed to achieve coverage of the target group and to reduce malnutrition and mortality. These workshops will be organized and conducted by approved institutions and staff of the district ICDS cells to redress the weaknesses in the basic training. All project staff below the block level will attend these workshops during the first three years of USAID assistance. Short continuing education sessions will be held monthly at the time the AWWs pick up their honoraria. Orientation will also be provided for the health staff in the project areas.

Staff of the National Institute of Public Cooperation and Child Development (NIPCCD), the Indian Council of Child Welfare (ICCW), and the state governments' ICDS cells will be augmented with project funds to provide coordination and technical assistance for the training activities. Performance standards for assessing the quality of training will be developed and applied by NIPCCD for all levels of trainers and ICDS workers.

NUTRITION AND HEALTH EDUCATION

Nutrition and health education will be improved by adding staff with communications expertise in the state ICDS cells. They will plan and execute multi-media campaigns and seek the active involvement of home science colleges and other appropriate institutions to assist them. The availability of appropriate nutrition education and

training materials at the anganwadis and training centers will be greatly improved by establishing clearing-houses at the state governments' ICDS cells for collecting, pre-testing, adapting, translating, reproducing, and distributing exist-ing materials. The responsibilities of existing District Education and Media Officers will be expanded to cover NHED activities in the AID assisted ICDS blocks. They will be provided additional funds for meeting the increased expenses they incur in playing this role.

MANAGEMENT

The primary indicator for assessing management effectiveness will be the generation and use of field-level data for making program decisions at each administrative level. The utility of the MIS and impact evaluation systems will be measured by the extent to which central planners review and apply the information provided to them to spread the experience gained in AID assisted blocks to the rest of the ICDS program nationwide.

It is believed that project coverage targets for the priority groups can be better achieved by the provision of 1 supervisor (MS) to each 10 village AWWs. Supervisors (MSs) are now responsible for 20 AWWs in areas up to 30 square km. They are unable to visit each anganwadi more than once a month and at this rate their effectiveness is limited. To test the effectiveness of increased supervision, additional MSs will be hired in one of the project districts (Panch Mahals) and not in the other (Chandrapur). The supervisors in the enhanced district will be expected to visit each village every two weeks and to assist AWWs with recordkeeping, identification and follow-up of the target group. At the end of the project, the impact achieved in the two districts will be compared to see if the increased cost of supervision was a worthwhile investment.

An improved ICDS reporting system will be tested to more rapidly analyze and make better use of data on target group coverage and impact on malnutrition and mortality. Revised weight charts for children will be used. Techniques for rapid feedback and preparation of decision-oriented reports will be introduced including provision of microcomputers to the state governments and MOSW. An officer will be assigned in the state governments' ICDS cells to oversee this improved management information system. The district ICDS cells will prepare an annual summary for USAID of impact on malnutrition and mortality in the 19 blocks. Furthermore, USAID and CARE staff will periodically visit blocks and anganwadis to monitor their assistance to the program.

Principal responsibility for provision of food to the anganwadis will rest with CARE, using its well established logistical system through the PL 480 Title II program. CARE will monitor food delivery and end use consistent with its existing procedures.

EVALUATION

Coverage of the target group with supplementary feeding, health services and nutrition education, and the resultant decline in malnutrition and mortality will be assessed by Indian home science and medical colleges independent of ICDS, selected by the GOI and AID. They will conduct baseline and follow-up impact evaluation surveys in a sample of anganwadis in each of the 19 blocks. There will also be a mid-project and end of project review of performance by a team of independent experts assembled by AID, including consultants from outside India.

TECHNICAL ASSISTANCE

To facilitate accomplishment of the above described activities, the project will have two American advisors with expertise in training, communications, and management information systems for 2-5 years. This will be accomplished by an American firm selected by the GOI and AID to work under contract to AID. Through this firm, short-term technical assistance will be made possible, including deputation of senior Indian project staff to the U.S. for both short and long term training in project related fields, and hiring of two Indians to assist AID with project monitoring.

LOW BIRTH WEIGHT RESEARCH

Another important element of the project will be research conducted by Indian scientists in collaboration with experts from the United States in the critical area of low birth weight. Studies will evaluate the causes of low birth weight and interventions to improve it. Although it is not expected that this research will be finished in time to influence the design or operation of anganwadis during the life of this project, it does promise valuable guidance in the planning of future health and nutrition programs to reduce infant mortality. The details of this research will be finalized by the Indian Council of Medical Research (ICMR) subject to the approval of the Ministry of Health and Family Welfare.

B. BACKGROUND AND RATIONALE[1/]

1. Child Mortality, Nutritional Status, and Foodgrain Supply and Demand

a. Child Mortality and Nutritional Status

1/ References for this section can be found in Annex 22.

While the death rate for India has declined by 70% over the last 60 years, rural infant mortality, although variable within the country, has declined only about 43% and remains at about 136 per 1,000 live births[1]. About 47% of all deaths in India occur in children under age five years as compared to 3% in the U.S.[2,3] One-third of "under five" deaths occur in the first month of life, 60% have occured by age twelve months, and about 86% have occured by age 36 months.[3-5] High mortality figures for infants and children in India are mostly due to infections such as septicemia, neonatal tetanus, diarrhea, pneumonia, measles, and malaria plus birth injuries and prematurity.[6]

An important contributing cause of death is low birth weight (less than 2.5 kg.) which is found in 30% of all Indian infants as compared to about 7% in the U.S.[7-9] Low birth weight (LBW) infants have at least three times the risk of dying as infants born at normal weight.[10,11] Maternal malnutrition, infection and other factors most commonly associated with LBW are described in Annex 13. This project provides support for research to further elucidate the determinants of LBW in India and to test various interventions to improve birth weights.

Another important contributing cause of death in young Indian children is malnutrition. About 18% of rural Indian children under six years of age are severely malnourished 1/ and another 26% are moderately malnourished 2/ based on results of baseline surveys conducted by AIIMS in rural and tribal ICDS blocks from 1976-1979. Malnutrition mostly occurs when a child has had one or more infections in a short period of time; is already mildly underweight due to insufficient calorie intake; or was low birth weight. In India, insufficient calorie intake is a serious problem and field studies by the National Nutrition Monitoring Bureau (NNMB) have shown that 60% of Indian children aged 1-4 years consume at least 500 calories (kacl) less than recommended each day (a 40% deficit).[12,13] These deficits result from inadequate family purchasing power for food and certain feeding practices such as late introduction of solid food to babies, withholding of foods during illness, infrequent feeding relative to a child's need, and inequitable distribution of food within the family. Thus, low birth weight plus severe and moderate malnutrition are contributing causes in most of the deaths of Indian children under age five years.[3,14]

1/ less than 60% of the Harvard Standard Weight for Age or Third and Fourth Degree Malnutrition.

2/ 60-69% of the Harvard Standard Weight for Age or Second Degree Malnutrition.

b. Foodgrain Supply and Market Demand: A Precarious Balance

Although India has made enormous progress in food production, the growth in population has negated the impact of increased food production so that the current per capita foodgrain availability of 168 kg per year is unchanged from twenty years ago and is only 86% of the recommended daily allowances for a balanced diet in India.[1,15] Neither food nor income is equally distributed and about 58% of Indian households have a family caloric deficit, primarily due to inadequate purchasing power, which mostly affects the women and young children.[12]

At present, buffer stocks of foodgrains have declined and the government has recently imported grain again. While food production is expected to continue to increase, the high cost of fertilizer, the continued growth of the population at about 2% per annum, and the higher marginal cost of adding new lands to production suggest that food prices in real terms will not decline soon. As such, poor families will continue to have inadequate purchasing power and direct nutrition interventions will continue to be needed.

2. GOI Policies and Programs

a. History of Direct Nutrition Intervention Programs in India.

Numerous nutrition programs have been initiated by the Indian Government over the past 30-40 years. Two important ongoing programs to combat specific nutrient deficiencies are the distribution of iron and folic acid supplements to pregnant women who frequently suffer from severe anemia, and the distribution of high potency Vitamin A to young children to prevent blindness. Attempts to solve the difficult problem of protein energy malnutrition which is tied to multi-faceted social and economic interactions have followed the food distribution approach (Special Nutrition Program - SNP) and the integrated approach (Integrated Child Development Services - ICDS).

The Special Nutrition Program (SNP): The SNP began in 1970 to provide supplementary food to young children and to pregnant and nursing women from the weaker sections of the urban slums, tribal areas, and backward rural areas at feeding centers using minimally trained and paid SNP workers. The centers were often located in schools. Financial assistance came from state government budgets and food was from state resources (46%), CARE Title II (30%), and the World Food Program (WFP-24%). Program management was through state governments with supervisory control by the Ministry of Social Welfare of the GOI. The program was managed with minimal infrastructure.

Over the years, numerous reviews documented that the target population of moderately and severely malnourished children under three years of age and pregnant and nursing women were not widely reached, that the ration was inadequate, that supportive health services and nutrition education were generally lacking, and that the SNP workers were not adequately supervised, paid, or trained. Significant nutritional impact was not attained and since few young children were enrolled, little impact on child mortality was possible. Because of the limited impact of SNP a decision was made in the GOI's Sixth Five Year Plan to upgrade all SNP centers to the level of ICDS as soon as possible. No new SNP centers are to be opened. Over the next few years, the WFP and CARE will give preference to supplying food to centers in which SNP has been upgraded to ICDS and to phasing out many former SNP centers.

CARE's MCH Feeding Programs: Besides support for the SNP, CARE, working through and in support of various state governments for many years, has supplied Title II food to mothers and preschool children at other feeding centers and primary schools (in conjunction with the School Lunch Program), and, to a limited extent, at centers offering maternal and child health services plus food supplements. These programs have had varying goals but generally have been to improve maternal and child nutritional status. CARE's management role is supportive to the states but vital because of CARE's extensive field staff.

As part of worldwide AID interest in the potential for food aid as a development resource, an evaluation of Title II programs in India was done in 1979 including CARE's MCH Feeding Programs.[16] This evaluation doubted that the great majority of beneficiaries in CARE assisted MCH programs had an improved nutritional status or reduced risk of dying. The evaluation team suggested that Title II food could have such an impact if SNP and other CARE-assisted mother and child feeding programs were restructured to reach malnourished children 0-3 years and pregnant and nursng women with a package of adequate feeding, health, and education services and if the programs were managed better with an information system for monitoring and guiding performance. CARE is addressing these recommendations by shifting their food assistance into ICDS and other upgraded programs with similar goals wherever possible, such as the Composite Programme for Women and Preschoolers (CPWP) in Kerala.

The Integrated Child Development Services (ICDS) Scheme: By 1974 there was concern in India about the ineffectiveness of the various social welfare programs in addressing the development needs of preschool children. Consequently after much deliberate planning, the Central Government, Ministry of Social Welfare (MOSW), launched an ambitious, multi-purpose pilot program in 33 blocks in 1975

to meet the health, nutrition, social, and education needs of preschool children. A block is a community development unit with an average population of 100,000 in rural areas. As of March 1982, ICDS had expanded to 200 functioning blocks with a plan to cover a total of 1,000 blocks by March 1985.

The goals of ICDS are to: (a) improve the nutritional and health status of children in the age group 0-6 years; (b) lay the foundations for proper psychological, physical and social development of the child; (c) reduce the incidence of mortality, morbidity, malnutrition, and school drop-out; (d) achieve effective coordination of policy and implementation among the various departments to promote child development; and (e) enhance the capability of the mother to look after the normal health and nutritional needs of the child through proper nutrition and health education. To achieve these goals the following services are provided: (a) supplementary feeding; (b) preschool education;(c) immunization; (d) health check-up; (e) referral services; (f) nutrition and health education; and (g) nonformal education for women. The beneficiaries are children age 0-72 months and pregnant and nursing women plus mothers of preschool children who receive nutrition education.

ICDS operates at centers called anganwadis which cover a population of 1,000 in urban and rural areas and 700 in tribal areas. The service workers, called anganwadi workers (AWWs), are paid an honorarium of Rs.125-175 monthly and are usually young, literate women with an eighth to tenth grade basic education. They are to be recruited from the area which they will serve.

The daily routine of the AWW includes ten assigned tasks. Most time-consuming as reported by AWWs is preschool education for children 3-6 years of age; followed by teaching functional literacy for adult women; home visiting; supplementary feeding; record keeping; and child weighing. Nutrition and health education occur during the preschool and adult literacy classes, during home visits, and during supplementary feeding. Other periodic activities include assisting the health staff, visits from supervisors, liaison with other government officials, participation in special government programs such as the bi-annual distribution of Vitamin A and provision of iron and folic acid supplements to pregnant women, and assisting in the registration of births and deaths. In a study done by the Programme Evaluation Organization (PEO) and in field interviews conducted by the USAID project design team, the AWW seemed to prefer the preschool education classes of all her myriad tasks.[17] This may be because in her role as a school teacher she feels she has more status and is better accepted. Communities are encouraged to participate fully. If a women's club (Mahila Mandal) does not exist the AWW is to establish one and actively involve it in the running of the program. The community is to select the AWW and donate a building for the anganwadi.

Supplementary feeding at the anganwadi is provided for about 90 persons with an average attendance of 60. Selection criteria is as follows: pregnant women and nursing women 'at-risk' due to being from families of landless laborers, scheduled castes and tribes, and other poor groups; children below age 6 years who are severely or moderately malnourished ; and other children 3-6 years of age who attend the preschool education class. Eligibility based on malnutrition in children is defined as weight for age less than 70% of Harvard standard (II, III, or IV degree) or arm circumference less than 13.5 cm (red and yellow zones on Shakir Strip). USAID estimates about 50% of the enrolled persons are 'at-risk' pregnant and nursing women and severely or moderately malnourished children 6-36 months of age.[17,18] On an average day about 35% of those in attendance at the anganwadi for supplementary feeding are from the target group. The feeding itself is to occur on-site for 300 days per year in an anganwadi donated by the community. The food is cooked by the AWW's helper with fuel donated by the community. The helper also assists with feeding and cleaning up, and is paid an honorarium of Rs.50 monthly. Community surveys are to be done quarterly to identify malnourished children for enrollment by weight or arm circumference. Furthermore the progress of malnourished children is to be monitored by monthly weighing and recording on growth charts. Pregnant women are enrolled at the anganwadi from about the 6th month of pregnancy. Nursing women are fed until their baby is six months old. There is no graduation of children until they reach 6 years of age.

Most of the food used in ICDS up to 1982 has been indigenous and procured by the Child Development Project Officer (CDPO) with state government funds. Interruptions in food supplies of three months in a year are not uncommon due to lack of resources. A therapeutic food for severely malnourished children and other food supplements have been supplied by CARE (Title II) and by WFP. Due to the decision to expand ICDS to 1,000 blocks the GOI requested food assistance from CARE and WFP in 1982 to supplement budgetary resources for local food. The normal ration size in ICDS is 300 kcal and 8-10 grams (g) protein per day for all children except the severely malnourished who are to receive a double ration. Pregnant or nursing women are to receive a ration of 500 kcal and 25 g protein. With the exception of therapeutic food, no vitamin-mineral fortification of the indigenous food is done.

Nutrition and health education at the anganwadi is the responsibility of the AWW. ICDS guidelines direct her to communicate a set list of messages to all women in the 15-44 years age group with priority given to pregnant and nursing women. She is to make follow-up home visits to families of malnourished or frequently ill children and work especially with the mothers of these children. Her mandate includes both individual counselling and group meetings. Her teaching aids, while limited, are frequently made personally by her during basic training.

Primary health care services in support of the anganwadi are provided by one Primary Health Center (PHC) per block of 100,000 people and sub-centers for every 5,000 people in rural areas and 3,000 people in tribal areas through the state health departments. Staff at these health centers in ICDS block are to be augmented by 8 Female Health Workers (FHW, originally called Auxiliary Nurse Midwife -ANM) in rural blocks and 4 FHWs in tribal blocks; 2 additional Female Health Assistants (FHA, originally called Lady Health Visitor - LHV), and one additional physician at the PHC. These additional workers make the health staffing pattern in ICDS blocks comply with that of the GOI's Model Plan for health services, which is to be in place throughout India by 1990.

Management support for ICDS projects begins with front line supervisors called Mukhya Sevikas (MSs) who supervise the AWW. Each MS is assigned 20 AWWs in rural areas and 17 AWWs in tribal areas. The MS is supervised by the Child Development Project Officer (CDPO) who is the overall project manager at the block level. The Ministry of Social Welfare (MOSW) recently sanctioned district level cells for implementation, coordination and monitoring of ICDS in all districts which have five or more ICDS blocks. At the state level, the Secretaries of the Departments of Health and Family Welfare (Gujarat), and Rural Development (Maharashtra) have been assigned the nodal responsibility for implementation of ICDS. Each state government has an ICDS cell for planning, monitoring, and evaluation.

Since the ICDS strategy is an intersectoral approach, coordination of the efforts of different Ministries and Departments at all levels is necessary. Most important is the participation of the MOHFW, and the the State Departments of Health and Family Welfare. Coordination committees have been set up at all levels to assure that services are delivered in an integrated manner. A network of medical consultants (usually professors of community medicine at various medical colleges) provide technical assistance in the health and nutrition aspects of ICDS on an honorary basis under the coordination of a central committee chaired by a professor at the All India Institute of Medical Sciences in New Delhi, the premier medical institution in India. As part of this network each state has a state coordinator, a senior advisor, 2-3 training consultants, and 2-3 survey consultants. District Health Officers serve as ICDS Advisors.

The Central Government finances all the costs of ICDS with the exception of food inputs which are provided by the state governments, CARE or WFP. Some states have also financed additional ICDS projects through the state sector. The MOSW receives assistance from UNICEF to offset some of the cost of equipment and training. Even though funds are provided by the Central Government, the ICDS staff are borne on the appropriate cadres of the states and there-

fore, the states sanction the posts in the appropriate corresponding state pay scales. This does not apply to AWWs who are honorary workers.

Training support for the AWW is provided by various training institutes including rural development, community development, and social work. Many of these are run under the auspices of the Indian Council of Child Welfare (ICCW). For the MS, training is largely through home science colleges or the regional offices of the National Institute of Public Cooperation and Child Development (NIPCCD). Training of the CDPO is done by NIPCCD. For the health workers, training is provided in various nursing schools and medical colleges. The medical (training) consultants to ICDS provide orientation to the health staff. The curricula for the AWW, MS, and CDPO were developed by NIPCCD.

Technical support for nutrition and health education in ICDS is quite limited but guidance is provided by NIPCCD. Some materials have been provided to ICDS projects by Literacy House and UNICEF.

Management support for primary health services in ICDS follows the GOI's Model Plan which begins with the Female Health Worker (FHW) who supervises the village health guide (VHG) and trained dai (traditional birth attendant). Each FHW covers about five villages having two workers each. The FHW is supervised by the Female Health Assistant (5:1 ratio) who is supervised by the PHC Medical Officer (MO). The MO is supervised by the District Health Officer and his staff. District level supervision is by divisional or state level offices. The GOI provides substantial financial support for family planning and shares other costs of implementing its Model Plan for health services. A schematic of the interface of ICDS and the Model Plan health system is shown in Table 1.

b. Current GOI Nutrition Policies and Plans

On January 14, 1982, the Prime Minister of India announced a 20 Point Program which stressed not only economic development but also social development and social welfare plans for the country. Point 15 of the 20 Point Program called for acceleration of nutrition programs for pregnant and nursing women and children especially from tribal, hilly, and backward areas. The GOI has begun expansion of ICDS in a big way. By April, 1983, 620 of the 1,000 blocks will have begun with the remaining 380 blocks to begin by April 1985.

Table 1

Interface of Workers and Services in the ICDS System

LEVEL OF SERVICES-MANAGEMENT POPULATION COVERED	MODEL HEALTH PLAN STAFFING PATTERN		NON-HEALTH ICDS STAFFING PATTERN	
	Service Unit/Type of Service Workers	Management-Support Unit/Type of Workers	Service Unit/Type of Service Workers	Management-Support Unit/Type of Workers
Village/about 1,000 people	None/Village Health Guide and Trained Traditional Midwife	None	Anganwadi/Anganwadi Worker and Helper*	None
Several villages/about 5,000 people	Sub Health Center/Female Health Worker (FHW), Male Health Worker(MHW)	FHW and MHW provide technical guidance to village worker	None	None
Sub-block/about 20,000 people	None	Supervision/Female Health Assistant(FHA) and Male Health Assistant (MHA)	None	Supervision/Mukhya Sevika
Community Development Block/about 100,000 people	Primary Health Center (PHC)/ Medical Officers, Female Health Assistants (FHAs), Male Health Assistants (MHAs)	Operational, management-communications support/doctor, block extension educator, clerks	None	Operational management/Child Development Project Officer (CDPO) & Staff
Several Blocks/about 400,000 people	Upgraded PHC, Sub-district hospital, specialist doctors, nurses plus other PHC staff	Same as PHC	None	None
District/about 1,000,000 people	District hospital/ specialist doctors, general doctors, nurses	District Health Office-District Media Office/ District Health Officer and staff, District Education and Media Officer and staff	None	District ICDS Cell/ Program Officer and Staff, District Health Officer as Adviser

*The Anganwadi Workers does deliver some primary health care services at village level.

3. Relationship of Project to AID Development Strategy, Policy Papers and Evaluation Findings

Since FY 82, USAID/India has pursued fertility and child mortality reduction as its two goals in the Health, Population and Nutrition sector. This project is expected to contribute to fertility reduction indirectly through an increased acceptance of family planning as child mortality declines and through population education by the AWW. The goal of the project itself is child mortality reduction. USAID/India's strategy is in full conformance with the Asia Bureau's strategy for the HPN sector.

The project has been conceived in line with guidance for integration of PL 480 resources (82 State 021304) and for design of Title II programs to increase their developmental impact (83 State 014324). Lessons learned in the 1979 evaluation of the India Title II program and in numerous impact evaluations of Title II programs elsewhere, including the Philippines, Sri Lanka and Morocco, have been used to shape the project.[16,19] A review of past experiences in India with similar projects was commissioned by AID as one of the first steps in designing this project. This review plus two similar world-wide literature reviews on supplementary feeding programs for young children in developing countries (one of which was AID funded) provided guidance on project design issues such as participant selection, food type and quantity, nutrition education, maternal supplementation, training, community involvement and evaluation.[21,22] The World Bank funded Tamil Nadu Integrated Nutrition Project, which has succeeded in in- troducing monthly weighing of young children and thereby greatly increasing the coverage of malnourished children under three years of age with supplementary feeding, has served as a prototype for the USAID assisted ICDS project.[23]

In harmony with the recently published AID Policy Papers on Nutrition and Food and Agricultural Development, this project was designed after a thorough analysis of the nutrition problems of rural Indian children and their determinants.[24,25] The nutrition policy paper recommended that food aid programs should target appropriate rations to at-risk groups and be complemented by growth monitoring, health care and nutrition education. The food and agricultural development paper stressed that food consumption could be improved through direct distribution of PL 480 food to those facing severe malnutrition, with greater emphasis on using this resource in programs that have been shown to have greater nutritional impact such as MCH with nutrition education. The proposed project has been designed to meet these recommendations.

Finally, this project meets the conditions required by the AID Policy Paper on financing recurrent costs. The GOI is moving toward a favorable policy framework in the nutrition field and the Mission has developed a carefully phased plan for shifting the burden of recurrent costs to the government.[26]

4. Other Donor Assistance

During the Sixth Plan the GOI will receive financial assistance for all 1,000 ICDS blocks from UNICEF ($21 million) and for 20 ICDS blocks in Uttar Pradesh from NORAD ($5.5 million). Inputs from UNICEF are described in Annex 20. Food assistance for ICDS will be provided by CARE (Title II) and WFP. The Tamil Nadu Integrated Nutrition Project is funded in part by a $32 million credit from the World Bank.

5. Project States, Districts and Blocks

The AID assisted ICDS project will be in 11 rural and 8 tribal blocks in Panch Mahals district, Gujarat state and Chandrapur District, Maharashtra State. See map. The blocks have a combined total population of approximately 3.3 million. Their names and the number of anganwadis needed in each block are shown in Annex 5.

The project blocks were assigned to AID by the GOI on the basis of need and to meet these characteristics: (1) rural or tribal with high child mortality, poor nutritional status and low income; (2) large number of existing CARE-assisted feeding centers; (3) administratively feasible due to 80% or more of the blocks in the district sanctioned for ICDS; and (4) overlap with the USAID supported Integrated Rural Health and Population Project (Panch Mahals in Gujarat).

Maharashtra and Gujarat respectively had the second and third highest rates of severe malnutrition and dietary inadequacy of the ten states surveyed annually by the NNMB from 1976-1981. Rural infant mortality rates in 1978 were 88 in Maharashtra and 131 in Gujarat.[1]

C. DETAILED PROJECT DESCRIPTION

1. Goals and Purposes

In accordance with the policies of the governments of India and the U.S., the project will seek to accomplish the following goal:

Goal

An average decline of 25% in the 0-12 months mortality rate and an average decline of 33% in the 13-36 months mortality rate in communities within six years after an anganwadi is established.

To accomplish this goal, the project will have the following subgoal:

Subgoal

An average reduction of 50% in the prevalence of severe malnutrition in children 0-36 months of age and of 35% in severe plus moderate malnutrition in communities within four years after an anganwadi is established.

To accomplish this subgoal, the project will have the following purposes:

Purposes

1. To expand and improve the ICDS program in 19 rural and tribal blocks by establishing approximately 4,000 anganwadis which regularly reach most at-risk pregnant and nursing women and moderately and severely malnourished children under 36 months of age with Title II foods through CARE, nutrition and health education, and selected health services.

2. To determine the technical feasibility and cost of improving the birth weights of children.

2. Purpose 1: Expansion and Improvement of the ICDS Program

a. Overview

This project will assist the GOI to expand and improve its ICDS program to approximately 4,000 anganwadis. It will do this by testing improvements in ICDS supplementary feeding, management, training, monitoring/evaluation, nutrition/health education, and logistics/coordination systems. The AID assisted anganwadis will serve the broad objectives of the GOI's ICDS. However, in AID assisted areas emphasis will be given to achieving a substantially improved coverage of at-risk pregnant and nursing women and severely and moderately malnourished children 6-36 months of age. While clearly recognizing the

importance of preschool education in the overall ICDS approach, USAID dollar assistance will not fund this component and therefore it is not described in this Project Paper (PP).

All 4,000 anganwadis will be partially financed by AID, GOI, and UNICEF. The anganwadi centers will be housed in space donated by the community with a minimum area of 30 square meters. They will be readily accessible to the poorest groups in the village and will be within reach of clean water for food preparation and hygiene. Funds from AID will cover all basic equipment for the anganwadis including cooking and eating utensils per ICDS guidelines, with the exception of play equipment to be provided by the GOI. Child weighing scales, arm tapes, and growth charts will be donated by UNICEF under its agreement with the GOI.

Title II food will be provided to the anganwadis through CARE. This food will not be additional to current levels but will be mobilized by upgrading CARE assisted mother and child feeding programs to anganwadis. The project will test an approach for upgrading the nutritional impact of Title II MCH programs which, if successful, could be applied more widely to other CARE assisted feeding programs throughout India.

As a result of this AID assisted expansion about 65,000 additional pregnant and nursing women will be enrolled in the ICDS program annually when all 4,000 anganwadis are operational. This should improve their nutritional and health status and their child rearing practices if they regularly use ICDS services. Improved nutritional and health status in pregnant women should improve birth weights which will lower infant mortality. Improved nutritional status of nursing women should increase their production of breast milk thus lowering early childhood malnutrition and mortality. Improved child rearing practices should contribute to a decline in malnutrition and infection in children of these women. About 243,000 additional children 6-72 months of age will also be enrolled annually in the ICDS program which should contribute to a decline in their mortality, an improvement in their nutritional status, and an enhancement of their development if they regularly use ICDS services.

For the child mortality reduction goal and the improved nutritional status subgoal to be met, the additional anganwadis must be "operational". "Operational" means that workers are in place and trained, have required supplies and equipment and that people in need regularly receive adequate quality services. Financial assistance from AID and UNICEF for the expansion will insure that workers are in place with the required supplies and equipment. Improvements in the ICDS and its support systems, described in the following sections, should insure that the people in need are receiving adequate quality

services on a regular basis. An important feature of the project is the evaluation and assessment of data from project villages by various administrative levels. Modifications in design based on implementation experience and the linkage with potential changes in the overall ICDS system will be dependent on the quality of information generated and how it is used.

As the ICDS monitoring and evaluation systems reflect that the project's subgoal of reduced malnutrition has been achieved on a block-wide basis, AID, CARE and the GOI will plan for phaseover of Title II food inputs to newly established ICDS blocks or to other ongoing ICDS blocks in non-project areas which continue to have high rates of moderate and severe malnutrition. The phaseover plan will be linked to an assessment of continuing need for supplementary feeding in anganwadis in AID assisted blocks and to the state government's capacity to absorb the food burden for supplementary feeding. It will be necessary to prevent premature removal of Title II foods prior to evaluating these factors to prevent recidivism in malnutrition rates. On the other hand, it will be important for AID and CARE to begin to assess how and at what pace the Title II food requirements for ICDS feeding in specific blocks may be phased over to the GOI at the earliest possible date.

Further reduction in malnutrition rates beyond the 35% projected decline, anticipated as a result of this project, will probably require activities to increase income and improve environmental sanitation, which could be considered in follow-on projects. Since malnutrition will likely be greatly reduced but not eradicated in the AID assisted villages at the end of the project, it is expected that the GOI, the state governments and the communities served will continue to support ICDS in these villages after AID assistance is withdrawn.

This PP will first describe the improvements to be made in services offered by the anganwadi including supplementary feeding, nutrition and health education, and health care. Next the expansion and improvement of ICDS support systems necessary to reach the project goal, subgoal, and purposes will be described.

b. Improvement in Supplementary Feeding at Anganwadis

From GOI evaluations, published reports, and routine service statistics (Annex 6), AID estimates that the supplementary feeding component of ICDS currently enrolls about 74% of at-risk pregnant and nursing women and severely and moderately malnourished children 6-36 months of age. However, the estimates also show that the average attendance by this target group is much lower. Both the GOI and AID have been concerned with the coverage of this group,

particularly their irregular attendance since both GOI and project goals are unlikely to be met unless malnourished children under three years of age and pregnant and nursing women receive food on a regular basis. In addition, AID has been concerned that unless Title II food for maternal and child feeding programs contributes to reduced mortality and malnutrition in children under the age of three years, continued justification of current levels may be difficult. As a result, the GOI and USAID agreed, with AID/W concurrence (82 STATE 096543), that the project would seek to achieve much higher coverage of the target group with supplementary feeding. Based on those discussions, the percent coverage of all members of the target group in the community to be achieved within three years after an AWW begins distributing food was set as follows:

Target Group	Enrolled	Attending Regularly/ Receiving Food for 15 + Days/Month
At-risk pregnant and nursing women	95%/anganwadi	85%/anganwadi
Moderately and severely malnourished children 6-36 months of age	95%/anganwadi	85%/anganwadi

To achieve the coverage target a number of changes in emphasis from current ICDS projects will be required. These are described in the following paragraphs. While initial enrollment of beneficiaries using a community household survey with both nutritional and economic criteria for selection will not be changed, additional recruitment will occur on a quarterly basis. Quarterly community surveys will be carried out by the AWW, the trained dai, and the MS to identify persons who may have entered the target group since the preceding survey. They will look for unenrolled at-risk pregnant and nursing women and will determine the nutritional status of all children in the community in the 0-36 months age group by weight for age or arm circumference. Pregnant and nursing women will be identified as at-risk and in need of supplementary feeding per eligibility criteria in the GOI's ICDS guidelines which include: women from families of landless agricultural laborers, marginal farmers (holding not exceeding one hectare), scheduled castes and scheduled tribes and other poor sections of the community (total monthly income of all members of the family not exceeding Rs.300) and women recommended on medical grounds by the FHW or Doctor. Based on the results of the low birth weight research component of this project, anthropometric and other more specific

health and nutrition indicators may be used to identify at risk pregnant women in the later years of this project. Through these quarterly community surveys parents will become accustomed to regular growth monitoring of children and many cases of malnutrition should be prevented through this early detection and increased awareness.

Second, to help achieve project targets for regular attendance/receipt of food, an improved, consolidated, registration and file system will be developed for use by the AWW as an aid to help her monitor attendance by the target group. This system will likely be similar to the defaulter systems used in the tuberculosis and leprosy control programs and the Tamil Nadu Integrated Nutrition Project. Such a system will quickly bring to the AWW's attention any irregular users of supplementary feeding so that she can visit the homes of these people, discuss them with the village committee, if necessary, and inform her supervisor so that both of them can visit the families to determine the reason for absence from supplementary feeding. This registration system will be part of the larger management information system which the project will help improve as described later in the paper.

In ICDS now, the AWW is assisted by a paid helper who usually prepares the food and assists with the cleaning. This helper will be retained in AID assisted blocks but in addition, the AWW will use the services of trained dais to help recruit and insure regular attendance by pregnant and nursing women. The dais will be paid an incentive per pregnant or nursing woman whom they refer to the anganwadi and who attends regularly. The AWW and her helper may also be paid an incentive based on each severely malnourished child rehabilitated to first degree or normal.

The home visiting activities of the AWW and the trained dai will be closely focussed on the target group. For enrolled pregnant and nursing women who are not attending or receiving food regularly, the trained dai or AWW will conduct home visiting to elicit their full participation. The AWW herself will visit the homes of enrolled malnourished children 6-36 months of age who are not attending supplementary feeding regularly. Furthermore, whereas most of the supplementary feeding will be done on site, selective use of take-home food distribution will be made to reach women and children who cannot attend regularly. This approach may be particularly effective for very young children and women who live long distances from the anganwadi in tribal areas. Take-home food distribution will of course be coupled with intensive nutrition education to minimize sharing of the ration with unintended family members.

Fourth, to help achieve project targets for regular attendance/receipt of food, the project will try to increase community participation, particularly by local women. Mothers of enrolled children will be asked to work in the anganwadi one day per month. They will be trained by the AWW in techniques for weighing or measuring the arm circumference of their children. Responsibility for the community nutrition survey will gradually be turned over to the mothers themselves. During the start-up of new anganwadis, a number of informational activities will occur. The CDPO, as the responsible person for initiating new anganwadis, will ask the community to select an AWW and to furnish a room for the anganwadi; to set up a village committee for community monitoring; and to encourage local women to work at the anganwadi, particularly mothers of malnourished children. ICDS management staff will try to give extra time to fostering community involvement in new anganwadis in the first year of their operation. Orientation sessions will be held for village leaders as described in the training section. The community will also be asked to donate fuel and condiments for preparing food at the anganwadis. In case of feeding interruptions due to late arrival of Title II or other foods, the community will be asked to contribute local foods so that feeding activities at the anganwadi will not be disrupted.

Fifth, the efficacy of increased supervision will be tested in all the anganwadis in one of the project districts (Panch Mahals). The frequency of supervisory visits to anganwadis will be increased from once a month to once every two weeks by reducing the ratio of Mukhya Sevikas from 1 MS; 20 AWW to 1 MS: 10 AWW. In all project blocks, the MSs will visit the AWWs as frequently as possible. During her visits the MS will review the register book for attendance at supplementary feeding of severely and moderately malnourished children 6 to 36 months of age and at-risk pregnant and nursing women. She will talk with the AWW to determine which children and women in the target group have not regularly attended in the past week and the reasons for their absenteeism. She and the AWW will visit the homes of irregular attenders to determine why they are not participating, to see if they are sick, and to discuss with the family why regular attendance is important.

These changes in emphasis can be considered successful if pregnant women and severely and moderately malnourished children are gaining weight on a sustained basis and if fewer children in the community are becoming malnourished. As such, regular monitoring of nutritional progress is the cornerstone of supplementary feeding for the target group. Per ICDS guidelines, AID-assisted anganwadis will weigh all enrolled malnourished children monthly and record the information on growth charts. The AWWs will be trained to interpret growth charts. This will require close supervision by well-trained

MSs. When enrolled children achieve normal weight for age, their parents will be advised that the child no longer needs nutritional supplements at the anganwadi. The aim will be to get parents to voluntarily withdraw children from supplementary feeding whose weights are normal. Such children will, however, continue to be given other health and educational services. Pregnant and nursing women will be enrolled before the end of the sixth month of pregnancy and be retained until the baby is six months old. These women will be referred to the sub-health center where the FHW will provide antenatal care and take their weights whenever possible.

Feeding will generally be conducted on site, although take-home food distribution will also be done on a selected basis for hard to reach members of the target group. Tumblers, spoons, plates vessels for cooking, and a kerosene stove will be funded by AID as basic equipment for each anganwadi. Storage bins may also be provided if needed. In order to set the time of day at which to serve the food, the AWW will determine when it would be most convenient for mothers to bring their children and for pregnant and nursing women to attend. The ration size will be at least 300 kcal and 8-10 g protein per day for all children, except severely malnourished children who will receive a double ration of at least 600 kcal. Since it will not be possible for younger severely malnourished children to consume their double ration at one sitting, they will be fed several times at the anganwadi or given a portion of the food to take-home. Pregnant and nursing women will receive a ration containing 500-600 kcal.

Within the basic equipment allowance, a standard measure (cup or spoon) will be provided by AID to each AWW for measuring ration sizes correctly. As described in Annex 7, AID's analysis found that the AWW cannot be expected to measure different ration sizes correctly without a standard device. To simplify operations further, the same type of food will be provided to all beneficiaries. However, if feasible, a separate preparation may be given to pregnant and nursing women to increase acceptability. Such a food, specially designed to appeal to pregnant women and known as Matruahar, has met with some success in Gujarat. AWWs, MSs and CDPOs will be trained in the preparation and distribution of the food in proper amounts and in calling forward sufficient supplies from CARE so that there are no interruptions. They will in turn convey these instructions to their helpers. The MS will assist the AWW with interpreting written instructions, maintaining records, and indenting for fresh supplies.

In accordance with the GOI's and CARE's interest in using food inputs to achieve the greatest possible reduction in malnutrition, and consistent with ICDS program manuals and the FY 83 and 84

CARE draft program plans, first priority for enrollment in supplementary feeding will be given to the target group followed by malnourished children 36-72 months of age. The allotment of food to each block will be adjusted quarterly based on actual enrollment, attendance and malnutrition rates obtained from the community surveys done by the AWW. An upper limit will be set on the number of ration units provided for feeding the lower priority group of children 36-72 months of age in the preschool education class (average 40 per rural anganwadi). In cases where the total number of beneficiaries seeking enrollment exceeds the amount of Title II food available, the state governments will increase their food inputs so that there is no dilution of rations for the target group.

Supplementary feeding in AID assisted ICDS will use Title II food commodities supplied by CARE to the GOI's ICDS program in Gujarat and Maharashtra and local condiments supplied by the villagers and through state government resources In the first three years it is anticipated that Corn Soy Milk (CSM) and oil will be fed together with local condiments in Gujarat, with a gradual phaseover to a ready to eat food, processed in India from Title II commodities such as Soy Fortified Bulgur (SFB) and oil to which local ingredients such as jaggery (brown sugar) have been added. The pace of this phaseover will be governed by the speed with which local processing capacity and commitment to absorb the extra costs increase. The processing of SFB or CSM and oil with jaggery into a ready to eat food known as Sukhada has been successfully underway in the CARE program in Maharashtra for several years and so is anticipated to concontinue in that state over the life of the AID project. All rations distributed in the AID assisted areas, whether composed of imported Title II blended foods and oil or locally processed ready to eat foods made from Title II and indigenous ingredients, will meet the nutritional specifications described in Annex 7. CARE will oversee the processing to maintain quality control and will sign agreements with the processors, copies of which will be shared with AID. These agreements will state the amount of ingredients to be provided, expected yield, and acceptable percentage loss during production.

The state governments will pay for all local ingredients, processing costs, relabeling and repackaging of ready to eat foods in India. They will continue to pay for local transport of Title II commodities and for administrative expenses incurred by CARE. Fuel and condiments required for preparing the food at the anganwadi will be donated by the community or provided by the state governments as is the case in ICDS now. The sale of the containers in which the Title II commodities are packaged and the handling of the proceeds will be managed by CARE in the manner prevailing in 1983 in both states.

The project will use the well established food delivery system from port to anganwadi overseen by CARE as described in Annex 7. This system will be monitored by CARE and AID staff to try to assure that the food required by the anganwadi is available at that level at least 90% of the time. In CARE's terminology this will mean maintaining a Supply Efficiency Ratio of 90% or more. The food monitoring responsibilities expected of CARE and AID are described in the Monitoring Plan.

Estimates of the tonnage and value of Title II and local food inputs required and local processing costs over the life of the project are contained in Annex 7, Table 9. The Annual Estimate of Requirements (AER) prepared by CARE each fiscal year will specify the precise tonnage and commodity mix needed for AID assisted ICDS centers as part of CARE's overall MCH program. About 111 food units (a unit is defined as a 300 kcal ration) will be required at a typical rural anganwadi and 79 at a tribal anganwadi on an average day based on 85% attendance of those enrolled. Enough Title II food will be provided for distribution six days per week and 300 days per year. It is estimated that if 85% coverage of the target groups in the community is achieved and an upper limit is set on the number of children enrolled for preschool education, then 70% of the food at the anganwadi will be consumed by the target group.

c. Improvement in Nutrition and Health Education at Anganwadis

Analysis by AID of the nutrition and health education (NHED) services offered in ICDS anganwadis revealed that this aspect of the program is weak (Annex 8). According to the PEO, many women in villages served by ICDS claim to have not received any NHED despite their awareness that these services are offered. Many AWWs find little time in their busy schedule for contact with women and offer NHED at inconvenient times. The AWWs are poorly trained in communications techniques and their supervisors, the MSs, visit infrequently and offer little help with NHED. Children's weight charts are seldom used as a teaching tool. Failure to orient the community to ICDS in general also results in poor participation by women.

These problems will be tackled in the AID assisted ICDS areas in several ways. The communications component of the training and continuing education of AWWs, MSs, and CDPOs will be improved as described in the training section. Supervision and assistance to the AWW by the MS will be increased. Orientation to ICDS will be provided to village leaders annually during the first three years of operations in a community. The NHED services will be offered at more convenient times, e.g. group evening sessions, and made more interesting through use of a multi-media approach including films and

folk drama. A time and motion study of the AWW will be conducted during the first and fourth years of the project as an innovative activity to determine if she has time to do justice to NHED and her many other responsibilities. If not, the results of the study will be used by the MOSW to restructure her workload or to decide whether additional workers are required to assist the AWW. Mothers will also be asked to work in the anganwadi one day a month to both help the AWW and to create on opportunity for NHED. In order to improve the credibility of the AWW as a person with knowledge and experience in maternal and child health and nutrition, married or widowed women with children will be given preference when recruiting AWWs.

The AWWs will give priority to teaching families with severely or moderately malnourished children 0-36 months of age and at-risk pregnant and nursing women to follow the practices listed in the ICDS basic messages to reduce and prevent young child malnutrition and mortality (Annex 8 page 2). They will also teach other mothers of preschool children how to keep children healthy and to prevent malnutrition. Pregnant and nursing women will be advised to eat more, to take iron and folic acid, and to get antenatal care and immunization. Mothers will receive instruction on weaning foods, feeding children during illness and frequency and types of foods for a balanced diet. This will be done during home visits and at the anganwadi. The NHED program will use the growth of the child as recorded on the weight and arm circumference card to teach mothers the relationships between food intake, infection, activity level, growth and health. Growth will be used as an indicator of improvement in feeding practices due to NHED. Since older siblings or grandmothers often care for young children, the AWW will also talk to them about NHED. The trained dai will assist the AWW with teaching pregnant women about diet and weight gain and breastfeeding.

Group approaches such as visits to women's clubs and talks at the anganwadi will also be part of the NHED program. However, since home visits or assembling mothers for group discussions may not always be practical during the day due to mothers' time constraints, monthly evening group sessions will be arranged monthly. Although the AWW may be unwilling to venture out at night, it is felt that she would not be uncomfortable in an evening gathering of village women. The focus of each monthly session will be an elaboration of one of the basic messages. The AWW and trained dai will be accompanied at the session by the MS, the FHW, the Sarpanch (Village Chief), and the VHG. Special efforts will be made to invite and urge the attendance of both parents of malnourished children, but the sessions will be open to all parents of preschool children as well as grandmother, and mothers-in-law. To make these monthly gatherings more attractive, films will be shown or local drama troupes invited to perform. The film projection services of the Ministry of

Information and Broadcasting's (MIB) Field Publicity Units or the Department of Food's Extension Units will be used as much as possible. Films will be purchased by the State NHED coordinator from MIB's film division or the State Health Education Bureaus (SHEB) and distributed to the District Education and Media Officers (DEMO) who will be designated as NHED coordinators in AID assisted ICDS districts. Print materials, such as posters, flip charts, and booklets, will be distributed to the AWW for use in NHED. In addition, All India Radio (AIR) may be asked to broadcast ICDS radio programs to promote the services available in new blocks and to provide information on the basic messages. As described in the NHED support systems section funds will be provided by AID through an account controlled by the state NHED coordinator to pay for films, folk drama and other useful educational materials and activities.

The AWW will record her NHED activities in her monthly progress report so that coverage and delivery of services can be assessed by the MS who will also assist with the monthly evening sessions and home visits. The MS will coordinate NHED activities for her 10-20 anganwadis. Project targets for NHED will be to have 50% of the at risk pregnant and nursing women and mothers of moderately and severely malnourished children visited at home at least six times per year by the AWW or trained dai and in attendance for at least four of the monthly group NHED sessions held per year. To accomplish these improvement activities, NHED support systems will be strengthened at the district, state and national level.

d. Improvement in Primary Health Care Services in Support of Anganwadis

An analysis by AID (Annex 10) noted that primary health care services in support of the anganwadi have been moderately effective to date. While the trend was positive, the coverage levels achieved were modest. Since in most states health services and other ICDS services are administrated by two different departments, coordination between them to achieve delivery of an integrated package of services has been one of the biggest challenges facing ICDS.

For the project goal and subgoal to be met, the health departments of both states must support the 4,000 anganwadis with selected primary health care services for pregnant and nursing women and young children, with special emphasis on coverage of at-risk pregnant and nursing women and severely and moderately malnourished children 6-36 months of age. The essential health services to be provided for pregnant women via ICDS are two tetanus toxoid immunizations, three health check-ups, regular supply of iron/folic acid tablets, and delivery by trained health personnel. Nursing

women should receive at least one check-up after the baby is born. The vital health services to be provided to children enrolled in ICDS include BCG, DPT (3 doses), and polio (3 doses) immunizations, four health check-ups per year, semi-annual megadose vitamin A, and oral rehydration therapy for diarrhea.

The main health department workers for the support of the anganwadi are the Female Health Worker (FHW-ANM), the trained dai, and the Village Health Guide (VHG). Supervision and back-up services are provided by the Female Health Assistant (FHA) and the Primary Health Center Medical Officer (PHC-MO). In the 19 blocks with AID assisted anganwadis, the Ministry of Health and Family Welfare (MOHFW) has agreed to implement the Model Plan for health services to full national norms so that the additional health workers are in place when an anganwadi opens. In one of the project districts, Panch Mahals, AID is providing financial assistance for implementation of the Model Plan through its Integrated Rural Health and Population Project (IRHP).

The FHW's job is to provide maternal and child health care, delivery, family planning, selected immunizations, and health and child rearing education in support of the anganwadi. In AID assisted areas she will also give all pregnant women iron/folic acid tablets and weigh them whenever possible. In Panch Mahals district, the feasibility of monthly weighing of pregnant women by FHWs and recording on specially designed married women's charts will be tested. Given the FHW's many other tasks, her time in direct support of the anganwadi is limited. She will visit most anganwadis two or three times per month where she will perform a health check on pregnant and nursing women and on children in attendance at the anganwadi. During her visit, she and the AWW will also go to the homes of at-risk pregnant and nursing women and severely and moderately malnourished children enrolled in the supplementary feeding program but not attending regularly. They will check on these families and encourage regular attendance. The FHW will also distribute megadose Vitamin A capsules to all children 6-72 months of age twice a year.

The trained dai will assist the AWW with identifying and enrolling pregnant women and encouraging their regular attendance. She will provide NHED to pregnant women and conduct deliveries. The VHG, where male, is expected to play a limited role in support of the anganwadi except as a referral agent and for treatment of fever, minor ailments, and diarrhea through oral rehydration. Where the VHG is female, she is also expected to provide NHED to women about pregnancy, child care, malnutrition and family planning as well as refer them for supplementary feeding, but since she functions independently this will be an ad hoc approach.

For adequate primary health care services to be rendered, the problem of vacant posts, especially for FHWs at sub-centers, must be minimized. The vacant post rate continues to be high despite special efforts to fill posts. As such, for AID assisted ICDS areas, the MOHFW and state Health Departments will again be urged to fill existing vacant posts at sub-centers on a priority basis, particularly for FHWs and FHAs, and will be requested to maintain a low rate (10%) of vacant posts in AID assisted locations throughout the life of the project. Health workers in ICDS areas must be knowledgeable about the relationships between maternal malnutrition and infection, low birth weight, child malnutrition and mortality, and must be skilled in their prevention and treatment. These topics will be emphasized during the ICDS orientation sessions to be held for all health staff in AID assisted areas. To improve coordination, joint continuing educations sessions will be held monthly at the block level for ICDS and health staff. Furthermore, FHWs and trained dais will participate with AWWs in mobile, in-service workshops to strengthen their skills in these key areas. (See training section for more details.) The health workers must also have access to adequate drugs, vitamins, minerals and supplies for addressing critical child malnutrition and mortality problems. Therefore, the MOHFW will insure that health workers in AID assisted ICDS areas have an adequate supply of iron/folic acid tablets, vitamin A, oral rehydration salts, vaccines and other critical drugs and supplies.

The District Health Officer (DHO) serving as ICDS Advisor will have overall responsibility for assuring that project targets for health services are met. S/he will work closely with staff of the district ICDS cell to insure that senior district officials maintain interest and that the various departments are working together to accomplish project goals and purposes in a timely fashion. Following the MOSW's recommendations to improve coodination at the block level, the office and residence of the MO and the CDPO will be located in the same place, preferably the PHC, if possible, and these two officers will make joint visits to ICDS villages. The same steps will be taken to foster coordination between MSs and FHAS. They will jointly review monthly progress reports of AWWs and FHWs.

e. Improvement in Management Support Systems

Staffing Pattern and Filled Posts

Given the plans to achieve higher coverage of the target group with ICDS services in this project, an enhanced and improved management support system as summarized in Table 2 is required. Regarding the staffing pattern at the anganwadi, AID's analysis found that an AWW, a trained dai and a helper should be able to do

Table - 2

ICDS Staffing Pattern Compared to
Staffing Pattern Recommended for
AID Assisted Areas

Level	Positions Already Sanctioned	Additional Positions Recommended by AID
Anganwadi	Anganwadi Worker (AWW) Helper	Trained Dai (paid incentive) Volunteer Women
Sub-Block	Mukhya Sevika/Supervisor (MS) 1 : 20 AWW (Rural) 1 : 17 AWW (Tribal)	1 MS : 10 AWW (Rural/Tribal in Panch Mahals district only)
Block	Child Development Project Officer (CDPO) 1 Assistant/ Account Clerk 1 (who is UDC/LDC) Statistical Assistant 1 Clerk-Typist 1 Driver 1 Peon 1	In Rural Blocks with 150-200 AWWs or Tribal Blocks with 100-150 AWWs Assistant CDPO 1 Office Hand 1 In Rural Blocks with 200 or more AWWs or Tribal Blocks with 150 or more AWWs Assistant CDPO 2 Office Hand 2
District	Program Officer 1 Statistical Assistant 1 Office Superintendent 1 Upper Division Clerk 1 Lower Division Clerk 1 Driver 1 Peon 1 + In Districts with 80% ICDS Blocks: Nutritionist 1 Preschool Instructor 1 Health Instructor 1 S.W. Teacher 1 Accountant 1 Typist 1	District Health Education and Media Officer (DEMO) designated as ICDS Nutrition/Health Education (NHED) Coordinator

Table - 2 (Contd.)

Level	Positions Already Sanctioned		Additional Positions Recommended by AID
State Departments of Health or Rural Development	Director	1	NHED Coordinator 1 Training Coordinator 1 MIS Coordinator 1 (May be re-designated full time from positions already sanctioned)
	Program Officer Deputy Director Joint Director Addl. Director	2-4	
	Supervisor	1-2	
	Accountant	1	
	Accounts Clerk	1-2	
	Statistical Assistant	2-3	
	Upper Div. Clerk	2-3	
	Lower Div. Clerk	2-3	
	Steno-Typist	1-2	
	Driver	1	
	Peon	1	
Central GOI/ MOSW	Joint Secretary	1	None (Project Manager of Deputy Secretary rank designated from positions already sanctioned)
	Director	1	
	Deputy Secretary	1	
	Under Secretary	1	
	Program Officer	1	
	Research Officer	2	
	Section Officer	3	
	Assistant	7	
	Senior Research Investigator	2	
	Research Investigator	1	
	Upper Div. Clerk	4	
	Lower Div. Clerk	7	
	Accountant	3	
	Steno-Typist	5	

feeding and preschool education at the anganwadi if they are assisted by village women volunteers. However, there is some doubt as to whether the AWW has sufficient time to also carry out the essential quarterly community nutrition surveys, home visits and NHED activities. The time and motion study to be conducted as an innovative activity under this project should provide necessary information to the MOSW for resolving this problem.

The success or failure of an anganwadi will depend largely on the quality of the person chosen to be the AWW and on the process through which she is chosen. It is more important that the AWW be from the village than that she meet a certain educational or literacy standard. The single most important quality desired in an AWW will be the ability to relate to women and children . She should be pre-preferably married or widowed with at least one child. She should be chosen for her high personal credibility combined with mental capacity to learn new concepts and willingness to work with and visit homes of people from scheduled castes and tribes. Wherever possible she will be chosen from the group in the village which will most likely need the nutritional services of ICDS. Age will not be a barrier if she meets the other criteria. The AWW will be selected by the CDPO through a process of consultation with village leaders and interviews.

Table 2 depicts the type and number of supervisory and managerial staff sanctioned under ICDS at all levels as of 1982 and also the additional staff needed to manage AID assisted ICDS. At the sub-block level, the current ratio of Mukhya Sevikas to AWWs of 1:20 in rural areas and 1:17 in tribal areas is below standards observed in common management practice of one frontline supervisor to every 5-10 workers. The unfavorable ratio is exacerbated by the fact that the supervisors live far away from the anganwadis (up to 30 km), usually at block headquarters, and lack suitable transport. The effects of this subminimal pattern are that the MS visits the anganwadi at most once a month in rural areas or every six weeks in tribal areas. One of the most commonly noted deficiencies in program operations in the CDPOs' Monthly Progress Reports is infrequent supervisory visits.

It would appear that an increase in the number of supervisors to a ratio of 1 MS: 10 AWW might facilitate reaching project targets, by making more frequent visits and support to AWWs possible. However, the recurring cost of doubling the number of supervisors in ICDS is substantial. Furthermore there is some doubt as to whether an increased number of supervisors would actually lead to an increased frequency of supervisory visits. The GOI is willing to consider increasing the number of MSs at a future date, if it can be proven that the impact of ICDS is significantly improved by doing so. Therefore, the AID project will follow an experimental approach in which all the ICDS blocks in Panch Mahals district will have increased supervision (1 MS: 10 AWW) and all the ICDS blocks in Chandrapur district will

have the existing levels of supervision in ICDS (Table 2). All other ICDS services and staff in the two districts will be the same. The effectiveness of increased supervision on services delivered and impact achieved will be ascertained from data generated by the monitoring and evaluation systems in both districts.

In all AID assisted ICDS blocks the MS will help the AWW with quarterly village surveys to enrol members of the target group for feeding and with home visits to follow-up or enrolled women and children who attend irregularly. Due to competing priorities at the anganwadi, the MS will insure that at-risk pregnant and nursing women and malnourished children 6 to 36 months of age are regularly receiving supplementary food. The MS will also see that food supplies are almost always on-hand, that the community is providing volunteers to work regularly, and that fuel and condiments for cooking are supplied. The MS will coordinate the NHED activities for the anganwadis she supervises. She will also facilitate coordination with health workers, particularly the FHW, so that essential health services are delivered to ICDS beneficiaries. An effort will be made to house the MSs as close as possible to the anganwadis they supervise to reduce travel time. They may share housing with the FHA or FHW which will facilitate coordination. The MSs will travel to the villages on foot, by public transport, or on bicycles provided by UNICEF. Spot checks as well as review of records of the MS's activities will be done by the CDPO to insure that she is visiting each AWW every two weeks in Panch Mahals and at least once a month in Chandrapur.

At the block level, the existing pattern of a Child Development Project Officer (CDPO) and staff to see to accountability for food and project expenditures, data tabulation and general administration, should be adequate except in very large blocks. As depicted in Table 2, in rural blocks with more than 150 AWWs and in tribal blocks with more than 100 AWWs, one or two assistant CDPOs and an office hand will be required. The block ICDS cell will have a jeep provided by the GOI or UNICEF.

District ICDS cells have recently been sanctioned by the GOI for all districts with 5 or more ICDS blocks and added professional staff have been sanctioned for districts in which 80% or more of the blocks have ICDS. Both Panch Mahals and Chandrapur districts have ICDS in at least 80% of their blocks so it is expected that all the staff listed in Table 2 will be in place in these districts. The only modification that will be necessary is for the District Education and Media Officer (DEMO - Health and Family Welfare) to be designated to act as NHED coordinator for ICDS. Allowance has been made in the project budget for covering the DEMO's expenses for NHED work in ICDS. The district ICDS cell will oversee the food delivery system, statistical monitoring, accounting and field

supervision through monthly visits to each ICDS block. The statistical and clinical staff will monitor the quality and analyze MIS data and prepare reports. The district cell will have one jeep provided by the GOI or UNICEF.

At the state level, the Secretaries of the nodal Departments of Health (Gujarat) and Rural Development (Maharashtra), have been given overall administrative responsibility for ICDS. Day to day management is now done by an ICDS Program Officer who assumes this job as additional to other work. Due to the multiplication of ICDS blocks, an expansion of staff at the state level has been sanctioned by the GOI which should be sufficient for AID project needs with the exception of training, nutrition/health education and the management information system. For these three areas, three technically qualified, full time staff members will need to be designated to serve the state ICDS program as a whole including the AID assisted ICDS blocks.

The proposed job descriptions of these professionals are described in detail in the training, management information system, monitoring, and nutrition/health education sections of this paper. Staff from the state ICDS cell will visit each AID assisted ICDS district quarterly. The Director of the Rural Development Department, Maharashtra will maintain active liaison with the Health and Family Welfare Department to assure that health posts are filled and essential services delivered in ICDS areas.

Since the AID assisted project will be located in only 19 blocks in 2 states it should not place too heavy a management burden on existing ICDS staff at the Ministry of Social Welfare. For overall management of ICDS a senior Indian Administrative Service Officer of the rank of Joint Secretary in the Nutrition and Child Development Division holds this charge in addition to other responsibilities. The MOSW will be asked to designate a Project Manager of at least Deputy Secretary rank, supported by adequate statistical staff, to act as liaison for the purpose of implementing the AID project. The Project Manager will supervise the implementation and improvement of ICDS with AID assistance in the two states including coordination with senior officials from the state governments, MOHFW and CARE for training, NHED, food delivery, health services and the MIS. S/he will be assisted by professional staff who have been sanctioned as described in Table 2 plus the staff of NIPCCD, the central committee on health and nutrition at AIIMS, and ICCW.

If all the positions described in Table 2 are sanctioned and filled, management capability should be adequate to reach project targets. However, the vacant post rates found by the PEO for AWWs, MSs and CDPOs ranged from 4-19% and will need to be monitored closely through the MIS and rectified if project targets and purposes are to be achieved. Efforts will be made to minimize the transfers of

trained ICDS personnel outside the AID assisted areas during the life of the project. Furthermore, AID's experience is that the duties described for ICDS management at GOI, state and district level, are frequently assigned to existing staff in addition to their many other responsibilities and as such are not given adequate attention. Therefore, AID will monitor to see that workers are assigned full-time to these jobs. Funding will be provided by AID to furnish the block and district ICDS cells. Funds will also be provided for extraordinary administrative expenses incurred by the district, state, and central ICDS cells on account of the AID project, including air travel and per diem for project monitoring, hosting of coordination meetings, and hiring of vehicles. In addition, AID will help meet a portion of the total salary cost for staff listed in Table 2 on a declining scale over the life of the project.

Management Skills

As described in the training section, the management skills of AWWs, MSs and CDPOs will be enhanced through the revised syllabi for their basic training and through special in-service workshops. Furthermore, AID funds have been set aside for special in-country, regional or U.S. based courses for ICDS management staff from the district, state, and national level, including CARE, to enhance their skills in management information systems, financial analysis, operations research, and the use of management studies for policy analysis. It is expected that this training to improve management skills will be conducted by Indian and American management experts. During the first year of the project a management needs assessment and training plan will be developed with the assistance of the American resident advisors for training/NHED and the MIS.

Management Information System (MIS)

The current ICDS system provides some of the data required to monitor progress toward achieving the project goal, subgoal, and purposes but additional data, more analysis, and more decision-oriented reports are needed. The quality of the data is quite variable so that verification through independent "spot checks" will be necessary. Moreover, some of the impact indicators are difficult to collect through the routine system and so will be collected by periodic evaluation surveys using sampling techniques. The MOSW, with the assistance of AIIMS, is revising the built-in ICDS monitoring system. They are also computerizing the monthly progress reporting system so that information can be analyzed and rapid feedback provided to project staff at all levels. An HCL Word Processor already procured by the MOSW will be used for some tasks. Detailed suggestions have been made by AID on the types of information which need to be incorporated in the new system. These are described in Annex 18. With financial and technical assistance from AID, the MIS will be

strengthened and revised to provide the necessary information. One suggested change is that weight charts for children 0-6 years of age be revised to include a record of arm circumference measurements, morbidity, and receipt of Vitamin A, using the chart from the Kerala Composite Programme for Women and Preschoolers as a possible model.

The "monthly progress reports" prepared by AWWs and CDPOs will be revised to incorporate the information described in Annex 18. These reports will include information on the number and percentage of all eligible malnourished children 6-36 months of age and at-risk pregnant and nursing women in the village who actually ate at the anganwadi for 15 or more days in the month, which will be used to determine if the feeding coverage target set by the MOSW and AID has been achieved. The MOSW's committee for revising the monitoring system will see whether the "monthly monitoring reports" on health and nutrition services in ICDS, which are prepared for AIIMS by the AWWs, Advisors, Senior Advisors, and State Coordinators, can be streamlined or incorporated into the AWW's and CDPO's monthly progress reports to reduce the workload of the AWW and eliminate duplication of effort. Extra copies of the monthly progress reports could be provided to the health officials to meet their requirements. Pre-printed forms will be used to save time.

The core of the Management Information System (MIS) at the village level will be: (1) registers kept by the AWW of attendance of women and children at the NHED, preschool education, feeding, and health services; (2) family records; (3) children's arm circumference and weight charts; and (4) quarterly, community, health and nutrition surveys conducted by the AWW, trained dai and helper. During these surveys all 0-6 year old children and 15-44 year old women will be canvassed to identify malnourished children and at-risk pregnant and nursing women. Family records will be updated with births, deaths, and in and out migration. The results will be carefully recorded and sent to the CDPO with the monthly progress report for the appropriate month as detailed in Annex 18. The monthly progress reports will also include information on the equipment and facilities available for the anganwadis, community participation, health services, NHED activities and the number of supervisory and health visits received.

At the block level the CDPO will prepare a monthly progress report which is a consolidation of all the AWWs' and MSs' reports and which also contains information on the number of workers sanctioned, in position, and trained, and health services. Every quarter this report will contain a summary of the results of the village surveys. The CDPOs' reports will be sent to the district and state ICDS cells, and the monitoring cell in the MOSW, for further consolidation and reporting. The MOSW will review the progress reports, make a critical appraisal of achievements and provide feedback, suggesting mid-course corrections as necessary. This review will be circulated back to all

the persons connected with ICDS implementation. At the state level the specially designated, full time MIS coordinator will have primary responsibility for installation of the revised MIS and timely data analysis and feedback. At the center, the Project Manager in MOSW will have overall responsibility for the improved MIS.

The district ICDS cell will also prepare an annual summary of target group coverage with supplementary feeding and impact on malnutrition and mortality for each of the AID assisted blocks based on information from the 'DPOs' monthly progress and quarterly survey reports. The information needed in this summary is shown in Annex 18. The district annual summary will be sent to the state ICDS cell, the MOSW and AID. The state and central ICDS cells will carefully review these district annual summaries, make a critical appraisal of achievements, and provide feedback to the district and block level ICDS staff. Lessons learned through data generated by the MIS in AID assisted areas will be appraised by the MOSW for relevance and application to ICDS projects elsewhere.

The schedule for establishing the improved MIS will be as follows. In the first year of AID assistance, the forms will be revised, field-tested and final format approved. At the same time, sample reports will be developed, discussed and finalized in a decision-making format and displayed so that the purpose of the monitoring process is clear. Computer processing arrangements will be worked out for generating standardized graphical and tabular information displays, aggregated for different levels of decision-makers. An implementation plan to convert from the old system to the new MIS will be made, including plans to train the ICDS staff in data gathering, collation, analysis, and interpretation. During the second and third year, all ICDS staff will be trained in the new MIS as part of the mobile in-service workshops or special short-term courses as described in the training section. The new system will be installed during these years in all 19 AID assisted blocks. Supervisory, and managerial staff at all levels will be taught the basic principles of the MIS (management by objectives, management by exception), interpretation and use of data for decision-making and follow-up action. The effectiveness of the system will be monitored closely in years 4 and 5, and necessary modifications made. In year 6, a decision will be made about the appropriateness of spreading the improved MIS to other ICDS and Title II MCH feeding projects in India which have reduction in child malnutrition or mortality as objectives.

To successfully install an improved MIS will be a complex task. Short and long term technical assistance from Indian and American experts will be required and will be funded by AID. The Project Manager in the MOSW will oversee the improved MIS. An expatriate MIS advisor with two Indian assistants will be based at USAID/New Delhi to help design and install the strengthened MIS. This advisor will work closely with the staff of the MOSW, AIIMS and the state MIS coordinators funded by AID.

To support the development of an effective management information system, the project will finance the procurement of Indian made pocket calculators and locally available batteries for use by each MS, CDPO, District State and GOI ICDS Cell. Schedule 6, Part 4 subpart G of the AID Commodity Eligibility List identifies electronic machines with self contained power sources as an ineligible commodity. Consequently, in accordance with the provisions of Chapter 4, Section A4 of Handbook 1, Supplement B, the Assistant Administrator, Bureau for Asia will be asked to approve a waiver to permit procurement of the calculators.

f. Improvement in Training Support Systems

Training in ICDS consists of: (a) Basic training of the AWW, MS, CDPO, and their trainers; (b) Continuing education for these workers; and (c) Orientation for state and district officials and health staff. A detailed description of the existing training system and AID's analysis of the limitations and obstacles it is facing are in Annex 11. The expansion of ICDS to 1,000 blocks by 1985 is dramatically increasing the demand for trained functionaries. Major problems found in ICDS training will first be discussed and then the activities AID will assist to improve the training support systems will be described.

There is a substantial backlog of untrained AWWs which results in workers being on the job for one year prior to receiving basic training. At the same time many training centers are functioning at less than capacity due to lack of planning, coordination and management of training by state government ICDS officials. Trainees deputed to each center often are heterogenous groups with disparate backgrounds that are difficult to teach together. Many AWW training centers are under the auspices of the Indian Council of Child Welfare (ICCW) which does not have adequate staff to monitor the quality of the training they provide. Other AWW training centers have no one organization to coordinate them and it is impossible to maintain any standards for the training offered at them.

The quality of the training is affected by the fact that no performance standards exist for testing the knowledge and skills of instructors and trained workers. The syllabi used for basic training are not task-oriented and contain a fair amount of theoretical material. Not enough time is spent on imparting essential health, nutrition, and communications skills for reducing young child malnutrition and mortality as described in Annex 11. The training includes very little field work in an anganwadi or supervising one. In fact many of the instructors have never seen an ICDS project and are recent graduates with little experience. There is also a dearth of training materials.

In order to resolve these problems AID assistance will be provided to improve the quality and management of ICDS training. Revised syllabi which are task-oriented with enhanced health and nutrition content will be introduced along with appropriate trainin

materials for the CDPO, MS, AWW and their trainers. Field practice will be emphasized. To complement the basic training, in-service mobile workshops will be held for AWWs and MSs to practice health and nutrition skills in ICDS villages. Continuing education will be imparted through monthly meetings with supervisors and AIIMS consultants, refresher courses at MS training centers, and state level workshops. Orientation sessions will be held for health staff, village panchayat leaders, district and state officials. There will be some training abroad for senior project staff. Performance standards will be developed by NIPCCD and applied to all training centers and trainees.

Management, Coordination and Technical Assistance

To improve the management, coordination, and technical content of the ICDS training program for the 19 blocks, AID will provide partial salary support on a declining scale for additional personnel at NIPCCD, ICCW and the state governments.

National Institute of Public Cooperation and Child Development (NIPCCD)

As noted above one of the greatest weaknesses in the existing training system is the lack of control of the AWW training centers. Presently the only technically qualified training organization within the sphere of the MOSW that could oversee the quality of AWW training is NIPCCD. Therefore, with AID assistance NIPCCD's role will be expanded to enable them to monitor the quality of AWW training as well as to carry out other activities to upgrade the total ICDS training system. The additional responsibilities envisioned for NIPCCD in support of the AID project include:

1. Accreditation of all AWW training centers and supervision of the quality of training they provide in collaboration with ICCW.

2. Revision of the syllabi and design of competency-focused, basic training materials for CDPO, MS, AWW, and their trainers.

3. Development and application of performance standards for assessing the knowledge and skills of all ICDS instructors as well as AWWs, MSs, and CDPOs.

4. Supervision of approved institutions and district ICDS cells for MSs, AWWs and their instructors.

The performance standards developed by NIPCCD will be used at the end of the basic training courses and mobile in-service workshops for CDPOs, MSs, AWWs and their instructors to test their acquisition of knowledge and skills. Furthermore, during both the basic and in-service training of supervisory staff, i.e., CDPOs/Assistant CDPOs

and MSs, they will be taught how to conduct performance assessment of the workers they supervise. NIPCCD will work closely with the MS and AWW training centers and with the institution selected to organize the in-service workshops to assure that the new performance standards are used.

In order to achieve these tasks, NIPCCD will require additional technical expertise. Therefore, two Indian training experts will be added to its staff and assigned the scope of work just described. They will serve as national ICDS training coordinator and assistant. AID will also fund a resident, expatriate training/NHED advisor for three years to assist NIPCCD and ICCW staff with implementation of the above responsibilities. The advisor will help design materials and implement mobile in-service workshops and will serve as a liaison between ICCW and NIPCCD on matters related to training of AWWs. The additional training staff at NIPCCD will have access to all of the institutes's support staff and facilities. However, AID will fund a typist/clerk to assist with the increased work load.

Indian Council of Child Welfare (ICCW)

Although the technical content and quality of AWW training will be the responsibility of NIPCCD, the ICCW will continue the administrative responsibility assigned to it by the MOSW for opening new AWW training centers and for supervising the majority of AWW training centers nationwide. Despite a nominal increase in ICCW staff sanctioned by the MOSW in 1982, more personnel are needed. Assistance will be provided by AID to ICCW to add two program officers and one steno-typist at the New Delhi headquarters and one program officer and typist/clerk in each of ICCW's two state council offices (SCCW) to manage the AWW training centers under their auspices. Funds will also be provided for a locally made photocopier and stationery at ICCW headquarters.

State Governments

AID will provide partial salary support for a full-time training coordinator in the responsible department in both project states to supervise, monitor, evaluate and strengthen ICDS training at all involved institutions in the state. The coordinator will ensure development and maintenance of minimum standards in the quality of training. Preference will be given to candidates with formal training in education plus teaching experience. The coordinator will be based in the state government's ICDS cell and will have access to all necessary support staff and facilities. The coordinator will be the state government's link with NIPCCD and will have responsibility for announcing all training programs on a timely basis to all training centers, district ICDS cells and CDPOs. The coordinator will prepare an annual plan for recruitment and deputation of AWW trainees from

each block to insure that institutions are filled to capacity. Trainees will be assigned by the coordinator to training centers closest to their blocks in groups with similar educational backgrounds. The coordinator will spend one day observing MS and AWW training at each institution in the state at least three times a year to assure that the quality of the training is adequate and that the revised syllabi are being used as intended. Staff of district ICDS cells will also be asked to assist the state training coordinator by monitoring the performance of ICDS training centers in their districts. Annual workshops of 3 days duration, with one representative from each MS and AWW training center in the state plus the AIIMS training consultants and SCCW program officers, will be organized at a different training center each yearly by the state training coordinator and funded by AID.

The training coordinators, training consultants, and ICCW program officers from both states and Delhi will receive one week of orientation on their respective training responsibilities in ICDS at NIPCCD, New Delhi, as soon as they have all been recruited. The orientation will be organized by the national training coordinator. A follow-up session will be held at the time of introduction of the revised syllabi to brief the same group on new training approaches. AID will provide funds for these orientations. In addition AID will fund special courses and observational tours for senior ICDS management and technical staff abroad or in India to enhance skills needed for job performance. Funds have been set aside for up to 5 years of long term, non-degree training and 30 months of short term training.

Syllabi and Training Materials

The syllabi for the AWW, MS, and CDPO/Assistant CDPO will be revised by NIPCCD to support development of essential skills needed by these workers to reduce young child malnutrition and mortality. The subject areas in which the syllabi needs to be strengthened are described in Annex 11. Missing and excess content will be identified through task analysis and a special version of the syllabi will be developed for semi-literate AWWs. Training materials will reflect a participatory approach and will include lesson plans and manuals for the instructors plus student-held materials for use together as one system.

Since every ICDS training center and every CDPO will have a slide projector supplied by UNICEF, slide sets will be especially useful teaching aids. A series of training slides accompanied by texts will foster adherence to the content of the syllabi by the various training centers. With AID assistance, sufficient sets of slides on health and nutrition topics will be produced by NIPCCD for use during the project. The slides and accompanying texts will emphasize role-playing,

indicating how problems can best be explored and solved with target audiences. The slides will be distributed to all CDPOs, training consultants and ICDS training centers in both states.

Clearinghouses will be established in both states under the direction of the state NHED coordinator for collecting, adapting, reproducing and distributing useful NHED and training materials to all training centers and AID assisted ICDS blocks and anganwadis. These clearinghouses are described in greater detail under the NHED section. Prototype copies of the teaching materials and syllabi prepared by NIPCCD will be sent to the state NHED clearinghouse for reproduction and distribution. Copies will also be sent to each ICDS training center for immediate use. However, NIPCCD will be responsible for the reproduction and distribution of the slide sets it prepares.

Basic Training

Basic training for ICDS functionaries in the AID blocks is expected to be completed by March 1986. It is estimated that one third of the AWWs required for the AID assisted anganwadis will have been trained prior to the signing of the project agreement. However, AID will cover only those training costs incurred after the signing of project agreement. The characteristics of the training: course size, duration and annual capacity of the training centers, are described in the training analysis, Annex 11.

Training for the 19 CDPOs and approximately 18 Assistant CDPOs for the AID assisted area will be done at NIPCCD, New Delhi. The state governments will depute the approximately 4,000 AWWs and 348 MSs needing training for AID assisted blocks to some of the 40 existing state training centers listed in Annex 12. The training centers chosen will be as close as possible to the districts in which the AID ICDS project will take place. For each training center, the state training coordinator will formally assign the ICDS project closest to it for field practice. Project officials from this block will be notified of this decision and asked to facilitate the field practice of trainees.

The MOSW provides an annual grant to each training center through ICCW or the state government following a schematic budget. AID will reimburse costs incurred for training AWWs from the 19 blocks up to Rs.1,328 per worker. This figure includes funds to increase the annual allowance for conveyance and field trips from Rs.6,000 to Rs.20,000 per training center to facilitate more field work. The costs of training the CDPOs, Assistant CDPOs, MSs and instructors of MSs and AWWs for the AID blocks will be borne by the MOSW or UNICEF under their existing agreement with the GOI.

In-Service Workshops

A series of in-service, mobile workshops will be held at district level and in various anganwadis to reinforce and complement the health and nutrition component of the basic training of all MSs, AWWs, and their instructors from the AID assisted blocks. The content and training materials for these mobile workshops will be designed, translated and printed by an approved institution under the direction of NIPCCD. This institution will be the overall coordinator for the workshops. The continuing education staff of the two district ICDS cells, and additional institutions as necessary, will conduct the training. The workshops will strengthen the workers' and instructors' skills for reducing young child malnutrition and mortality through an abbreviated and applied version of the basic training. During these workshops, the MSs will learn how to use performance assessment to supervise AWWs. All MSs and AWWs will be required to attend the in-service workshops whether or not they received basic training prior to the workshops.

The in-service training will be conducted in a two phased, six week cycle. The first phase will be a three week workshop at the block or district level for MSs. During the second phase of three weeks the MSs will train the AWWs, FHWs and trained dais working in their areas. The MS will be used deliberately to train AWWs in order to develop her skills as a trainer and to expand her role beyond mere supervision. The mobile team from the district ICDS cell and the CDPO will provide assistance and supervision for the training of the AWWs by the MS. Table 3 shows the number of trainees and mobile teams required to complete the in-service workshops in 1-2 years.

TABLE - 3

NUMBER OF TRAINEES AND MOBILE TEAMS NEEDED FOR IN-SERVICE WORKSHOPS IN AID ASSISTED ICDS BLOCKS

	Gujarat	Maharashtra
CDPOs	11	8
Assistant CDPOs	14	4
MSs	287	61
AWWs	2,865	1,113
FHWs	573	223
Trained Dais	2,865	1,113
Helper	2,865	1,113
Instructors	45	75
District Teams	1	1
Workshops (3-6 weeks)	13	5
Months to complete	32	14

Total = 13,235 Trainees
Per Trainee Cost = Rs.568

The first in-service workshop will be used to re-train instructors from each of the institutions which do basic training for MSs and AWWs from AID assisted areas. Although the workshop to re-train these instructors will be similar to those held later for ICDS staff, there will be an emphasis on familiarizing the instructors with the revised syllabi, with performance assessment, and with techniques for effective training through field practice. Following the workshops for re-training instructors, the mobile teams will conduct in-service workshops for ICDS staff, district by district, until all AWWs and MSs have been trained. The district training site will be within easy access of an ICDS block and a PHC for field practice.

The approved institution with overall responsibility for the in-service workshops will be chosen by NIPCCD in consultation with AID. This institution will organize a two month training program at NIPCCD to prepare the district cell staff to serve as mobile trainers. As part of their training, the mobile teams will develop the training materials to be used by the MSs and the AWWs. The coordinating institution will work with the state training coordinators to draw-up annual schedules for the workshops and to see that all ICDS staff in AID assisted blocks are deputed to attend. This institution will also supervise the mobile teams and make all logistical arrangements for the workshops. All costs of the in-service workshops will be covered by AID.

Continuing Education

Ongoing ICDS continuing education activities will continue in the AID assisted areas. These include lectures by staff of the district ICDS cell, DHOs, MOs and CDPOs at monthly block level meetings of ICDS and health staff. State level workshops of block level ICDS and health officials are also organized by the MS training centers and district ICDS cells. The GOI will finance all of these continuing education activities with the exception of partial salary support for some of staff provided by AID.

Orientation of District and State Officials, and Health Staff

Orientation for government ICDS staff from the state and district ICDS cells will be done by NIPCCD. Furthermore, two or three training consultants per state, who are professors of medicine, have been asked by AIIMS to orient the health staff to ICDS. These consultants provide 3-4 orientation courses per year of 5 days each to MOs from PHCs in ICDS blocks, the first two days of which are also attended by District Health Officers (DHOs) who serve as advisors to ICDS. The DHOs and MOs from AID assisted blocks will attend these sessions and will in turn provide an orientation to the health staff they supervise. Once a year, the training consultants will also hold a half day orientation seminar for officials in each district where ICDS

operates. When the revised syllabi and training materials for training ICDS functionaries with strengthened health and nutrition content are ready for use, copies will also be given to the state training consultants. They will be asked to modify their orientation sessions accordingly. Funds for orientation sessions conducted by the training consultants will be provided by the GOI and UNICEF.

To foster community participation, AID will support one day orientation sessions organized at the block headquarters by the CDPO for two leaders from each ICDS village, preferably the head of the panchayat and the head of the women's club (Mahila Mandal). These sessions will be attended by the DHO, the District NHED Coordinator (DEMO), the BDO, the MO, the MSs who supervise those villages and other staff of the District ICDS cell as available. All villages will be covered by this orientation once a year during the first three years of implementation of the ICDS block.

An illustrative sequence of the training activities that will take place for each block is shown in Table 4.

TABLE - 4

ILLUSTRATIVE SEQUENCE OF TRAINING ACTIVITIES FOR AN ICDS BLOCK

Activity	Month Number
1. Basic CDPO Training at NIPCCD	1-2
2. Basic MS Training at Designated Training Centers	3-4
3. Orientation for Panchayat Leaders and Selection of AWWs	3-6
4. Basic AWW Training at Designated Training Centers	6-15
5. Orientation for MO by Training Consultant	7
6. Orientation of FHA, FHW, and Trained Dai by MO	8
7. Orientation for District Officials by Training Consultant	9
8. In Service Workshops for MS by Mobile Teams	16
9. In Service Workshops for AWW, Dai, MS, and FHW	17
10. Monthly Continuing Education Sessions for AWW, MS, and CDPO	16(life of project)
11. Refresher Course for MSs at Training Centers	28

g. Improvement in Nutrition and Health Education (NHED) Support Systems

Strengthening Planning, Management, and Technical Capacity for NHED

The limitations of the NHED component of ICDS have been described earlier in this paper and in detail in Annex 8. These are in part due to lack of utilization of existing resources, lack of administrative control and supervision, and lack of overall program management. The addition of qualified personnel is essential for effective implementation of NHED within ICDS. Therefore, a planning, management and coordination system will be established at the state and district level with partial funding from AID. Technical assistance by a resident, expatriate training/NHED advisor will be provided by AID for three years.

In Gujarat and Maharashtra, a full-time NHED coordinator will be appointed in the state ICDS cell to serve all the ICDS blocks in the state (possibly by designation of existing staff), with partial salary support on a declining scale from AID. The state NHED coordinators will:

1. Plan well-integrated NHED campaigns through:

(a) identification of communication strategies, media, and interpersonal change agents; (b) mobilization of existing resources; (c) provision of new resources; and (d) securing high-level inter-departmental sanction and support.

2. Supervise NHED services and training for AID assisted ICDS blocks through frequent contact with the district NHED coordinator (DEMO) and training centers.

3. Disseminate educational materials to ICDS blocks, anganwadis and training centers through establishing an NHED clearinghouse to:

(a) collect existing NHED and training materials from India and abroad; (b) review and pre-test suitability of these NHED materials for ICDS; and (c) adapt, translate, mass reproduce and distribute NHED and training materials including films, radio scripts and printed materials.

The state coordinator will have full access to the facilities and support staff of the state government's ICDS cell. Through the establishment by the coordinator of a state clearinghouse for NHED and training materials, a large collection of useful, existing materials will be assembled and the availability of relevant NHED

materials at the anganwadi level will be greatly increased. Funds from AID at the rate of Rs.100 per AID assisted anganwadi per year will be placed at the discretion of the state NHED coordinator for collecting, adapting, and distributing materials to anganwadis through the clearinghouse. The clearinghouses for NHED materials at the Voluntary Health Association of India in Delhi and at the International Nutrition Communication Service (INCS) at the Education Development Center in Boston, USA could serve as models for the ones to be established by the two states. Furthermore, the state NHED clearinghouses will translate reproduce and distribute in local languages, various prototype training materials, manuals, and forms received from the MOSW, NIPCCD or AIIMS.

The state NHED coordinator will work with the local station of AIR to get time allotted for ICDS radio messages to promote services and NHED information and will help design such radio programs. S/he will also work closely with the Mass Education and Media Officer (MEMO) of the Health and Family Welfare Departments. The state coordinator will see that the MIB's and Department of Food's Mobile Field Publicity and Extension Units are supplied with relevant health and nutrition films to show in ICDS villages. The state coordinator in Maharashtra will also follow the results of the Department of Health's film campaign for possible application in ICDS. The expertise of the home science colleges will be employed by the state coordinator whenever appropriate to strengthen NHED activities in ICDS.

At the district level, the existing District Education and Media Officers (DEMOs) working under the Department of Health and Family Welfare will be designated as NHED coordinators for ICDS. Funds will be provided by AID to cover some of the additional expenses they incur in filling this function. The district NHED coordinators will see that: a) monthly village education meetings are held; b) the Block Extension Educator (BEE), Block Extension Officers (BEO Women and BEO Panchayat), FHW and VHG assist the ICDS staff in all NHED activities; c) annual block level orientation meetings are held for village leaders; and d) monthly meetings of AWWs, FHWs and MSs with the CDPO and MO are utilized for continuous retraining in NHED and supervision of these personnel. They will have use of the support staff and facilities of the district ICDS cell.

At the beginning of each calendar year the district NHED coordinators will prepare detailed annual plans of all NHED activities to take place in their ICDS blocks. The plan will include a schedule for use of mobile field publicity and extension units and other available vehicles and film projectors. At the end of the calendar year the district coordinator will prepare a report on NHED activities which took place compared to those projected in the annual plan, which will be sent to the state NHED coordinator for monitoring

purposes. Immediately after being designated, the district coordinator will make an inventory of all working projectors and advise the state coordinator on whether or not regular projection of films is possible and the purchase of film prints is justified.

Strengthening NHED Skills of Project Staff

Since a major limitation of NHED in ICDS is the lack of training of AWWs, MSs, and CDPOs in techniques for communicating effectively with villagers, their training will be strengthened to impart these skills. This will be accomplished under the lead of NIPCCD by revising the syllabi, re-training the trainers and producing useful student-held training materials. An important part of the training will be in-service workshops in which the trainees will be able to practice these skills through village field work during which they will teach mothers individually and in groups. The state NHED coordinators will be given training in communications and NHED either abroad or through specially arranged courses at NIPCCD with AID funds.

h. Innovative Research and Development to Improve ICDS

Practical research and development activities will be undertaken to improve ICDS operations. Both state governments, as well as the MOSW, will have a budget for studies which arise from their perceived needs as ICDS decision makers and from problems encountered during project implementation and monitoring. They will decide on which studies would be most useful and who is best suited to do them. With these funds, the task analysis and time and motion study of the AWW, referred to earlier in this paper, will be done under the direction of the MOSW during the first and fourth years of AID assistance. This study could be carried out by AWW and MS instructors through NIPCCD to serve as the first step in revising the syllabi for these workers. The repeat study will evaluate whether training improvements and change in emphasis of various tasks of the AWW have been successful.

Other activities suggested for study are

1. Methods for increasing attendance of children under three years of age and pregnant/nursing women at feeding and nutrition surveillance sessions.

2. Use of incentives/prizes to reward desirable child feeding behavior by parents and good performance by the AWW.

3. Development of an accurate and dynamic ration planning system based on malnutrition and attendance rates.

4. Development of food supplements more acceptable to pregnant women, e.g. Matruahar in Gujarat.

5. Child to child approaches for NHED.

6. Feasibility of regular weighing of pregnant women and recording on charts by FHWs.

7. Feasibility of regular weighing of newborns by trained dais.

3. Purpose 2: Low Birth Weight Research

Low birth weight (LBW less than 2.5 kg) is an important contributing cause to the high mortality rate among Indian infants. Determinants of LBW in India and suitable interventions to prevent it are not fully understood but research priorities have been identified by the Indian Council of Medical Research's (ICMR) Task Force on Low Birth Weight in March 1982. A review of the current state of knowledge in this field is provided in Annex 13. AID is interested in funding research over a six year period in these priority areas, particularly the role of maternal malnutrition, infection and interventions to prevent them including better antenatal care and anthropometric assessment of fetal growth. The studies will be conducted by various Indian research institutes in collaboration with several U.S. universities and research institutes and under the coordination of the ICMR. See Annex 13 for the list of the investigators and collaborating institutes. A detailed protocol for these studies has been jointly prepared by the collaborating Indian and U.S. investigators and is being finalized by the ICMR subject to the approval of the MOHFW.

During the initial phases in which the prevalence of malnutrition, infection and their effect on birth weight will be studied, two reference laboratories and three study centers will be created. The chosen institutions will gain capability in important nutrional, microbiologic and serologic techniques, which India does not now possess. They will be able to conduct standardized analyses which have many applications far beyond their immediate use for LBW research. During the latter phase of the six year research period, this newly acquired expertise will be used in support of intervention trials which will be conducted at these or other centers to determine the technical feasibility and cost of improving birth weights. Cost effective interventions identified through the studies could be considered for wider application in India's health services and in programs providing maternal food supplements such as the ICDS. Given the obstacles described in Annex 13 to conducting the proposed research in India, the studies will be phased so that successful com-

pletion of one phase will be a prerequisite for proceeding to the next. A description of the general approach and timetable for the research follows.

Phase I (Preparatory) - 6 Months

During this period, laboratory and field study staff will be recruited and trained, laboratories equipped, and the protocol for prevalence of infection studies finalized. One technical person from each of the two reference laboratories will be sent to the U.S. for three months of training in isolation and serologic techniques for Mycoplasma at Channing Laboratory, Harvard Medical School and for Chlamydia at the Centers for Disease Control. Persons chosen for training will have prior experience in cell culture with viral pathogens, immunofluorescent microscopy, diagnostic bacteriology, and serologic methods. After training in the U.S., they will transfer this technology to their institutes in India to create reference laboratories, and they will train the laboratory personnel at the study centers. The U.S. collaborators will visit India to assist with this technology transfer. A trial exchange of standardization specimens will be made between India and the U.S. The questionnaire for the study of the prevalence of malnutrition and infection in pregnancy, will be written by an Indian medical sociologist from one of the selected institutes, circulated to the other collaborating institutes, revised, translated, pre-tested, back-translated, finalized, and printed. Research staff will be hired and trained in questionnaire administration, clean-voided urine specimen collection, speculum examination, taking of anthropometric measurements, and blood collection in a hospital setting. Methods will be tested for delivery of uncontaminated specimens to the study center and reference laboratories.

Phase II (Prevalence Study) - 24 Months

During this period the laboratory methodology in the study centers and reference laboratories will be tested in studies of the prevalence of maternal malnutrition and infection in the hospital setting and in rural communities. Approximately 200 women attending each study center for prenatal care will have pertinent cultures and serology performed and anthropometric measurements taken in order to determine what infections may be of significance during pregnancy and the role of malnutrition. Other risk factors will also be studied as well as outcome (birth weight). In addition, in a portion of women, placentas will be retained for histologic and microbiologic examination. Duplicate specimens will be sent to the reference laboratories for standardization and random samples of these specimens will be sent to the collaborating U.S. laboratories for quality control. Anthropometric measures of fetal growth will be tested. Once the hospital prevalence study is smoothly underway, an attempt will be

made to replicate the interview and exam techniques in 200 women from rural communities (rural population area of 30,000). A cold chain for transporting samples will be tested. Further transfer of technology from the reference laboratories to the study centers to increase the self-sufficiency of these laboratories will also be done at this time.

Analysis and Evaluation of Results and Protocol Design for Phases III and IV - 6 months

The results of the laboratory and field techniques developed in the first two phases will be analysed by ICMR and evaluated by the IMCR Task Force on LBW, and the Indian and U.S. collaborators at a joint meeting in order to decide on whether and how to proceed with Phases III and IV. The most appropriate institutes for the next phases will be identified by the review panel. The protocol for Phases III and IV will be written at a joint meeting of the investigators from the chosen institutes and the U.S. collaborators.

Phase III - IV (Outcome/Intervention Studies) - 36 months

These phases will address the relationship between malnutrition, infection and LBW by hypothesis testing of association or by intervention or both. The nature of these longitudinal studies will depend heavily on new knowledge acquired in the previous phases and in studies done elsewhere. One technical person from each of the reference laboratories will be sent to the U.S. for retraining in the latest microbiologic and serologic techniques for maternal infections. Other research staff will also be trained as necessary in the U.S. up to 12 person months during these phases.

The studies will take place in under privileged urban areas and in rural communities. It is anticipated that three research institutes will be chosen to conduct the clinical trial of treatment of infection in the urban areas they serve and in approximately 24 rural villages over a two year period at each site. The effect of food supplementation in malnourished pregnant women will be studied by a separate institution at separate sites comprising up to 100 "fed" villages and 100 control villages. Midway through Phases III/IV, the ICMR Task Force on LBW, and the Indian and U.S. collaborators will meet to review progress and to determine any modifications required in the research designs. Continual quality control checks by ICMR staff and U.S. collaborators on both epidemiologic and laboratory data will be necessary throughout Phases III and IV. At the end of Phase IV, cost benefit and cost effectiveness analysis will be made of the various interventions as well as assessment of their suitability for large scale application in the GOI's health delivery system and in ICDS.

Collaboration with U.S. Research Institutes

Since much of the proposed research has never been done in India and many difficulties will be faced in transferring the needed technology, continued collaboration with experienced U.S. researchers will be essential. The U.S. collaborating institutes will assist with training, experimental design, standardization of a random sample of a random sample of duplicate specimens through laboratory analysis and exchange, data analysis, procurement and shipping of supplies and equipment from the U.S. and other technical services. At least four meetings will be held with the Indian and U.S. collaborators at key stages over the life of the project to jointly write protocols and review progress. The mechanism for the collaboration will be contractual arrangements between AID and the U.S. institutions under which AID will meet the costs incurred.

Funding will also be provided by AID for training in the U.S. of Indian researchers, procurement and shipping of equipment, supplies, and specimens within India and between the U.S. and India, and other contingencies of the Indian research institutes. Salary support for Indian researchers, vehicles, POL and drugs will be financed by ICMR. Food for maternal supplementation trials will be supplied by CARE or the state governments. A detailed budget with a list of the equipment needed and staff projections can be found in the protocol for these studies which ICMR is processing.

4. Outputs

Project outputs for the categories of training and employment of staff, nutrition and health education, supplementary feeding, monitoring and evaluation, and low birth weight research are listed in Table 5.

5. Inputs

The inputs for the project will be supplied by AID, CARE, GOI and UNICEF and are described in the next section.

Table - 5

ICDS PROJECT OUTPUTS

CATEGORY OF OUTPUTS	SPECIFIC OUTPUT	QUANTITY OF OUTPUT
ADDITIONAL SERVICE WORKERS TRAINED AND EMPLOYED AT ANGANWADIS	AWWs Helpers Trained dais	4,000 4,000 4,000
ADDITIONAL MANAGEMENT & TECHNICAL SUPPORT STAFF TRAINED (OR ORIENTED) AND EMPLOYED		
.AT SUB-BLOCK LEVEL	MSs	348
.AT THE BLOCK LEVEL	Assistant CDPOs	18
	CDPOs	19
	Other block staff	104
.AT DISTRICT CELLS	Program Officers	2
	Other district staff	24
.AT STATE CELLS	In-service workshops for MSs, AWWs	348 MSs 4,000 AWWs
	MIS Coordinators	2
	Other state staff	8
EXISTING HEALTH WORKERS RECEIVING IN-SERVICE TRAINING THROUGH MOBILE WORKSHOPS	Female Health Workers	800
MANAGEMENT & TECHNICAL SUPPORT STAFF RECEIVING ADDITIONAL TRAINING	Short and long term training in India and abroad	5 person years +30 person months

Table - 5 ICDS Project Outputs (Contd.)

CATEGORY OF OUTPUTS	SPECIFIC OUTPUT	QUANTITY OF OUTPUT
ADDITIONAL TRAINING SUPPORT STAFF TRAINED AND EMPLOYED		
.AT NIPCCD	National Training Coordinator	1
	Assistant Training Coordinator	1
	Clerk-Typist	1
.AT ICCW	Program Officers	1
	Steno-Typist	1
.AT SCCWs	Program Officers	2
.AT STATE CELLS	Training Coordinators	2
.AT TRAINING CENTERS	ICDS Instructors trained at in-service workshops	120
ADDITIONAL COMMUNITY MEMBERS ORIENTED	Village Panchayat leaders oriented annually during first 3 years of implementation	8,000
ADDITIONAL TRAINING MATERIALS PRODUCED AND APPLIED IN ALL TRAINING CENTERS	Revised syllabi and materials for Basic Training of:	
	CDPOs, CDPO Instructors, MSs, MS Instructors, AWWs, AWW Instructors	1
	Training materials for mobile, in-service workshops:	
	Instructor's Guide for MSs & Student's Guide for AWWs	1
	Slide sets	150 copies of 2 sets

Table 5 ICDS Project Outputs (Contd.)

CATEGORY OF OUTPUTS	SPECIFIC OUTPUT	QUANTITY OF OUTPUT
ADDITIONAL TRAINING MATERIALS PRODUCED AND APPLIED IN ALL TRAINING CENTERS	Performance standards for: CDPOs, CDPO Instructors, MSs, MS Instructors, AWWs, AWW Instructors	1
ADDITIONAL NHED TECHNICAL SUPPORT STAFF TRAINED AND EMPLOYED		
.AT DISTRICT CELLS	District Education and Media Officers designated as NHED Coordinators	2
.AT STATE CELLS	NHED Coordinators	2
ADDITIONAL NHED SYSTEMS ESTABLISHED		
.AT ANGANWADIS	Monthly NHED sessions	In 4,000 anganwadis by third project year
.AT STATE CELLS	NHED clearinghouse for materials	2
ADDITIONAL NHED MATERIALS SUPPLIED	Additional sets of NHED materials for anganwadis (five sets of different materials)	4,000 of each set
FOOD CONSUMPTION BY TARGET GROUP	Existing CARE Title II food consumed in 4,000 ICDS anganwadis	85% of at-risk pregnant and nursing women and moderately and severely malnourished children under 3 years of age in communities served by 4,000 anganwadis, regularly receiving Title II foods by 4th project year

Table 5 ICDS Project Outputs (Contd.)

CATEGORY OF OUTPUTS	SPECIFIC OUTPUT	QUANTITY OF OUTPUT
ADDITIONAL MANAGEMENT SYSTEMS ESTABLISHED	Quarterly enrollment system for the anganwadi	1
	Management information system	1
	Independent monitoring system including "spot" checks	1
	Baseline and 2 follow-up impact evaluation surveys	In 19 blocks, 228 anganwadis
ADDITIONAL ANALYSES/ INNOVATIVE ACTIVITIES	Time and motion study of the AWW	1
	Innovative activities	3
LOW BIRTH WEIGHT RESEARCH	Establishment of Indian reference laboratories	2
	Prevalence of infection and maternal malnutrition studies	3
	Intervention trials	3-4
	Review meetings of collaborators in India	4

IV. COST ESTIMATE, FINANCIAL PLAN & DISBURSEMENT PROCEDURES

A. Cost Estimate and Financial Plan

The total project cost, exclusive of Title II food, is $24.5 million over six years. The AID portion is $15 million ($7 million loan and $8 million grant). The GOI contribution is $9.5 million (which includes approximately $0.7 million under UNICEF's agreement with GOI). The summary cost estimate and financial plan are shown in Table 6. Detailed budget tables are in Annex 14. Title II commodities valued at an estimated $18 million based on May 11, 1983 prices plus $7 million for ocean transport will also be provided to the project by AID through CARE. A projection of expenditures by fiscal year is shown in Table 7. Payments made on account of taxes and excise duty for any category of project expenses will not be eligible for AID financing.

The AID grant funds will support all contracted expatriate and Indian technical assistance, training, nutrition/health education materials, low birth weight research and other innovative activities, equipment for food processing plants, monitoring and evaluation. The loan funds will provide partial support on a declining scale for salaries, operational costs for anganwadis and blocks and extraordinary costs associated with project operations of district, state and central ICDS cells, such as airfare and per diem. Disbursement for salaries of ICDS staff in AID assisted areas will be made retroactive to April 1, 1983 and continue through March 31, 1989. The loan will also support some furniture and equipment for anganwadis and block, district, state and central ICDS cells, and a limited number of personnel and equipment at the National Institute of Public Cooperation and Child Development (NIPCCD) and the Indian Council of Child Welfare (ICCW).

Approximately 51% of the total project costs are recurring in nature (salaries and operations). This level of recurrent costs reflects the human resource and institutional development emphasis of supporting effective village nutrition delivery systems. Of the AID loan, approximately $6 million will be for recurrent costs which represents about 47% of all recurrent costs. AID financing of this proportion of recurrent costs is considered necessary for two reasons. First, the largest cost category in the total project, with the exception of food, is salaries and administration. For the AID assisted ICDS blocks in Maharashtra, recurring costs for staff at all levels, including district and state cells, will be approximately 6% higher than those now budgeted by the GOI due to minor increases in staffing and administrative expenses proposed by AID to increase project effectiveness. In Gujarat, where the efficacy of increasing the number of supervisors (MSs) will be tested in the AID assisted blocks in addition to other staff changes, the recurring costs will be 14% higher

Table 6

SUMMARY COST ESTIMATE AND FINANCIAL PLAN FOR AID ASSISTED ICDS
($ THOUSAND)

PROJECT ELEMENTS	SOURCE OF FUNDS AID LOAN LC	AID GRANT LC	AID GRANT FX	AID TOTAL	GOI	TOTAL PROJECT COSTS LC	TOTAL PROJECT COSTS FX	TOTAL PROJECT COSTS TOTAL
1. Staff Costs	5,006	-	-	5,006	5,006	10,012	-	10,012
2. Operations	1,007	-	-	1,007	1,643	2,650	-	2,650
a.Petrol, Oil, Lubricant	-	-	-	-	(821)	(821)	-	(821)
b.Medicines	-	-	-	-	(822)	(822)	-	(822)
c.Others	(1,007)	-	-	(1,007)	-	(1,007)	-	(1,007)
3. Furniture and Equipment	411	-	-	411	461*	872	-	872
4. Technical Assistance	-	170	1,763	1,933	-	170	1,763	1,933
5. Training & Nutrition/ Health Education	-	1,903	202	2,105	317*	2,220	202	2,422
6. Research and Innovative Activities	-	1,963	997	2,960	1,803	3,766	997	4,763
7. Monitoring & Evaluation	-	749	-	749	9*	758	-	758
8. Food Processing Plants	-	114	-	114	-	114	-	114
9. Contingency	576	139	-	715	334	1,049	-	1,049
TOTAL	7,000	5,038	2,962	15,000	9,573	21,611	2,962	24,573

Includes inputs expected to be provided by UNICEF under their agreement with GOI as specified in UNICEF Master Plan of Operations, 1981-83.

TABLE 7

AID ASSISTED ICDS
PROJECTION OF EXPENDITURES BY FISCAL YEAR

U.S. FISCAL YEAR	AID Loan	AID Grant	AID Total	G O I	T O T A L
1983	781	-	781	620	1,401
1984	1,756	1,370	3,126	647	3,773
1985	1,538	1,617	3,155	713	3,868
1986	1,054	1,602	2,656	1,615	4,271
1987	634	1,366	2,000	2,164	4,164
1988	414	1,076	1,490	2,510	4,000
1989	247	830	1,077	970	2,047
Contingency	576	139	715	334	1,049
T O T A L	7,000	8,000	15,000	9,573	24,573

*Includes inflation at 7% per year on local currency costs and 10% per year on dollar costs applied from FY 84 onward.

than those now budgeted by the GOI. AID is willing to bear a large portion of the cost of testing the effectiveness of these new personnel configurations. Second, AID participation in recurrent cost financing will permit early posting of personnel and establishment of the strengthened administrative units. The functioning of these personnel can then be observed over the full life of the project to determine the appropriateness of the new systems and procedures for wider application in the national ICDS program.

The GOI will finance all medicines, POL and play equipment as well as 53% of all recurrent costs over the project life. The GOI will also pay all staff and vehicle costs for the low birth weight research. Under its agreement with the GOI, UNICEF will partially finance in-country training costs, anganwadi equipment, vehicles (for ICDS) and monitoring and evaluation (Annex 20).

B. Disbursement Procedures

Disbursements under the AID loan for partial salary support, certain operational costs (e.g. travel, per diem, etc.), furniture and equipment for anganwadis and block, district, state and central ICDS cells, and for limited numbers of personnel and equipment at NIPCCD and ICCW, will be made semi-annually based on a statement of actual expenditures by specific cost category, accompanied by a performance statement, both prepared by the MOSW. Under the grant, disbursements for U.S. technical assistance and low birth weight research collaboration, including imported equipment and overseas training of Indians, will be made by direct payment per AID contracting and payment procedures. Disbursements for in-country training/orientation and workshop costs will be made semi-annually on either a per trainee or per workshop basis upon receipt of the statement of expenditures and performance prepared by MOSW. The remaining items under the grant will also be reimbursed semi-annually on the basis of the aforementioned statements of actual expenditure and performance. These include nutrition/health education and training materials, local cost component of the low birth weight research, and monitoring and evaluation. A separate mechanism for disbursing funds for innovative studies based upon approval and implementation of specific studies will be outlined in a Project Implementation Letter (PIL).

Dollar ceilings on unit costs for support of anganwadi, block, district and state cells will be established so that AID disbursements for recurring and non-recurring costs do not exceed loan and grant funding available. As indicated in Table 6, AID will finance 100% of all non-recurring costs under both the loan and grant, except for special research and innovative activities which will be 62% AID financed. AID will fund 47% of all recurring costs under the loan. A formula will be developed such that AID support of recurring costs which is 100% in the first year is gradually reduced to 14% by project year 6. These percentages will be applied to the items eligible

for AID financing on the GOI's semi-annual expenditure statements to determine the amount of disbursement each time. This procedure will also be described in greater detail in Project Implementation Letters.

V. IMPLEMENTATION PLAN

The role of various actors in the implementation of specific project activities has been described in detail in the pertinent sections of this PP. A summary list of who will have primary responsibility for each major project component follows:

Overall Management and Coordination	- MOSW, USAID
Supplementary Feeding	- CARE, state governments
Health Services	- MOHFW, state governments
Nutrition and Health Education	- State governments, U.S. contractor
Training	- NIPCCD, ICCW, AIIMS, training centers, U.S. contractor, state governments, in-service workshop contractor
Technical Assistance	- U.S. contractor
Monitoring and Evaluation	- USAID, CARE, AIIMS, home science and medical colleges, state governments
Low Birth Weight Research	- ICMR, and various Indian research institutes, U.S. collaborators
Innovative Studies	- MOSW, state governments

Annex 21 contains a list of critical performance indicators for the project, expected completion dates and responsible parties. Activities to take place by project year are described such that all 4,000 anganwadis will be fully operational within three years of the signing of the project agreement and such that a complete package of services will be offered in each of these anganwadis for at least three years prior to the end of the project. The first AID assisted anganwadis to open will be approximately 2,564 centers in 10 ICDS blocks sanctioned by the GOI in IFY 82/83 or earlier. CARE will commence supplying a regular and adequate amount of Title II foods to these blocks in FY 83 and continue to do so over the life of the project. These will be followed by the remaining approximately 1,436

anganwadis in 9 ICDS blocks sanctioned by the GOI in IFY 83/84 to which CARE will supply Title II food from FY 84 onward. See Annex 5 for the names of the AID assisted blocks by year of sanction.

By the end of the first project year the following tasks should have been accomplished: all project contracts and agreements signed and contractors on the job in India; all project equipment ordered and delivered to end users; all project managerial and technical staff at block (ICDS and health), district, state, MOSW, ICCW, SCCW, NIPCCD, USAID and research institutes hired; improved MIS and evaluation systems designed, clearinghouses for NHED materials established at the state ICDS cells; in-service workshops designed and mobile teams trained; final protocol and questionnaires printed for prevalence of maternal infection studies and tests of anthropometric indicators of fetal growth; and Title II food in use in all functioning AID assisted anganwadis.

By the end of the second year, the following tasks should have been accomplished: syllabi for training CDPOs, MSs and AWWS revised based on a task analyses and time and motion study of the AWW; basic training and orientation completed for CDPOs, MSs, DHOs, MOs and district officials; all villages identified, project explained to communities, buildings donated and anganwadi workers selected; performance standards for workers and instructors developed; NHED materials distributed to anganwadis by state clearinghouses; reference laboratories for maternal infection studies established; slides sets to accompany revised syllabi designed, produced and distributed; revised syllabi and performance standards presented to ICDS training staff and instructors at series of workshops and in use in all training centers and ICDS blocks; baseline impact evaluation survey reports done; and Title II food in use in all functioning AID assisted anganwadis.

By the end of the third project year, the following tasks should have been accomplished: all managerial, supervisory and technical staff trained or oriented; prevalence of maternal infection studies and tests of anthropometric indicators completed; protocol designed for birth weight intervention trials; basic training for all anganwadi workers completed; all 4,000 anganwadis operational, including distribution of Title II food; improved MIS installed; innovative studies to improve ICDS completed; and the mid-project review done.

In the remaining three project years all 4,000 anganwadis will continue to be operational and strive to reach coverage targets for feeding, NHED, and health services. All MSs, AWWs, trained dais and their instructors will have attended in-service workshops. Impact evaluations will be conducted in a sample of anganwadis after they have been functioning for two and four years. Intervention trials to improve birth weight will be conducted. The time and motion study of AWWs will be repeated to test the impact of improved training and use of performance standards. In the final project year, all outputs will have been achieved and the end of project review done.

All materials and equipment to be funded by AID for the project will be purchased locally by the GOI, state governments and LBW research institutes, with the exception of some of the laboratory equipment for the low birth weight research which will be purchased in the U.S. and shipped to India by the U.S. National Institute of Allergy and Infectious Diseases (NIAID/NIH).

VI. MONITORING PLAN

The GOI will have the primary responsibility for monitoring progress in AID assisted ICDS blocks through its existing management information system (MIS). Use of Title II food will be monitored by CARE in accordance with its Food Monitoring and Control Manual. In addition, field reviewers on contract to AID will monitor dollar assistance in project areas, and USAID administrative review staff in the Office of Food for Development will review CARE monitoring of Title II assistance in those same areas. It is expected that USAID and CARE collectively will be able to visit only a small sample of anganwadis and that monitoring will be more intensive at the block level. Hence AID technical assistance will be used to strengthen the built-in ICDS monitoring system from the anganwadi to the block.

Management Information System (MIS)

Ongoing monitoring responsibilities in ICDS are vested in the project management staff at the central, state, district, block, and sub-block (MS) level and in the medical consultants assigned by AIIMS. An MIS is in place and is used by these managers for project monitoring. Through AID technical assistance the MIS will be strengthened to include essential information on progress toward achieving project outputs, purposes and goals and will become more of a decision-making and management tool at all levels. AID will be allowed to review data generated by the MIS in the ICDS areas it is assisting upon request. The MOSW will make available to AID for review, copies of the CDPOs' monthly progress reports, and AID will also review MIS reports during site visits. AID will also receive annual summary reports generated by the MIS in the 2 districts which contain information for each of the 19 blocks on coverage of the target group with supplementary feeding and impact of ICDS on malnutrition and mortality. A suggested format for the annual report is shown in Annex 18. This information, in addition to that generated by the periodic impact evaluation surveys which will be conducted in the 19 blocks (see Evaluation Arrangements), should greatly assist AID in monitoring its assistance to ICDS.

Independent Site Visits

In general, CARE will be responsible for monitoring Title II food inputs to project areas. AID will concentrate its monitoring on

dollar-assisted inputs, as well as monitoring of CARE's monitoring activities. Despite this division of responsibility, it is recognized that food utilization issues straddle the interests of both CARE and AID who have agreed to conduct their respective monitoring activities in such a way as to not intentionally infringe upon or duplicate the activities of the other party. The monitoring roles of CARE and AID are discussed below.

It is customary for staff from USAID's Office of Food for Development (FFD) to make field visits (administrative reviews) throughout the year to monitor CARE's monitoring at a sample of feeding centers which receive Title II food through CARE. These visits will continue at approximately the same frequency in AID assisted ICDS areas to fulfil AID's usual regulations to review the logistics pipeline from port to anganwadi and to monitor CARE's monitoring of Title II commodity utilization. As local food processing activity increases under this project, these administrative reviews will also include visits to processing plants to ascertain whether processing is in conformance with AID Handbook 9 and AID Regulation 11. Staff of USAID's Office of Health, Population and Nutrition (HPN) will have overall project management responsibilities within USAID and therefore will visit a sample of anganwadis, and block, district and state ICDS cells periodically to monitor the non-food inputs of the project.

The monitoring by USAID direct-hire staff discussed above will have to be supplemented to allow more frequent visits to a large number of AID assisted anganwadis. Thus, the U.S. technical assistance team will subcontract for and train two Indian field reviewers who will concentrate on monitoring AID dollar assistance to ICDS, looking at the performance of all project components.

Visitation rates for anganwadis will vary by state due to road and weather conditions. However, AID contract field reviewers should be able to visit 160 centers per year in the two states for a 4% annual coverage of AID assisted anganwadis. It is estimated that each field reviewer will go to 9-10 blocks twice per year and spend one week at each block each time during which four randomly selected anganwadis will be visited. In order to assure that the maximum possible number of anganwadis are visited each year by the various monitoring entities, a deliberate attempt will be made to have AID contract field reviewers visit different anganwadis than those visited by CARE, or by the impact evaluation survey teams. Field visits will be coordinated with CARE to minimize overlap. Based on CARE's current visitation rates and its plans for intensifying its monitoring under the ICDS program, CARE should be able to visit an average of 3% of the AID assisted anganwadis annually. In addition, the impact evaluation survey teams should be able to cover 36 centers or 1% per year (see Evaluation Arrangements.) Taking all these moni-

toring and evaluation activities into account, an average of 8% of all the AID assisted anganwadis should be visited annually. Assuming a 5 year monitoring period, and a 15-20% rate of re-visits to problem centers, approximately 28-30% of all anganwadis should be visited during the project.

Prior to going to the field, the AID contract reviewers will be trained by FFD and HPN staff, and the MIS advisor. While the contract reviewers will not attempt to duplicate monitoring of food inputs already being carried out by CARE, it will be necessary for them to observe how the food is used to adequately assess performance of the total integrated program. During the visit to each block and during the unannounced site visits to 4 randomly selected anganwadis, the AID contract reviewers will ask questions about the use of the food commodities and about the delivery of NHED and health services. They will observe feeding and other services being provided and record the number of pregnant and lactating women and children in attendance by age and nutrition status. They will compare their observations to the number enrolled and attendance rates according to records kept by the AWW. The reviewers will measure arm circumference and weight of a sample of children under three years of age at the anganwadi and compare their findings to the records kept by the AWW. They will measure the type and amount of food being fed to different groups of children and women to see if nutritional specifications are being met. They will query the AWW on the criteria and frequency of selection of beneficiaries for feeding, and the type of NHED and health services that have been provided. They will estimate from actual observations and the AWW's records whether coverage of 85% of the target group with food for 15 or more days per month is being achieved. They will also ascertain whether NHED and health service targets are being met. Similar information will be collected from records kept at the block and district level. The reviewers will also report on the degree to which project staff are in place and trained at each level visited.

The schedule of dates of AID visits to each of the 12 blocks will be set enough in advance so that project officials can be notified to be present and the schedule adjusted as necessary. Visits to anganwadis will be timed so that feeding can be observed even if it means visiting the block headquarters early in the morning or in the evening. The AID contract field reviewers will use a specially designed questionnaire to monitor AID assistance to ICDS to assure that project targets are being achieved.

The contract field reviewers will share their findings orally with CARE state administrators after their visits . The contract reviewers will not themselves become involved in checking food inventories or food indenting records in specific instances, but their findings may suggest a need for CARE follow-up. They will also prepare written reports of their findings. In the case of problems

arising with food inputs that are appropriately CARE's concern, USAID/FFD will provide a copy of their report to CARE/India, along with a cover letter for CARE's review and comment. Correspondence on remedial actions relating to other aspects of the project will be directed by USAID/HPN to the MOSW, state governments or other responsible entities.

CARE monitoring will be concentrated on food delivery to the block and on end use as reported in the block records and verified by selected site visits. Any deficiencies with respect to the dollar funded component of the program which CARE may note in its monitoring visits will be quickly communicated to USAID for follow-up action. As CARE gains experience in supplying food to the ICDS program, aspects of its monitoring system are likely to change. This system may be expanded to include monitoring of health inputs, nutritional status and enrollment of the target group in supplementary feeding. CARE will be reviewing the experience of ICDS nationally and AID assisted ICDS to determine what changes in its monitoring and reporting system will be required over time. Proceeds from container sales or AID specific support grant funds may be requested to implement these changes in the CARE system nationwide.

Project Review Meetings

Project progress will also be monitored by attendance of USAID and CARE staff at selected review meetings that are held quarterly by the ICDS coordination committees at the central, state, district and block levels. Quarterly meetings are also held for a full day at the state level by the state coordinators for health and nutrition in ICDS which are attended by Senior Advisers, Consultants, Advisers, staff of the Central Committee at AIIMS and the Director and Program Officer from the nodal department for ICDS. All of these meetings provide an opportunity for officials of the MOSW and other ministries and departments responsible for various aspects of ICDS, especially health, to discuss and resolve problems which have arisen in project implementation and coordination. The MOSW has also recently asked the Chief Secretaries at the state level to call a monthly meeting with the Health Secretary and the Secretary of the nodal department for ICDS to facilitate the provision of essential health services, especially the filling of vacant posts and assurance of a steady supply of medicines and vaccines. USAID and CARE will be invited to the inter-departmental direction committee and apex body meetings chaired by the Secretary, MOSW, to review progress in ICDS in both states and to all of the quarterly ICDS meetings at the state level. Time will be reserved on the agenda to discuss progress in the AID assisted blocks and to approve plans for the next quarter. Staff of USAID will also be allowed to attend other ICDS coordination and review meetings in the three states as requested. Special efforts will be made by MOSW, the state governments, and USAID staff to assure that the coordination committees meet regularly at all levels.

Contractors' Progress Reports

The approved institutions hired by AID to provide technical assistance in training, NHED, monitoring and evaluation and the LBW research collaborators will be required to submit quarterly progress reports to AID describing their accomplishments. These reports will be used for monitoring purposes.

VII. SUMMARIES OF ANALYSES

As the first step in designing this project AID commissioned a review of the determinants of low birth weight and young child malnutrition in rural India and of past experience in India and elsewhere with similar integrated health and nutrition projects and low birth weight research. Technical analyses were also made of the capacity of existing systems to support the project and ways in which these needed to be strengthened. The detailed analyses of these systems, namely CARE Title II food delivery and coverage, primary health care, training, and nutrition and health education are found in the annexes. Summaries are provided here of the economic, financial, social soundness and administrative analyses, detailed versions of which can be found in the annexes.

A. Economic Analysis (Annex 15)

Choice of Models: Cost Effectiveness

The analysis compares the cost effectiveness of two nutrition intervention models: the CARE assisted mother and child feeding program prior to upgradation to ICDS and the AID assisted ICDS project. The analysis concludes in general that more effective targeting under the AID approach will result in greater efficiency of food use, as measured by significantly increased calorie intake, lower child malnutrition rates and a greater number of child deaths averted. The analysis estimates that the marginal additional recurring cost per beneficiary per day of $0.24 which will make this upgradation and targeting possible is far less than the cost of food wasted through ineffective use in ongoing programs.

Benefit Stream

Efficient food use must be combined with other factors such as improved outreach, health services and nutrition and health education when looking at the prospective benefits such as increases in human productivity and reduction in malnutrition, the latter being a key factor to improved educational performance. Although the literature permits some inferences as to the quantifiable benefits of these impacts, the analysis concludes that a benefit-cost ratio cannot be calculated with sufficient precision within the Indian context. This

is because under either optimistic or pessimistic assumptions it is difficult to quantify productivity gains and academic performance attributable solely to a nutrition intervention. Based on what is known, however, it is estimated that a minimum return of 10% on the project investment can be achieved. Given the cost per malnutrition case averted through 1989 at $202, those who avoid malnutrition would have to demonstrate a productivity increase of 15-33%, depending on the assumptions used, to achieve a 10% return on investment. The existing literature does demonstrate a synergism between health, nutrition, and educational performance and attainment. It suggests that increases in lifetime earnings as a function of less malnutrition and more education are of a magnitude well within the human productivity increase required to return 10% on investment for the ICDS project (at its proposed cost).

The analysis also attempts to calculate the potential earnings benefit from a death averted. This benefit is estimated to account for 13% to 43% (low to high range depending on assumptions as to value of labor) of the total cost per death averted. This benefit, plus the savings on food and maintenance costs of a child who might otherwise have died, reduce the range of individual productivity increase required to 8-25%. This kind of productivity increase is well within what might be expected, leading to the conclusion that the project will earn much more than a 10% return on investment.

B. Financial Analysis

The average annual cost of all project services per food beneficiary will be $29.87 of which $21.62 is the portion attributable to AID. This compares very favorably to the cost of similar programs in other countries.[21] The food supplement and transporting it are responsible for 59% of the cost. There will be an average of 309,000 food beneficiaries per year when all anganwadis are operational of whom approximately 177,000 will be in the target group. However, it should be noted that in addition to feeding these beneficiaries at the anganwadi, protective health and nutrition services will be provided to all children 0-6 years of age and to all women 15-44 years of age in the villages served by the new anganwadis, for an average of 986,000 people per year when all anganwadis are operational. The average annual cost, including feeding, of protecting an entire village of 700-1,000 people will be approximately $2,245 or $6.98 per woman or child protected. The cost of providing a complete package of services including health care, nutrition education, supplementary feeding, and preschool education is approximately twice as expensive as the straight feeding programs CARE has been assisting in which no other services are offered, and in which food coverage of the target group is much lower. However, the greatly increased coverage of the target group with essential services, and the significant reduction in child malnutrition and

mortality expected to result from this improved coverage, will make the ICDS model proposed by AID far more cost effective than straight feeding programs.

As noted earlier, the expansion of ICDS to 1,000 blocks (which include 19 AID assisted blocks) is a high priority of the GOI. With the announcement of ICDS expansion as point 15 of the Prime Minister's 20 Point Program in 1982, the Sixth Plan budget for the non-food costs of ICDS was increased from $45 million to $82 million. The MOSW's plan outlay for FY 82/83 was approximately $51 million of which ICDS spending represented 29%. In FY 83/84 the plan outlay will rise to $60 million of which ICDS will be 37%. Thus funds available in the Sixth Plan, when complemented by AID and other donor assistance, should be able to cover the costs of ICDS. Maintenance of blocks started in the Sixth Plan will continue to be a high priority in the seventh and future plans. The GOI is committed to meeting all of the recurring costs of the blocks established with AID assistance once AID's partial support ceases.

C. Social Soundness Analysis (Annex 16)

A key factor relating to improved nutrition status is food behavior, particularly of mothers. Changing this behavior through education is essential for sustaining nutrition status improvements in villages where food supplies are likely to be scarce or dependent upon external supply. The analysis addresses several other important issues which the project must incorporate in its design and made the object of continuous monitoring and evaluation.

The first is to create legitimacy for the project's village level workers (AWWs, helpers, and dais) by: 1) orienting the village leadership toward the project's objectives; 2) having that leadership select workers from within the village; and 3) soliciting assistance from village leaders to support ICDS workers on a continuous basis.

A second issue is the importance of involving mothers themselves in actual anganwadi operations as volunteers, either directly or through familiar structures such as Mahila Mandals (women's clubs). The objective is to instill in the village an understanding that, despite introduction of external resources, the problem of malnutrition is the community's own to solve. This means that withdrawal of children from supplementary feeding programs once they have been rehabilitated to normal must be an objective valued by their parents.

A third issue is to assess the demands on the AWW herself, i.e. to evaluate the social "fit" between her responsibilities and her status in the village. The project design recognizes the danger of over burdening this key worker. Too heavy a workload may lead the

AWW to over emphasize her preschool education activities relative to her responsibilities to do nutrition education and village nutrition surveys and recruitment. It is important that the AWW's credibility be established early and maintained to lend credence to the nutrition messages she delivers.

A fourth issue is one of spread effect of the project. Adjacent districts will become aware of a special government program with additional inputs of staffing and food commodities. They are likely to put pressure on the state and center for inclusion in ICDS. If their requests for the program are heeded, it may be possible to train people from these new blocks in the AID assisted ones so that they can observe effective anganwadi operation, community survey techniques, and nutrition and health education. While lateral spread is not planned as an anticipated benefit, blocks will be encouraged to start some of these activities on their own if they are interested and unable to secure additional food and other resources from the GOI.

Finally, much of the project's monitoring emphasis will be focused on organizational coordination at the block level and below. Coordination will be most critical between the FHWs at the health subcenters and the AWWs. Much pressure will be placed on the MS and FHA, and to a lesser extent on the CDPO and MO supervisory levels, to broker conflicts which may arise and to establish communication links where they are absent or strained. Considerable attention, therefore, needs to be given to recruiting the right type of person at each level.

The analysis concludes with a discussion of social consequences of the project. Specifically, the analysis identifies the potential problem of how to sustain nutritional status improvement after supplementary foods are withdrawn. It is expected except in very poor families that the nutrition education will be effective and lead to permanent improvements in the immediate beneficiaries plus prevention of malnutrition in their younger siblings. The assumption is based on the finding in India that, to a considerable degree, intra-family shifts in allocation of food can make up calorie deficits in the target group. However, AID will use impact evaluation findings to assess whether absolute poverty stands in the way of lasting improvement. Opportunities for linking the AID assisted areas with GOI or other donor funded activities to increase income and food production will be explored.

D. Administrative Analysis

Successful implementation of this project will require a well coordinated effort among the relevant agencies within the Central Govrnent of India and the state governments of Gujarat and Maharashtra, as well as close coordination among the GOI, AID, CARE, and UNICEF. Administrative arrangements within the government are well

established and have been described in detail in pertinent sections of the PP. Discussions were held between AID and each of the main actors in the project on their respective roles. Agreement was reached with each of these parties on their ability and willingness to perform the assigned tasks.

Briefly the lead counterpart entity will be the ICDS cell within the Ministry of Social Welfare. At the state level, AID and the MOSW will work with the ICDS cells within the Department of Health and Family Welfare in Gujarat and the Department of Rural Development in Maharashtra. Below the state level, district ICDS cells have been sanctioned for both of the districts in which the AID project will be located and in these districts 80% or more of all the blocks will have ICDS with AID assistance. AID assisted ICDS blocks will have an average of 200 anganwadis within their jurisdiction, and will be the responsibility of the Child Development Project Officer. The administrative link between the CDPO and the AWW will be the Mukhya Sevika. Committees will be formed at all levels of government to ensure Coordination between those concerned with the ICDS program and those concerned with GOI health programs. Meetings will be held on a quarterly basis by the ICDS coordination committees at the Central, State, District and Block levels.

USAID's Health, Population, and Nutrition (HPN) office and its Food for Development (FFD) office will work together to see that AID's responsibilities under the project are fulfilled. HPN has 1 full-time U.S. direct hire Nutritionist and 1 Indian Management Specialist to administer the project. To assist them, an American firm will be contracted to provide short term technical assistance on an as-needed basis and two resident consultants. One of the resident consultants will assist with the strengthening of the management information system and the other will help make improvements in training and nutrition/health education activities. Two Indian consultants will be sub-contracted by the American firm to assist with field monitoring of AID's assistance. AID will meet regularly with officials from the GOI and state governments, CARE and UNICEF to discuss project progress, and to correct any problems which arise.

VIII. EVALUATION ARRANGEMENTS

Process evaluations of the ICDS have been conducted in the past by the Programme Evaluation Organization (PEO) of the Planning Commission. Impact evaluations have been and continue to be conducted annually in October-December by 2-3 medical survey consultants per state through AIIMS and medical college consultants using a centrally designed questionnaire. These evaluations are to be done in 10% of all ICDS blocks nationwide and in six randomly selected anganwadis in each of these blocks. Data are collected cross-sectionally on all

the preschool children and women in the village served by the anganwadi. Unfortunately, these surveys do not collect the type of information AID requires to measure achievement of project purposes and adequacy of outputs. Although the nutrition status of all the preschool children in the village is measured, it is not disaggregated by children who eat at the anganwadi regularly and those who do not. It is essential to AID to have this information to know if project targets for 85% coverage of malnourished children under three and at-risk pregnant and nursing women with supplementary foods are being met. Therefore in the AID assisted ICDS blocks, specially designed impact evaluation surveys will be conducted. These impact evaluations will be done by a team comprised of nutrition experts from home science colleges in Gujarat and Maharashtra in addition to the survey consultants appointed by AIIMS from the medical colleges in those states.

Annex 19 describes the sample, survey techniques, schedule and type of information needed for impact evaluation surveys of AID assisted ICDS. Data will be collected from four randomly selected anganwadis in each of the 19 blocks on three different rounds, i.e. baseline and follow-up surveys at year 2 and year 4 of implementation. Two teams of six people each will be required to work continuously over the life of the project to collect and analyze the data. These surveys will complement the information made available through the monitoring system and will provide an independent means of verifying the MIS. They will measure the impact of ICDS on reducing young child malnutrition and mortality, including prevention of malnutrition in younger siblings, and the coverage of the target group with essential project services. The treatment group will be used as its own control and appropriate statistical analysis will be conducted to account for anticipated confounding results. Timely feedback of survey reports to AID and ICDS project managers within eight months of completing data collection each year will be a major consideration. Data from the project evaluations will be compared to nutritional status information collected annually by the National Nutrition Monitoring Bureau in non-project areas. Since Panch Mahals district is also covered by the AID assisted Integrated Rural Health and Population Project, mortality and fertility data will be available from evaluation surveys conducted for that project.

In addition to these biannual impact surveys, a mid-project and end of project review will be conducted by a team of independent experts assembled by AID including consultants from outside India. The mid-project review will make use of existing data from the monitoring system and impact surveys, as well as selected site visits. At a minimum, the mid-term review will focus on: 1) performance of Indian and U.S. institutions (including low birth weight research collaborations) 2) effectiveness and utility of MIS and AID monitoring systems; 3) assessment of data from impact evaluation surveys;

and 4) organizational management and performance. The last item includes performan' of the food logistics system (CARE), monitoring and review activities of AID, GOI-Donor coordination, and intra-GOI administrative coordination. The mid-project review will recommend changes in project design based on lessons learned up to that time. The end of project review will cover these same areas and assess whether the project's purposes have been achieved and at what cost. In particular the final review will examine the issue of replication of the AID assisted ICDS approach throughout the ICDS system. The review and evaluation costs are included in the grant portion of the project.

UNCLASSIFIED

DEPARTMENT OF STATE AGENCY FOR INTERNATIONAL DEVELOPMENT

Washington D.C. 20523

ANNEXES TO PROJECT PAPER

INDIA

INTEGRATED CHILD DEVELOPMENT SERVICES SCHEME

(386-0476)

USAID/INDIA

June 1983

UNCLASSIFIED

Annex 1

PID APPROVAL MESSAGE AND DISCUSSION OF PROJECT ISSUES

The principal issues raised and guidance given by AID/Washington (AID/W) during the Project Identification Document (PID) Review in May 1980 and during project design are discussed and their resolution described. See attached copies of referenced cables. In the PID approval cable 80 STATE 141794 the following issues were mentioned:

(a) AID/W preferred a grant to the GOI rather than a contract with CARE or another voluntary agency.

The Project Agreement will be signed with the GOI rather than with a voluntary agency.

(b) AID/W preferred to maximize competition among contractors (if contractors are used) and stated that a "compelling case would have to be made for predominant capability."

Contractors will be used for technical assistance and in-service training and usual competitive procedures for award of contracts will be followed.

(c) AID/W stated that close coordination with the Indian rural health system was desirable, that natural linkages between community-based workers in the health system and workers in the nutrition delivery system be fully exploited, but that AID/W remained troubled by separate administrative structures for health and nutrition services and that a parallel delivery system is a major technical issue that must be fully addressed during project design.

Health and nutrition services, although delivered by separate departments, are fully integrated and complementary in the GOI's ICDS Scheme. Mechanisms for coordination at all levels are well established and will be fully utilized by this project. See PP Table 1.

(d) AID/W preferred that the location of the project overlap with areas under the AID assisted Integrated Rural Health and Population Project and the Mission strategy for geographic concentration.

Areas have been chosen for the project on the basis of high child mortality rates and coverage by existing CARE assisted feeding centers. The two states chosen coincide with the Mission's geographic concentration. One of the districts, Panch Mahals, overlaps with the Integrated Rural Health and Population (IRHP) Project in Gujarat.

(e) AID/W wanted it understood that Title II food aid would not be additional to the (then) current levels; that continuation of the program in project areas should not be later found to be dependent on Title II support but instead supported by the GOI's own food aid program; and preferred that the latter be recorded in the Project Paper and the Project Agreement.

The level of Title II food is not additive to current levels. The GOI will meet some of the food requirements during the life of the project (Annex 7). Furthermore, it is planned to assess readiness for phaseover of Title II food inputs from the project areas into new ICDS projects within four years after the anganwadis are established based on ability of the state governments to assume the cost, malnutrition rates, and availability of funds for Title II inputs.

(f) AID/W preferred that recurrent cost contributions by AID be on a declining scale during the life of the project and, recognizing the difficulty of achieving this in a four year project, suggested consideration of longer life-of-project.

Recurrent cost contributions by AID are on a declining scale as the project progresses and the life-of-project has been lengthened to six years. See PP Financial Plan and Annex 14.

(g) AID/W understood that AID funding for auxiliary nurse midwives would only occur in blocks with weaker health systems.

All costs of additional health workers needed to strengthen the staffing pattern in project blocks to that of the GOI's Model Plan will be borne by the GOI, except in Panch Mahals where AID is providing funds through the IRHP Project.

(h) AID/W expressed concern about the cost of the ICDS approach, particularly regarding its potential for replicability, and understood that USAID is hoping to develop an ICDS model which is low-cost, but incorporates the best features of the present ICDS and is something the GOI may be encouraged to replicate.

The GOI has decided that the ICDS approach is replicable in its current form and has budgeted for 1,000 blocks in the 6th Plan. A lower cost approach was not feasible given the multiple objectives of the ICDS Model.

Additional guidance was given by AID/W in April 1982 after the Boughton-Staples-Bloch discussions (82 State 096543) as follows:

(i) AID/W would support a revised proposal to improve nutritional impact within the broader ICDS structure instead of requiring a stricter targeting of ICDS itself, so that 85% of moderately and severely malnourished children under 36 months of age and 85% of 'at-risk' pregnant and nursing women are reached with nutritionally adequate rations by the end of three years and as many malnourished 36 to 72 months children are fed as possible.

This project has been designed to improve nutritional impact within the broader ICDS structure and agreement has been reached on priority coverage of the above described target group.

(j) Current food levels in the CARE/MCH program should be sufficient to supply food to the severely and moderately malnourished children 0-36 months of age plus the 'at-risk' pregnant and nursing women but that state government or other CARE resources will most likely have to supplement Title II resources to feed children 36-72 months of age in the preschool education classes.

The Project Agreement contains a condition precedent to disbursement for specific blocks that the GOI will furnish evidence that the block has adequate food commodities to meet nutritional specifications. The state governments will also be expected to pay for jaggery and local processing to supplement the CARE Title II ration (Annex 7).

(k) A thorough independent monitoring system which will report on coverage of malnourished children under age 36 months and pregnant and nursing women is needed which will provide interim information about the progress toward meeting project targets and evidence by the end of the third year after the project agreement is signed, that the major targets are met. The Project Paper should describe how the monitoring system will be integrated into the project from the outset.

A thorough, independent monitoring and evaluation system which will provide interim progress reports and evidence that targets for coverage are met by the fourth project year is incorporated into the project. The Project Paper describes how the monitoring and evaluation system is integrated into the project itself. See the Monitoring Plan and Evaluation Arrangements.

Additional major points and issues raised during the Project Paper design process included the following concerns:

(l) The adequacy of current feeding services in ICDS to reach child mortality reduction goals.

The mutually agreed criteria for beneficiary selection, ration size and nutrient content, for the number of feeding days per year, and for the duration and regularity of participation appear adequate to achieve child mortality reduction when combined with the other key services.

(m) The adequacy of current nutrition and child rearing education services in ICDS to reach child mortality reduction goals.

Planned improvements in nutrition and health education support systems should insure that educational services adequately support child mortality reduction goals.

(n) The adequacy of current health services in ICDS to reach child mortality reduction goals.

The Project Agreement contains a covenant that the GOI will fill posts at the periphery, especially for females at sub centers, on a priority basis. In addition, the GOI has agreed to fully implement the rural health system's Model Plan so that two village-level workers exist for each 1,000 people and two sub center workers exist for each 5,000 people (3,000 in tribal and hilly areas) in project-assisted areas. Health Workers in project areas will receive in-service training in pregnancy care, delivery care, and basic child health and nutrition care services to be delivered in ICDS.

These planned improvements should insure that health services adequately support child mortality reduction goals.

(o) The ability of the anganwadi worker to achieve child mortality reduction goals given all her other tasks.

In addition to assistance by the trained dai and helper, mothers of participating children will also take turns working in the anganwadi to relieve the AWW's load. Furthermore, a time and motion study of the AWW will be done in the first year of the project. Based on the results, her responsibilities will be reduced or additional helpers hired if needed.

(p) The adequacy of training capacity for expansion of ICDS and the adequacy of knowledge and skills of anganwadi workers for child mortality reduction services.

Regarding training support, adequate training capacity exists for the training of additional anganwadi workers to meet project needs. Planned improvements in AWWs' knowledge and skills about malnutrition and mortality should insure that the quality of training is adequate to meet child mortality reduction goals. See Annex 11 and PP Improvement in Training Support Systems.

(q) The adequacy of ICDS program management for achievement of child mortality reduction goals in an expanded system.

Regarding Project management, the planned improvements in skills of supervisors and managers, the coordinating linkages established between the state-level nodal department and the state health department, the strengthened central, state, district, and block staff, the monitoring system with independent "spot-checks", the provision of technical assistance, and the location of project blocks in only two districts should insure that project management is adequate to meet project goals over the year life-of-project.

(r) The ability of the GOI to sustain the food costs and the non-food costs in the post-project period.

USAID assessments as well as GOI plans indicate that GOI can sustain both food and non-food costs in the post-project period. See PP summary of financial analysis.

(s) Whether direct nutrition interventions are more cost effective than other approaches and whether ICDS is more cost effective than other direct nutrition interventions.

Analysis has shown that direct nutrition interventions are more cost-effective than pure income transfers, food-price subsidies, and expanded health services and that the ICDS direct intervention approach is more cost-effective than non-ICDS straight child feeding approaches. See Economic Analysis Annex 15.

(t) Whether the projected rate of return on ICDS in terms of direct and indirect benefits is adequate for AID investment.

Cost benefit analysis suggests that the rate of return on this type of investment in the long run is likely to exceed 10% considering both direct and indirect benefits. See Economic Analysis Annex 15.

87

(u) Whether the community is sufficiently involved in the project to insure the potential for child mortality reduction.

Regarding community involvement, the decentralized approach, the hiring and involvement of local women, and the orientation of village leaders to the project in the first three years should get the community to understand and agree with the project goals to insure the potential for child mortality reduction. See Annex 21.

(v) Whether USAID can adequately monitor this project so that the child mortality reduction goals are achieved.

Use of USAID staff and selected contractors, and establishment of a strengthened monitoring and evaluation system with independent "spot checks" should insure that USAID monitoring responsibilities will be adequately met. See Monitoring Plan and Evaluation Arrangements.

(w) Whether CARE would agree with the overall goals, purposes, design, and administrative arrangements of this projec and supply Title II food to project areas.

CARE has agreed that if requested by the GOI to do so, CARE will supply, on a priority basis and to the extent required, Title II commodities to those ICDS centers receiving dollar assistance from AID under the bilateral agreement for ICDS.

NO0543
PP RUEHNO
DE RUEHC #1794/01 15 1112Z
ZNR UUUUU ZZH
P 300813Z MAY 80
FM SECSTATE WASHDC
TO AMEMBASSY NEW DELHI PRIORITY 8463
BT
UNCLAS STATE 131794

PHOJ. 386-0476
80 MAY 30 17 18

AIDAC

E.O. 12065: N/A

TAGS:

SUBJECT: APAC: INTEGRATED MATERNAL/CHILD NUTRITION PID (386-0476)

REFS: (A) NEW DELHI 8760, (B) STATE 109492

1. THE APAC APPROVED THE PID ON MAY 7TH AND RECOMMENDED THAT THE MISSION PROCEED TO DEVELOP THE PROJECT FOR FY 81 GRANT FUNDING AT A LIFE OF PROJECT COST OF DOLS. 15 MILLION. DECISIONS ON ISSUES AND GUIDANCE FOR PP PREPARATION FOLLOW.

2. GRANT/CONTRACT: PROJECT DESIGN SHOULD PROCEED UNDER THE ASSUMPTION THAT THE PROPOSED DEVELOPMENT ASSISTANCE FUNDS WILL BE OBLIGATED VIA A PROJECT AGREEMENT WITH GOI AND DISBURSED VIA EITHER AN AID DIRECT OR GOI CONTRACT. WE CONSIDER A GRANT TO CARE (OR ANOTHER PVO WHICH MIGHT BE SELECTED AS INAPPROPRIATE. THE DIFFERENCES BETWEEN CONTRACT AND GRANT ARE STATED IN VARIOUS PARTS OF HANDBOOK GUIDANCE (SEE, E.G., HDBK 1, SUPP. B, CH. 25). THE IMPORTANT DIFFERENCE, IT SEEMS TO US, IS THAT AID DOES A CONTRACT WHEREAS IS ESSENTIALLY INTERESTED IN THE PROVISION OF CERTAIN SERVICES IN TERMS OF HOW THEY ARE [illegible] AND WITH SUBSTANTIAL INVOLVEMENT IN PERFORMANCE AND LEGAL RECOURSE IF THEY ARE NOT PERFORMED. AID [illegible] A GRANT WHEN IT IS ESSENTIALLY INTERESTED IN THE GRANTEE'S ACHIEVING CERTAIN PURPOSES OR GOALS AND IS CONTRIBUTING TO THAT ACHIEVEMENT WITHOUT THE PERFORMANCE DETAIL, INVOLVEMENT, OR RECOURSE TRUE OF A CONTRACT. WE VIEW THE ROLE OF THE PVO IN THIS PROJECT AS FITTING THE GRANT MODE RATHER THAN THE CONTRACT MODE. MOREOVER, THE EXISTENCE OF TWO GRANTS, ONE TO THE GOI AND ONE TO CARE (OR WHOEVER) WOULD ONLY CAUSE CONFUSION ON BASIC PROJECT RESPONSIBILITY AS OPPOSED TO IMPLEMENTATION RESPONSIBILITY.

3. COMPETITION: THE AGENCY'S PREFERENCE IS TO MAXIMIZE COMPETITION; THEREFORE, A COMPELLING CASE FOR PREDOMINANT CAPABILITY OF A CONTRACTOR (E.G., CARE) WOULD HAVE TO BE MADE IF THAT APPEARS TO THE MISSION AS THE ONLY FEASIBLE ARRANGEMENT. THERE WAS CONSIDERABLE DISCUSSION, FOR EXAMPLE, OF CARE'S CAPACITY IN FIELDS PERIPHERAL TO ITS NORMAL ACTIVITIES, FIELDS SUCH AS RESEARCH. MISSION SHOULD EXPLORE WITH CARE AND OTHER CANDIDATE INSTITUTIONS, IF ANY, THEIR ABILITY TO UNDERTAKE THESE ASPECTS OF PROJECT IMPLEMENTATION AND PERHAPS CONSIDER SPLITTING THESE COMPONENTS INTO SEPARATE, COMPETITIVE CONTRACTS, E.G., FOR RESEARCH AND EVALUATION ACTIVITIES ON THE ONE HAND AND TECHNICAL ASSISTANCE ADVISORY SERVICES ON THE OTHER. NO ORGANIZATION WHICH IS A POTENTIAL CONTRACTOR FOR IMPLEMENTATION OF THE PROJECT SHOULD BE REPRESENTED ON THE PROJECT'S DESIGN TEAM.

4. COORDINATION: THERE WAS CONSIDERABLE DISCUSSION OF THE DESIRABILITY OF LINKING THE PROJECT AS CLOSELY AS POSSIBLE WITH THE INDIAN RURAL HEALTH DELIVERY SCHEME. WHILE APAC RECOGNIZED THE DIFFERENCE BETWEEN THE INTEGRATED CHILD DEVELOPMENT SCHEME (ICDS) AND THE HEALTH AND FAMILY PLANNING DELIVERY SYSTEM, IT CONTINUES TO BELIEVE THAT THERE ARE STRONG NATURAL LINKAGES BETWEEN THE HEALTH SCHEME'S COMMUNITY-BASED WORKERS (WHO CAN CARRY OUT SURVEILLANCE ACTIVITIES) AND THOSE WHO ACTUALLY DELIVER FOOD FOR MALNOURISHED CHILDREN--ANY SUCH LINKAGE SHOULD BE EXPLOITED TO THE FULLEST EXTENT POSSIBLE. DESPITE REASSURANCES OF REFA, APAC CONTINUES TO BE TROUBLED BY THE FACT THAT HEALTH AND NUTRITION SERVICES ARE SEPARATELY ADMINISTERED IN MOST OF INDIA AND THAT THIS FACT COULD RESULT IN PARALLEL SERVICES DELIVERY STRUCTURES IN PROJECT AREAS. THIS IS THE MAJOR TECHNICAL DESIGN ISSUE WHICH WE BELIEVE THE MISSION MUST RESOLVE IN THE PROCESS OF PROJECT DESIGN AND NEGOTIATION OF PP.

5. LOCATION: APAC REITERATED PREFERENCE FOR GEOGRAPHICAL CONCENTRATION OF THE PROJECT'S ACTIVITIES OVERLAPPING WHENEVER PRACTICAL WITH AREAS PLANNED FOR ASSISTANCE UNDER THE INTEGRATED RURAL HEALTH/POPULATION PROJECT AND THE GENERAL LOCATION STRATEGY OF THE MISSION AS SET OUT IN THE COSS. IT IS RECOGNIZED THAT THERE CANNOT BE A PERFECT MATCH.

6. TITLE II: IT IS UNDERSTOOD THAT THE TITLE II FOOD ASSISTANCE REQUIRED FOR SUCCESS OF THE PROJECT WILL NOT BE ADDITIVE TO THE CURRENTLY ANTICIPATED LEVEL OF THE INDIA PROGRAM, AND THAT THE GOI'S OWN GROWING FOOD AID PROGRAM IN LIKELY PROJECT AREAS SUPPORTS THE ASSUMPTION THAT CONTINUATION OF THE PROGRAM WILL NOT LATER BE FOUND TO DEPEND ON TITLE II SUPPORT. SUPPORT FOR THIS ASSUMPTION REQUIRED IN THE PP AND PROJECT AGREEMENT WILL BE WELCOME.

7. RECURRENT COSTS: APAC EXPRESSED A STRONG PREFERENCE THAT RECURRENT COST CONTRIBUTION BY AID DURING THE LIFE OF THE PROJECT BE ON A DECLINING SCALE, AT THE SAME TIME ENCOURAGING ASSUMPTION BY THE GOI OF INCREASED COSTS AS EARLY AS POSSIBLE DURING PROJECT IMPLEMENTATION. IT IS RECOGNIZED THAT THE FOUR-YEAR DURATION OF THE PROJECT IS TOO SHORT TO MAKE THIS EASY. A LONGER LIFE OF PROJECT, I.E., SPREADING THE DOLS. 15 MILLION OVER MORE YEARS TO ACCOMMODATE INCREASING GOI CONTRIBUTIONS, MIGHT BE CONSIDERED. IT WAS ALSO UNDERSTOOD THAT THE PROJECT WILL PROVIDE FUNDING FOR AUXILIARY NURSE-MIDWIVES ONLY IN BLOCKS WITH WEAKER HEALTH SYSTEMS.

8. REPLICATION: WE UNDERSTAND THAT THE GOI'S PRESENT ICDS DOES NOT LEND ITSELF TO WIDESPREAD REPLICATION DUE TO ITS HIGH COST. IT IS UNDERSTOOD THAT THE MISSION IS HOPING TO DEVELOP AN ICDS MODEL WHICH IS LOW-COST, BUT INCORPORATES THE BEST FEATURES OF THE PRESENT PROGRAM AND IS SOMETHING THE GOI MAY BE ENCOURAGED TO REPLICATE.

9. DESIGN CONSIDERATIONS: (SEE ALSO REF B.)

(A) EXPLICIT AND DETAILED DESCRIPTION OF SPECIFIC TASKS OF CONTRACTOR(S), HOW METHODS OF PAYMENT, REPORTING AND EVALUATION WILL BE ORGANIZED, WILL BE

NECESSARY IN PP. RESEARCH HYPOTHESES SHOULD BE FULLY PRESENTED.

(B) COORDINATION AMONG MINISTRIES, STATES AND OTHER INSTITUTIONS TO AVOID OVERLAP AND ASSURE SMOOTH OPERATIONS WILL HAVE TO BE SETTLED AND THOROUGHLY DESCRIBED. (SEE PARA 4 ABOVE.) GETTING FOOD TO THE NEEDIEST IN THE TARGET GROUP IS THE POINT AND SHOULD NOT BE LOST IN A BUREAUCRATIC TANGLE.

(C) EXTREME DIFFICULTIES OF MEASURING INFANT MORTALITY AND MORBIDITY SHOULD BE TREATED AND RESOLVED IN THE PP AND THE BUDGET FOR MONITORING AND EVALUATION PROBABLY ENLARGED ACCORDINGLY.

(D) PP SHOULD DESCRIBE THE EXTENT TO WHICH THE APPROACH AND ACTIVITIES OF THE PROJECT ARE INTENDED TO REPRESENT A MODEL TO BE EXTENDED BY THE GOI MORE BROADLY IN INDIA (SEE PARA 8 ABOVE). RELATE THIS TO THE EVALUATION AND MONITORING PLAN.

(E) APAC FULLY SUPPORTS MISSION'S GOAL OF INTEGRATING TITLE II PROGRAM WITH BROADER AGENCY DEVELOPMENT

OBJECTIVES. IT IS IMPORTANT THAT TITLE II FOOD BE USED NOT ONLY TO ADDRESS BENEFICIARIES' IMMEDIATE NUTRITION NEEDS, BUT TO SUPPORT PROJECT-LINKED ACTIVITIES THAT LEAD TO SELF-SUSTAINED DEVELOPMENT AT THE LOCAL LEVEL. SPECIFICALLY, IT WAS SUGGESTED THAT THE PROJECT MIGHT BE DESIGNED TO USE TITLE II FOOD IN SUPPORT OF WOMEN'S INCOME-GENERATING ACTIVITIES. AS NOTED IN THE PID, QTE ABOUT 48 PERCENT OF THE PEOPLE LIVE BELOW THE POVERTY LINE AND EVEN AFTER SPENDING 80 PERCENT OF THEIR INCOME ON FOOD, THEY ARE NOT IN A POSITION TO HAVE A BALANCED DIET UNQTE. A WOMEN'S INCOME COMPONENT COULD BE AN EFFECTIVE MEANS TO ACHIEVE LONG-TERM REDUCTION IN CHILD MALNUTRITION, CONTRIBUTING, AS WELL, TO COMMUNITY DEVELOPMENT. THE LITERATURE ON WOMEN'S INCOME AND EXPENDITURE PATTERNS SUGGESTS THAT AN INCREASE IN A POOR WOMAN'S INCOME IS USUALLY SPENT ON HER CHILDREN'S WELFARE. BUREAU IS POUCHING MATERIALS DEVELOPED FOR A WOMEN'S QTE FAMILY FOOD PRODUCTION UNQTE COMPONENT ADDED TO AN ONGOING AGRICULTURAL PROJECT IN JAMAICA. THESE MATERIALS MAY PROVE USEFUL DURING PROJECT DESIGN. INDIVIDUALS WHO DEVELOPED THIS COMPONENT MAY BE AVAILABLE TO ASSIST IN PROJECT DESIGN IF MISSION BELIEVES SUCH AN APPROACH IS FEASIBLE AND APPROPRIATE.

10. IEE: ASIA/TR/STEP WILL RECOMMEND THAT A NEGATIVE DETERMINATION ON THE IEE BE APPROVED.

11. DESIGN REQUIREMENTS: AS THIS PROJECT IS SOMEWHAT INNOVATIVE AND REPRESENTS A DESIRABLE EVOLUTION OF PROJECT WITH TITLE II ASSISTANCE, MORE PDS AND DE BUDGET FOR PP PREPARATION THAN THE PID SUGGESTS WOULD APPEAR TO BE NEEDED. SPECIALISTS ON DATA COLLECTION AND USE, AND ON IMPLEMENTATION ARRANGEMENTS SUITABLE TO AID (AND THE SETTING HERE, PERHAPS, OF A PRECEDENT AND A MODEL FOR OTHER AID PROGRAMS) OUGHT TO BE INCLUDED ON THE DESIGN TEAM. MISSION'S SUGGESTION TO INCLUDE AN EPIDEMIOLOGIST ON THE TEAM TO ASSIST WITH THE EXPERIMENTAL DESIGN OF THE PROJECT SHOULD BE AMPLIFIED TO INSURE THAT THIS NEW TEAM MEMBER CAN PROVIDE THE SKILLS REQUIRED IN THE STATISTICAL DESIGN OF THE PROJECT. THE DATA COLLECTION PLAN SHOULD BE CONSIDERED PART OF THE OVERALL STATISTICAL DESIGN.

12. EXPECT DESIGN TEAM TO BEGIN PP PREPARATION IN

AUGUST 1980. DUE TO THE SPECIAL NATURE OF THE PROJECT AND THE COMPLEX NATURE OF THE ASSIGNMENT, WE EXPECT THAT PP PREPARATION MAY TAKE LONGER THAN IS NOW ANTICIPATED. SEPTEL FOLLOWS ON THIS SUBJECT.

13. PROJECT WILL BE AN FY 81 SHELF ITEM AND WILL BE PLACED IN FY 82 CONGRESSIONAL PRESENTATION. MUSKIE
BT
#1794

UNCLASSIFIED

STATE 096543

VZCZCNEO283
PP RUEHNE
DE RUEHC #6543 1020437
ZNR UUUUU ZZH
P 100435Z APR 82
FM SECSTATE WASHDC
TO AMEMBASSY NEW DELHI PRIORITY 0617
ET
UNCLAS STATE 096543

12 APR 82
TOR: 0158
CN: 18080
CHRG: AID

AIDAC, FROM STAPLES AND BLOCH

ACTION AII-12

E.O. 12065: N/A
TAGS:
SUBJECT: INTEGRATED MATERNAL AND CHILD NUTRITION PROJECT (386-0476)

Project 386-0476

REF: (A) BOUGHTON/DAYAL LETTER OF 3/19/82; (B) NEW DELHI 4090; (C) BOUGHTON/DAYAL LETTER OF 3/2/82; (D) AIAICH/BOUGHTON LETTER OF 2/26/82; (E) DAYAL/BOUGHTON LETTER OF 1/29/82; (F) STATE 141794, DATED 5/20/80; (G) IMCH PIP OF 4/10/80 (H) NEW DELHI 6021 (DAYAL/BOUGHTON LETTER OF 3/23/82 (I) NEW DELHI 6096 (ATWOOD/BOUGHTON LETTER OF 3/26/82)

1. BASED ON REF MESSAGES AND AID/W-BOUGHTON DISCUSSION ON 3/24/82, WE UNDERSTAND THAT MISSION PROPOSED TO SUPPORT PRIORITY COMPONENTS OF THE GOI'S INTEGRATED CHILD DEVELOPMENT SCHEME (ICDS) WITH DOLIAR ASSISTANCE UNDER THE IMCH PROJECT AND WITH TITLE II FOOD AID THROUGH CARE, AND THAT THE GOI HAS ACCEPTED THE MISSION'S PROPOSAL. RECOGNIZING THAT AT THE PURPOSES OF ICDS ENVISAGE TOTAL DEVELOPMENT OF THE CHILD COMPARED TO OUR PROJECT'S SHARPER FOCUS ON NUTRITIONAL TARGETING TO REDUCE INFANT AND CHILD MORTALITY, AID/W SUPPORTS THE MISSION'S REVISED PROPOSAL TO IMPROVE NUTRITIONAL IMPACT WITHIN THE BROADER ICDS STRUCTURE, INSTEAD OF REQUIRING A STRICTER TARGETING OF ICDS ITSELF. BASED ON REF C, AS MODIFIED BY REF A, THE ICDS DEVELOPMENT CENTERS AID SUPPORTS SHOULD AFTER 3 YEARS REACH A TARGET OF AT LEAST 85 PERCENT OF THE MODERATELY AND SEVERELY MALNOURISHED CHILDREN UNDER 36 MONTHS AND 60 PERCENT OF THE AT RISK PREGNANT AND LACTATING WOMEN WITH NUTRITIONALLY ADEQUATE FOOD RATIONS AND FEED AS MANY MALNOURISHED 36 TO 72 MONTH OLD CHILDREN AS POSSIBLE. THESE THREE GROUPS ARE TO BE GIVEN FIRST PRIORITY FOR SUPPLEMENTARY FEEDING. CURRENT FOOD LEVELS IN THE CARE/SNP SYSTEM SHOULD BE SUFFICIENT FOR THE FIRST TWO OF THESE THREE GROUPS, BUT STATE GOVERNMENT OR OTHER CARE RESOURCES WILL MOST LIKELY HAVE TO SUPPLEMENT CARE/SNP BUDGETS IN ORDER TO PROVIDE SUFFICIENT FOOD FOR ALL CHILDREN IN PRESCHOOL EDUCATION CLASSES. NOW THAT AGREEMENT ON THESE PRIORITIES HAS BEEN REACHED WITH GOI, THE CURRENT ICDS COVERAGE OF AN ESTIMATED 50 PERCENT OF THE MOST VULNERABLE GROUPS IS TO BE MARKEDLY IMPROVED.

2. WE STRONGLY AGREE WITH THE MISSION IN REF C THAT WE NEED TO BUILD INTO THE PROJECT A THOROUGH INDEPENDENT MONITORING SYSTEM WHICH WILL SPECIFICALLY MONITOR THE COVERAGE OF MALNOURISHED CHILDREN UNDER AGE 36 MONTHS.

INCOMING

UNCLASSIFIED

49

WE BELIEVE IT ESSENTIAL TO HAVE AVAILABLE, THREE YEARS AFTER THE PROJECT AGREEMENT IS SIGNED, EMPIRICAL EVIDENCE INDICATING WHETHER OR NOT THE THREE MAJOR GOALS OUTLINED IN PARAGRAPH ONE ARE BEING ACHIEVED. ACCORDINGLY, THE PROJECT PAPER SHOULD SET FORTH IN THE MONITORING AND EVALUATION SECTION: (A) REALISTIC INTERIM TARGETS FOR EACH OF THESE GOALS DURING THE THREE YEAR TIME PERIOD TO ALLOW PRELIMINARY JUDGEMENTS CONCERNING THE LIKELIHOOD OF ACHIEVING THE OVERALL GOALS; (B) THE POINTS DURING THE THREE YEAR TIME PERIOD AT WHICH EVALUATIONS SHOULD BE CONDUCTED; AND (C) A DESCRIPTION OF HOW THE MONITORING SYSTEM WILL BE INTEGRATED INTO THE PROJECT FROM THE OUTSET AND HOW IT WILL BE USED TO PROVIDE INFORMATION FOR THESE EVALUATIONS.

4. OVERALL, THE PROPOSED PROJECT APPEARS TO REPRESENT A SIGNIFICANT U.S. CONTRIBUTION TO INDIA'S ICDS THROUGH THE (A) HIGHER PRIORITY GIVEN TO THE THREE MOST VULNERABLE GROUPS, (B) INDEPENDENT MONITORING SYSTEM, (C) IMPROVED NUTRITION EDUCATION, AND INTEGRATED HEALTH SERVICES AND (D) LOW BIRTH WEIGHT RESEARCH.

5. WITHIN THE GUIDELINES OF THE ORIGINAL APAC APPROVAL CABLE, (REF F) AS REVISED BY THIS MESSAGE, THE MISSION MAY PROCEED TO DEVELOP AND AUTHORIZE A PROJECT PAPER FOR DOLS. 15 MILLION LOP GRANT FUNDING IN FY 1982.

6. WHEN THE PROJECT IS READY FOR AUTHORIZATION THE MISSION SHOULD CABLE THE MAIN FEATURES AND FOOD REQUIREMENTS TO AID/W. AID WILL THEN SEEK PDC APPROVAL FOR A FOUR YEAR OUT-OF-PROJECT MULTI-YEAR COMMODITY SUPPORT AGREEMENT UNDER PL 480 TITLE II FOR THE PROJECT. IT WOULD APPEAR TO BE APPROPRIATE TO CONSIDER AT THE SAME TIME THE PROGRESS MADE AND THE GOI AND STATE GOVERNMENTS ARE MAKING IN DEVELOPING A TIME PHASED PLAN TO UPGRADE THE ENTIRE CARE-MCH PROGRAM, WITHIN THE ICDS PATTERN, AND TO CONSIDER WHAT BALANCES MIGHT BE APPROPRIATE TO MAINTAIN THE PROGRAM AT LEAST AT THE FY 81 LEVEL OF DOLS. 41 MILLION THROUGHOUT THE PERIOD OF OPERATING.

7. MISSION'S ATTENTION IS CALLED TO CONCERNS RAISED IN APAC CABLE (REF F) FOR GUIDANCE IN DRAFTING FINAL PP. STOESSEL

BT

#6543

NNNN

ANNEX - 2

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project
From FY 83 to FY 89
Total U.S. Funding $15 millio
Date Prepared: June 1983

Project Title & Number: Integrated Maternal and Child Nutrition
Project 386-0476

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes: (A-1) Reduce mortality in children 0-36 mos. of age. Subgoal: Reduce prevalence of moderate and severe malnutrition in children 0-36 mos. of age.	Measures of Goal Achivement: (A-2) Mean mortality decline of 25% in children 0-12 mos. & 33% in children 13-36 mos. within 6 yrs of anganwadi establishment. Subgoal: Mean decline of 50% in severe malnutrition & 35% in severe & moderate malnutrition within 4 yrs of anganwadi establishment.	(A-3) Sub-goal will be verified by quarterly community nutrition surveillance, periodic and end of project impact evaluations.	Assumptions for achiving goal targets: (A-4) Mortality reduction can't be accurately measured. Better nutrition status and birth weight reduce child mortality. Subgoal: Growth monitoring, health care, food, and nutrition education, improve nutrition status. Economic constraints don't prevent better child feeding practices.
Project Purpose: (B-1) 1. Expand & improve ICDS to regularly reach most "at-risk" pregnant or nursing women & moderately or severely malnourished children 0-36 mos. of age with Title II foods, nutrition education, & health services. 2. Determine feasibility & cost of improving birth weights of children.	Conditions that will indicate purpose has been achieved: End-of-Project status. (B-2) Approx. 11,000 anganwadis in 75 blocks delivering services to meet targets in Project Paper. Low Birth Weight Studies completed per Project Paper	(B-3) Data generated by management information system, spot checks, periodic impact evaluations, and low birth weight studies.	Assumptions for achieving purpose: (B-4) Integrated services reach target group by concerneddepts. Priority groups participate fully. Monitoring and evaluation provide rapid and accurate data. Low birth weight studies designed and executed in a manner to assure useful data.
Project Outputs: (C-1) 1. Trained, employed workers and trainers; 2. Improved training, facilities & materials; 3. Improved & expanded nutrition education system; 4. Increased Title II food consumption by target group; 5. Improved & expanded, management, monitoring & evaluation systems; 6. Innovative & low birth weight studies	Magnitude of Outputs: (C-2) See Table 5 of Project Paper.	(C-3) Data generated by management information system, spot checks, periodic impact evaluations, and low birth weight studies.	Assumptions for achieving outputs: (C-4) Staff are motivated and supervised to perform as planned. Inputs from CARE, UNICEF, USAID, and GOI arrive in villages on time. Community participates fully. obstacles to low birth weight research described in Project Paper can be overcome.
Project Inputs: (D-1) Training, materials and equipment, technical assistance, partial salary support, monitoring and evaluation, and Title II foods.	Implementation Target (Type and Quantity) (D-2) See Financial Plan in Project Paper and Annex 4.	(D-3) Not Applicable	Assumptions for providing inputs: (D-4) U.S. Government continues to supply Title II foods and other inputs for life of project. Project agreement between U.S. Government and Government of India is signed and followed.

Annex 3

STATUTORY PROJECT CHECKLIST

Listed below are statutory criteria applicable generally to projects with FAA funds and project criteria applicable to individual fund sources: Development Assistance (with a sub-category for criteria applicable only to loans); and Economic Support Fund.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP-TO-DATE? Yes.

HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT? Yes.

A. General Criteria for Project

1.Continuing Resolution Unnumbered: FAA Sec. 653(b); Sec. 634A. (a)Describe how Committees on Appropriations of Senate and House have been or will be notified concerning the project; (b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more that $1 million over that figure)?	(a) A Congressional Notification advising Congress of A.I.D.'s intention to obligate funds for this project was forwarded. (b) Yes.
2.FAA Sec. 611(a)(1). Prior to obligation in excess of $100,000 will there be (a) engineering, financial and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?	(a) Yes. (b) Yes.
3.FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?	Not Applicable.
4.FAA Sec. 611(b); Continuing Resolution Sec. 501. If for water or water-related land resource construction, has project met the standards and criteria as per the Principles and Standards for Planning Water and Related Land Resources dated October 25, 1973?	Not applicable

5.FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed $1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project?	Not Applicable
6.FAA Sec. 209. Is project susceptible to execution as part of regional or multilateral project? If so, why is project not executed? Information and conclusion whether assistance will encourage regional development programs.	UNICEF will provide direct support to this project through the provision of equipment and training opportunities. This project is not susceptible to execution as part of a regional project.
7.FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c)encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce and (f) strengthen free labor unions.	(a) Not applicable. (b) Not applicable. (c) Not applicable. (d) Not applicable. (e) Not applicable. (f) Not applicable.
8.FAA Sec. 601(b). Information and conclusion on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).	U.S. technical assistance will be provided under this project.

9.FAA Sec. 612(b); Sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized to meet the cost of contractual and other services.	The Government of India will finance approximately 40 percent of project costs and is contributing sufficient amounts of local currencies to the project.
10.FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and if so, what arrangements have been made for its release?	The U.S. owned rupees are being used for various U.S. government agencies' programs and administative support. These currencies are expected to be liquidated over the next 10 years.
11.FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?	Yes.
12.Continuing Resolution Sec. 522. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity.	Not applicable.

B. Funding Criteria for Project

1. Development Assistance Project Criteria

a .FAA Sec. 102(b); 113: 281a. Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (b)help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions; (c)support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries?	(a) This project will increase awareness among the rural poor of the value of a well balanced diet. Consequently the health status of the rural poor should improve increasing their ability to participate in the benefits of development. (b) This project will increase the quality of life among the rural poor by promoting improved health. (c) This project entirely supports Indian self-help in implementing nutrition programs. (d) This project will promote the improvement of women's status by providing employment opportunities for women as anganwadi workers and by improving their nutritional intake. (e) Not applicable.
b.FAA Sec. 103, 103A, 104, 105, 106, & 107 Is assistance being made available: (include only applicable paragraph which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source.)	
(1) [103] for agriculture, rural development or nutrition; if so, extent to which activity is designed to increase productivity and income of rural poor.	Under this project assistance is being made available to increase the nutritional status of children and pregnant and nursing mothers. A healthier population is a more productive population.
c. [107] is appropriate effort placed on use of appropriate technology?	Yes, all weighing and measuring devices are appropriate technology.

d.FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or has the latter cost-sharing requirement been waived for a "relatively least-developed country)?	Yes.
e.FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to the Congress been made and efforts for other financing, or is the recipient country "relatively least developed"?	Not applicable.
f.FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective particiption in governmental and political processes essential to self-government.	This project recognizes the need, desire, and capacity of the people of India to improve their nutritional status. It will encourage institutional development by assisting the Government improve its integrated child development service scheme and by increasing opportunities for training. By upgrading the health of the rural poor it will enhance their ability to participate in governmental and political processes essential to self-government.
g.FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase or productive capacities and self-sustaining economic growth?	Yes. This project will increase the productivity of human capital.
2. Development Assistance Project Criteria (Loans Only).	
a.FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan including reasonableness of repayment prospects.	India's foreign exchange reserves are currently $4.865 billion. The loan component of this project is $7 million, an amount well within the government's capability to pay.

b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete in the U.S. with U.S. enterprise, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan?	Not applicable.

3. Project Criteria Solely for Economic Support Fund Support Fund

This section not applicable.

followed till September 1984. Dr. S. K. Bhargava of Safdarjang Hospital is one of the principal investigators and overall coordinator.

Each of the seven centers was expected to generate data on 1,000 pregnant women based on prevailing birth and infant mortality rates. However, actual enrollment has been only about 40% of this target. The importance of this study is that careful design, execution, and analysis should assure high quality and comparability and thereby provide an accurate picture of adverse pregnancy outcome in both urban and rural settings. Additionally, all children will be followed for one year after birth, so relatively detailed information on growth and development, major illnesses, and causes of death should become available. No maternal infection data will be collected.

The study is intended to describe the existing situation and as such no interventions are included. After the results have been analyzed, the ICMR plans to follow up with appropriate intervention trials in 1984-85. Intensive neonatal care units will be established to provide regional perinatal care at: 1) Safdarjang Hospital, Delhi; 2) B. J. Medical College, Ahmedabad; and 3) JIPMER Hospital, Pondicherry. Interventions could be tested at these sites.

Other observational as well as intervention studies on maternal nutrition, infection and LBW are underway at the National Institute of Nutrition, Hyderabad. They are studying the effects of anemia and supplmentation with iron and folic acid on LBW. They have studied the prevalence of common infections, i.e. respiratory, gastrointestinal, skin, and vaginal, in pregnancy and found no effect on birth weight. Fetal growth monitoring measurements such as abdominal girth, fundal height, and maternal weight gain are being tested by NIN.

Studies on anemia, maternal malnutrition, supplementation and IUGR are underway at Banaras Hindu University. The M.S. University of Baroda, Department of Food and Nutrition, is doing acceptablility trials on specially formulated maternal food supplements.

CAPACITY FOR CONDUCTING PROPOSED RESEARCH IN INDIA

The LBW problem is great in India and the stakes are high. However, a number of obstacles which could threaten the feasibility or validity of conducting the proposed studies need to be reviewed. The hurdles to be overcome are especially great for the study of maternal infection, a research area which is not settled by the studies that are underway in the U.S. There are probably a greater number of co-factors contributing to pre-term delivery and IUGR in India then in the U.S. making it more difficult to determine cause and effect.

There are few investigators in India with experience in the design, execution and analysis of large scale population studies of the type proposed. Biostatistical support in ongoing studies is frequently weak. Interrelationships and confounding variables that should be analyzed, frequently are not. Microbiologic and serologic capabilities for Mycoplasma exist only at the laboratories at AIIMS and at the Post Graduate Institute of Medical Education and Research (PGI) Chandigarh. No Indian laboratories possess these capabilities for Chlamydia. Current serologic laboratory methods for these microorganisms are difficult and slow, but newer and simpler methods are evolving in the U.S. Indian researchers would need to be trained at experienced laboratories in the U.S. and to be re-trained in newer methods through continual collaboration during the study. A reference laboratory would need to be established in India for quality control. It is not clear how easily paramedical workers can be trained to perform interviews or to obtain vaginal, cervical, or blood samples outside the hospital setting. High turnover of research staff is also a problem.

Logistical difficulties arise from lack of transport, equipment, and cold-chain capacity for preserving biologic specimens. Losses of specimens could occur at several points. Local ground transportation can be uncertain, particularly in the wet season. A reliable supply of dry ice is not always available. Multiple transfers between airplanes and ground vehicles may account for losses in submissions to the reference laboratory. Certain laboratory supplies and equipment are not available in India and will need to be imported from the U.S. Inexpensive, portable scales are not available in India or elsewhere for weighing pregnant women in field studies. The scales used in the 7-Center study of high risk pregnancy weigh 12 kg and were imported from the U.K. at a cost of $1,800 each. Applications for customs waivers and clearance for importation due to non-manufacture in India can take many months to obtain.

A number of problems also result from lack of cooperation and low response rates of pregnant women. It is difficult to enroll women until late in pregnancy (after 28 weeks) because they conceal the fact that they are pregnant for superstitious and other reasons. Many rural women seek no professional antenatal care. Movement of village women within a study area to a place outside during the latter part of pregnancy, e.g. to the parents' home (15-70%), reduces follow-up completeness although it may not significantly bias results. This is particularly true of the first delivery and is less common in urban areas.

Perhaps the most serious response obstacle is the refusal of women outside the hospital or health center to permit an internal examination by speculum, or blood sampling by venipuncture or finger

prick, especially on more than one occasion. The problem appears to be more or less uniform throughout India and overcoming it will require a rather intensive educational effort. Similarly, there may be important questions of medical history that the women cannot answer accurately (e.g. date of last menstrual period, prepregnancy weight, previous LBW outcome) or will not answer accurately (e.g. sexual practices). A local events calendar may need to be developed to help assess gestational age. It has been difficult in some studies to get clean - voided urine specimens.

In the absence of a reference laboratory in India on the microorganisms being studied and during the early stages of establishing one, quality control and standardization will need to be achieved by sending random samples of duplicate specimens to the U.S. In a similar fashion, a sample of epidemiologic data should also be independently analyzed. Restrictions against exchange of biologic samples and data between Indian and U.S. collaborators will need to be overcome.

Whether these and other obstacles can be circumvented or eliminated without seriously compromising the value of the research will have to be carefully assessed from the earliest stages of the project and reassessed at each phase. It is preferable that these studies be rural community-based. However, if the obstacles to conducting rural studies cannot be overcome, urban and hospital-based studies are a second best alternative.

The current cost of treating a Mycoplasma infection with erythromycin for six weeks of Rs. 168 (@ Rs.4.0/g) may be prohibitive given the current budget for drugs at the PHC. Food supplementation programs during the last trimester are likely to cost Rs. 100. The cost benefit and effectiveness of various interventions to prevent LBW will have to be calculated as an integral part of the research.

Capacity of Various Institutes to Conduct Proposed Research

Fourteen Indian institutes, were visited and their capacity for the proposed research was assessed based on the following criteria:

1. Research - History of commitment to research accomplishments, including specific references in laboratory or field projects relevant to the proposed studies.

2. Laboratory - Capabilities in routine bacteriology, anaerobic bacteriology, and other special capabilities or studies, experience or capabilities in Mycoplasma isolation, capabilities for Chlamydia isolation including virology, experience in serologic diagnostics, current facilities and staffing.

3. Field - Longevity of work in community, access to hospital and community population, village projects; organization, accomplishments and goals of community projects; field staff and facilities, center-base project staff; and relationships apparent on site visit.

4. Clinical - Background and potential time demands among obstetrical and pediatric professionals; thinking about the issues of proposed study.

5. Interest/Commitment - Collective response to the idea of the study, willingness to be part of a collaborative effort, control of resources and environment.

Three institutes were identified at which the potential for conducting studies on the prevalence of maternal infections, malnutrition and pregnancy outcome is good: 1) Post Graduate Institute of Medical Education and Research (PGI), Chandigarh; 2) Christian Medical College (CMC), Vellore; and 3) Kind Edward Memorial Hospital (KEM), Pune. Two of these institutes could serve as reference laboratories for the infection studies (PGI, Chandigarh and CMC, Vellore); and all three could serve as sites for field studies. A description of these institutes and the reasons why they were chosen is provided.

Post Graduate Institute of Medical Education and Research (PGI), Chandigarh

This modern, sophisticated facility is academically-oriented. The clinical staff in the critical departments are actively involved in research and can probably devote a greater portion of time to it because of fewer service obligations. They seemed receptive to the proposed research as outlined, remaining appropriately skeptical about any study that would not thoroughly examine the major variables. Their micobiology laboratories are extremely well organized and equipped compared to the other laboratories visited. They are busy but relatively well staffed, and research obviously occupies a substantial portion of their time. For example, they are doing Mycoplasma cultures now and are planning Chlamydia work for the near future. The field and community activities are also well established through participation in the ICMR 7-center study and in separate, longer-lived projects (e.g. on intervention for high risk mothers and infants). Although the community program was not personally observed, it did not appear as if the field activities had quite the ample support that the hospital-based research had. The uncertain capabilities here are not so much greater than at the other centers as to offset the obvious advantages. Good transportation access by air and land would make PGI a suitable reference laboratory as well as study center.

Christian Medical College, Vellore (CMC)

The creative leadership and experience of Dr. Jacob John, the director of the ICMR Virology Laboratory, coupled with long-standing capabilities of introducing new lab techniques into India, make CMC attractive as a reference center. Although the laboratory has the basic necessities, some of the equipment is outdated and in need of repair. Also, the need for additional laboratory space might require some remodeling. None of these needs is likely to entail any major capital expenditures. From discussions with people in the other sections of the microbiology laboratory it appears that they would be capable of serving the reference function for other microbiologic studies, although they did not express any special commitment to this function. One limitation to CMC serving as a reference laboratory is that there are no air connections to other major cities and all samples would have to be transported overland. There are direct rail connections between Pune and Vellore. On the plus side, CMC has a good working relationship with both the KEM Hospital and the National Virological Institute in Pune and could serve as reference laboratory for them.

As for the other elements of a clinical investigation, the field and research activities of the hospital and university are fairly well developed. However, it was not clear how easy it would be to graft a laboratory-based, epidemiologic research project onto the exisiting community outreach program. The interest or commitment in the population aspects of the project on infection and LBW among the key professionals in the pertinent disciplines other than microbiology did not seem to be as great as elsewhere.

King Edward Memorial (KEM) Hospital, Pune

The enthusiasm about the LBW problem and the proposed research was higher than elsewhere. Moreover, the research orientation, commitment, and mentality are quite strong under the dynamic directorship of Dr. Banoo Coyaji. Experience in field and clincial investigation on the part of the professionals who would be involved is another advantage. Although their five-years of experience in both research and service in the 19 rural villages in the VADU project certainly favors the accomplishment of the most difficult field components of the study, even there the formidable obstacles common to all the institutions will challenge their capabilities. The weakness of the institution, they are frank to admit, is the microbiology laboratory. Minimal equipment and absent research expertise would make them dependent for training and technology transfer on another institution. Proximity to the National Virological Institute, with which working relationships are already established, may offset this deficiency. Microbiologoic technology transfer would not be a major difficulty. Air connections to Bombay facilitate transport of samples and they regularly send specimens back and forth to England without much trouble.

Research institutes for intervention trials to be conducted during the latter years of the research program will be identified based on the outcome of the prevalence studies and the types of interventions proposed. Institutes to be considered would most logically be the three prevalence study centers, but the seven centers in the ICMR study of high risk pregnancy, and the regional perinatal care centers to be established by ICMR could also be considered.

A list of the investigators to be involved from each of the above described Indian institutes and of the collaborating U.S. researchers and institutes is provided here.

LOW BIRTH WEIGHT RESEARCH

LIST OF INVESTIGATORS AND COLLABORATING INSTITUTES

INDIA

Christian Medical College, Vellore

Dr. Jacob John	Department of Microbiology
Dr. Mark Steinhoff	Department of Microbiology
Dr. Sulechana Abraham	Community Health and Development Center (CHAD) Obstetrics Division
Dr. J. Prakash	Community Health and Development Center (CHAD) Obstetrics Division
Dr. Prabha Jairaj	Department of Obstetrics and Gynaecology
Dr. Balasubramaniam	Department of Obstetrics and Gynaecology
Dr. Lalitha	Department of Bacteriology
Dr. G. Sridharan	Department of Bacteriology

King Edward Memorial Hospital, Pune

Dr. Banoo Coyaji	Obstetric and Medical Director
Dr. Anand Pandit	Department of Pediatrics
Dr. Rao	Research Director
Dr. Kulkarni	Vadu Rural Health Project Director
Dr. K.B. Niphadaker	Department of Microbiology

Post Graduate Institute of Medical Education and Research, Chandigarh

Dr. G.I. Dhall	Department of Obstetrics and Gynaecology
Dr. Kamla Dhall	Department of Obstetrics and Gynaecology
Dr. K.C. Agarwal	Department of Microbiology and Parasitology
Dr. N.K. Ganguli	Department of Microbiology and Parasitology
Dr. R.C. Mahajan	Department of Microbiology and Parasitology
Dr. Vijay Kumar	Department of Community Medicine
Dr. B.N.S. Walia	Department of Pediatrics
Dr. Bakoo	Department of Pediatrics

UNITED STATES

Albert Eintein College of Medicine, New York, New York

Dr. David Rush	Division of Pediatric and Perinatal Epidemiology

Centers for Disease Control, Atlanta, Georgia

Dr. Russell Alexander	Operation Research Branch Venereal Diseases Control Division

Harvard University, Boston, Massachusetts

Dr. Julia Walsh	Channing Laboratory
Dr. Ed Kass	Channing Laboratory
Dr. M.G. Herrea	Department of Nutrition, School of Public Health

National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland

Dr. Richard Kaslow	Epidemiology and Biometry Section

ANNEX 4

D.O.No.F.2(6)-AID/ Vol.III

K.A.Krishna Moorthy,
Under Secretary.

भारत सरकार
वित्त मंत्रालय
आर्थिक कार्य विभाग
Government of India (Bharat Sarkar)
Ministry of Finance (Vitta Mantralaya)
Department of Economic Affairs (Arthik Karya Vibhag)

नई दिल्ली/New Delhi September 15, 1983.

Dear Mr. Cylke,

Government of India hereby request a loan of $ 2 million for the Integrated Child Development Services Project which has been under discussion with US AID. Government of India would provide or cause to provide an amount of $ 620,000 for this project, including costs borne on an 'in-kind' basis.

With regards,

Yours sincerely,

K.A. Krishna Moorthy

(K.A. Krishna Moorthy)

Mr. Owen Cylke,
Director,
US AID, American Embassy,
New Delhi.

ANNEX 5

Number of Blocks and Estimated ICDS Anganwadis for A.I.D. Assistance by Year of Sanction

State	Indian Fiscal Year	Rural		Tribal		Total	
		Blocks	AWW	Blocks	AWW	Blocks	AWW
Gujarat							
Panch Mahals	81/82	0	0	2	706*	2	706
	82/83	3	402	3	1,127	6	1,529
	83/84	3	630	0	0	3	630
Sub Total		6	1,032	5	1,833	11	2,865
Maharashtra							
Chandrapur**	82/83	1	111	1	207	2	318
	83/84	4	473	2	322	6	795
Sub Total		5	584	3	529	8	1,113
Grand Total of 2 Districts		11	1,616	8	2,362	19	3,978

* Approximately 100 of the anganwadis in these blocks have already been established and will not need to be equipped.

**Chandrapur district was subdivided into Chandrapur and Garhchiroli districts in early 1983. The USAID assisted blocks fall in Chandrapur proper and not in Garhchiroli.

ANNEX 5 (continued)

BLOCKS PROPOSED FOR USAID ASSISTED ICDS

State	District	Block	Year of Sanction	# of AWW based on 81 Estimated Population*
Gujarat	Panch Mahals*	Dohad (T)	81/82	422
		Jhalod (T)	81/82	284
		Jambughoda (R)	82/83	27
		Shehra (R)	82/83	142
		Lunawada (R)	82/83	233
		Limkheda (T)	82/83	291
		Santrampur (T)	82/83	443
		Devagadh Baria (T)	32/83	393
		Godhra (R)	83/84	337
		Halol (R)	83/84	145
		Kalol (R)	83/84	148
Maharashtra	Chandrapur	Rajura (T)	82/83	207
		Warora (R)	82/83	111
		Mul (R)	83/84	138
		Gondpimpri (T)	83/84	148
		Bhadravati (R)	83/84	112
		Chimur (T)	83/84	174
		Sindewahi (R)	83/84	113
		Nagbhid (R)	83/84	110

*Tribal 1 AWW : 700 population, Rural 1 AWW : 1,000 population

ANNEX 6

ANALYSIS OF SUPPLEMENTARY FEEDING AT THE ANGANWADI

This section analyzes the planned supplementary feeding program in AID assisted anganwadis in view of the project targets of enrollment of at least 95% of the severely and moderately malnourished children 6 through 36 months of age and at-risk pregnant and nursing women and regular attendance/receipt of food (15 or more days per month) by 85% of them within three years after an anganwadi is established.

Coverage of Target Group: Coverage of the target group may be analyzed by determining enrollment, average attendance, and regular attendance. Rough estimates of the 1982 coverage have been made by AID based on available data from the 1981 PEO Report 1/ and a summary of six reports on ICDS by AIIMS.

Table 1 shows that enrollment of the target group is probably about 74%. The project plan to follow-up the initial community survey for malnutrition with quarterly surveillance rounds and to have the dai make regular home visits to pregnant women will be necessary to insure that enrollment targets are met. Table 2 shows that an additional 12 persons will need to be enrolled in each Ananwadi to meet the project targets.

Regarding regular attendance/receipt of food, it is clear that substantial improvements over 1982 estimates are needed to reach project targets. The coverage of the target group is low and Table 3 shows that an additional 31 persons need to be regularly attending/receiving food in an average anganwadi for targets to be reached.

AWW Assessment of Nutritional Progress: Weight data in the 1977 AIIMS Report were available for an average of 69% of children enrolled at the anganwadis. Accuracy of weight recording averaged 39%. Project plans to strengthen supervision should insure that accurate weight recording of children enrolled in anganwadis exceeds 90%.

Time of the AWW for Supplementary Feeding Activities: The AWW has four daily supplementary feeding related activities: feeding itself, child weighing and growth charting, home visiting, and administration. Regarding current daily operation of the feeding service, the time required is about one hour per day based on an estimated average attendance of 63 persons including 23 in the target group plus 40 in preschool education. Assuming that the number enrolled stays the same, the average daily attendance would go from about 63 to 82, a 30 percent increase. The number of severely

---

1/ See reference 17 Annex 22.

Table 1

Estimated Coverage of Supplementary Feeding Services in Average Rural Anganwadis in 1982

Target Group	Number in Target Group	Enrollment No.	Enrollment %	Average Attendance No.	Average Attendance %	Regular Attendance No.	Regular Attendance %
S+M* 6-12 mo.	4	3	75	2	50	1	25
S+M* 13-36 mo.	30	24	80	15	50	8	27
At-risk preg.	9	6	67	4	44	3	33
At-risk nurs.	11	7	64	4	36	3	27
Total	54	40	74	25	48	15	28

Table 2

Increases Over 1982 Estimates to Meet Project Targets For Enrollment

Target Group	Number in Target Group	Number Enrolled 1982	Project Target	Increase	% enrolled if Target to be achieved
S+M* 6-12 months	4	3	4	+ 1	100
S+M* 13-36 months	30	24	29	+ 5	97
At-risk pregnant	9	6	9	+ 3	100
At-risk Nursing	11	7	10	+ 3	91
Total	54	40	52	+12	96

*S+M = Severely and moderately malnourished by weight for age

Table 3

Increases Over 1982 Estimates to Meet Project Targets For Regular Receipt/Attendance

Target Group	Number in Priority Group	Number Regularly Receiving 1982	Project Target	Increase	% regularly receiving food if target achieved
S+M* 6-12 months	4	1	3	+ 2	75
S+M* 13-36 months	30	8	26	+18	87
At-risk Pregnant	9	3	8	+ 5	89
At-risk Nursing	11	3	9	+ 6	82
Total	54	15	46	+31	85

and moderately malnourished children 6 to 36 months of age would rise from about 17 now to 30. These children take longer to eat, often require assistance with feeding, and severely malnourished children also need to be fed twice a day at the anganwadi. If the AWW and her helper have no assistance with supplementary feeding, the time required for this activity would likely increase by at least one-half hour per day. Since it is unde- sirable to decrease the time required for preschool education, addi- tional part-time help is needed to assist with the feeding program. Project plans to request mothers (particularly those with malnour- ished children) to work once a month at the anganwadi should meet this need.

Regarding child weighing and growth charting, the time required for enrolled children is estimated at about 30 minutes per day. Since daily weighing of each enrolled child is unnecessary, monthly weighing should suffice. An improvement in the regularity of attendance should allow this activity to be easily accomplished in about 1-2 hours per week. The overall time for this activity should decline.

Regarding home visits, the AWW's time required is estimated at about 1 1/3 hours per day including distribution of food, visiting of families who are enrolled but do not attend regularly, visiting families for nutrition and health education, and other visits. To achieve project targets, the AWW and the dai must use this time effectively to follow-up on children and pregnant and nursing women who are "irregular" attenders. It is expected that the AWW and the dai can do this effectively with the available time if assisted more frequently by the MS. However, as data are not readily available, plans are to conduct a time-and-motion study of the AWW early in the project and consider innovative alternatives if problems exist.

Administration of the entire anganwadi program takes about 30 minutes per day. The improvements in the daily recording of information on enrollment and attendance should not add administrative time for the AWW.

The AWW has one major quarterly activity: the survey of the community for new cases of malnutrition in children and for newly pregnant at-risk women. The AIIMS studies found that only about 92 households in an average anganwadi have children under five and/or women aged 15-45. As such, this activity should be easily accomplished in 3-5 days or an average of 2-3 hours per week.

ANNEX 7

ANALYSIS OF FOOD REQUIREMENTS AND DELIVERY SYSTEMS

I Specifications for Nutritional Adequacy of Supplement

The amount of food distributed to each beneficiary in AID assisted ICDS should be enough to facilitate growth and recovery from malnutrition and to significantly reduce energy and protein deficits. Rations should meet the elevated calorie requirements of malnourished children for catch-up growth and have enough protein to compensate for losses due to frequent diarrhea.

The NNMB data on the calorie and protein gaps in the diets of preschool children and pregnant and nursing women in the project states are presented in Tables 1 and 2. These data are for the average child and woman surveyed, and include the normal as well as the malnourished. Therefore, the gap of moderately and severely malnourished women and children or of all individuals with a deficit would be greater. Ration size should be adequate to fill these deficits when complemented by the home diet.

Further requirements to be met in supplementary food used for rehabilitating malnourished children under three years of age are energy density, protein quality and quantity, and adequate vitamin and mineral content. Due to the small stomach of the young child, the foods distributed should not be too bulky, i.e. cereals which require large amounts of water for cooking. They should be energy dense, providing at least 4 kcal per g food. Energy density is greatly increased and the amount of water required for cooking reduced by the addition of fat or oil to cereal and legume weaning food mixtures. These foods should contain approximately 25% of their calories from fat.

A minimum of 11% of calories as protein is required in foods used for nutrition rehabilitation of young children to assure normal growth. The protein should be of a high quality with a Protein Efficiency Ratio (PER) of not less than 2.1 as established by the Protein Calorie Advisory Group of the UN and by the USDA for blended foods and special food supplements used for young children in the Title II program. Since protein deficits in Indian children are slight compared to their much larger calorie deficits, it has been questioned whether the protein content of the food supplement is important. However, it is essential that the food supplement have an adequate protein content and quality for several reasons. As stated earlier, the protein deficits of Indian children are greater than would appear in Table 2 due to their elevated requirements resulting from repeated infections. Furthermore it is important that the meals

TABLE 1

SUMMARY OF FINDINGS OF DIET SURVEYS ON PREGNANT AND LACTATING WOMEN BY NATIONAL NUTRITION MONITORING BUREAU IN GUJARAT AND MAHARASHTRA FROM 1975-78

	Calories	Protein (g)
PREGNANT WOMEN		
(Sedentary)	1,688	47
ICMR Recommended Intake	2,200	59
Gap	512	12
LACTATING WOMEN	1,911	56
(Sedentary)		
ICMR Recommended Intake	2,450	70
Gap	539	14

TABLE 2

SUMMARY OF FINDINGS OF DIET SURVEYS ON
12-83 MONTH OLD CHILDREN IN
GUJARAT AND MAHARASHTRA
1975-1978*

	Calories	Protein (g)
12-35 months	714	21
ICMR Recommended Intake	1,220	22
Gap	506	1
36-83 months	1,061	31
ICMR Recommended Intake	1,720	29
Gap	659	2

*Annual Surveys, National Nutrition Monitoring Bureau 1975-1978; Report for the 1979 (1980).

fed at the center, which will comprise nearly half of the severely malnourished child's daily intake, be balanced in both protein and calories. To assure a normal growth response, the protein and calories should be provided at the same meal, not at separate meals.

The food supplements used in the program should be fortified with vitamins and minerals at the levels established by USDA for blended foods in the Title II program. Particularly important are fortification with vitamin A and iron. It is well known that the accelerated growth that occurs during recovery from protein-energy malnutrition increases the need for vitamin A. Children with protein-energy malnutrition frequently are also deficient in vitamin A. Feeding a supplement without adequate vitamin A content can catapult a child into severe vitamin A deficiency and possible blindness. Although, theoretically all children in the program should be protected by the existing GOI distribution of megadose vitamin A capsules, the delivery system and coverage of this program is inadequate and it would be risky to rely solely on it. Most malnourished preschool children and pregnant women in India have iron deficiency anemia. There is no program for providing children with iron supplements and the iron/folic acid supplementation program for pregnant women has limited coverage. Fortifying a food supplement with iron is probably the easiest way to correct anemia. The vitamin-mineral premix used in the blended foods in the Title II program is inexpensive and easily added. For the amount of protection it can provide against the most common vitamin and mineral deficiencies at a low cost, there is no compelling reason why the food supplements should not be vitamin-mineral fortified.

Other considerations in selecting the ration for the program are that it should be the lowest cost formulation which meets the above specifications in order to reach as many needy children as possible. Its shelf life and packaging should be adequate to assure that it can be transported and stored without spoiling. It should be readily acceptable and appealing to the tastes of the beneficiaries.

The supplement for pregnant and nursing women should be sufficient to meet their protein and calorie deficits. Acceptability is very important. It has been found that there are strong food beliefs among pregnant women in India against eating an adequate diet during pregnancy due to fear of having a big baby and a difficult delivery. It has been possible to get pregnant women to improve their diet if the food supplement is appealing and promoted to the mother to increase her strength, and not for the purpose of increasing the baby's size. Nursing women do not have the same taboos against eating an adequate diet as do pregnant women but food preferences and assuring acceptability of the supplement are equally important in this group.

II Description of Food Supplements in ICDS and CARE Title II Programs

ICDS

The philosophy of ICDS up to 1982 was to rely almost exclusively on indigenous foods funded by the state governments. However, since food is the biggest cost in ICDS, state allocations for local food purchases were not always forthcoming and imported commodities supplied by CARE or WFP were occasionally used. As part of the decision taken in 1982 to expand ICDS to 1,000 blocks, the GOI changed its policy on imported foods and welcomed contributions from WFP and CARE. Local foods are still used in ICDS to the extent possible. The decision as to which local foods is usually left to the CDPO who purchases them at the block level. Guidelines have been established by the MOSW on the calorie and protein content and cost to be maintained in the rations (Table 3). However, no guidance has been issued on how to use the allotted budget to purchase foods with the required nutrient content. A manual entitled Selected Nutritious Recipes, published by NIPCCD in 1982 could help in ICDS menu planning but it has not been widely distributed.

Until May 1981 a therapeutic food for severely malnourished children called Bal Amul was processed for ICDS by the Amul Dairy in Gujarat using Soy Fortified Flour, Non Fat Dry Milk, and Oil supplied by CARE through the Title II program. This food contained excessive protein and did not contain enough fat to meet energy density requirements for young children. Furthermore the cost of Bal Amul was exorbitant. State governments were charged $0.39 per kg of Bal Amul to cover the cost of sugar, vitamin-mineral premix, blending, packaging, and transport, despite the free Title II ingredients. A comparable blended food in the Title II program, Wheat Soy Blend, cost $0.39 per kg in 1982 all inclusive. When the costs to the state governments plus the cost of the Title II ingredients were taken into account, the actual cost of Bal Amul was $0.75 per kg. Since CARE stopped supplying ingredients for Bal Amul, the GOI has been unable to replace it with an alternative, locally processed therapeutic food.

Therapeutic food in ICDS has been used only for severely malnourished children. All other beneficiaries are to consume regular foods. Feeding is done on-site, six days per week, 300 days a year. Severely malnourished children are to be fed twice at the anganwadi and to be given the remainder of their ration to take-home. Due to the variation in foods used from project site to project site in ICDS and the absence of specific guidelines, it is not possible to say how well the food distributed meets the specifications for nutritional adequacy. However, it is doubtful that the foods used meet these requirements on a regular basis due to the failure to provide CDPOs with techniques for planning menus and food purchases to assure nutritional adequacy.

TABLE 3

SPECIFICATIONS FOR ICDS RATIONS

Severely malnourished Children 6-72 mos. old		
	RATION	Ready-to-eat, pulvesrized, vitamin-mineral fortified, mix with potable water.
	CALORIES	600
	PROTEIN (g)	16-20
	COST/DAY (Rs)	0.60
Moderately malnourished and all other children 6-72 mos. old		
	RATION	Arbitrary
	CALORIES	300
	PROTEIN (g)	8-10
	COST/DAY (Rs)	0.25
Pregnant and Nursing Women		
	RATION	Arbitrary
	CALORIES	500
	PROTEIN (g)	25
	COST/DAY (Rs)	0.50

CARE Title II Program

The rations distributed in the CARE assisted mother and child feeding programs in the project states in 1982 are described in Table 4. None of the rations was vitamin-mineral fortified. Feeding was done on-site for 240 days in Gujarat and for 300 days in Maharashtra. None of the rations contained sufficient calories to fill the average 1-3 year old child's energy deficit. Only the Sukhada RTE food in Maharashtra met the specifications for fat and protein content and quality. The Bulgur ration and the fried noodle RTE food in Gujarat are bulky and difficult for the young child to consume. Of all the rations the Sukhada RTE food in Maharashtra was the most nutritionally balanced at the least cost. If vitamin-mineral fortified and distributed in adequate quantity to close the calorie gap, it would constitute a suitable food supplement for use in AID assisted ICDS. Subsequent to this analysis, the price of CSM has fallen 36% as of May 1983, making it more economical than Sukhada.

III Food Delivery Systems

A. Port to State-Level Processing and Distribution Points

Gujarat

The CARE program in Gujarat depends on the lighterage port of Bedi-Jamnagar for receipt of commodities. Cargo is cleared from the port within five days and dispatched to CARE/Gujarat's designated consignees. All Title II inputs for Gujarat are transported by the State Civil Supplies Corporation from the state godown to the district and from there to the blocks and villages. Various modes of transport are used to deliver food from the block to the anganwadi including bullocks, camels, and jeeps. Marine and port losses through Bedi-Jamnagar averaged 1.9% in FY 82. Marine claims are processed by CARE/New Delhi. Inland losses are processed through CARE's counterpart, the Department of Health and Family Welfare in Gujarat.

Under contract to CARE, the Anand Milk Producers Union Ltd. (Amul) at Mogar, Anand is making a ready to eat (RTE) food called "Mumri gathia" as described in Table 4. To produce one MT of "Mumri gathia", 925 kg SFCM and 122 kg Oil plus 40 kg condiments (supplied by the government of Gujarat) are needed. Annually, about 4-5 thousand MT Title II SFCM and 600 MT Title II oil are used for the production of this RTE food. The production loss is approximately 9%. This food is packed in 15 kg bags with polyethylene liners, has a minimum shelf life of 3 months and costs 15 paise per beneficiary per day for processing, packaging and transporting. The daily production rate is 15-18 MT. Of the 247,000 beneficiaries who received Amul produced RTE foods in IFY 81/82, most were in the urban areas and none were from the AID assisted ICDS blocks.

TABLE 4

DESCRIPTION OF TITLE II RATIONS DISTRIBUTED BY CARE IN GUJARAT AND MAHARASHTRA IN 1982

	Ration	States	Number of of Bens (000)	Kcal	Protein (g)	% of Kcal from Fat	% of Kcal from Protein	Protein Efficiency Ratio	Cost ($)*
A.	80 g. Bulgur 7 g. Oil	Gujarat	353	345	9.0	21	10	1.0	0.0257
B.	RTE 80 g. soy fortified cornmeal 11 g. oil	Gujarat	247	350	9.0	26	10	1.8	0.0309
C.	RTE (Sukhada) 63 g. soy fortified bulgur 10 g. oil 30 g. jaggery	Maharashtra	235	425	10.9	23	10	2.3	0.0348

* Cost exclusive of ocean freight from U.S., local processing and transport as of August 19, 1981. Only (D) ration is vitamin-mineral fortified. RTE = Ready-to-eat

12

In addition to RTE food for CARE programs, Amul is manufacturing RTE food for the GOG's ICDS for 3,500 beneficiaries using local rice, wheat and soy/cottonseed oil. For this, GOG pays Rs.6.00 per kg which includes cost of commodities, packaging and transportation to the designated blocks. The RTE ration fixed by the GOG for ICDS is 80-105 g per beneficiary per day.

Amul officials have not experienced any problems with the supply of CARE Title II commodities, except in certain cases they found SFCM to be gritty which caused temporary shut down of the plant. Since Title II commodity containers do not indicate the date of manufacture or packaging, it becomes difficult to determine the age of the commodities. The Amul officials would prefer to receive Oil in 55-gallon drums rather than 1 gallon tins to avoid wastage of approximately 15 g of oil in the bottom of each tin.

The GOG remains undecided on centralized processing of commodities for the ICDS program. Their decision will have to take into account: (a) selection of sites for food processing with sufficient storage, (b) assumption of transportation, packaging and processing costs, (c) low shelf life of 4-6 weeks of Sukhada which would be more acceptable for use by under three's than the Amul produced RTE food, and (d) costs in its distribution at feeding centers.

Maharashtra

Centrally processed food is in use in all CARE assisted MCH centers. Title II SFB and Oil are cleared through the Port of Bombay by the Maharashtra Small Scale Industrial Development Corporation (MSSIDC) on behalf of CARE's counterpart, the Rural Development Department, and trucked to 40 privately owned, small processing plants throughout the state. Port-interior and transit losses are minimal, 1.4% from FY 79-81.

The Government of Maharashtra (GOM) has contracted directly with the processors (primarily located at district towns) to produce Sukhada as described in Table 4. Processors are paid 21 paise per beneficiary per day to cover the costs of (1) transporting commodities from Bombay to the units and on to the feeding centers, (2) jaggery, (3) administration, and (4) production of Sukhada. The GOM pays the processors in part form a 5 paise "Nutrition Cess" on bustares in Bombay. The processors, after meeting the above costs, make a 4 paise per beneficiary per month profit. This results in a minimum profit of Rs.8,000 per month per unit. Processors are responsible for transportation of Sukhada from their units to the feeding centers. The processors are contractually responsible for

reaching an agreed number of beneficiaries in a given geographic area. The beneficiary level is negotiated on the capacity of the processing units. The average number of feeding centers served by each unit is 50 within a 150-200 km radius. Sukhada is transported to the block level by truck. The Child Development Project Officer (CDPO) or Block Development Officer (BDO) is responsible for ensuring the movement of Sukhada to the anganwadis.

Sukhada is packed in 25 kg plastic-lined paper bags, has a 4-6 weeks shelf life, and at any time a center does not have more than one month's stock. Processors are required to furnish reports every month. The units are regularly visited by CARE field officers. Quality control testing is done once a month. Processing units in the Nagpur area have formed a cooperative for collecting and forwarding commodities thereby saving time and money.

Although Sukhada processing works relatively well, processors face several problems in the implementation of their contracts:

1. Uncertain contract duration and untimely reimbursement of costs by the Rural Development Department.

2. Long waiting period in case of the Nagpur producers' association in completion of formalities to get commodities released.

3. Making arrangements to lift commodities from MSSIDC warehouses which sometimes requires several days.

B. Supply Efficiency Ratios

CARE routinely monitors delivery of commodities to the block level in a measure known as the Supply Efficiency Ratio which equals:

$$\frac{\text{Food Delivered}}{\text{Food Required}}$$

Less is known about the regularity of delivery of commodities from the block to the anganwadi, but CARE has provided some SERs for the sub-block level in the project states.

Supply Efficiency Ratios for Delivery to the Block in 1981 (%)

State	Dec-Mar	Apr-July	Aug-Nov	Average
Gujarat	95	187	97	126
Maharashtra	90	97	89	91

Supply Efficiency Ratios for Delivery to Feeding Centers in 1982 (%)

State	Dec-March	April-July
Gujarat	159	142
Maharashtra	90	59

CARE data as verified by USAID during visits to each of the selected states in 1982 suggest that supply of Title II commodities should not negatively affect the achievement of project outputs. However, delivery to feeding centers needs to be improved and will have to be carefully monitored during the AID assisted ICDS project.

C. Reporting and Indenting

With some minor variations in form and terminology, each state uses the same procedures for reporting on commodity distribution and for indenting fresh stocks. In Maharashtra, the Block Report (Form II) details the receipt of Sukhada on the basis of delivery waybills submitted by the feeding centers. Processors furnish reports to CARE/Maharashtra (Form IV) which detail the receipt and stock of Title II inputs, Sukhada production and delivery to feeding centers. In Gujarat, feeding centers indent to the block level who in turn are supplied by truck from the Central Warehouse Corporation.

D. CARE's Role

CARE controls the flow of commodities from the port to the first level of storage through the preparation of commodity calls forward. CARE Field Officers (FO) monitor the flow of commodities to the processing plants in Gujarat and Maharashtra as well as to the block level in both states. CARE FOs are also responsible for conducting the annual physical counts and verifying records including condemnation and loss disposal at rail, non-rail and transit point godowns and processing units in Maharashtra. They also visit every block twice a year. However, the monitoring of feeding centers or anganwadis below the block is given lower priority by CARE due to time and personnel constraints.

Food Requirements for AID assisted ICDS

Proposed rations for AID assisted ICDS are described in Table 5. These rations will be supplied by CARE through Title II and will meet the nutritional specifications spelled out at the beginning of this section. Consideration had been given to reducing food costs by providing cheaper, less processed foods to older less malnourished children, and by providing three different ration sizes for different groups per the ICDS guidelines (Table 3). This approach does not

TABLE 5

DESCRIPTION OF TITLE II RATIONS TO BE DISTRIBUTED IN AID ASSISTED ICDS BLOCKS IN GUJARAT AND MAHARASHTRA FROM FY 84 - 89

Beneficiary Group	Food Type	Kcal	State	Years	Formulation (grams)*			
					CSM	SFB	OIL	Jaggery
At-Risk Pregnant (last 4 months) and Nursing (first 6 months) Women	CSM/OIL	600	Gujarat	FY 84-86	130	-	16	-
	Sukhada	600	Gujarat & Maharashtra	FY 87 89 FY 84-89	-	100	16	32
Severely Malnourished Children (≤ 36 months)	CSM/OIL	600	Gujarat	FY 84-86	130	-	16	-
	Sukhada	600	Gujarat & Maharashtra	FY 82-89 FY 84-89	-	100	16	32
Moderately Malnourished & Preschool Children	CSM/OIL	300	Gujarat	FY 84-86	65	-	8	-
	Sukhada	300	Gujarat & Maharashtra	FY 87-89 FY 84-89	-	50	8	16

*For the preparation of Sukhada type food CSM will be used during FY 84-FY 85. From FY 86 onwards SFB is likely to be used in place of CSM. There is no change in the weight, i.e., 50 g CSM/SFB for 300 kcal and 100 g CSM/SFB for 600 kcal.

appear to be workable in the field because the AWW has difficulty measuring even one uniform ration size correctly. Since beneficiaries usually all eat together at the same time, it is very difficult to provide different types of food to different groups of children at the same center.

The conclusions of AID's analysis are that to simplify operations at that anganwadi and to assure that rations are served as intended, there should be one type of food for all beneficiaries. A single portion of this food should meet the ICDS standard ration guidelines and contain 300 kcal and 8-10 g protein. All beneficiaries will receive a single portion except severely malnourished children and pregnant or lactating women who will receive a double portion. The AWW will have a standard measure (cup or spoon) for serving a correct single portion, which she can fill twice for double portions.

Prevailing malnutrition and birth rates (1976-1981) have been applied to estimate the number of beneficiaries in each category in rural and tribal anganwadis (Table 6). The number of ration units of 300 kcal required for 100% enrollment and 85% regular attendance of the target group are also shown. It was assumed that 8.5% of the total population would be children under three years of age of whom 15% would be severely malnourished and 25% moderately malnourished. The numbers in the table are just estimates. There will be no fixed number of beneficiaries per center. Rather the number to be fed will be based on the actual population, birth and malnutrition and attendance rates in each village which will be determined quarterly by the AWW.

Another decision affecting the food requirements for the project is whether to import blended foods through the Title II program, e.g. Corn Soy Milk (CSM) or whether to bring in fortified grains like Soy Fortified Bulgur (SFB) and re-process them in India with local ingredients to make appropriate blended foods like Sukhada. In both cases Title II Oil would be required to serve with the grain based product to achieve the necessary energy density. The total cost of the ration including processing and Title II costs, and feasibility are key considerations. The two options will be compared here.

Option 1 -- CSM and Oil

The decline in Title II commodity prices was very significant in 1982 and is expected to continue. The cost of CSM went from $366 per MT in August 1981 to $234 in May 1983. The fall in prices of high quality blended foods has made consideration of supplying the entire food input from US Title II sources more favorable. This option has the following other advantages:

TABLE 6

Estimated Number of Beneficiaries and Ration Energy and Protein Requirements for Average Rural and Tribal Anganwadis

Beneficiary Group	Kcal	Protein (g)	100% Coverage of Target Group		85% Coverage of Target Group	
			Rural	Tribal	Rural	Tribal
At-risk Pregnant Women (last 4 mos)	500-600	16-24	9	6	8	6
At-risk Nursing Women (first 6 mos.)	500-600	16-24	11	8	10	7
Severely malnourished ($\leq$ 36 months)	600	16-24	13	9	11	8
Moderately malnourished ($\leq$ 36 months)	300	8-12	21	15	19	13
Preschool (32-72 mos.)	300	8-12	40	28	34	24
Total Beneficiaries			94	66	82	58
Total Ration Units of 300 Kcal			127	89	111	79

(a) universal acceptability of CSM as a weaning and supplementary food by all categories of vulnerable groups in terms of palatibility digestability, and nutritional specifications; (b) ease in preparation with no central/local processing, just the addition of clean water and minimal cooking; and (c) elimination of the need for locally supplied ingredients and vitamins and minerals except for flavoring.

The costs of the CSM and Oil and the Sukhada rations are compared in Table 7. It can be seen that although the cost of the Title II ingredients is more in the case of the non-Sukhada, CSM and Oil rations, the total cost of this ration is 29-38% less than that of Sukhada. This cost comparision underestimates the advantages of CSM because it does not take into account the cost of setting up small scale processing plants, nor of controlling the quality of the product they produce.

Option 2 -- Centrally Processed Foods Using Title II and Local ingredients

Building upon the experience accumulated by CARE, the GOI, and the project states, Title II foods could be centrally processed in India with local ingredients into formulations with the necessary nutritional specifications. Sukhada would continue to be used in Maharashtra because it is well established there. However, it would need to be fortified with a vitamin/mineral premix. In Gujarat Sukhada would be started from FY 87 onwards and as such a plant (P) would have to be set up there. The estimated cost of setting up such a food processing plant to serve 100,000 beneficiaries is $100,000. The estimated processing and local ingredient costs for supplying Sukhada to AID assisted ICDS blocks in Maharashtra from FY 84 to FY 89 and in Gujarat from FY 87 to FY 89 are shown in Table 8. These costs would have to be borne by the state governments. While at present the CSM and oil option is more cost competitive, the choice of commodities and processing options should be reassessed periodically based on changes in the cost of Title II ingredients. Another factor to be considered is the ability and committment of the GOI and the states to progressively assume responsibility for supply of the basic ingredients.

The estimated Title II food and jaggery requirements by U.S. fircal year over the life of the AID assisted ICDS project are shown in Table 9. The calculations are based on 100% coverage of the target group for 300 days a year using the estimated number of beneficiaries in each category from Table 6. The rations used are those described in Table 5, with Gujarat receiving CSM and Oil from FY 84 to FY 86 and SFB, Oil and Jaggery from FY 87 to FY 89 and Maharashtra receiving CSM/SFB, Oil and jaggery throughout the life of the project. Severely malnourished children and pregnant and

TABLE 7

COMPARISION OF ANNUAL COST OF FEEDING A SINGLE RATION (300 KCAL) FOR 300 DAYS OF LOCALLY PROCESSED SUKHADA OR CSM AND OIL ($)*

Costs	Sukhada CSM (50 g) Oil (8 g) Jaggery (16 g)	SFB (50 g) Oil (8 g) Jaggery (16 g)	I/CSM (60 g) and Oil (8 g)
Ingredients			
Title II Foods	5.57	6.05	6.62
Local Foods	1.71	1.71	-
Vitamin/Mineral premix	Already added	0.77	Already added
Processing	2.10	2.10	-
Total	9.38	10.63	6.62

* CCC prices as of May 11, 1983.

Jaggery price as of April, 1983.

TABLE 8

ESTIMATED COST OF PROCESSING AND JAGGERY FOR SUKHADA FOR 19 AID ASSISTED ICDS BLOCKS IN RUPEES (000)

FY	STATES	PRICE OF JAGGERY & 10% INCREASE '85 ONWARDS	PROCESSING COST	TOTAL
84	Maharashtra	1,320	1,615	2,935
85	Maharashtra	2,290	2,546	4,836
86	Maharashtra	2,510	2,546	5,056
87	Maharashtra	2,770	2,546	5,316
	Gujarat	6,710	6,178	12,888
88	Maharashtra	3,040	2,546	5,586
	Gujarat	7,380	6,178	13,558
89	Maharashtra	3,350	2,546	5,896
	Gujarat	8,120	6,178	14,298
TOTAL FY	Maharashtra	15,280	14,345	29,625
84-89	Gujarat	22,210	18,534	40,744
Combined Total		37,490	32,879	70,369

TABLE 9

(June 7, 1983)

ESTIMATES OF GROSS TONNAGE AND VALUE OF TITLE II AND LOCAL FOOD INPUTS FOR 19 AID ASSISTED ICDS BLOCKS FROM FY 84-89

FY	States	Metric Tons				Value $(000)*				O/T (40%)	Total $(000)
		CSM	SFB	Oil	Jaggery	CSM	SFB	Oil	Jaggery		
84	Gujarat	4,957	-	610	-	1,160	-	525	-	674	2,359
	Maharashtra	1,153	-	185	369	270	-	159	132	172	733
	Total	6,110	-	795	369	1,430	-	684	132	846	3,092
85	Gujarat	5,737	-	706	-	1,365	-	638	-	801	2,804
	Maharashtra	1,819	-	291	582	433	-	263	229	278	1,203
	Total	7,556	-	997	582	1,798	-	901	229	1,079	4,007
86	Gujarat	5,737	-	706	-	1,502	-	702	-	882	3,086
	Maharashtra	-	1,819	291	582	-	532	289	251	328	1,400
	Total	5,737	1,819	997	582	1,502	532	991	251	1,210	4,486
87**	Gujarat	-	4,413	706	1,412	-	1,420	772	671	877	3,740
	Maharashtra	-	1,819	291	582	-	585	318	277	361	1,541
	Total	-	6,232	997	1,994	-	2,005	1,090	948	1,238	5,281

TABLE 9

(June 7, 1983)

ESTIMATES OF GROSS TONNAGE AND VALUE OF TITLE II AND LOCAL FOOD INPUTS FOR 19 AID ASSISTED ICDS BLOCKS FROM FY 84-89

FY	States	Metric Tons				Value $(000)*				O/T (40%)	Total $(000)
		CSM	SFB	Oil	Jaggery	CSM	SFB	Oil	Jaggery		
88	Gujarat	-	4,413	706	1,412	-	1,562	849	738	964	4,113
	Maharashtra	-	1,819	291	582	-	644	350	304	398	1,696
	Total	-	6,232	997	1,994	-	2.206	1,199	1.042	1,362	5,809
89	Gujarat	-	4,413	706	1,412	-	1,719	934	812	1,061	4,526
	Maharashtra	-	1,819	291	582	-	708	385	335	437	1,865
	Total	-	6,232	997	1,994	-	2,427	1,319	1,147	1,498	6,391
Total FY 84-89	Gujarat	16,431	13,239	4,140	4,236	4,027	4,701	4,420	2,221	5,259	20,628
	Maharashtra	2,972	7.276	1,640	3,279	703	2,469	1,764	1,528	1,974	8,438
	Total	19,403	20,515	5,780	7,515	4,730	7,170	6,184	3,749	7,233	29,066

NOTE TO TABLE 9:

May 11, 1983 prices have been used for calculating the cost

*1 CSM price for FY 84 is $234/MT.
CSM price for FY 85 is $238/MT + 10% per year w.e.f. FY 86.

1.1 SFB price for FY 86 is $266/MT + 10%.

1.2 Oil price for FY 84 is $860/MT and for FY 85 is $904/MT + 10% w.e.f. FY 86.

1.3 Jaggery price is $357/MT for FY 84 + 10% w.e.f. FY 85.

2 Ocean transport O/T is shown separately (on CSM;SFB; and il only).

** From FY 87 onwards a locally processed "Sukhada" type food is expected to be used in both states. In Maharashtra it will be used from FY 84 through FY 89.

---

lactating women will receive double rations. It is assumed that the 10 blocks sanctioned in IFY 82/83 will receive food from U.S. FY 84 through FY 89. The 9 blocks sanctioned in IFY 83/84 will receive food from the latter half of U.S. FY 84 through FY 89. The estimated food requirements are the maximum likely to be needed. Lower attendance rates and delays in implementation may lower requirements in the initial years. On the other hand higher populations or rates of malnutrition and attendance then expected could increase requirements. Necessary adjustments will be made by CARE in the Annual Estimate of Requirements. The amount of food needed by each anganwadi will be determined quarterly by the CDPO from actual attendance and malnutrition rates and indented from CARE accordingly. USAID will guarantee, in so far as the Title II budget and commodity availabilities permit, that required levels of Title II food inputs for the target group will be provided over the life of the project. The GOI and state governments will likewise be expected to guarantee that if additional food is needed, beyond the Title II projections, to feed lower priority groups, i.e. children 3-6 years of age and older children who escort younger siblings to the center, that these foods will be provided by the state governments or that these lower priority children will not be fed. The preferred course of action will be for the GOI/States to provide some stipend to the AWW or CDPO so that locally available foods can be purchased. This problem can only be minimized through making the AWW, her staff and the community as a whole aware that first priority for receiving ICDS rations should be given to malnourished children under three and to pregnant and nursing women.

ANNEX 8

ANALYSIS OF NUTRITION AND HEALTH EDUCATION (NHED) SERVICES IN ICDS

Description of NHED in ICDS

Nutrition and health education (NHED) are an important part of ICDS. The guidelines of the MOSW are that NHED be given to all women 15-44 years of age with priority to nursing and expectant mothers. Special follow-up is to be made of mothers whose children suffer from malnutrition or from frequent illness. The NHED methods used are:

1. Mass media and other forms of publicity;
2. Special campaigns at suitable intervals to saturate the project area;
3. Short courses in the village for about 30 women at a time;
4. Home visits by AWWS;
5. Cooking demonstrations;
6. Utilization of the NHED program of the MOHFW;
7. Incorporation of NHED in the Functional Literacy for Adult Women classes (FLAW).

The NHED is to be done in conjunction with other ministries' field extension services, such as those of the Ministry of agriculture, Department of Food and the Ministry of Information and Broadcasting. The key educator is the AWW through her daily contacts with the community. She is assisted by the MS, the CDPO and the staff of the PHC, primarily the FHW and to a lesser extent the FHA. All these people have received training in NHED and their job descriptions state that they are to educate the public.

Other state level personnel responsible in principle for NHED are the multi-purpose Family Welfare Staff - the Mass Education and Media Officer (MEMO - State Level), the District Education and Media Officer (DEMO), and the Block Extension Educator (BEE). Extension agents such as the BEO (Panchayat) and BEO (Women) have a lesser role to play but are to be familiar with major issues in rural development of which NHED is one.

The following list of basic messages for NHED has been developed by AIIMS and UNICEF and distributed by the MOSW to all ICDS functionaries and their trainers:

1. Breastfeed as long as possible.

2. Introduce semi-solid food from five to six months.

3. Feed young children from three to six times a day.

4. Don't reduce food in illness.

5. Use the health services available.

6. Get children immunized.

7. Keep yourself and your surroundings clean; drink clean water.

8. Have no more than two or three children, two to three years apart.

The list is accompanied by 20 components which provide more details including the importance of maternal nutrition and prenatal care. The AWW is responsible for promoting increased utilization of ICDS services in support of the basic messages. Since 1976 when the basic messages were established, AIIMS medical consultants to the MOSW have urged more emphasis on the control of infant diarrhea by use of home-prepared or pre-packed oral rehydration solution and growth monitoring and weight cards. The AWW has also been asked to provide more population education in support of message 8.

The execution of the NHED component of ICDS is the responsibility of several agencies. NIPCCD has developed all training syllabi of which NHED is a part. They have collected NHED materials from all over India to show trainees along with information on how they can be ordered. NIPCCD also produces and distributes a small number of educational materials to serve as prototypes for ICDS, i.e. The Guidebook for AWWs. However, it is the responsibility of the state governments to translate these materials into local languages and have them mass produced and distributed. A communications adviser has recently been added to the staff of NIPCCD and they hope to expand their involvement in NHED.

The Ministry of Information and Broadcasting (MIB) can disseminate NHED messages through its system of radio, television, films and audio-visual field publicity units. The Central Health Education Bureau (CHEB) has given print materials to its State Health Education Bureaus (SHEB) for reproduction and distribution within ICDS. A list of CHEB produced brochures, folders and posters in English and Hindi has been included in the ICDS guidelines and distributed to field staff by the MOSW. Literacy House, Lucknow, has also played a major role in preparing educational materials in many languages for use especially in the FLAW classes in ICDS. The various ICDS training

centers are to teach workers NHED techniques. Approximately Rs.125/- per trainee are provided to enable the workers to prepare NHED teaching aids from local materials to complement the training materials provided by the training centers. However, for the most part, very little time is spent during basic training on techniques for NHED, and the training provided on communications is ineffective as described in Annex 11.

At the state level the primary responsibility for NHED rests with the department in charge of ICDS, e.g. Health, Tribal Welfare or Rural Development in the three states. Day to day arrangements for NHED coordination with other agencies and procurement and distribution of materials is to be done by the deputy director or ICDS program officer. A budget of Rs.2,500/- per year per block has been allotted by the MOSW for this purpose. Since these officers manage all aspects of ICDS plus other programs, they have little time for NHED. In many cases the NHED budget is underutilized. For a more detailed description of the ongoing or potential role of various institutions in NHED in ICDS see Annex 9.

Limitations on the Effectiveness of NHED

Coverage

The 1981 PEO Evaluation Report of ICDS projects states that fewer than half of all anganwadis offered any NHED in 1977. At these, only 19% of all eligible women had ever received NHED. However, 43% of all pregnant women and 27% of all nursing women had received some NHED. This is despite the fact that 73% of all women reported that they were aware that NHED was given at the anganwadi. Few mothers of malnourished children are enrolled in the FLAW classes. Instead these classes are attended more often by young women without families. Although this audience is important to reach in terms of future child upbringing, it is not the audience needed to effect immediate change in child health and nutrition.

Behavioral Change

The PEO reports that ICDS increased community awareness of the importance of professional advice for health and nutrition problems. However, there may have been a regression in awareness of proper remedial measures. When asked what should be done in the case of childhood diarrhea, 16% of those polled in the baseline said "Do nothing". Surprisingly, 21% in the re-survey said "Do nothing". The percentage of respondents stating that they give branded medicines to children with diarrhea went up substantially in the survey interim from 31% to 40%, suggesting that ICDS information concerning diarrheas may have been incorrect, and contributed to a practice the MOHFW would like to discourage.

Questions concerning food habits were posed during both baseline and re-survey. According to respondents, the consumption of green leafy vegetables went up from baseline for both children 0-6 years old of age and pregnant mothers. Similarly, the reported consumption of fats and oils went up. Pulse consumption, however, went down. Little can be made of this information, since nothing is known about the socio-economic conditions during the two surveys. Pulse consumption might have been down due to poor production, lack of sufficient income, or greater market demand (pulses sold not consumed). Similarly oil/fat consumption may have gone up because of surplus disposable income rather than a new conviction that fat is important in the diet.

Significant improvement in nutritional status of ICDS beneficiaries as found in the AIIMS studies indicates that there has been some positive behavioral change. However, discussions with ICDS officials at all levels, with professionals both in and outside of Government, and with multilateral and private voluntary organizations confirm that NHED has been less than a complete success. These officials and professionals cite a number of reasons why NHED is not working effectively.

Role of the AWW

One reason that NHED has not been effective is the lack of contact the AWW has with mothers because children are brought to the anganwadi by older siblings. Women are not required to work in the anganwadi and are not at home during the day visits of the AWW. Participation in FLAW classes is low relative to the time devoted to them. Given her many other responsibilities, the AWW has little time to make contact with village women either at home or in groups outoutside of FLAW. The PEO states that AWWs reported spending 8 1/2 hours on activities other than NHED or home visits on which they reported spending an additional 3 hours. The typical AWW teaches preschool, feeds the children and completes her records from 9:00 A.M. to 2:00 P.M. and teaches FLAW for two hours in the afternoon or evening.

The AWW's use of home-made teaching aids and her coverage of NHED and family planning topics during FLAW is good. However, as has been described in the training analysis (Annex II), her training in communications techniques, organization of group meetings and prevention and treatment of the most common health and nutrition problems needs to be strengthened.

Credibility of information sources is an important factor for effective NHED. The credibility of the AWW in health matters may be low because she is thought of as a school teacher and not as a nutrition/health worker. If she is thought of as a village health worker, there is confusion in the community as to her role vis a vis other workers.

Her credibility and effectiveness as a health/nutrition worker are also hampered by the fact that she is not usually given basic drugs or vitamins and minerals to distribute. When a village health worker serves as a reliable supplier of basic drugs, the community begins to seek her advice on non-curative matters. The AWW has an advantage, however, over the traditional primary health care worker because she is offering food, a major incentive for people to come to the anganwadi or be enrolled in the program.

Role of Supervisory and Health Staff

The participation by ICDS staff (MS and CDPO) in NHED has been limited, due to their perceived role as supervisors and not educators and their limited contact with the AWW. At the ratio of one MS to 20 AWWs, she is able to visit each village only every 4-6 weeks. Her visits are not at the time most suitable for family contacts, group discussions, or village events, i.e. the evening. The problem of lodging for supervisors is frequently mentioned. The efficacy of FHWs as NHED educators has been limited by the demands of their other health care and family planning responsibilities. The training of the MS in NHED suffers from the same deficiencies as that for the AWW and needs to be strengthened as described in the training analysis (Annex 11).

Community Participation

The PEO report indicates that community participation in ICDS has been less than expected. In 1977 only 68% of the anganwadi coordinating committees had ever met. When meetings were held, only administrative matters were discussed and the committees did not make an effective contribution to the implementation of the program or to seeking public cooperation. Community participation in ICDS is important for improved NHED for the following reasons. Firstly, if village women take an active role in running the anganwadi, they will see what the ICDS scheme offers, and will receive relevant NHED from the AWW. If every mother of a preschool child contributed two hours every three months, sufficient contact would be had without hardship to mothers. Secondly, if members of the village panchayat are convinced that ICDS is a good scheme, then the information given by ICDS functionaries would also be seen as valuable. Panchayat sanction and support would increase the credibility of ICDS. Thirdly, community support at the panchayat level would help the AWW gain access to homes otherwise closed because of ignorance, class or caste distinctions. Although such access is as much related to the personal relationship of the AWW to the individual family, and class and caste will continue to be important factors, official village sanction and active support would help open the community.

Community support and participation in ICDS appear to be lacking because of many factors. There is no regular contact with the village pancyahats. The BEO (Panchayat) could but has not played an important role in this effort. Because there has been inadequate orientation of the panchayat to ICDS, the AWW is often a stranger to these leaders and as a young woman, she is not welcomed. The MS and CDPO have not been able to help the AWW gain credibility with the panchayat because they visit the village infrequently and often spend more time in the anganwadi than in the community. These supervisors usually visit the village during the day when the panchayat leaders are away working. The BEO (Women) has also not been asked officially to make an active contribution to the participation of women's groups in the ICDS program. The considerable experience of the State Departments of Family Welfare has not been applied to encourage community and particularly panchayat support for ICDS. Gujarat, for example, developed a successful Model Methodology for Involving Panchayat as Change Agent in its family planning efforts in the sixties for use at village, block and district level.

The title of the ICDS - Integrated Child Development Services - implies the multifaceted nature of the program, but from the point of view of the community, integration may mean little and the wide range of services available may present some confusion. Many respondents in the PEO study thought of ICDS only as a preschool education or feeding program and were unaware of the services provided for mothers or the health aspects of the program. The establishment of a project identity may be important for ICDS, particularly in the early phases. Although an explanation of the many different services of ICDS, their importance, and their function may help engender community participation and utilization of the scheme, fostering the idea that the anganwadi is a unique institution may aid community perceptions.

Given the successful use of weight cards as community teaching tools in other countries, it is surprising that they are not used more extensively for this purpose in ICDS. Weight cards can be used to focus community attention on child growth as an attainable goal. In order for growth to happen and be seen on weight cards, children must be fed properly, immunized and given oral rehydration for diarrhea. Weight cards, in addition to being a persuasive educational technique for the motivation of individual mothers, can also be used for collective motivation.

NHED Planning

The basic list of messages for NHED accurately refects those few practices that would be most beneficial for improving the health and nutrtion situation of Indian children. However, beyond the list of messages, no strategies have been developed for assessing the reasons why these practices are not being followed, techniques for convincing

parents of their value, and simple instructions for parents to act on the messages. This lack of planning and absence of an NHED strategy results in great variation in NHED from one anganwadi to another. Certain misinformation is conveyed along with messages upon which a family cannot act due to lack of more detailed guidance.

Weaning is a good example. There is no argument that supplementation of mother's milk at 5-6 months should be encouraged through small but frequent feedings. However, in most villages fuel is scarce, storage facilities for cooked food are inadequate and unsanitary, and women are often away from the home leaving infants in the care of older siblings or grandparents. Given these constraints to mothers acting on the message, what solutions can be proposed? Recipes for inexpensive, locally available, energy-dense, easy to prepare, weaning foods need to be provided. Perhaps more sanitary storage techniques can be developed so that the child's food can be cooked once a day. Can a ready to eat food be made in a large quantity at home or centrally in the village to which the mother need only add clean water before serving? Can food eaten by adults be appropriately modified for young children, e.g. chappatis soaked in tea? Is better intra-family food distribution possible given local traditions? Techniques need to be devised for providing NHED to older children who take care of toddlers. Similar strategies need to be developed for the other messages.

The question of NHED priorities is also critical. Can the AWW effectively promote better environmental sanitation, when such improvements are likely to take more physical and financial resources than presently available in backward areas? Should she talk about the importance of breastfeeding, when the length of breastfeeding in rural India often exceeds one year? Although there can be no argument concerning the importance of all the basic messages, it may be necessary to limit them to insure the credibility of the AWW, the possibility of them being acted upon, and a direct relationship of the messages to actions to prevent infant mortality, i.e. diarrhea control, immunization, and supplemental feeding of young children and pregnant and lactating women.

Utilization of Available Technical Resources and Innovative Approaches

The medical consultants through AIIMS provide invaluable assistance in the health and nutrition components of ICDS. However, they do not have the time or requisite skills in education, sociology, anthropology, economics, communications, etc. necessary to plan an NHED strategy. Similarly, the major educational organizations, such as NIPCCD or NCERT either have little experience in such communications planning or have had little opportunity to provide technical assistance. Furthermore, government and private agencies with the requisite experience have not been fully utilized. CHEB, skilled in

the training of health workers in health education and experienced in the production of health education materials, has participated in only a marginal way. Its main function has been to supply existing print materials to ICDS workers.

The MOHFW has perhaps the greatest experience through design and execution of motivational family planning campaigns throughout India, yet, has played only a minor role in the NHED component of ICDS. Since a strengthened NHED program will require the same campaign planning and implementation skills associated with India's family planning efforts, the MOHFW should play a more active role.

Since ICDS is not directly implemented by the health and family welfare departments in most states, the BEE, MEMO and DEMO have not been utilized for NHED in ICDS. The SHERs have the capacity for producing audio-visual materials for ICDS, but have frequently not been used at all or just asked to reproduce already develcped materials. The various divisions of the MIB also have a lot to contribute to NHED in ICDS through radio, films, songs and drama but they have seldom been asked to do so (see Annex 9). Most NHED in ICDS is done through face to face communication and few other media or innovative approaches such as film, radio, mime or folk drama have been tried. The AWW frequently lacks teaching aids for NHED and materials in local languages or for use by illiterate women are rare.

Although ICDS guidelines recommend the use of the Ministry of Agriculture, Department of Food's Mobile Extension Units, little attempt has been made to use them or the many other mobile units and vehicles available at District and Block level for showing films. Common reasons for not showing films in ICDS are too few jeeps and working projectors to cover all villages more than once a year. Film prints and fuel for the jeeps are costly. Maintenance of projectors is a problem that has caused UNICEF to cease supplying them. However, the Department of Health and Family Welfare in Maharashtra plans to purchase 300, 16 mm film projectors so that each district will have 8-10 projectors for use with all the district and block health vehicles. A driver will be trained as a projectionist for each vehicle. The state has purchased 2,000 prints of 20 health, nutrition, and family planning films from MIB's Films Division, many of which are relevant to ICDS. To increase attendance, the state plans to purchase prints of popular Hindi films (Rs.10,000 each) which are a guaranteed big draw for rural audiences. The educational films will be shown during intermission. However, given the number of projectors and vehicles available, there still will probably be no more than one film showing per village every ten months. In Gujarat it would appear that with the existing vehicles, projectors and money available for NHED, more films could be shown in ICDS if these resources were better coordinated.

All India Radio (AIR) frequently broadcasts health and nutrition messages but has not been asked to do so expressly for ICDS. Radio could be a promising channel for NHED in ICDS and for publicizing the inauguration of new ICDS blocks. Recent estimates suggest that 90% of India's population is within listening range of radio broadcasting and that there are 20 million licensed radio sets in the country[1/]. There probably are equally as many unlicensed. Local confirmation of these figures by any objective means is impossible, but consensus has been that radio does not penetrate as effectively as could be hoped. Even if one were to use a 40 million radio sets figure, and multiply that by five listeners per set, the estimated coverage would be only 200 million out of the total population of 700 million. If one assumes that half of these people are children, then the projected radio listenership for adults might approach 66% of the total adult population. Such projections, however, should only be regarded as speculations.

1/ India - Report of Mission on Needs Assessment for Population Assistance, No.12, UNFPA, April 1979.

Annex 9

ROLE OF VARIOUS AGENCIES IN NUTRITION AND HEALTH EDUCATION (NHED) IN ICDS

Central Health Education Bureau (CHEB)

The CHEB of the MOHFW in Delhi is the primary institution for health education in India. It is comprised of a Media Divison for the production of print materials, slides, films and radio scripts; a Training Division for the training of medical and paramedical personnel of the MOHFW; a Field Study and Demonstration Division for training, pre-testing and evaluation of materials and media-related field research; and a School Health Division for the integration of NHED within primary and secondary school curricula.

The production of print materials - leaflets, pamphlets, brochures, posters-is done according to MOHFW directives in English and Hindi for use in national health campaigns, e.g. for immunizations and malaria. These materials are for the most part produced at the Directorate of Advertising and Visual Publicity, then sent to the State Health Education Bureaus (SHEB) where they are adapted into local languages.

Other print materials have been produced by CHEB, for example, the Handbook for Mothers (1980), a guidebook for paramedical personnel. It contains detailed, although readable and practical information about pregnancy, lactation, care of infants and young children, and psycho-social development. The booklet, in fact, was designed for use by literate rural and urban mothers, but has been found to be of limited use for that audience. At present the booklet is not being routinely distributed to AWWs, but such a distribution could be contemplated. The CHEB is also producing a manual on health education for MOs.

All prototype material produced in Delhi is sent to the SHEBs, who after adaptation, reproduce it in as many copies as required. According to discussions with SHEB officials, few of the materials reproduced at state level are distributed to AWWs. A review of a complete set of print materials produced by CHEB indicates that aside from Handbook for Mothers, only one or two are appropriate for wider distribution within the ICDS system. One, a leaflet entitled Protect Your Child Against Diseases, presents basic information on immunizations. Posters produced by CHEB on breastfeeding, immunizations, basic food groups, and hygiene may be applicable for

distribution to anganwadis. Slides for cinema halls on breastfeeding have been prepared from the same artworks as the posters. Other slides are prepared on an ad hoc basis. Little emphasis is given to slides by CHEB although those produced are of uniformly good, technical quality.

Films are also conceived at CHEB, then produced by Films Division, MIB. A film on Oral Rehydration Therapy is presently under production. Films Division has a catalog of films sponsored by CHEB and the MOHFW available on request. Of relevance to ICDS are the films on malaria and neonatal tetanus. The CHEB estimates that approximately 10 films per year are produced by Films Division. Many quickies of 2-3 minutes duration have been produced, most on family planning, and may have been included in CHEB's count.

The following training activities of CHEB are perhaps its most important function:

1. A Post-graduate course of one year ending in the degree of Master in Health Education. This course for M.B.B.S. graduates, usually of the MO level in government, is executed in conjunction with Delhi University.

2. A three-month certificate course in Health Education for paramedical personnel of the FHA level. Two courses are given per year, with 30-35 students per course. The syllabus is thorough, and well organized, presenting participants with communication theory, basic science, epidemiology, educational psychology, social and behavioral science, health education and community organization. This course has a practical, field component, organized and executed by the Field Study and Demonstration Division and although designed for FHAs, it is open to all candidates recommended by local officials. Although FHWs could participate, it appears that the course might be too advanced for them.

3. A one-month health education course for Medical Officers (usually MO, but also DHO level). The syllabus is an abbreviated version of the 3-month course. All basic health education issues and their socio-cultural context are taught.

4. A one-month media course for artists, and audio-visual technicians.

5. A two-month course in specialized Health/Family Planning Education for DEMOs, two courses per year (syllabus not available).

The Field Study and Demonstration Division and its affiliates at the state level, provide field training as part of all health education courses.

The CHEB represents a potential resource for the training of ICDS personnel. The Director of CHEB indicated his willingness to include medical and paramedical personnel in CHEB's existing training programs and to develop shorter, more specialized sessions for ICDS. In addition, he would allow CHEB professionals to advise on regional training and to participate in this training.

Ministry of Information and Broadcasting (MIB)

The MIB has a variety of resources of potential usefulness to ICDS: All-India Radio (AIR) - a national radio system comprised of many local stations per state; Films Division which produc s most of tne educational films in India; the Division of Field Publicity which distributes and shows films through mobile units; the Directorate of Advertising and Visual Publicity which produces (although usually does not design) audio-visual materials; and the Song and Drama Division.

AIR

All-India Radio is a promising channel for disseminating information concerning health and nutrition and for publicizing the inauguration of new ICDS blocks. Although AIR has broadcast health and nutrition messages frequently, there has been no expressly established link between the ICDS scheme and AIR, although station directors indicated their willingness to participate. For this closer relationship to occur, a directive would have to come from MIB, indicating what is expected from local stations who do nearly 90% of their own production (only short national news and information programs come from Delhi via the network). In principle, coordinating mechanisms already exist between the MOSW and MIB.

Frequent meetings are to be held by MOSW with representatives from all MIB Divisions. Although these meetings may orient MIB officials and sensitize them to NHED priorities in ICDS, more detailed program ideas must be given to AIR. Prior to the inauguration of ICDS blocks in AID funded areas, for example, the MOSW would have to specify information to be broadcast, the timings (coordinated with local events), the emphasis and priority to be given, and how long the information should continue. A detailed broadcast plan would have to be developed and agreed upon between the two Ministries before any comprehensive campaign could begin.

Films Division

Films Division, Bombay, produces health, nutrition and family planning films for the Government of India for national distribution, dubbed in local languages where required. One criticism is that most of Films Division's films are made in Bombay, and hence lack the regional variety needed in a multi-cultural society. However, a main strategy in the Sixth Plan was to shift the thrust from making films for the All-India circuit in 16 languages to decentralized film making in support of extension. However, no evidence of this shift in policy has been noted.

Division of Field Publicity

The Division of Field Publicity had 221 mobile units throughout the country in 1979. These mobile units organize film shows and village entertainment. The Sixth Plan states, however,that "the integration of these units with development activities in these areas requires to be strengthened". This view was corroborated during field visits to Maharashtra and Gujarat. Local officials, although citing the Field Publicity Units as potential resources, stated that they were unsure of the best way to use them. No attempt had been made in the two states to see that the units had been furnished with existing health and nutrition films and had been given instructions as to which ICDS villages to visit.

DAVP

The Directorate of Advertising and Visual Publicity is responsible for the production of print material. In terms of NHED, its primary function has been the printing of material designed by CHEB. It has, apparently, no more than a production role.

Song and Drama Division

The Song and Drama Division, which has 16 offices throughout India, utilizes live entertainment media to make the masses aware of various national programs and objectives. Although this Division has not been used to any appreciable extent in the states visited, increased utilization of it should be considered, particularly for the dissemination of information for public groups at block and district level.

UNICEF

Of most relevance to the proposed AID assisted ICDS blocks is the provision by UNICEF of slide projectors, film strips and slides to every CDPO and every training institution for AWWs, MSs, and CDPOs. This includes all new training centers which serve ICDS.

The use of these slide projectors for new NHED training material is a strong poseibility. UNICEF is hoping to provide enough equipment and raw stock of film to NIPCCD to make them self-sufficient in training slide production. Funds have already been provided by UNICEF for the production by NIPCCD of flash-cards for ICDS training centers.

CARE/Gujarat and the Vikram Sarabhai Community Science Center (VSCSC)

These two organizations are involved in an upgraded mother and child feeding program called the Integrated Nutrition and Health Action Program (INHAP), which includes an innovative approach to NHED. The local worker is asked to concentrate on a centrally assigned theme or problem each month and she is provided materials for teaching mothers which have been produced by VSCSC. The VSCSC has conducted applied research and developed a number of innovative toys and games to teach science to young children and to adults.

Indian Space Research Organization (ISRO)

The ISRO has been operating a direct, line-of-sight television service to village communities around Ahmedabad. Although they have no plans to increase broadcasting, they have extensive research experience and could do field testing and market-type research for new materials/media for ICDS.

ANNEX 10

ANALYSIS OF PRIMARY HEALTH CARE SERVICES IN SUPPORT OF ANGANWADIS

For the project goal and subgoal to be met, the GOI must offer selected primary health care services important for child mortality reduction and must achieve a reasonable level of coverage of the target group so that improved nutrition is sustained by improved health.

Coverage of the Target Group: Both the PEO and AIIMS Reports contain 1977 data on primary health care coverage at anganwadi sites. The PEO Report also has data from the previous year for some indicators so a limited trend analysis can be done.

Regarding pregnancy care services, the PEO Report shows strongly positive trends for coverage with immunizations (doubled) and health check-ups during pregnancy (quintupled). However, the base was low so that in 1977, only 61% of anganwadis reported the availability of tetanus toxoid (TT) injections for pregnant women. At those sites, the coverage with one TT injection was about 10% of rural pregnant women and 23% of tribal pregnant women (two is the minimum recommended). Analysis of six AIIMS studies covering 48 anganwadis in six states found that 29% of pregnant women had received one injection and 14% had received two injections during pregnancy.* In the PEO Report 59% of anganwadis reported the availability of prenatal check-ups and coverage at those sites was 20% of rural women and 13% of tribal women for at least one check-up. Analysis of AIIMS data showed 51% of rural and tribal women reported having a health check-up during pregnancy with 21% reporting two or more. Anemia in pregnancy is a major problem in India with 21% of pregnant women reported to have pallor in the AIIMS studies. For both prevention and treatment of anemia, iron/folic acid tablets are used. The PEO Report showed no rural women reporting having received iron/folic acid tablets while 27% of tribal women did report receiving them. The AIIMS data showed that 46% of rural and tribal women reported receiving iron/folic acid with 21% reporting regular receipt of tablets. Of women with pallor, 38% reported receiving treatment. The PEO Report inquired about health referral and found that only 4% of rural pregnant women and no tribal women reported visiting a health worker on the advice of an AWW.

Regarding delivery services, no trend data are available. The AIIMS data confirmed the strength of traditional delivery practices in rural and tribal India as only 5% of women reported delivery by a

*The AIIMS data on pregnancy should be considered as low estimates as they are based on "currently pregnant women".

doctor or hospital; 17% by a government Female Health Worker (FHW or FHA); and 16% by a trained dai. Thirty-one percent of deliveries were by untrained dais and 30% by relatives or neighbors. In addition, great diversity is found between states in the sources of care for delivery.

Regarding child care services, the PEO Report showed strongly positive trends for coverage with immunizations (doubled), health check-ups (quadrupled), and health referral (nearly doubled). Again, the base was low with 59% of anganwadis reporting the availability of immunizations for children. Those sites reported 10% coverage of rural children and 8% coverage of tribal children in the 0-12 month group with at least two DPT injections (minimum recommended). For the 13-36 month group, reported coverage with two DPT injections was 13% for rural children and 8% for tribal children. Regarding health care check-ups, the PEO Report showed 58% of anganwadis reporting the availability of health check-ups. Those sites reported a coverage of 17% and 8% for rural and tribal children in the 0-12 month age group with one or more check-ups. For the 13-36 month group, the coverage was 21% and 8% for rural and tribal children. The PEO Report inquired about health referral andfound that only 2% of rural children and no tribal children were reported to have visited a health worker on the advice of an AWW. No data are available on utilization of health services by children 0-3 years of age when sick. However, analysis of AIIMS data showed that only 54% of all people dying during the study period had received any medical care by a doctor of the government health system.

AIIMS data (1980-81) taken from household surveys in 53 project areas showed an encouraging trend in the number of children who ever received a health check-up or Vitamin A supplement. The rural health system itself has been undergoing a major expansion (Model Plan) which began in 1978 and is due for completion by 1989 with additional staff at the village, trained dais (midwife) and Village Health Guides (VHG), and additional staff at the sub-center level, a Female Health Worker (FHW) and a Male Health Worker (MHW) for each 5,000 people. It should be possible to achieve project plans for increased coverage of the target group with immunizations, health check-ups, oral rehydration, vitamins/minerals and delivery care due to these additional health workers.

Time of the Health Workers for Support of the Anganwadi: The health workers have many responsibilities besides support of the anganwadi. They are responsible for maternal and child health services, control of communicable disease, illness care, sanitation, and health education for all of the population in their catchment area. Perhaps, most importantly, they are the backbone and prime focus of the family planning efforts of the GOI in rural and tribal

areas. As such, they do not view support of ICDS as a major responsibility, and expectations that they might visit the anganwadi more frequently than once every 1-2 weeks are unrealistic. An expanded and strengthened coordination role of the MS will, however, help keep FHW and VHG support for the anganwadi at a reasonable level.

Coordination between the Anganwadi and the Health System for Primary Health Care Services: Since the inception of ICDS, the Auxiliary Nurse Midwife (now called Female Health Worker) has been the main worker for health support of the anganwadi. In general, the AWW and the FHW work independently but are coordinated at the block level. The FHW is to visit each anganwadi weekly (each has up to five anganwadis in her service area) but there are no available data to know if this is generally practiced. The USAID consultants, visiting in 1981, did not feel that this coordination was effective due to high numbers of vacant posts, inadequate supplies and equipment, lack of orientation of the FHW about cooperation with the AWW and the many other duties of the FHW.

Coordination between the AWW, the VHG, the trained dai, and the FHW is essential to insure the regular check-ups planned for anganwadi communities and also to achieve an improvement of referrals so that sick malnourished children receive treatment promptly, and at-risk pregnant women receive adequate care by the FHW with referral as appropriate. Project plans to implement the Model Plan so that anganwadis have adequate health support, to employ the trained dai, to monitor closely and minimize vacant posts, to retrain existing health staff as required, to improve the supply of drugs, and to strengthen the number of MSs who can assist in coordination of the FHW's support for the anganwadi should insure that the health services necessary for achievement of the project goal and subgoal will be delivered.

ANNEX 11

ANALYSIS OF ICDS TRAINING SUPPORT SYSTEMS

The expansion of ICDS to cover 1,000 blocks throughout India by 1985 is dramatically increasing the demand for trained functionaries. Training in ICDS consists of: a) Basic training of AWW, MS, CDPO, and their trainers; b) Continuing education for these workers; and c) Orientation for health staff and state and district officials. Chart 1 depicts the financial and administrative responsibilities for ICDS training.

Basic Training

Table 1 summarizes the number of training centers, class size and duration, annual capacity and budget per center, and the coordinating body for training each level of ICDS worker. Training is to be done by three full-time instructors plus part-time instructors and guest lecturers with expertise in nutrition, child development, preschool education, social work, and extension education. Basic training is residential. A list of the training centers for ICDS functionaries in Gujarat and Maharashtra can be found in Annex 12.

Two organizations oversee the basic training of ICDS functionaries: the National Institute of Public Cooperation and Child Development (NIPCCD) and the Indian Council for Child Welfare (ICCW). Under the aegis of the MOSW, NIPCCD, an autonomous body, performs functions of research, training and consultancy in the fields of Public Cooperation and Child Development. It has responsibility for training all CDPOs and for coordinating the training of all MSs and their trainers at 26 institutes throughout the country. Training of CDPOs takes place at NIPCCD headquarters in Delhi and at its regional field units in Bangalore and Lucknow. These regional field units and an additional one in Gauhati also train MSs. The other 23 centers which train MSs are supervised by, but independent of, NIPCCD. The syllabi for training CDPO, MS, AWW and their trainers have been developed by NIPCCD. A Manual for Middle Level ICDS Training Centers was prepared by NIPCCD in October 1982. Trainers of MSs are prepared for their job by attending the first week of the training program for CDPOs at NIPCCD. In addition NIPCCD holds a semi-annual meeting of representatives of all the MS training centers to review progress.

CHART 1

FINANCIAL AND ADMINISTRATIVE RESPONSIBILITIES FOR ICDS TRAINING

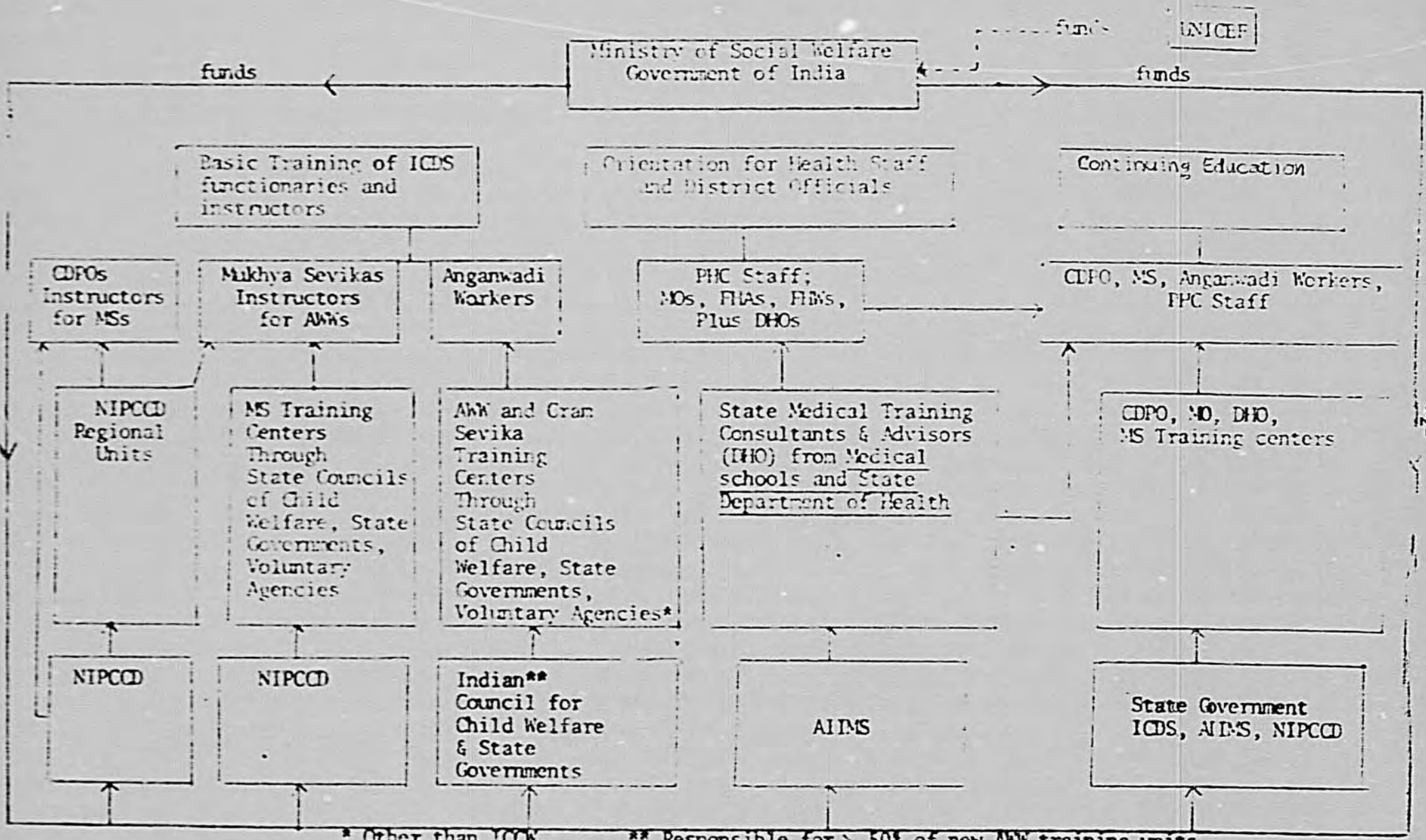


Table 1

CHARACTERISTICS OF BASIC TRAINING FOR ICDS FUNCTIONARIES

	Anganwadi Worker	Mukhya Sevika	Child Development Project Officer
Number of Training Centers*	200 (36)	26 (4)	1 (0)**
Class Size	50	40	30
Course Duration*** (months)	4	3	2
Number of Classes Per Center/Year	2 1/2 - 5	3	17
Recurring Budget Per Center/Year (Rs.000)	138-276	466	1,785
Coordinating Body	ICCW	NIPCCD	NIPCCD

NOTES:

* ( ) Number of centers in Gujarat and Maharashtra.

** CDPOs are trained mostly at NIPCCD in Delhi but also at the NIPCCD regional Field Units in Bangalore and Lucknow.

*** Illiterate or semi-literate anganwadi workers are trained for 3 months instead of 4 since the teaching of functional literacy to adult women has been deleted from their responsibilities.

The MS training centers receive an annual grant from NIPCCD based on a schematic budget and not per course taught which provides appromately Rs.3,925 per MS. The budget and schedule of these institutes allows two weeks per year for instructors to do field work in ICDS projects. Although no formal accreditation exists, centers must submit a proforma to NIPCCD with information on facilities (classroom, field work, hostel), training materials and equipment, and training methods. The potential for quality control of CDPO and MS training is better than for AWW training due to the involvement of NIPCCD and the lesser number of centers to be monitored. Trainers of AWWs receive a two week residential course in batches of 30 at the MS training centers. Two courses are held per year per center. The AIIMS training consultants assist with the training of trainers.

The Indian Council of Child Welfare (ICCW), a national council of voluntary organizations concerned with child welfare, serves as a coordinating body for the AWW training centers with which it is affiliated through its member state councils. These centers represent more than half of the over 200 AWW training institutes nationwide. Although most of the training centers overseen by ICCW have been newly created to meet the needs of ICDS, some are former Balsevika Training Institutes. The original purpose of these institutes was to train preschool teachers (balsevikas), who are similar in function to AWWs, through an eleven month course. In 1982 the MOSW asked the ICCW to temporarily suspend training of balsevikas and concentrate on training of AWWs, since the village balwadi program for which the balsevikas were being trained had been largely subsumed by ICDS and the demand for anganwadi workers far exceeded the demand for balsevikas.

The office bearers of ICCW are volunteers. However, the MOSW sanctioned five salaried posts for an ICDS training department in ICCW in 1982 which have been filled as follows: senior program officer, program officer, senior accountant, accounts assistant, and typist-cum-clerk. The training department is primarily administrative and not technical. The job descriptions of the staff are general and leave little scope for them to influence the quality of AWW training. For matters of content and quality of AWW training, ICCW defers to NIPCCD. It was originally hoped by ICCW that they would get additional program officers for the training department but these positions were not sanctioned by MOSW. There are 13 sub-committees that oversee the various activities of ICDS. A separate sub-committee has not been set up for ICDS; the Balsevika Training Advisory sub-committee oversees ICDS.

The diversified interests and voluntary nature of ICCW limit its ability to manage AWW training or to insure quality. It must depend heavily on its state councils which are weak with regard to quantity and qualifications of personnel. The state councils have not been augmented to coordinate ICDS training. Instead they rely on a child welfare officer and an accountant paid by MOSW who have responsibility for all ICCW's programs. In addition, the state councils do fund raising to cover other expenses of the state offices. Since ICCW does not have sufficient staff to direct, monitor, or provide technical assistance to ICDS training programs, the available staff devote their time to opening new AWW training centers. The ICCW would like to monitor the quality of the training, but they would need a major increase in technical staff to do so. The ICCW receives reimbursement from the MOSW for training costs incurred by its affiliated institutions. It releases funds to its state councils which in turn release funds to the training centers on an annual schematic basis rather than per course.

Many AWW training centers are not under the auspices of ICCW and ICCW has no coordinating or supervisory role with reference to them. In fact, there is no one body to coordinate these other training centers which are run by state governments or voluntary organizations.

In an effort to cope with the huge volume of AWWs to be trained there has been a rush to start new training centers and to identify centers already established for other purposes and add AWW training to their responsibilitiess. There has been no formal process for accreditation of these centers due to time constraints, and lack of an institution to carry out this responsibility. However, proposed centers are asked to submit a proforma to ICCW and the state government department responsible for ICDS describing their facilities.

Since the training facilities in many states are insufficient to train the large number of AWWs needed, it has become common for many workers to be on the job for at least a year prior to basic training. In order to avoid delays in the flow of services to children on account of inadequate training facilities, the MOSW has recently issued guidelines which permit AWWs to begin ICDS activities in their villages after receiving a two week course taught by the CDPO. The short-term training covers village survey techniques, selection of beneficiaries for supplementary feeding by weight and arm circumference, primary health care, and very elementary non-formal, preschool education activities. Workers who have received this mini-course are to be sent for four months of basic training as soon as possible. During their absence, the helper is to continue supplementary feeding and play activities for children with the help of village women.

Annual plans for MS and CDPO training are drawn up by NIPCCD for each state and institute, and NIPCCD deputes the trainees. No such plan is prepared at a central level for AWW training. It is the responsibility of the state ICDS Program Officer and the CDPO to be in constant liaison with the AWW training centers in their state in order to depute trainees and utilize the centers to capacity. This lack of planning and management of AWW training results in underutilization of some centers despite a substantial backlog of untrained workers. Furthermore, AWWs are deputed for each training course from disparate ICDS blocks throughout their respective states resulting in heterogeneous classes that can include both illiterate tribal women and matriculates from urban areas.It is very difficult to teach these mixed groups and the workers find it inconvenient to travel long distances for training.

Partial financial support for the training of the CDPO, MS, and AWW has been provided by UNICEF in the form of stipends, training grants, travel costs, and funding of NIPCCD. The bulk of UNICEF support has gone for training of CDPOs and MSs. In addition, UNICEF supplies all ICDS designated training centers with a typewriter, a manually-operated duplicator, a slide projector with film strips/ slides, two ladies bicycles, and a weighing scale.

Training Needs (All India):

The estimated number of workers, training centers and courses required nationally in the expanded ICDS program are given in Tables 2 and 3 for the 320 new blocks in IFY 82/83 and the 380 additional blocks in IFY 83/84. These estimates were calculated using the GOI specifications for population coverage by AWWs with a block population of 100,000 in urban and rural areas and 35,000 in tribal areas. The coverage of AWWs is 1:1,000 population in urban and rural areas and 1:700 in tribal areas. The annual capacity of each training center is 125 AWWs (50 per batch) or 120 MSs (40 per batch). One thousand CDPOs will need to be trained for the 82/83 and 83/84 blocks plus backlog. This will be done by NIPCCD at the rate of 500 CDPOs per year.

A review of progress toward training the targeted numbers of AWWS and MSs in 1982-83 reveals that a substantial backlog of untrained workers, a high attrition rate, underutilization of existing centers, and a delay in the establishment of new centers will probably render the targets unrealistic. Many training centers that were to be functioning at full capacity from April 1982 started their first courses only in September 1982.

TABLE 2

ICDS FUNCTIONARIES TO RECEIVE BASIC TRAINING

Functionaries	1982-83	1983-84	Total
AWW	27,250	33,300	60,550
*MS	1,372	1,628	3,000
*CDPO	320	380	700

* MS ratio to AWWs: tribal blocks 1:17, Rural Blocks 1:20, Urban Blocks 1:25, CDPO - 1 per block.

TABLE 3

FACILITY AND STAFF REQUIREMENT FOR AWW & MS TRAINING*

	Anganwadi Workers		Mukhya Sevikas	
	82/83	83/84	82/83	83/84
Courses	545	666	34	41
Training Centers	218	266	11	13
Instructors	654	798	33	39

*320 Blocks in 82/83 and 380 blocks in 83/84.

Table 4 projects the national needs for training of AWW instructors in batches of 30 with two, two week courses per year per training center.

TABLE 4

TRAINING OF INSTRUCTORS FOR AWWs

	1982-83	1983-84
Courses Required	22	27
Centers	11	14

The number of AWW training courses required is the sum of the expansion requirements plus the courses required to eliminate the backlog of untrained AWWs who are currently in service. The MOSW has calculated the number of untrained workers in each state and current training projections include these workers. Although many officials express confidence in the ability of the expanded system to meet the defined training outputs by March 1985, it appears fairly certain that the backlog will complicate and retard efforts to reach targets.

The high rate of personnel attrition adds to the 1982-83 training burden. High turnover of MSs and AWWs has been reported by state officials, CDPOs, MSs and AWWs, but no study is available which documents rates of attrition. Estimates of attrition since the program began range from 20 to 40% of the work force.

Training Capacity (Gujarat and Maharashtra)

Tables 5 and 6 show the demand and capacity for training AWWs and MSs in the two states proposed for AID assistance, and the number of additional centers required to assure that all training for ICDS blocks sanctioned through IFY 83-84 is completed by the end of the Sixth Five Year Plan, i.e. March 1985. Capacity for training MSs is adequate even at the increased rate of supervision proposed for Gujarat (1 MS : 10 AWWs). It can be seen in Table 6 that the capacity for training AWWs is less and three additional training centers will be required in Gujarat to service all ICDS blocks including those assigned to AID.

The AID estimates of number of MSs requiring training in both states are higher than those of the MOSW and NIPCCD. AID's estimates are based on 1981 block populations and a ratio of 1 MS : 10 AWW in Gujarat and the usual number of supervisors in Maharashtra. Likewise, AID's estimates of number of AWWS needing training are higher than those of the MOSW (Tables 7 & 8).

TABLE 5

NUMBER OF MSs TO BE TRAINED AND CAPACITY*

	Gujarat	Maharashtra
Number of Training Centers	2	2
MS Capacity	240	240
USAID MS Requirement*		
82/83	218	16
83/84	63	45
Non-USAID MS Requirement		
82/83	75	150
83/84	54	163
Backlog thru 81/82**	42	62
Total Requirement 82/83 (including 81/82 backlog)	335	228
83/84	117	208
Projected Backlog 84/85	0	0
Additional Centers Needed to finish Training by 3/85	0	0
Number of Centers Needed for USAID MS* Requirement 3/85	1	1

*Assumes 1 MS : 10 AWW in AID assisted ICDS in Gujarat.
**Information from M.K. Miglani, MOSW, July 1982.

TABLE 6

NUMBER OF AWWs TO BE TRAINED AND CAPACITY*

	Gujarat	Maharashtra
Number of Training Centers	13	23
AWW Capacity	1,625	3,000
USAID AWW Requirement		
82/83	2,135	318
83/84	630	795
Non-USAID AWW Requirement		
82/83	1,208	2,794
83/84	1,013	2,892
Backlog thru 81/82*	696	1,235
Total Requirement		
82/83 (including 81/82 backlog)	4,039	4,347
83/84	1,643	3,687
Projected Backlog 84/85	2,432	2,034
Additional Centers Needed to Finish Training by 3/85	3	0
Number of Centers Needed for AID Requirement through 3/85	7	3

*Information from M.K. Miglani, MOSW, July 1982.

TABLE 7

GOI TARGETS FOR AWW TRAINING IN PROPOSED USAID PROJECT STATES*

	Total No. of AWW Trained by March 1985	Yearly Targets
Maharashtra	5,000	1,700
Gujarat	2,800	950

*Figures taken from Letter No. D.O. 3-1/82 TR - Sent to ICCW by Mr. Miglani dated February 8, 1982.

TABLE 8

TRAINING BACKLOG IN USAID PROJECT STATES*

State	AWW Backlog 1982-83	AWW New Requirements 1982-83	Total Training Requirements 1982-83
Maharashtra	1,235	2,200	3,435
Gujarat	696	950	1,646

*Information from M.K. Miglani, MOSW, July 1982.

The MOSW had suggested to ICCW that some of the backlog in AWW training could be alleviated by running two AWW courses of 50 students each simultaneously in centers with adequate facilities and conducting 2.5 such sessions per year to train a total of 250 AWWs instead of 125. However, only one of the 36 training centers in these has enough faculty, classroom, or hostel space to accommodate 100 students simultaneously . Many training centers have to hire additional classroom and hostel space and faculty to accommodate even 50 students, especially in tribal areas where most of the AID assisted ICDS blocks will be located. The solution has therefore been to open new training centers and to hire additional space as needed.

For AID assisted blocks, 8 CDPOs will need to be trained in 82/83 and 9 in 83/84. This should be an easy target for NIPCCD to fulfil with their annual capacity of 500. Given the large population of some of the AID assisted blocks and the increased numbers of MSs, there will also be a need to provide assistant CDPOs. Estimates of the number of CDPOs and assistant CDPOs required for AID assisted ICDS blocks are given in Table 9.

TABLE 9

TRAINING REQUIREMENT FOR CDPOs AND ASSISTANT CDPOs IN AID ASSISTED BLOCKS

	Gujarat	Maharashtra
CDPOs		
82/83 Blocks	6	2
83/84 Blocks	3	6
Assistant CDPOs		
82/83 Blocks	12	2
83/84 Blocks	2	2

A total of 18 assistant CDPOs will need to be trained for which there is no provision in any training center. It is suggested that they attend the two month course for CDPOs at NIPCCD. USAID assumes NIPCCD can accommodate these additional trainees with available staff and facilities.

Quality of Training

A recurrent theme among the administrative personnel of ICDS is that the timely expansion of training capacity nationwide is of primary importance. In contrast, there is little emphasis on monitoring the training process. The quality of training efforts is generally assumed to be adequate and there is no systematic assessment of the effectiveness of the training of ICDS workers or their instructors. No pass/fail performance standards exist to guide the instructors to evaluate the acquisition of knowledge and skills by ICDS trainees. As a result, the individual job performance of AWWs, MSs and CDPOs varies greatly. The ICDS training centers, for the most part, are not producing workers who can effectively deliver the nutrition and health components of ICDS to achieve a reduction in malnutrition, morbidity and mortality among children and mothers. The areas in which the ICDS training program could be improved will be discussed.

Syllabi

The syllabi designed by NIPCCD for training the AWW, MS, CDPO, and their instructors were revised in 1982 to include population education and detection of childhood disabilities. The syllabi have been distributed throughout the country to all training centers. A syllabus for training illiterate and semi-literate AWWs is under preparation by NIPCCD.

The syllabus for AWWs allocates 220 of the 560 course hours to nutrition and health, i.e. 39% of the total teaching time. The syllabus suggests extensive practical or field experience which demonstrates NIPCCD's appreciation for the value of experiential learning in vocational training. Table 10 displays the distribution of classroom and practical training time for health and nutrition topics in the syllabus.

TABLE 10

DISTRIBUTION OF AWW TRAINING TIME IN NUTRITION AND HEALTH

	Classroom	Practical	Total (560)
Nutrition	53 (42%)	72 (58%)	125 (22%)
Health	60 (50%)	60 (50%)	120 (21%)

The practical value of the nutrition and health content in the syllabus was analysed and the content that directly applied to the job functions of the AWW was separated from the rest. When the aspects of the health and nutrition subjects that have direct relevance to the AWW's job are isolated from the nonrelevant, theoretical subject matter, the estimates of time spent on appropriate training drop sharply. When the reduced hours are compared to the total course time, the functional nutrition content accounts for only 15% of the course and the health component 8% (Table 11). It appears that a large portion of the training is nice to know but not essential for job performance. Although a superficial analysis suggests adequate emphasis, the estimated time spent on developing functional skills in health and nutrition is surprisingly small. A complete analysis would include the identification of missing as well as excess content by task analysis to identify discrepancies.

TABLE 11

	Functional Hours For Subject	Percentage of Total Subject Hours	Percentage of Total Course (560)
Nutrition	85	68	15
Health	43	35	8

The 20 hours spent on the preparation of simple messages and materials for NHED and the additional 26 hours devoted to the production of audio-visuals for use with the community appears excessive. The basic NHED messages have already been formulated and the opportunities the AWW will have for using such materials to teach mothers in groups are limited. For her home visits, an informal approach may be preferable to using visual aids. If a way were found to assemble women or entire families in groups in the evening, more attractive, less visibly instructional media (such as films, local troubadours, drama groups) would be more appropriate. The AWW should receive training in how to organize such group sessions. Although visual aids have been shown to be effective when an audience is motivated to learn, they have not been effective for motivating groups.

There is a need to strengthen the syllabus so that instructors and students will know what the key malnutrition and mortality related problems are, their causes, and what can be done about them

in the anganwadi. Instructors need to increase their applied knowledge and be given explicit guidelines for teaching the following essential skills:

1. Identification and follow-up of at-risk pregnant and nursing women.

2. Nutritious diet during pregnancy and lactation; iron and folic acid supplements.

3. Monitoring growth of children 0-6 years of age by weight and arm circumference; how to take measurements, plot on child's card, interpret data and advise parents.

4. Quarterly community nutrition surveys to identify target group: collection, analyses and use of data for monitoring the program.

5. Care of newborn, especially low birth weight infants.

6. Feeding of children 0-36 months of age and 36-72 months of age with nutritionally balanced, locally available, convenient and inexpensive foods at home and at the anganwadi.

7. Nutrition rehabilitation for malnourished children at home and at the anganwadi.

8. Prevention, recognition and treatment of Vitamin A deficiency blindness.

9. Immunization schedule; identification and referral of non-immunized children and pregnant women.

10. Recognition of common childhood health problems and referral, i.e. cough, fever, rash or diarrhea.

11. Preparation and administration of oral rehydration solution (ORS) for diarrhea and teaching mothers to do so.

12. Communications techniques for imparting nutrition and health education to parents and children; how to teach the basic messages.

13. Recordkeeping and use of data to monitor the program and to spot problem areas.

14. Time management for supervisory and home visits, etc.

15. Training techniques for supervisors.

16. Role delineation and teamwork by AWW, FHW, and dai; by MS and FHA; and by CDPO and MO.

17. Cooking, serving and ordering Title II foods from CARE to assure that correct ration sizes are fed to each category of beneficiaries.

Great liberties are taken at the local AWW training centers in executing the syllabus and often the discipline provided by the syllabus is lost in local adaptation. One of the major gaps in the ICDS program is that there is no way, given current financial, personnel, and other constraints, for the MOSW, NIPCCD or ICCW to supervise AWW training. There is a lack of participatory and problem-oriented training in the AWW training centers, reflecting the bias of the syllabus and a formalized system of education fashioned after an academic and not a job oriented model.

Training Materials

In 1976 NIPCCD produced a Guidebook for AWWs, which is being converted into a more practical manual to be used by students. The Guidebook is not frequently found at AWW training centers and students have not been given copies. Student-held training materials are rarely used. Such materials, developed specifically for ICDS workers, would asist them in mastering the subject matter and serve as reference documents after training. Once developed, translation to local languages is essential. There is a dearth of all training materials, particularly any in local languages or for use by semi-illiterate workers. Training centers also need an ample supply of all the records and forms used in ICDS, especially weight charts, so students can practice filling and interpreting them. Even copies of the syllabi are in short supply at the training centers and must be translated into the local language by each institute.

Instructors

The AWW instructors frequently hold B.S. and M.S. degrees in home science subjects such as nutrition and child development. Their theoretical background in these subjects is extensive but their understanding of practical application to the daily activities of the AWW is limited. Many instructors have not seen the ICDS program in the field and so have no first hand familiarity with the job requirements of the workers.

The classes for teaching health and nutrition topics are usually assigned to part-time lecturers, most often physicians, who may teach 25% of the course. Consequently, the full-time faculty feel little need to understand the health and nutrition aspects of the

curriculum. This severely limits the amount of practical and field experience activities that are provided for the students. Along with the underemphasis on health and nutrition topics, there may be an overemphasis on psychological development of the child and preparation of preschool teaching aids and recipes.

In the past, instructors have been salaried per course with no guarantee of employment beyond the four month course. High faculty turnover and low motivation naturally occur in this situation. As a result, the available work force consists mainly of young and inexperienced women without other employment options. The MOSW is presently offering yearly contracts to ICDS training centers which should improve the stability of the training staff and create an environment in which meaningful employment activities can be initiated.

Facilities for Field Practice

Training facilities are often located in urban or semi-urban centers with little or no access to rural or tribal anganwadis. Rural and tribal students attending such centers lack the opportunity to become familiar with the function of an anganwadi similar to their own. Access to ICDS field sites for practical experience could be greatly increased by stressing the importance of field work and by providing a budgetary allowance for transport of students and faculty to the field. The current annual transport budget of Rs.6,000 for AWW training centers is less than one third that provided to MS training centers (Rs.19,800) and needs to be substantially increased.

Each of the MS training centers in the two states proposed for AID assistance have ICDS blocks in the same district that could be formally assigned to them as practice sites. Furthermore, most of the AWW training centers in Gujarat and Maharashtra have ICDS projects in the same district. Training centers without ICDS in the same district are those in Kaira and Bhavnagar in Gujarat, and Jalna, Parbhani, Satara, Mohol, Bandhapur, Akola, Phulgoan, Kankowali, and Aurangabad in Maharashtra. Each training center should be formally assigned the closest ICDS block for regular field practice by trainees. Budget provisions should be made for transporting students to these blocks for field work especially in Maharashtra where distances are great and more than half the centers are in districts with no ICDS blocks.

ANNEX 12

LIST OF CENTERS FOR SUPERVISORS (MUKHYA SEVIKAS) TRAINING

GUJARAT

1. Shri V.T.K. Institute of Rural Development
   Faculty of Social Work
   M.S. University, At Post, Samiala
   Baroda

2. Health and Family Welfare Training Center
   Government of Gujarat
   Rajkot
   Gujarat

MAHARASHTRA

1. Rural Balsevika Training Centre
   Post Kosbad Hill
   Station Gholwad, Thana 401 703

2. College of Social Work
   Nirmala Niketan
   38, New Marine Lines
   Bombay 400 020

LIST OF CENTERS FOR ANGANWADI WORKERS TRAINING

GUJARAT	SPONSORING AGENCY*
1. Balsevika Training Institute Nilgiri Hostel Vallabh Vidhyanagar District Khera Gujarat	I.C.C.W Gujarat State Program Himaran Paladi Ahmedabad
2. Anganwadi Talim Kendra B/10-11, Lecturers Quarters Gujarat University Campus Navrangpura Ahmedabad 380 009	I.C.C.W.

*COG designation indicates that funding allocated by GOI to GOG for dispersal to the institute. Other notation indicates that funding allocated to other agency directly from GOI.

3.	AWW Training Center Adiwasi Mahila Prasikshana Kendra (Tribal Women Training Center) P.O. Jhalse District Jhalod, Panchmahal	Government of Gujarat
4.	Principal Vikas Griha Anand Nagar, P.O. Paladi Ahmedabad, Gujarat	Government of Gujarat
5.	Principal Kamta Vikas Griha Dhabar Road Rajkot, Gujarat	Government of Gujarat
6.	Hony. Secretary Sri Kasturba, Sri Vikas Griha Patel Colony, Jamnagar Gujarat	Government of Gujarat
7.	Shishumangal Junagar, Gujarat	Government of Gujarat
8.	Gujarat State Crime Prevention Trust Ashram Road, Ahmedabad	Crime Prevention Trust
9.	Vikas Vidhalya Wadhwan City District Surendranagar Gujarat	Government of Gujarat
10.	Anganwadi Talim Kendra Ashirwad Kanya Chhatralaya Drive-in Cinema Road Near Memnagar, Manav Mandir Ahmedabad (Harijan Ashram)	I.C.C.W. Gujarat State Program Himaran, Paladi Ahmedabad
11.	Anganwadi Workers Training Center C/o Balsevika Training Institute "Vidrom" Sardar Chowk Sardar Nagar Bhavnagar - 364001 (Gujarat)	I.C.C.W
12.	Anganwadi Workers Training Center Coba, Near Gandhinagar Gujarat	I.C.C.W.

13.	Anganwadi Workers Training Center Prakash College Juhapura Ahmedabad	I.C.C.W.

	MAHARASHTRA	SPONSORING AGENCY
1.	Principal Gramsevika Training Institute Manjri Farm District Pune, Maharashtra	Government of Maharashtra
2.	Principal Rural Balsevika Training Cente Post Kosbad Hill Station Gholwad District Thana 401 703	I.C.C.W.
3.	Gramsevika Training Center Sindewani District Chandrapur	Government of Maharashtra
4.	Gramsevika Training Center Jalna, District Jalna	Government of Maharashtra
5.	Gramsevika Training Center Buldhana District Buldhana	Government of Maharashtra
6.	College of Home Science Maharashtra Agricultural University Parbhanai	Government of Maharashtra
7.	Gramsevika Training Center C/o Vanitha Samaj Rajkamal Chowk Amravati, Maharashtra	Government of Maharashtra
8.	Gramsevika Training Center Gargoti District Kolhapur	Government of Maharashtra
9.	Anganwadi Workers Training Center At & Post: Aurad Shahajani District Latur 413522 Maharashtra	I.C.C.W.

10. Anganwadi Workers Training Center — I.C.C.W.
At & Post: Narsirabad (Peth)
Jalgaon, Maharashtra

11. Anganwadi Workers Training Center — I.C.C.W.
S.O.S. Balgramme
Pune - 6

12. Anganwadi Workers Training — I.C.C.W.
Institute
"Gurukul"
Guruvarya Nanasaheb
Agashe Nagar
Akola - 444004 (2 Units)

13. Anganwadi Workers Training Center — I.C.C.W.
Aurangabad District Council
for Child Welfare
Marathwada Sanskritik
Mandal Campus
Behind Anjali Theatre
Khadkeshwar
Aurangabad

14. Anganwadi Workers Training Center — I.C.C.W.
Jalana District Council for
Child Welfare
"Sai-Datt" Near Nandi Mandir
Nandi Mandir
Kadrabad (Jalna)

15. Anganwadi Workers Training Center — I.C.C.W.
Buldana District Council for
Child Welfare
Vadri Road, Mal Vihar
Buldana 443 001

16. Anganwadi Workers Training Center — I.C.C.W.
Raigad District Council for
Child Welfare
House No. 217
Coatali, Mahad
Dist. Raigad 202 301

17. Anganwadi Workers Training Center — I.C.C.W.
Sindhudurg District Council
for Child Welfare
Gopuri Ashram
At & Post: Wagede - Gopuri
Tal. Kankavali
Dist. Sindhudurg

18. Anganwadi Workers Training Center I.C.C.W.
Nagpur District Council
for Child Welfare
Plot No. 46
Ambazari Layout
Nagpur 440 010

19. Anganwadi Workers Training Center I.C.C.W.
Dr. Ram Mahoher Lohiya
Unnati Mandal
C/o Indian Institute of
Youth Welfare
134 Shivaji Nagar
Nagpur 440 010

20. Anganwadi Workers Training Center I.C.C.W.
Ratnagiri District Council
for Child Welfare
House No. 287 & 189
Bagwadi
At. Jaigad
Distt. Ratnagiri 415 614

21. Anganwadi Workers Training Center I.C.C.W.
Satara District Council
for Child Welfare
Zilla Parishad Satara
Station Road
Satara

22. Anganwadi Workers Training Center I.C.C.W.
Solapur District Council
for Child Welfare
House No. 114
At. Vadapur
P.O. Kusur, Tal. South
Solapur, Dist. Solapur

23. Anganwadi Workers Training Center I.C.C.W.
House No. S. NO. 18 A
Karve Nagar
Pune

ANNEX 13

ANALYSIS OF THE LOW BIRTH WEIGHT (LBW) PROBLEM IN INDIA AND RESEARCH NEEDS

Definition, Nature and Magnitude of the Problem

Low Birth Weight (LBW - less than 2.5 kg) is an important contributing cause to the high infant mortality rate in India. It affects 30% of the infants, in contrast to only 7% in the U.S. and Europe.

More than 50% of infant deaths occur in the first month of life and those with the lowest birth weights (in India < 2kg) experience the greatest risk. Unless birth weights can be substantially increased it is unlikely that infant mortality can be lowered. Thus the GOI in its strategy for Health for All by 2000 AD is striving to reduce the prevalence of LBW to 10%.

The average birth weight of the Indian infant, 2.7 kg, has not changed over the past 30 years. The problem is most acute among the poor and illiterate. Infants born to wealthy, educated women weigh 3.4 kg on average which compares favorably to the average birth weight of 3.2 kg in the U.S. and Europe. The most favorable birth weight range in terms of infant survival has been found to be 3.5 - 4 0 kg. Only 5% of Indian infants have weights in this range versus 26% in the U.S.

Infants with LBW fit into one of three categories: 1) pre-term with appropriate weight-for-dates, 2) pre-term with intrauterine growth retardation 3) full term with intrauterine growth retardation. It is important to distinguish between these categories because the prognosis differs in each case. The LBW problem in India is largely confined to categories 2 and 3, whereas in the U.S. category 1, predominates. A pre-term infant is a baby born too early with a gestation of less than 37 weeks. Intrauterine growth retardation (IUGR also referred to as small-for-dates or small-for-gestational age) is defined as a birth weight less than the 10th percentile or 2 standard deviations below the mean birth weight for gestational age and may occur in babies born pre-term or full-term.

Fetal growth in India is similar to the U.S. until the last 4-6 weeks of pregnancy when the weight gain of Indian infants dramatically slows. Pre-term deliveries represent 10-20% of all deliveries in India. The average length of gestation in India is 38.5 weeks versus a normal term of 40 weeks. With 1 1/2 weeks longer gestation, the average weight of the fetus can increase 150-200 g.

DETERMINANTS AND INTERVENTIONS

In order to define research priorities, an extensive review of world and Indian literature was commissioned by USAID to elucidate the causes of pre-term deliveries and IUGR, and interventions to increase birth weight. Maternal factors most commonly associated with LBW in India are: malnutrition, poor antenatal care, bad obstetric history, current obstetric problems (toxemia, vaginal bleeding), young age, short interbirth interval (less than 2 years), and physical exertion. Genito urinary and other maternal infections have not been considered a very significant factor in the causation of LBW in India because the prevalence and incidence of maternal infections in India, which have been implicated in LBW elsewhere, is unknown and their effect on the outcome of pregnancy has not been studied. In developed countries, heavy smoking and alcohol consumption have also been associated with LBW but the extent of these practices including chewing of tobacco and betel leaf and their role in LBW are unknown in India. Family planning programs have had some success in raising the age at first pregnancy, lengthening the interbirth interval and reducing completed family size. Of the other factors for which preventive or therapeutic interventions exist, studies in India and elsewhere have focused most on maternal malnutrition and least on infection and workload. A great deal more research needs to be done, however, on the role these factors play and suitable interventions. It is likely that the high prevalence of both malnutrition and infection in the same group of women in India leads to many LBW infants. The synergistic effect of malnutrition and infection in pregnancy has not been studied.

MATERNAL MALNUTRITION

The major nutritional problems during pregnancy result from inadequate food, iron and folic acid intake prior to and during pregnancy, manifest by low pre-pregnancy weight (38 kg.) and height (145 cm), anemia, and inadequate weight gain during pregnancy. Deficiencies of zinc, copper and other nutrients may also play a role but few studies have been done. Dietary restrictions markedly decrease birth weight, and reductions in birth weight of 550 g have been recorded in famines. Poor pregnant Indian women consume 540 kcal less than they should daily and gain only 6 kg over the course of pregnancy when they should gain 12 kg. This inadequate weight gain leads not only to LBW but also to insufficient fat stores to meet the energy demands of nursing. More than half of all non-pregnant and two thirds of all pregnant women are anemic. Consumption of iron and folic acid tablets during pregnancy has been shown to effectively prevent anemia, and these tablets are distributed at health centers throughout the country as part of a national program, but still do not reach most women.

Provision of food supplements to at-risk pregnant women is a part of the ICDS and other national feeding programs. Studies on the impact of maternal food supplementation in India and elsewhere with a 150-250 Kcal increase in daily intake have found small, but statistically significant increases of 50 g in birth weight on average. Increases have been larger in male infants. Supplementation has been most effective in the second and third trimesters. Furthermore, in Colombia birth weight increases were greater in infants of women chosen for supplementation on the basis of being under weight rather than by the usual criteria of poverty or inadequate diet. Birth weights increased 181 g in these malnourished women with weight for height at the sixth month of pregnancy less than 360 g per cm. No studies have been done in India to determine the maternal weight for height threshold below which food supplements will have greater impact on birth weight. The functional significance of small increases in birth weight (50 g) to reduced perinatal morbidity and mortality or improved long term growth and development have also not been studied.

The supplementation studies have shown that maternal calorie deficiency is greater and plays a more important role in IUGR than protein deficiency. High-protein supplements may actually depress birth weight. The impact of food supplements on birth weight has not differed much between developed or developing countries. Attempts to reduce sharing of the supplement by providing enough for the whole family have not increased impact, nor has impact been greater with a supplement fitted to individual needs rather than a uniform ration for all women. However, acceptability trials in Gujarat, India of a food supplement named "Matruahar", which was developed by the Protein Foods and Nutrition Development Association of India expressly to meet the traditional tastes of pregnant women, have shown reduced sharing of the supplement with the rest of the family and greater consumption by pregnant women. An essential review of the state of the art of maternal supplementation is "Effects of Changes in Protein and Calorie Intake during Pregnancy on the Growth of the Human Fetus" by David Rush, March 1982.

MATERNAL INFECTION

The treatable infections and organisms most commonly associated with LBW are: malaria, syphilis, gonorrhea, urinary tract infections, asymptomatic bacteriuria and other genito-urinary infections caused by Mycoplasma hominis, Ureaplasma ureolyticum, Chlamydia trachomatis and Group B Streptococcus. These infections are most detrimental in the last three months of pregnancy and probably lead to LBW through stimulating pre-term delivery rather than IUGR. Most studies of the relationship between these maternal infections and pregnancy outcome have been done recently in developed countries and not in India. The prevalence of these and other infections among pregnant Indian women and the role they play in LBW are virtually unknown.

Few attempts have been made anywhere to increase birth weight by screening for these infections during pregnancy and providing chemotherapy. One study in the U.S. found that women infected with Mycoplasma gave birth to babies 200 g lighter than those of non-infected women. When infected women were treated for 6 weeks with 1 g daily of erythromycin in the last trimester, birth weights increased 144 g over those of infants of infected, non-treated women. The prevalence of LBW was 3% in the treated versus 12% in the non-treated group. This is one of the largest effects seen in any controlled treatment trial.

Other observations in the U.S. on the prevalence of previously suspected organisms and adverse pregnancy outcome have yielded varying results due to failure to control confounding factors in the relationship. Recent advances in microbiologic description of the genital tract flora in and outside of pregnancy leave open the possibility that pathogenic agents not previously considered (e.g. Gardnerella vaginalis or anaerobic organisms) may play a role. There is evidence that an immune response demonstrating current or even recent primary infection with Mycoplasma, Ureaplasma, or Chlamydia may correlate better with LBW than mere presence or absence of the organisms. Very preliminary data from studies in San Diego suggest that different bacteria produce varying amounts of phospholipase A, an enzyme involved in metabolism of a precursor for prostaglandin, a potent stimulant of uterine contraction. This finding lends support to the theory that infections lead to LBW through stimulating pre-term delivery. Given the current state of knowledge, prospects are uncertain, even under the best circumstances of scientific research, for early resolution of whether and which infections are major causes of LBW.

RESEARCH PRIORITIES

Through the above literature review, and consultations with Indian researchers and GOI officials, USAID has been able to identify research priorities for determining the technical feasibility and cost of improving birth weights of Indian infants. Studies need to be conducted to:

1. Test simple anthropometric measures of women to accurately predict or detect normal fetal growth or IUGR, e.g. weight gain, height, fundal height, abdominal girth, triceps skinfold, sub-scapular skinfold, arm circumference and weight for height prior to and during pregnancy.

2. Determine the prevalence in pregnant Indian women of infections suspected to play a role in LBW, and to correlate these infections with fetal outcome, birth weight, maternal nutritional status, and other factors.

3. Assess the impact on pregnancy outcome and cost of chemoprophylaxis or chemotherapy for the infections identified in study 1 and correlate with maternal nutritional status and other factors.

4. Assess the impact and cost of food supplementation on pregnancy outcome in women with anthropometric signs of malnutrition and IUGR, using measures developed in study 1 and correlate with infections during pregnancy, and other factors.

5. Assess the synergistic impact on pregnancy outcome and cost of food supplementation and infection control in malnourished, infected women.

6. Follow the growth and survival in the first year of life of children of women receiving interventions 3, 4, and 5.

Below is a list, although not necessarily exhaustive, of the kinds of exposure (risk) factors and outcome variables that should be sought under the best of circumstances.

Demographic/Social

Age, caste/religion, income, work habits, dwelling type, cigarette and betel use, family type.

Medical & Obstetric History

Last Menstrual Period (LMP)

Number of pregnancies, number of children (living and dead), number of abortions, number of stillbirths

Past LBW children, recognized complications, perinatal mortality

Symptoms in past pregnancies - genitourinary, fever

Current Pregnancy

Fever, productive cough, skin lesions, diabetes, abnormal lie or presentation

Sexual activity - habits by week, partners

Examination

- Edema
- Temperature
- Blood Pressure and Glucose
- Smear for malaria where history of fever/chills or current fever

- Hemoglobin, Hematocrit, weight, height, fundal height, triceps skinfold, sub-scapular skinfold, arm circumference, abdominal girth, and other nutritional measures
- Vaginal fluid culture for: Mycoplasma, Ureaplasma, Group B Streptococcus.

Cervical culture - Chlamydia, Gonococcus,
Urine Albumin and Sugar

Quantification and identification of usual organisms esp. E. coli, Klebsiella, Enterobacter, Proteus, Pseudomonas, Enterococcus

Serum specimens (2-3cc) - paired
Syphilis - STS
Mycoplasmacidal Ab, other
Chlamydia - microimmuno - fluorescence
Malaria

Pregnancy Outcome

Eclampsia
Spontaneous abortion
Stillbirth
Sepsis
Pre-term prolonged rupture of membranes
Pre-term delivery

Infant

Gestational age

Birth weight, length and head circumference

Perinatal, neonatal, and post neonatal mortality, morbidity, and growth in 1st Year of Life correlated with birth weight

ONGOING RESEARCH IN INDIA

There are no studies underway in India which address the research priorities identified by USAID. However, several studies are relevant to the proposed research. Of most interest is an ICMR-sponsored national collaborative study to identify high risk pregnancies and follow their outcome with particular reference to maternal nutrition, low birth weight, perinatal and infant morbidity and mortality in seven rural and urban slum areas, covering total populations of 30,000 each. The rural areas being studied are Chandigarh, Hyderabad, Varanasi, and Trivandrum. The urban slums are Calcutta, Delhi, and Madras. The study commenced in 1981 and the last babies of enrolled women will be born in September 1983 and

June 17, 1983
LOAN

ANNEX 14

COST ESTIMATES OF 19 BLOCK AID ASSISTED ICDS PROJECT
(Rs.000)

DESCRIPTION	UNIT COST	US FY '83 (Apr-Sept) No.	US FY '83 (Apr-Sept) Cost	US FY '84 No**	US FY '84 Cost	US FY '85 No**	US FY '85 Cost	US FY '86 No**	US FY '86 Cost	US FY '87 No**	US FY '87 Cost	US FY '88 No**	US FY '88 Cost	US FY '89 (Oct 88-Mar 89) No**	US FY '89 (Oct 88-Mar 89) Cost	TOTAL
I STAFF COST																
A BLOCKS																
CDPO	18.0	1	9.0	1	18.0	18.0		18.0		18.0		18.0		9.0		108.0
STATISTICAL ASSISTANT	14.0	1	7.0	1	14.0	14.0		14.0		14.0		14.0		7.0		84.0
ASSISTANT/ACCOUNTS CLERK	9.0	1	4.5	1	9.0	9.0		9.0		9.0		9.0		4.5		54.0
CLERK-TYPIST	8.0	1	4.0	1	8.0	8.0		8.0		8.0		8.0		4.0		48.0
DRIVER	7.5	1	3.8	1	7.5	7.5		7.5		7.5		7.5		3.7		45.0
PEON	6.0	1	3.0	1	6.0	6.0		6.0		6.0		6.0		3.0		36.0
TOTAL FOR 1 BLOCK W/O ASSTT. CDPO			31.3		62.5	62.5		62.5		62.5		62.5		31.2		375.0
19 BLOCKS TOTAL W/O ASSTT. CDPOs		10	313.0	19	907.0	1,188.0		1,188.0		1,188.0		1,188.0		595.0		6,567.0
*ASST. CDPO COSTS	16.0	14	112.0	18	256.0	288.0		288.0		288.0		288.0		144.0		1,654.0
OFFICE HAND	9.0	7	31.5	9	72.0	81.0		81.0		81.0		81.0		40.5		468.0
TOTAL OF ALL BLOCKS (INCLUDING ASSTT. CDPO & OFFICE HAND)			456.5		1,235.0	1,557.0		1,557.0		1,557.0		1,557.0		779.5		8,699.0

* Rural Blocks with 150-200 AWWs or Tribal Blocks with 100-150 AWWs will have 1 Assistant CDPO + 1 Office Hand.
Rural Blocks with more than 200 AWWs and Tribal Blocks with more than 150 AWWs will have 2 Assistant CDPOs + 1 Office Hand.

179

ANNEX 14

June 17, 1983
LOAN

COST ESTIMATES OF 19 BLOCK AID ASSISTED ICDS PROJECT
(Rs.'000)

DESCRIPTION	UNIT COST	US FY '83 (Apr-Sept) No.	US FY '83 (Apr-Sept) Cost	US FY '84 No**	US FY '84 Cost	US FY '85 No**	US FY '85 Cost	US FY '86 No**	US FY '86 Cost	US FY '87 No**	US FY '87 Cost	US FY '88 No**	US FY '88 Cost	US FY '89 (Oct 88-Mar 89) No**	US FY '89 (Oct 88-Mar 89) Cost	TOTAL
1 DISTRICT STAFF																
PROGRAM OFFICER	30.0	1	15.0	1	30.0		30.0		30.0		30.0		30.0		15.0	180.0
NUTRITIONIST	28.0	1	14.0	1	28.0		28.0		28.0		28.0		28.0		14.0	168.0
PRESCHOOL INSTRUCTOR	28.0	1	14.0	1	28.0		28.0		28.0		28.0		28.0		14.0	168.0
HEALTH INSTRUCTOR	28.0	1	14.0	1	28.0		28.0		28.0		28.0		28.0		14.0	168.0
S.W. TEACHER	28.0	1	14.0	1	28.0		28.0		28.0		28.0		28.0		14.0	168.0
OFFICE SUPERINTENDENT	21.0	1	10.5	1	21.0		21.0		21.0		21.0		21.0		10.5	126.0
STATISTICAL ASSISTANT	14.0	1	7.0	1	14.0		14.0		14.0		14.0		14.0		7.0	84.0
ACCOUNTANT	11.0	1	5.5	1	11.0		11.0		11.0		11.0		11.0		5.5	66.0
UPPER DIVISION CLERK	10.0	1	5.0	1	10.0		10.0		10.0		10.0		10.0		5.0	60.0
LOWER DIVISION CLERK	8.0	1	4.0	1	8.0		8.0		8.0		8.0		8.0		4.0	48.0
CLERK TYPIST	8.0	1	4.0	1	8.0		8.0		8.0		8.0		8.0		4.0	48.0
DRIVER	7.5	1	3.8	1	7.5		7.5		7.5		7.5		7.5		3.7	45.0
PEON	6.0	1	3.0	1	6.0		6.0		6.0		6.0		6.0		3.0	36.0
D.E.M.O. EXPENSES FOR NEED	15.0	1	7.5	1	15.0		15.0		15.0		15.0		15.0		7.5	90.0
TOTAL COST OF 1 DISTRICT			121.3		242.5		242.5		242.5		242.5		242.5		121.2	1,455.0
TOTAL COST OF 2 DISTRICTS			242.6		485.0		485.0		485.0		485.0		485.0		242.4	2,910.0

ANNEX 14

June 17, 1983
LOAN

COST ESTIMATES OF 19 BLOCK AID ASSISTED ICDS PROJECT
(Rs.000)

DESCRIPTION	UNIT COST	US FY '83 (Apr-Sept) No.	US FY '83 (Apr-Sept) Cost	US FY '84 No**	US FY '84 Cost	US FY '85 No**	US FY '85 Cost	US FY '86 No**	US FY '86 Cost	US FY '87 No**	US FY '87 Cost	US FY '88 No**	US FY '88 Cost	US FY '89 (Oct 88-Mar 89) No**	US FY '89 (Oct 88-Mar 89) Cost	TOTAL
C STATE OFFICE																
PROJECT DIRECTOR	33.0	1	16.5	1	33.0		33.0		33.0		33.0		33.0		16.5	198.0
NHED CO-ORDINATOR	30.0	1	15.0	1	30.0		30.0		30.0		30.0		30.0		15.0	180.0
TRAINING CO-ORDINATOR	30.0	1	15.0	1	30.0		30.0		30.0		30.0		30.0		15.0	180.0
M.I.S. CO-ORDINATOR	30.0	1	15.0	1	30.0		30.0		30.0		30.0		30.0		15.0	180.0
STATISTICAL ASSISTANT	14.0	1	7.0	1	14.0		14.0		14.0		14.0		14.0		7.0	84.0
UPPER DIVISION CLERK	10.0	1	5.0	1	10.0		10.0		10.0		10.0		10.0		5.0	60.0
STENO-TYPIST	12.0	1	6.0	1	12.0		12.0		12.0		12.0		12.0		6.0	72.0
TOTAL OF 1 STATE OFFICE			79.5		159.0		159.0		159.0		159.0		159.0		79.5	954.0
TOTAL COST OF 2 STATE			159.0		318.0		318.0		318.0		318.0		318.0		159.0	1,908.0

ANNEX 14

June 17, 1983
LOAN

COST ESTIMATES OF 19 BLOCK AID ASSISTED ICDS PROJECT
(Rs.000)

	DESCRIPTION	UNIT COST	US FY '83 (Apr-Sept No.	US FY '83 (Apr-Sept Cost	US FY '84 No**	US FY '84 Cost	US FY '85 No**	US FY '85 Cost	US FY '86 No**	US FY '86 Cost	US FY '87 No**	US FY '87 Cost	US FY '88 No**	US FY '88 Cost	US FY '89 (Oct 88-Mar 89) No**	US FY '89 (Oct 88-Mar 89) Cost	TOTAL
D	NIPCCD STAFF																
	TRAINING CO-ORDINATOR	50.0		-	1	50.0		50.0		50.0		50.0		50.0		25.0	275.0
	NHED CO-ORDINATOR	50.0		-	1	50.0		50.0		50.0		50.0		50.0		25.0	275.0
	ASSTT. TRAINING CO-ORDINATOR	40.0		-	1	40.0		40.0		40.0		40.0		40.0		20.0	220.0
	ASSTT. NHED CO-ORDINATOR	40.0		-	1	40.0		40.0		40.0		40.0		40.0		20.0	220.0
	TYPIST-CLERK	8.0		-	1	8.0		8.0		8.0		8.0		8.0		4.0	44.0
	TOTAL (D)					188.0		188.0		188.0		188.0		188.0		94.0	1,034.0
E	ICCW																
	PROGRAM OFFICER	30.0		-	2	60.0		60.0		60.0		60.0		60.0		30.0	330.0
	STENO-TYPIST	12.0		-	1	12.0		12.0		12.0		12.0		12.0		6.0	66.0
	TOTAL (E)					72.0		72.0		72.0		72.0		72.0		36.0	396.0

ANNEX 14

June 17, 1983
LOAN

COST ESTIMATES OF 19 BLOCK AID ASSISTED ICDS PROJECT
(Rs.000)

DESCRIPTION	UNIT COST	US FY '83 (Apr-Sept) No.	US FY '83 (Apr-Sept) Cost	US FY '84 No**	US FY '84 Cost	US FY '85 No**	US FY '85 Cost	US FY '86 No**	US FY '86 Cost	US FY '87 No**	US FY '87 Cost	US FY '88 No**	US FY '88 Cost	US FY '89 (Oct 88-Mar 89) No**	US FY '89 (Oct 88-Mar 89) Cost	TOTAL
F SCCs																
PROGRAM OFFICER	30.0		-	2	60.0		60.0		60.0		60.0		60.0		30.0	330.0
CLERK-TYPIST	8.0		-	2	16.0		16.0		16.0		16.0		16.0		8.0	88.0
TOTAL (F)					76.0		76.0		76.0		76.0		76.0		38.0	418.0
TOTAL (A to F)			858.1		2,374.0		2,696.0		2,696.0		2,696.0		2,696.0		1,348.9	15,365.0
G SUB BLOCK																
*MUKHYA SEVIKAS	10.0	240	1,200.0	348	2,940.0		3,480.0		3,480.0		3,480.0		3,480.0		1,740.0	19,800.0
TOTAL (A to G)			2,058.1		5,314.0		6,176.0		6,176.0		6,176.0		6,176.0		3,088.9	35,165.0
INFLATION FACTOR			-		1.07		1.14		1.21		1.28		1.35		1.42	
INFLATED COST (A-G)			2,058.1		5,686.0		7,040.6		7,473.0		7,905.3		8,337.6		4,386.2	42,886.8

NOTE: *The no. of M/S has been calculated @ 1/10 AWW in Panch Mahals, both for Rural and Tribal areas. In Chandrapur the no. has been calculated @ 1/17 in Tribal AWC and 1/20 in Rural AWC.

ANNEX 14

June 17, 1983
LOAN

COST ESTIMATES OF 19 BLOCK AID ASSISTED ICDS PROJECT
(Rs.000)

DESCRIPTION	UNIT COST	US FY '83 (Apr-Sept) No.	US FY '83 (Apr-Sept) Cost	US FY '84 No**	US FY '84 Cost	US FY '85 No**	US FY '85 Cost	US FY '86 No**	US FY '86 Cost	US FY '87 No**	US FY '87 Cost	US FY '88 No**	US FY '88 Cost	US FY '89 (Oct 88-Mar 89) No**	US FY '89 (Oct 88-Mar 89) Cost	TOTAL
H ANGANWADI																
ANGANWADI WORKERS	1.8	2,553	2,297.7	3,978	5,877.9		7,160.4		7,160.4		7,160.4		7,160.4		3,580.2	40,397.4
HELPERS	0.6	2,553	765.9	3,978	1,959.3		2,386.8		2,386.8		2,386.8		2,386.8		1,193.4	13,465.8
INCENTIVE FOR TRAINED DAIS, AWW/HELPER	0.15	2,553	191.5	3,978	489.8		596.7		596.7		596.7		596.7		298.4	3,366.5
TOTAL			3,255.1		8,327.0		10,143.9		10,143.9		10,143.9		10,143.9		5,072.0	57,229.7
TOTAL STAFF COST			5,313.2		14,013.0		17,184.5		17,616.9		18,049.2		18,481.5		9,458.2	100,116.5

**The numbers are same as in U.S. FY 84.

COST ESTIMATES OF 19 BLOCK AID ASSISTED ICDS PROJECT
(Rs.000)

DESCRIPTION	UNIT COST	US FY '83 (Apr-Sept) No.	US FY '83 (Apr-Sept) Cost	US FY '84 No.	US FY '84 Cost	US FY '85 No.	US FY '85 Cost	US FY '86 No.	US FY '86 Cost	US FY '87 No.	US FY '87 Cost	US FY '88 No.	US FY '88 Cost	US FY '89 (Oct 88-Mar 89) No.	US FY '89 (Oct 88-Mar 89) Cost	TOTAL
II FURNITURE & EQUIPMENT*																
PHOTOCOPIER & STATIONERY (ICCW)	100.0		-		100.0		-		-		-		-		-	100.0
CALCULATORS & BATTERIES (375)	0.3		-		112.5		-		-		-		-		-	112.5
BABY WEIGHING SCALES (PANCH MAHALS)																
3 FOR DAI/AWW (8595)	0.02		-		171.9		-		-		-		-		-	171.9
1 FOR FHWs (575)	0.02				11.5											11.5
EQUIPMENT FOR ANGANWADI*	0.75		1,839.75		1,068.75		-		-		-		-		-	2,908.5
INDOOR PLAY EQUIPMENT	0.25		613.25		356.25		-		-		-		-		-	969.5
FURNITURE (21 UNITS)*	8.0		96.0		72.0		-		-		-		-		-	168.0
MARRIED WOMEN CHART (500,000)	.001		-		500.0		-		-		-		-		-	500.0
TOTAL			2,549.00		2,392.9		-		-		-		-		-	4,941.9
INFLATION FACTOR			-		1.07		-		-		-		-		-	1 02
TOTAL WITH INFLATION			2,549.0		2,560.4		-		-		-		-		-	5,109.4

ANNEX 14

June 17, 1983
LOAN

COST ESTIMATES OF 19 BLOCK AID ASSISTED ICDS PROJECT
(Rs.000)

DESCRIPTION	UNIT COST	US FY '83 (Apr-Sept) No.	US FY '83 (Apr-Sept) Cost	US FY '84 No.	US FY '84 Cost	US FY '85 No.	US FY '85 Cost	US FY '86 No.	US FY '86 Cost	US FY '87 No.	US FY '87 Cost	US FY '88 No.	US FY '88 Cost	US FY '89 (Oct 88-Mar 89) No.	US FY '89 (Oct 88-Mar 89) Cost	TOTAL
III OPERATIONAL COSTS																
P.O.L.	0.30		383.0		979.65		1,193.4		1,193.4		1,193.4		1,193.4		596.7	6,733.0
MEDICINE	0.30		383.0		979.65		1,193.4		1,193.4		1,193.4		1,193.4		596.7	6,733.0
ANGANWADIS	0.18		229.8		587.8		716.0		716.0		716.0		716.0		358.0	4,039.6
BLOCKS	5.0		25.0		72.5		95.0		95.0		95.0		95.0		47.5	525.0
ADMINISTRATIVE COSTS OF 5 ADMN. CELLS	123.5		308.8		617.5		617.5		617.5		617.5		617.5		308.7	3,705.0
TOTAL III			1,329.6		3,237.1		3,815.3		3,815.3		3,815.3		3,815.3		1,907.6	21,735.6
INFLATION FACTOR			-		1.07		1.14		1.21		1.28		1.35		1.42	
TOTAL III WITH INFLATION			1,329.6		3,463.7		4,349.4		4,616.5		4,883.6		5,150.6		2,708.8	26,502.2

June 17, 1983
LOAN

ANNEX 14

COST ESTIMATES OF 19 BLOCK AID ASSISTED ICDS PROJECT
(Rs.000)

DESCRIPTION	UNIT COST	US FY '83 (Apr-Sept) No.	US FY '83 (Apr-Sept) Cost	US FY '84 No.	US FY '84 Cost	US FY '85 No.	US FY '85 Cost	US FY '86 No.	US FY '86 Cost	US FY '87 No.	US FY '87 Cost	US FY '88 No.	US FY '88 Cost	US FY '89 (Oct 88-Mar 89) No.	US FY '89 (Oct 88-Mar 89) Cost	TOTAL
IV TOTAL (I-III)			9,191.8		20,037.1		21,533.9		22,233.4		22,932.8		23,632.1		12,167.0	131,728.1
CONTINGENCIES AT 5% (ON I-III)			459.6		1,001.9		1,076.7		1,111.7		1,146.6		1,181.6		608.4	6,586.5
GRAND TOTAL (I-IV)			9,651.4		21,039.0		22,610.6		23,345.1		24,079.4		24,813.7		12,775.4	138,314.6

*No equipment or office furnishing has been provided for Dohad and Jhalod Block in Panch Mahals District since they were established prior to 82/83. It is assumed that each of these tribal blocks had 50 anganwadis previously established. Provision has been made for equipping 606 additional anganwadis to be established with AID assistance in these blocks.

ANNEX 14

June 17, 1983
GRANT

COST ESTIMATES OF 19 BLOCK AID ASSISTED ICDS PROJECT
(Rs or $ 000)

DESCRIPTION	UNIT COST		US FY '83 COST		US FY '84 COST		US FY '85 COST		US FY '86 COST		US FY '87 COST		US FY '88 COST		US FY '89 COST		TOTAL	
	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs
I TECHNICAL ASSISTANCE																		
TRAINING/NHED ADVISOR (1)	112.5 P.A.		-	-	56.3	-	112.5	-	112.5	-	56.2	-	-		-		337.5	-
M.I.S. ADVISOR	112.5 P.A.		-	-	56.3	-	112.5	-	112.5	-	112.5	-	112.5	-	112.5	-	618.8	-
SHORT TERM TECH. ASSISTANCE (14 M/M)	15.0 P.M.		-	-	21.0	-	42.0	-	42.0	-	42.0	-	42.0	-	21.0	-	210.0	-
SHORT TERM TECH. ASSISTANCE (10 M/M -USAID MANAGED)	15.0 P.M.		-	-	15.0	-	15.0	-	45.0	-	15.0	-	15.0	-	45.0	-	150.0	-
OFFICE RENTAL AND UTILITIES		200.0	-	-	-	100.0	-	200.0	-	200.0	-	200.0	-	200.0	-	200.0	-	1,100.0
LOCAL TRAVEL AND PER DIEM		50.0	-	-	-	25.0	-	50.0	-	50.0	-	50.0	-	50.0	-	25.0	-	250.0
TOTAL I					148.6	125.0	282.0	250.0	312.0	250.0	225.7	250.0	169.5	250.0	178.5	225.0	1,316.3	1,350.0
INFLATION FACTOR					1.1	1.07	1.2	1.14	1.3	1.21	1.4	1.28	1.5	1.35	1.6	1.42		
INFLATED COSTS					163.5	133.8	338.4	285.0	405.6	302.5	316.0	320.0	254.2	337.5	285.6	319.5	1,763.3	1,698.3

ANNEX 14

June 17, 1983
GRANT

COST ESTIMATES OF 19 BLOCK AID ASSISTED ICDS PROJECT
(Rs or $ 000)

DESCRIPTION	UNIT COST		US FY '83 COST		US FY '84 COST		US FY '85 COST		US FY '86 COST		US FY '87 COST		US FY '88 COST		US FY '89 COST		TOTAL	
	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs
II TRAINING & NUTRITION & HEALTH EDUCATION																		
1 STRENGTHENING NHED SKILLS OF PROJECT STAFF AT NIPCCD			-	-	-	6.0	-	-	-	-	-	-	-	-	-	-	-	6.0
2 BASIC TRAINING OF AWWs 2,750		1.33	-	-	-	1,461.0	-	1,461.0	-	730.0	-	-	-	-	-	-	-	3,652.0
3 IN SERVICE WORKSHOPS - 13,235 TRAINEES		0.57	-	-	-	1,254.0	-	2,508.0	-	2,508.0	-	1,254.0	-	-	-	-	-	7,524.0
4 ANNUAL MEETINGS OF AWW's AND M.S. TRAINERS			-	-	-	20.0	-	20.0	-	20.0	-	20.0	-	20.0	-	20.0	-	120.0
5 ORIENTATION AT NIPCCD FOR ICDS TRAINERS			-	-	-	5.0	-	-	-	5.0	-	-	-	-	-	-	-	10.0
6 ORIENTATION FOR VILLAGE LEADERS			-	-	-	240.0	-	240.0	-	240.0	-	-	-	-	-	-	-	720.0
7 TRAINING MATERIALS			-	-	-	104.0	-	104.0	-	-	-	-	-	-	-	-	-	208.0
8 TRAINING OF MONITORING AND EVALUATION PEOPLE			-	-	-	14.0	-	-	-	-	-	-	-	-	-	-	-	14.0

ANNEX 14

June 17, 1983
GRANT

COST ESTIMATES OF 19 BLOCK AID ASSISTED ICDS PROJECT
(Rs or $ 000)

DESCRIPTION	UNIT COST		US FY '83 COST		US FY '84 COST		US FY '85 COST		US FY '86 COST		US FY '87 COST		US FY '88 COST		US FY '89 COST		TOTAL	
	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs
9 TRAINING OF SR.MGT. AND TECH STAFF			-	-	22.0	219.4	22.0	219.4	22.0	219.4	21.6	219.4	-	-	-	-	87.6	877.6
10 U.S. TRAINING OF RES. STAFF	-	-	-	-	-	-	27.2	-	15.5	-	15.6	-	11.7	-	-	-	70.0	-
11 STATE NHED CLEARING HOUSE																		
a MATERIALS @ Rs.100/AWW/YR			-	-	-	200.0	-	400.0	-	400.0	-	400.0	-	400.0	-	400.0	-	2,200.0
b ADMINISTRATIVE COST			-	-	-	75.0	-	150.0	-	150.0	-	150.0	-	150.0	-	150.0	-	825.0
TOTAL II			-	-	22.0	3,598.4	49.2	5,102.4	37.5	4,272.4	37.2	2,043.4	11.7	570.0	-	570.0	157.6	16,156.6
INFLATION FACTOR			-	-	1.1	1.07	1.2	1.14	1.3	1.21	1.4	1.28	1.5	1.35	-	1.42		
TOTAL INFLATED COSTS (II)			-	-	24.2	3,850.3	59.0	5,816.7	48.8	5,169.6	52.1	2,615.6	17.6	769.5	-	809.4	201.7	19,031.1

ANNEX 14

June 17, 1983
GRANT

COST ESTIMATES OF 19 BLOCK AID ASSISTED ICDS PROJECT
(Rs or $ 000)

DESCRIPTION	UNIT COST		US FY '83 COST		US FY '84 COST		US FY '85 COST		US FY '86 COST		US FY '87 COST		US FY '88 COST		US FY '89 COST		TOTAL	
	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs
III *RESEARCH AND INNOVATION																		
1 LOW BIRTH WEIGHT RESEARCH																		
a EQUIPMENT			-	-	2,22.0	736.0	-	-	47.8	532.4	9.7	220.0	-	-	-	-	279.5	1,488.4
b SUPPLIES MEDIA & REAGENTS			-	-	9.4	150.7	9.8	187.0	0.7	87.0	27.8	1,026.3	27.8	1,026.3	27.8	1,026.3	103.3	3,503.6
c U.S. COLLABORATORS (TRAVEL, PER DIEM & SALARY)			-	-	53.2	-	53.2	-	53.2	-	53.2	-	53.2	-	53.2	-	319.2	-
d U.S. LAB WORK/ QUALITY CONTROL			-	-	26.8	-	26.8	-	26.8	-	26.8	-	26.8	-	26.8	-	160.8	-
e U.S. DATA ANALYSIS			-	-	-	-	26.8	-	26.8	-	26.8	-	26.8	-	26.8	-	134.0	-
f OTHER CONTINGENCIES			-	-	-	225.0	-	248.0	-	272.0	-	596.7	-	596.7	-	596.7	-	2,535.0
2 *INNOVATIVE STUDIES			-	-	-	2,140.0	-	2,280.0	-	2,420.0	-	2,560.0	-	2,700.0	-	-	-	12,100.0
TOTAL III			-	-	311.4	3,251.7	116.6	2,715.0	155.3	3,311.4	144.3	4,403.0	134.6	4,323.0	134.6	1,623.0	996.8	19,627.0

*All the costs are already inflated itemwise.

91

ANNEX 14

June 17, 1983
GRANT

COST ESTIMATES OF 19 BLOCK AID ASSISTED ICDS PROJECT
(Rs or $ 000)

DESCRIPTION	UNIT COST		US FY '83 COST		US FY '84 COST		US FY '85 COST		US FY '86 COST		US FY '87 COST		US FY '88 COST		US FY '89 COST		TOTAL	
	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs
IV MONITORING AND EVALUATION																		
1 EVALUATION TEAMS FOR 5.5 YEARS																		
a RECURRING COSTS:																		
i SURVEY TEAMS			-	-	-	120.0	-	240.0	-	240.0	-	240.0	-	240.0	-	240.0	-	1,320.0
ii DATA ANALYSIS & REPORT WRITING			-	-	-	200.0	-	400.0	-	400.0	-	400.0	-	400.0	-	400.0	-	2,200.0
b NON RECURRING COSTS-EQUIPMENT & SUPPLIES			-	-	-	10.0	-	-	-	-	-	-	-	-	-	-	-	10.0
2 M.I.S. ASSISTANTS (2)																		
a SALARIES			-	-	-	50.0	-	100.0	-	100.0	-	100.0	-	100.0	-	100.0	-	550.0
b TRAVEL & PER DIEM			-	-	-	100.0	-	200.0	-	200.0	-	200.0	-	200.0	-	200.0	-	1,100.0
3 MICROCOMPUTERS FOR MOSW & 2 STATES			-	-	-	900.0	-	-	-	-	-	-	-	-	-	-	-	900.0
TOTAL IV			-	-	-	1,380.0	-	940.0	-	940.0	-	940.0	-	940.0	-	940.0	-	6,080.0
INFLATION FACTOR			-	-	-	1.07	-	1.14	-	1.21	-	1.28	-	1.35	-	1.42		
INFLATED COSTS IV			-	-	-	1,476.6	-	1,071.6	-	1,137.4	-	1,203.2	-	1,269.0	-	1,334.8	-	7,492.6

ANNEX 14

June 17, 1983
GRANT

COST ESTIMATES OF 19 BLOCK AID ASSISTED ICDS PROJECT
(Rs or $ 000)

DESCRIPTION	UNIT COST		US FY '83 COST		US FY '84 COST		US FY '85 COST		US FY '86 COST		US FY '87 COST		US FY '88 COST		US FY '89 COST		TOTAL	
	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs	$	Rs
FOOD PROCESSING PLANT EQUIPMENT (1)			-	-	-	-	-	1,000.0	-	-	-	-	-	-	-	-	-	1,000.0
INFLATION FACTOR			-	-	-	-	-	1.14	-	-	-	-	-	-	-	-	-	-
INFLATED COST V			-	-	-	-	-	1,140.0	-	-	-	-	-	-	-	-	-	1,140.0
GRANT TOTAL (I to V)			-	-	499.1	8,712.4	514.0	11,028.3	609.7	9,920.9	512.4	8,541.8	406.4	6,699.0	420.2	4,086.7	2,961.8	48,989.0

ANNEX 15

ECONOMIC ANALYSIS

Introduction

To carry out economic analysis of a project requires a series of steps, beginning with exploration of the cost-effectiveness of the approach chosen versus the alternatives. Once a cost effective approach nas been identified, it remains to determine and evaluate all costs and benefits, direct and indirect. This final step allows the project to be compared on a rate-of-return basis with investments in other domains, both public and private.

This analysis begins by discussing the cost-effectiveness of alternative types of interventions to reach the goals of reduced infant and young-child malnutrition, morbidity, and mortality. Direct nutrition interventions are compared with pure income transfers, food-price subsidies, and increases in health care services. The following section looks at the cost-effectiveness of the proposed AID assisted ICDS project versus CARE assisted, non-ICDS, mother and child feeding programs in 1982. Explicit calculations of the cost of delivering an effective increase in calorie intake to at-risk children and mothers are presented. The attempt to measure the expected rate of return begins with discussion of the unit of analysis. Since this project is to be phased and will not have impact until it has been in operation for several years, the time horizon of the analysis must be set at eight years (1983-1990) to see the project at the stage of stable cost and effectiveness. The last step is the identification of the expected direct and indirect benefits of the project. Attempts are made to quantify, as best can be done, three of the most important benefits, viz, the expected increase in future productivity, the earning advancement effect of preventing deaths, and food resource savings. It is shown that these benefits alone should be enough to earn at least a 10% return on investment, though exact rate-of-return calculations are not possible. An inflation rate of 7% per year has been used in calculating project costs.

Cost-Effectiveness of Nutrition Interventions

In the broadest sense nutrition interventions like ICDS must be judged on a cost-effectiveness basis against other possible interventions which could attain the same goals. The goals for which the program will be judged are reductions in infant and young child malnutrition, morbidity, and mortality. The attacks on malnutrition and morbidity, while having merit themselves, are also a means to achieving mortality reduction. Two alternative strategies are suggested as ways to accomplish these goals: greater health inputs and increases in income.

More health services would provide both additional curative and preventive care. They would attack morbidity and mortality, but could do little to affect malnutrition.1/ There is already in place a health services system throughout India. Whereas the benefits of its improvement might well outweigh costs, any improvement could only have the marginal impact of additionality. Moreover, since mortality rates are twelve times normal for the severely malnourished and three times normal for the moderately malnourished child aged 1-3 years (A. Kielmann, "Weight for Age as an Index of Risk Deaths in Children," The Lancet, June 10, 1978), a program which does not attack malnutrition will by nature be curative rather than preventive.

Income programs can attack malnutrition indirectly by raising disposable income thereby inducing greater spending for food. Alternatively, food prices may be subsidized to increase consumption out of current incomes. Low calorie income elasticities found in India and elsewhere (M. Selowsky, "The Economic Dimensions of Malnutrition in Young Children, "World Bank Staff Working Paper No. 294, 1978), even among low income groups, indicate that relatively large increases in income would be necessary to close the calorie gap. Food subsidies have been proposed as a less-costly alternative to pure income transfers to affect nutritional status. A study in Kerala (S.K. Kumar, "Impact of Subsidized Rice on Food Consumption and Nutrition in Kerala," International Food Policy Research Institute, Research Report 5, 1979) showed food subsidies to be six to ten times more effective at improving nutritional status than income transfers of the same amount. For the goal of improvement in infant and young-child child nutrition, however, both income transfers and food subsidies would involve a lot of "wastage" as much of the increased food consumption would go to adults and older children, outside the target group.

Further, food subsidies do not address the problem of intra-family food distribution, as much of the young-child nutrition gap could be met from relatively small shifts in the distribution of current family resources. Finally, subsidy programs are not likely sustainable in light of the Sri Lanka Experience (J.D. Gavan and I.S. Chandrasekera, "The Impact of Public Foodgrain Distribution on Food Consumption and Welfare in Sri Lanka," International Food Policy Research Institute, Research Report 13, 1978) where, even when targeted only to low-income groups, they became a heavy fiscal burden.

1/ Some illnesses, like measles, cause weight losses that can begin a case of malnutrition. Rehydration of diarrhea can also avert nascent malnutrition, but most health services are only peripherally related to nutrition - many are called for only after malnutrition has done its damage.

The AID assisted ICDS program will improve on the cost effectiveness of the alternative interventions by targeting its food supplements to children and women who are in need on the basis of nutritional criteria. The extra inputs to carry out the targeting are less costly than the food wastage that would occur without them (see below on AID-ICDS versus CARE-MCH Cost Effectiveness). Health and nutrition education components of ICDS will attack the intra-family food distribution issue and lead to improvements in health and sanitary practices that should avert illnesses that are catalytic to malnutrition. The management of ICDS is integrated with the health services system to take advantage of complementarities between them. Additional malnutrition prevention will be undertaken by AID assisted ICDS through the special attention given to mothers of low birth weight babies and pregnant women at risk of delivering a low weight child. These women will be targeted for supplemental feeding to raise the weights of their high-risk children (see R. Puffer, Report to USAID/New Delhi, 1981 for a discussion of the mortality risk for low birth weight children). High-risk malnourished children under three years of age will also be targeted for priority attention by AID assisted ICDS. The nutrition education component of the project will promote the home preparation of weaning foods made from low-cost locally available products. These foods will meet a critical need, as many cases of malnutrition have their genesis at the point of weaning.

In sum, the targeting of food supplements, the education to improve intrafamily allocations, the integration with health services, and the attention paid to those at high risk by AID assisted ICDS render it an improvement in cost-effectiveness over existing alternatives to reach the goals of reduced infant and young child malnutrition, morbidity, and mortality.

AID assisted ICDS Versus CARE-MCH Cost Effectiveness

AID assisted ICDS will be compared for cost-effectiveness with the average non-ICDS CARE assisted mother and child feeding program in 1982. The comparison will be made by looking at ration cost, effectiveness of delivery to the at-risk group, the adequacy of the ration in meeting the calorie gap, and the outreach of each program to non-food beneficiaries.

In 1982 the average CARE-MCH ration cost $0.024 per beneficiary per day. The ICDS ration will cost $0.030 per beneficiary per day (a weighted average of $0.044 per maternal and severely malnourished beneficiary and, $0.022 per other child beneficiary). The ICDS ration is 25% more as costly than the CARE-MCH ration.

The largest of the CARE assisted MCH programs, SNP, selects beneficiaries on the basis of age and socio-economic criteria.

A CARE study in Tamil Nadu (Anderson, 1976) found that only 35% of those fed were malnourished children under three years of age and pregnant and nursing women. AID assisted ICDS will give priority for receiving food to moderately and severely malnourished children under three years of age and to pregnant and nursing women at-risk of giving birth to a low weight child or having lactation failure due to low socio-economic status. Fewer rations will be given to those not nutritionally in need (an estimated 30%). Thus, the SNP cost of reaching an at-risk beneficiary with food through CARE is $0.059, while the AID assisted ICDS cost will be $0.043.

The daily nutritional gap for preschool children in India is on average 500 kcal. The typical CARE-MCH ration contains 345 kcal and is fed 240 days per year. A study of ration leakage found that 47% is effectively consumed and not shared with other family members or substituted for the home diet. Therefore, the effective daily increase afforded by the CARE ration is 163 kcal.

The ICDS ration will be delivered 300 days per year to women and children. The weighted average caloric value of the ration for all groups will be 405 (500-600 kcal for pregnant and nursing women and severely malnourished children and 300 kcal for all other children). Nutrition education and house visits by the anganwadi worker will minimize ration leakage. It is felt that these activities will also contribute to reduction of the gap, by inducing families to feed pregnant and nursing women and young children more adequately out of existing resources. AID assisted ICDS expects to raise net daily intake by 275 kcal.

The additional recurring costs for nutrition education, beneficiary selection, and management inputs in AID assisted ICDS will be $0.022 per beneficiary per day above food costs. However when the total costs of AID assisted ICDS and CARE assisted SNP MCH for achieving a 100 kcal effective increase per day are compared, the cost of ICDS is only slightly higher, i.e. $0.0232 (IMCN) and 0.017 (CARE). In addition, AID assisted ICDS is more likely to be able to reduce malnutrition because ration size for severely malnourished children and women will be large enough to meet the gap, the type of food to be distributed will be more nutritionally suitable, and feeding is carried out for 25% more days per year than in most CARE assisted feeding programs.

Moreover ICDS will protect the children who are not direct food beneficiaries. ICDS will monitor the health and nutrition status of all children ages 0-3 years on a quarterly basis, and on a monthly basis for malnourished children enrolled for feeding. Those who need health care will be referred into the health system. The health and nutrition activities of ICDS are designed to reach the whole community, not just those receiving supplements and not just

children. The nutrition supplements and education for pregnant women will lead to higher birth weights, hence lower neonatal and infant mortality and lower early malnutrition.

The mother and child center concept of the ICDS anganwadi will encourage mothers and children to make better use of existing health services. More pregnant women will take advantage of tetanus toxoid vaccinations and iron and folic acid supplements, as well as seek assistance from trained dais. Similarly it is expected that child vaccination coverage will increase as a result of the establishment of anganwadis. None of these effects can be expected to result from straight feeding in the absence of other services.

ICDS expects to produce significant reductions in the incidence of malnutrition and in infant and young child mortality. It is expected that the incidence of severe malnutrition will be reduced by one half and moderate and severe malnutrition together reduced by 35% within four years of program operation in any given site. For a typical block of 100,000 population the number of severely malnourished should fall from 8,400 to 5,530. Severe malnutrition has been defined as 60% of standard weight for age and moderate malnutrition as 60-70% of standard weight for age, using Harvard Standards.

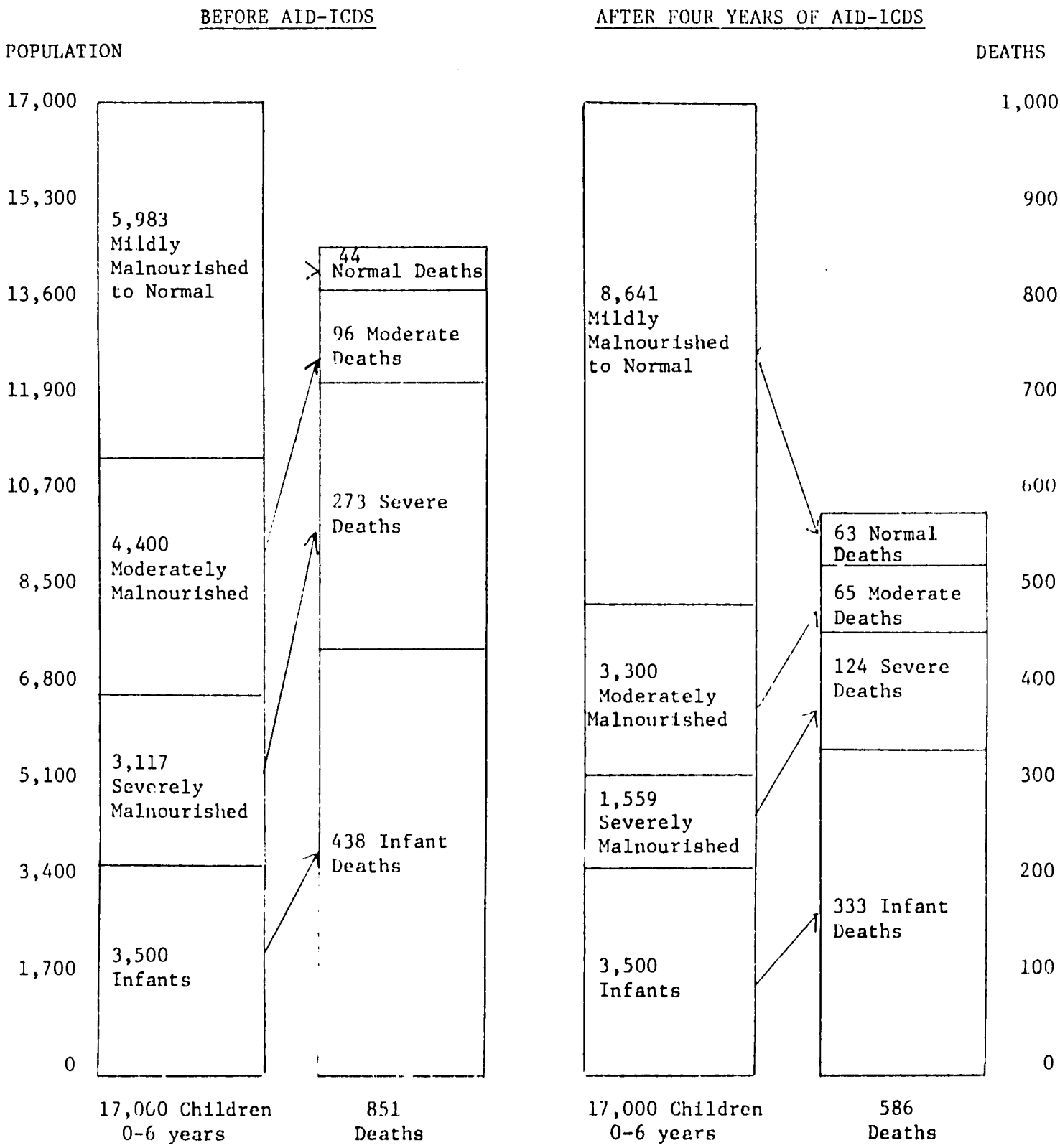
The risk of mortality is 12 times normal for the severely malnourished child, 3 times normal for the moderately malnourished (Kielmann, 1978). By reducing the incidence of malnutrition and supplementing those who are malnourished the current young-child (1-4 year) mortality rate of about 30 (calculated by R. Puffer from Registrar General's data) will be reduced below 20. The efforts made toward raising birth weights, assuring safe aseptic deliveries, and improving breast milk adequacy are expected to reduce the infant mortility rate from 136 to 102 in ICDS areas. Table 1 and Figure 1 show the expected results after four years of ICDS operation in a typical block. It is expected that 265 infant and child deaths will be averted annually in each block. No such mortality impact has ever been shown for SNP.

Table 1

Expected Results of ICDS on Malnutrition and Mortility in One Block of 100,000 Population

Population	Before ICDS	After 4 Years of ICDS
Infants	3,500	3,500
Severely Malnourished	3,117	1,559
Moderately Malnourished	4,400	3,300
Mildly Malnourished to Normal	5,983	8,641
TOTAL	17,000	17,000
Deaths		
Infants	438	333
Severely Malnourished	273	124
Moderately Malnourished	96	65
Mildly Malnourished to Normal	44	63
TOTAL	851	586

Figure 1: Expected Results of AID assisted ICDS on Malnutrition and Mortality in One Block of a 100,000 Population.



Calculation of Economic Benefits

Much of the benefit or cost of any project that affects mortality and morbidity is not quantifiable in economic terms, since lives saved or lost and illnesses cured or averted have large pure utility effects. Thus, such projects should not be judged merely on economic grounds. The calculation of expected net economic benefits only gives an indication of the total net benefit to the project. With that caveat in mind, certain economic benefits of the AID-ICDS project may be quantified, while others cannot because of lack of information To all of the economic benefits quantified and not quantified must be added the pure utility gains of young child deaths prevented and illnesses averted.

Quantification or attempts at quantification will be undertaken for the expected gain in productivity, the reduction in child mortality, and the value of improved educational performance. Methods by which the population consequences, potential resource savings, mothers' time, general health, and maternal depletion could be quantified will be discussed.

The unit of analysis will be a rural Indian block of 147,000 population since this is the average population of the rural blocks AID will assist. The time horizon used will extend beyond the final year of the project for three reasons. First, the impact of the nutrition intervention on mortality will not be fully realized until it has been in operation for six years. All project blocks will not have their full effect until one year after the end of AID participation in financing. Second, it is expected that the GOI will continue the program after the AID commitment ends. Finally, the expected improvement in nutritional status will lessen the amount of food required to a steady amount only after all blocks have been operating for six years.

The average rural block in the AID area is made up of 147 villages of 1,000 persons each. There are 170 children ages 0-6 years and 30 pregnant women in the average village at a given moment. The crude birth rate is 34. The ex ante infant mortality rate is 136; the 1-6 years mortality rate is 30.6. It is expected that 20% of the children are severely malnourished and 28% moderately malnourished. In a typical village the 0-3 years age group would have 24 severely and 33 moderately malnourished among them; the 4-6 years group would have 10 severes and 15 moderates.

The project will give a double daily supplementary food ration, value $0.044, to an average of 18 pregnant and lactating women, determined to be 'at-risk' of giving birth to a low-weight and to 11 severely malnourished children under three years of age. Another 53 children will receive single rations worth $0.022, 300 days per year.

After four years of operation the project expects, through its prevention and treatment efforts, to have reduced the incidence of severe malnurition by one-half and that of moderate and severe malnutrition combined by 35%. Of the remaining cases of malnutiriton, the project expects to be able to rehabilitate 60% of the cases. Of the severely malnourished, 18% would be brought to normal, and 42% would be improved to moderate malnourishment. 60% of the moderates would become normal. In addition, the improvements in mothers' status made through the project are expected to reduce the infant mortality rate to 105 from 136. The mortality rate for children aged 1 to 6 will be reduced from 30.6 to 20.0.

Table 2 shows the annual costs (including staff, equipment, supplies and training) and results of implementing the project in an average AID assisted rural block. Note that the numbers of malnutrition cases and deaths averted reach their maximum beginning in 1988 after the block has been operational for four years.

Table 2: Costs and Expected Results of ICDS Implemented in a Rural Block with 147 anganwadis

FY	Food Beneficiaries	Costs ($000) Non-Food	Food O.T.*	Total	Cases of Malnutrition Averted	Deaths Averted
1984	13,818	97.7	139.2	236.9	565	130
1985	13,818	98.2	147.3	245.5	849	136
1986	13,818	100.8	164.9	265.2	1,131	182
1987	13,818	103.3	194.1	297.4	1,508	242
1988	13,818	105.9	213.5	319.4	1,696	273
1989	13,818	108.5	234.9	343.4	1,696	273

* Food costs include approximately 40% of ocean transport.

Direct Benefit

ICDS aims to feed a 600 kcal ration to 85% of the severely malnourished children and a 300 kcal ration to all moderately malnourished children 0-3 years of age 300 days per year. In an average AID assisted rural block, this is expected to amount to 1,617 severes and 2,793 moderates. In addition, those mothers determined to be at risk of delivering a low birth-weight baby will be fed a daily 500-600 kcal ration throughout the last trimester of pregnancy and the first six months of lactation. There will be about 2,646 maternal food beneficiaries per block. An additional 4,998 children 3-6 years of age will receive food during preschool. Another 15,000 better-nourished children in each block will benefit from the monitoring of their nutritional status on a quarterly basis, from the health and nutrition education imparted to their mothers through the anganwadi worker, and from periodic vaccinations, vitamin A and oral rehydration. All mothers will benefit from the health and nutrition messages and from the services of the trained dai (midwife).

Indirect Benefit

Through its stimulation of the quality and reach of the health services system, it can be expected that the project will have an impact on the health and nutritional status of the community at large. Knowledge gained about the availability of health services, improvement in the composition of diets, and improved sanitation, hygiene, and health practices will lead to some reduction in general morbidity. The reduction in morbidity will mean an increase in labor supply per capita as fewer working days will be lost due to illness and premature death, and an increase in effective labor supply as debility caused by illness and nutritional deficiency is reduced.

The increased survivorship of young children induced by the project can be expected to positively influence the acceptance of family planning, hence lowering the cost per couple year of protection. Further, improved nutritional status at young ages is believed to have a singificant impact on reaching genetic-ability potential and ability to profit from education.

The success of this project will demonstrate that there is a more effective use for food currently used in other programs. At the same time, as this project progresses, its food requirements should diminish as malnutrition is reduced. The freed food will then be a resource that may be used elsewhere. It will also show the social profitability of investment in young child nutrition, making additional investments in this domain by the GOI and other donors more likely.

The success of this project will allow savings of resources currently devoted to health and education. The process of developing a child's adult productive capacity, or human capital, may be seen as a function of several factors including health, education and nutrition. The optimal combination of these inputs obtains where their marginal productivities per dollar spent are equal. Currently, in India, much is spent on health and educational inputs into child development, but little on nutrition. It is felt that additional investment in nutrition is likely to have higher marginal productivity than additional investments in health and education. Indeed, the situation may be such that a more efficient use of current spending could obtain by putting more resources into nutrition and fewer into health and education. In other words, to reach the same level of human capital development as currently holds would require less total spending on health, education, and nutrition, than is spent now for health and education alone.

There is evidence that the three inputs are not perfect substitutes for one another. Studies of the effect of education on IQ, cited by Selowsky and Taylor ("The Economics of Malnourished Children: A Study of Disinvestment in Human Capital", 1971), showed that at most education could recover half of the IQ potential lost because of early childhood malnutrition. Morbidity and mortality rates in excess of normal are associated with undernourishment, requiring curative health spending that could be avoided by preventing malnutrition. The excess morbidity has an additional cost, time foregone by mothers caring for their sick children.

The excess mortality, in addition to the population effects mentioned above, wastes the resources spent on child development and depletes mothers' strength. All resources devoted to rearing children who die prematurely, including food, care time, health services, and mothers' pregnancy costs, are lost. Each birth may cause mothers to suffer loss of working power, both at the time and in the future, and make future births more difficult.

Productivity Increases

There is little direct evidence as to the amount of future productivity increase that may be expected from improving the nutritional status of young children. It is known that malnutrition causes a loss of potential physical and mental ability. Physical and mental abilities along with other factors including environmental stimulation, health, education, and availability of capital determine productivity. Thus prevention of malnutrition can have some positive effect on future productivity. In addition, it has been shown that timely rehabilitation of malnourished children can restore much of physical and mental potential.

The value of a productivity gain would be calculated as the present value of increased output attributable to the nutrition improvement. To find that value several items must be known: the value of output in the absence of the nutritional intervention, the secular growth rate of productivity, the expected working lifetime, and the amount of increase in capacity that may be attributed to the intervention. Symbolically the formula for each case of malnutrition avoided may be given as:

$$P.V. \quad \sum_{t+s-a}^{n-a} (y'_t - y_t)\left[\frac{1+g}{1+r}\right]^t \qquad (1)$$

where,

P.V. = present value of the productivity increase attributable to the nutrition intervention.

t = time period in years, a is the age of the child at the time of the intervention, s is the age when one enters the workforce, and n is the age of retirement.

y'_t = the expected value of earnings in year t of an individual who is well nourished in childhood.

y_t = the expected value of earnings in year t of an individual who is malnourished in childhood.

g = expected secular rate of productivity growth.

r = rate of discount.

The difference in expected earnings of individuals who were well and poorly nourished in childhood may be expressed as a proportional increase in ability (a):

$$y'_t = y_t (1+a) \qquad (2)$$

substituting (2) into (1) P.V. = $$\sum_{t+s-a}^{n-a} a\, y_t \left(\frac{1+g}{1+r}\right)^t \qquad (3)$$

The working lifetime in India, accounting for the probability of death, is about 43 years, from age 12 to 55. A discount rate of 10% will be used.

A variety of values are plausible for use a, g, and y_t. The IMCN project is to be implemented in rural and tribal areas of India

where expected future employment might accurately be approximated as that of a landless agricultural worker. Thus, y_t would take on the value of the annual wage of such workers. This approach was used in the World Bank Tamil Nadu Nutrition Project (World Bank 1980). Annual earnings were calculataed as $162.50 (RS. 1,300), on the basis of a daily wage of RS.5 for the equivalent of 260 working days. A more optimistic assumption would be that the expected earnings could be approximated by the per capita income of India, $ 190 (RS.1,520).1/ As was assumed by the World Bank, it is expected that ten percent of children will not reach the age of twelve years.

The Bank assumes no value to the activities of women who are not involved in market labor, hence any productivity gain for them has no value. This is a serious error when trying to measure the social value of an intervention. Since market labor is available to women (the Bank says 15% of them would be so employed), when they choose not to work in the market it is implicit that, to them, the marginal value of wage employment is lower than that of their alternative activities. Therefore, increases in women's productivity attributable to nutrition intervention will be counted here. As a final consideration on y_t it will be assumed that 10% of those who reach working age will be unemployed.

The pessimistic assumption about g, the secular growth rate of agricultural productivity, would be that it will be zero. That is, declining land-labor ratios will overwhelm any increases due to improved technology and physical and human capital. An optimistic assumption would be that productivity would grow at 3%, the historic post-independence rate of growth of the Indian economy as a whole.

The following parameter values are used in Table 3 to find the present value of earnings of an unskilled, landless worker:

y_t = Rs. 1,300 - 1,520
g = 0.00 - 0.03
r = 0.10
n = 55
a = 2
s = 12

1/ Per capita income is calculated by dividing national income by the total population, including children, old people, and others not in the workforce. Thus, using per capita income as the base would leave the target population well into the lower income part of the Indian economy.

The results show a range from $ 561 under the least favorable assumption (LFA) to $ 1,269 under the most favorable assumption (MFA) for the present value of the expected future earnings of the beneficiary population of ICDS.

Since the value of the productivity increase is unknown our procedure will be to solve for the a value that would allow project costs to be covered. Note that this would produce a 10% return on investment since a 10% rate of discount has been used.

Table 3
Present Value of Future Earnings of an Unskilled, Landless Worker (in $)

Secular	Base Annual Earnings	
Productivity increase (%)	Rs. 1300	Rs. 1520
0	$ 561	$ 655
3	$ 1,085	$ 1,269

The cost per malnutrition case averted (Table 4) is high in the early years of the project, then declines to a low of $ 188 after four years of operation in a block and then rises again due to inflation. To meet this cost and earn a 10% return on investment, the avoidance of malnutrition would have to raise output by 10% in the MFA case and 23% in the LFA case. In order to cover all costs of the project through 1989 ($202 per case averted) those who avoid malnutrition would have to increase their productivity by 15% under the MFA and 33% under LFA. These rates are those needed to justify the project on productivity growth alone.

Since there is no direct evidence as to what productivity increase may be expected it is necessary to see if increases of 10 to 33% are within the order of magnitude that reasonably may be expected. A study by the National Institute of Nutrition, Hyderabad, (NIN, Annual Report 1980) found a significant (but unspecified) difference in wages paid to day laborers on the basis of physical size. Since adult size is an indication of childhood nutrition and size was used implicitly by employers as an indicator of productivity, the linkage can be made that childhood nutritional status affects adult productivity.

Table 4
AID Assisted ICDS Cost per Malnutrition Case Avoided

FY	Cost Per Case Avoided ($)
1984	419
1985	239
1986	235
1987	197
1988	188
1989	202

Further, Kalra, et al.("The Impact of Malnutrition on Intelligence," Indian Pediatrics, 17 : 109-116, 1980) found, in a study of malnourished children ages 1 - 12, that their IQ-SQ scores differed from a control group by 30.4 points. This study showed that 57% of the malnourished group would be classified as mentally retarded, while only 1% of the control would be so classified. Degree of malnutrition was positively related to degree of retardation.

Srikantia and Yogananda Sastri ("Observations on Malnutrition and Mental Development", National Institute of Nutrition) criticize such studies, noting that control has not been maintained for the influence of mothers' attitudes and intelligence on mental development. Cravioto tested for this effect "Intersensory Development as a Function of Age, Stimulation and Antecedents of Severe Malnutrition", Symposium on Nutrition and Functional Performance, Proceedings of the Nutrition Society of India, No. 22, 1978) and found that the negative relation between kinesthetic-visual competence (affecting reading ability) and malnutrition remains even when home stimulation is controlled.

A review of studies of childhood malnutrition and mental development (Y.A. Clugston, "The Effect of Malnutrition on Brain Growth and Intellectual Development", Tropical Doctor, 11 (January 1981):32-38) finds that in deprived communities the malnourished show persistent significant differences from the well nourished in cognitive functions, attention span, ability to concentrate, and motivation into late childhood.

None of these studies, however, makes the link between childhood malnutrition, hence ability, and later adult productivity. Selowsky has used such study results, along with studies showing the predictive power of childhood ability on adult ability, to calculate the future value of increases in childhood ability (M. Selowsky, "Nutrition, Health, and Education: The Economic Significance of Complementarities at Early Ages", presented at the Sixth World Congress of the International Economic Association, Mexico City, 1980). Selowsky's results show that a one standard deviation (s.d.) increase in childhood ability would increase lifetime earnings of persons with low educational attainment by 0.65. A two s.d. increase would improve earnings 1.52 times. Selowsky goes on to show that persons with greater ability will seek more education, which further improves earnings. Accounting for both the pure ability effect and the induced education effect, a one s.d. increase in ability implies a 2.32-fold improvement in lifetime earnings, and a two s.d. increase a 5.63-fold improvement.

Thus, the earning increases needed to earn a 10% return on the ICDS investment are well within these ranges, if improvements in ability of one to two s.d. may be expected. The AID assisted ICDS, in full maturity, will make a net improvement of 848 severe and 799 moderate cases of malnutrition to mildly malnourished or normal in each rural block annually. Colombian children suffering from moderate malnutrition were found to show a one s.d. improvement in IQ after receiving food supplements, health care, and preschool education, as ICDS will give (H. McKay, et al. "Improving Cognitive Ability in Chronically Deprived Children", Science, April 1978). A study of severely malnourished children (below 70% of normal) in Chile showed that rehabilitation would result in a two s.d. gain (M. selowsky and L. Taylor, "The Economics of Malnourished Children: An Example of Disinvestment in Human Capital", Economic Development and Cultural Change, October 1973). Thus, it appears that the ICDS project will generate the necessary productivity increases to earn at least a 10% return.

Reduction in Child Mortality

There are two kinds of economic benefits that may be calculated for the reduction in child mortality: the present value of advanced earnings and the savings of wasted resources. The advanced earnings benefit assumes that there is a desire for a target number of children in a family, so that, if one dies, s/he will be replaced by an additional birth. By preventing a death the need to have an additional child is eliminated, with the result that the earnings stream of the surviving child is advanced by the number of years between his or her birth and the time at which the replacement would be born. The present value of the advancement is calculated as the

benefit. The formula for this benefit is similar to (3) above where d is the age of the child when death is averted. Four years is taken as the period of earnings advancement, and the other symbols are defined as previously:

$$P.V. = \sum_{t=a-d}^{e-d+a} y_t \left(\frac{1+g}{1+r}\right)^t - \sum_{t=n-d}^{n-d+a} y_t \left(\frac{1+g}{1+r}\right)^t \qquad (4)$$

The ICDS project expects to reduce both the infant mortality rate (IMR) and the young child mortality rate (CMR). Each requires a different value for d in equation (4). Since most infant deaths occur very early in life (see Ruth Puffer, Report to USAID/New Delhi, 1981), d will be assigned the value zero for the reduction in IMR. For the reduction in CMR d is assumed to be two years.

Using the same parameters as in the section on productivity (above), the advanced earnings benefit of a prevented infant death is $ 295 under MFA and $ 178 under LFA. For a young child death averted the earnings advancement benefit ranges from $ 214 under LFA to $ 337 under MFA.

The AID assisted ICDS project expects to reduce IMR from 136 to 102 and CMR from 30.6 to 20.0. The value of earnings advancement following from ICDS in an average rural block is shown in Table 5. When the block reaches full maturity in 1988 the earnings advancement benefit accounts for between 31 and 49% of costs. Over the six year period 1984-89 this benefit accounts for 13 to 43% of total costs.

Table 5
Earning Advancement Benefit from AID Assisted ICDS
Implemented in an Average Rural Block

			($ 000)	
	Deaths Averted		Value of Earnings Advancement	
FY	Infant	Young Child	LFA	MFA
1984	57	69	25.2	40.0
1985	86	104	37.5	60.3
1986	114	138	50.0	80.3
1987	152	184	66.6	107.2
1988	172	207	74.9	120.5
1989	172	207	74.9	120.5

Premature death causes two types of resource waste: spending on child maintenance, i.e. expenditures for food and clothing up to the time of his or her death, and maternal costs. The maternal costs include productive time lost because of pregnancy, childcare time, and loss of mothers' strength and vitality that occurs with each successive pregnancy. It is not currently possible to estimate the value of maternal costs. To do so in the future it will be necessary to gather information on the amount of time diverted from other activities in pregnancy and during child care and on the productivity costs of extra pregnancies (these would include not only reductions in women's physical productivity, but also increased risks in future pregnancies, both for mother and child). The time diverted would be evaluated at the marginal value of alternative activites (this would likely be the unskilled labor wage rate adjusted for the probability of employment). These costs avoided would be part of the benefit due to mortality reduction.

The child-maintenance costs of early death may be evaluated. Since the deaths averted by ICDS occur at very early ages, there is almost no spending on clothing to be lost. Therefore our evaluation of child-maintenance costs will include only food losses. Most infant deaths occur in the immediate neonatal period (R. Puffer, Report to USAID/New Delhi, 1981), so that the average lifespan of a child who dies in infancy is 77 days.[1/] There daily food consumption will be estimated as 600 kcal; hence the loss is 46,200 kcal per death (Table 6).

Table 6
Food Savings Benefit from ICDS Implemented
in an Average Rural Block

FY	Deaths Averted		($ 000) Value of Food Saved
	Infant	Young Child	
1984	57	69	17.20
1985	86	104	25.81
1986	114	138	34.41
1087	152	184	45.90
1988	172	207	51.57
1989	172	207	51.57

1/ Calculated from a study of IMR data in Rural North Arcot, presented in R. Puffer, Report to USAID/New Delhi, 1981.

Conclusion

In addition to the humanitarian benefits associated with reductions in morbidity, mortality, and malnutrition, AID assisted ICDS offers many economic benefits. Those that have been quantified, to a greater or lesser extent are the future productivity benefit, the advanced earnings benefit, and the food savings benefit. Not enough information is currently known to quantify the additional economic benefits of increased acceptance of family planning, resource savings on health care, mothers' time and strength savings, and health benefits to the community at large. Methods by which these benefits can be evaluated during the course of the project have been described.

The discussion of the future productivity benefit indicated that its magnitude is unknown, but that a 10 to 33% productivity increase would alone justify ICDS on economic grounds. Inclusion of the earnings advancement and food savings benefits reduces the required productivity increase to 8 to 25%. As shown above, this kind of productivity increase is well within the range that may be expected. Therefore it should be concluded that AID assisted ICDS will earn more, and probably much more, than a 10% return on investment.

ANNEX 16

SOCIAL SOUNDNESS ANALYSIS

I. Social Cultural Feasibility

This project addresses the primary cause of malnutrition in Indian preschoolers which is insufficient intake of calories. A large part of the project is designed to fill the calorie gap through the use of Title II, PL-480 food and simultaneous promotion of home preparation of indigenous weaning foods from affordable cereals and pulses. The donated food will be made into familiar Indian dishes and combined with local ingredients to increase its acceptability.

Salient contributory causes of malnutrition will also be addressed by the project. A direct attack will be made on certain beliefs and practices which lead to inadequate food intake by the target population. Also, there will be intervention in illnesses such as diarrhea and in low birth weight which contribute to a high incidence of morbidity and mortality.

A. Socio-cultural Determinants of Malnutrition

Children are highly valued in India and are called "gifts from God". In the absence of a governmental income guarantee in old age, children become an important security for parents. Sons are needed to perform certain religious rituals when a parent dies and children of either sex join in the family work force. Despite this value placed on children, centuries of poverty and high mortality of infants have made poor people accept infant and young child mortality and morbidity with malnutrition. They believe some children are born with a better kathi (inbuilt resistance to disease) than others.

There are many traditional beliefs and practices about food for the pregnant and lactating woman as well as for the child. While many of these beliefs are beneficial, some are harmful and nutrition and health education to change them is planned in the project. Within the Indian family structure it is the young wife and her child who eat last and least after the male family members have finished their meal. The calorie gap for the average sedentary lactating woman, for example, is about 539. For moderately active nursing women the gap is 900 kcal. Since the decisions about how money is spent and for what purpose are often not made by the young wife, messages to change intrafamilial food distribution will need to be aimed at men, mothers-in-law and grandmothers, as well as at the target women. It is for this reason the project seeks to use a variety of media to motivate behavior change in food practices.

Films, radio messages and meetings with village leaders will reach men. Home visits and Mahila Mandal meetings will reach older women, while home visits and visits of women to the anganwadi will reach the young women. Since most dais are older women and since their advice is usually sought during pregnancy, delivery and the immediate post-partum period, the project will use them to advise women to take certain recommended foods and to feed their babies the correct amount of the right kind of food. Since a high caste woman will not accept prepared food from a lower caste dai, it is planned to either use the dai only for giving advice (which is culturally acceptable) or she will give the food in a packaged unprepared form. The exact methodology will depend on prevailing village attitudes and practices.

It has been the experience of similar projects that food meant for pregnant or lactating women has simply been viewed as extra food for the whole family. It is for this reason that one of the innovative studies proposed in the project is to develop a special food for pregnancy and lactation. There are deeply rooted beliefs about special foods for pregnancy and lactation so the concept of a "mothers food" as something separate from the regular food taken by the family is culturally feasible.

Of the harmful beliefs and practices related to child feeding, the late introduction of semi-solids after six months of age and often not until one year, is probably the one most uniformly practiced throughout India. The point at which an infant's demands are greater than can be met by its mother's milk depends on individual growth but occurs around 4-6 months of age in most infants. Motivational messages aimed at changing this practice will be given high priority in the project. An associated traditional practice which is good and which will be reinforced is breast feeding. The objective of motivational messages is to increase caloric intake by the infant after six months of age while at the same time encouraging the continuance of breast feeding.

The child most vulnerable to malnutrition in India has been shown to be female from a tribal or scheduled caste family, and one who suffers from an impoverished mother-child relationship. The preference shown to a male child in Indian society is deeply rooted in some of the practices, such as dowry giving, which make females a financial burden on the family. Male children are more likely to be provided with medical care than females and in some cases it has been documented that female babies are actually nursed for shorter intervals than are male babies. Such long standing and far reaching attitudes and practices are not changed quickly in the context of a single project. However, field level workers will be alerted to the fact that certain cultural attitudes, including gender bias, make some children more vulnerable than others.

Recognizing the synergistic relationship between malnutrition and morbidity episodes, such as respiratory infections and diarrhea, the project will be closely linked to the government's health infrastructure. It will draw upon the already established system of using Female Health Workers to visit the villages and follow up in the Primary Health Centers and Sub-Centers. A close working relationship will be established between the AWW, the FHW and the community.

B. Organization

The key to the success of this project will be the degree to which ICDS staff understand and are motivated to follow up on the problem of malnutrition in the village. The project appraisal team felt there were inherent weaknesses in the existing training system for ICDS and SNP workers which would have to be overcome if the project is to succeed. For this reason the training component for all levels of ICDS workers is to be strengthened. Village level workers and their supervisors will receive in-service training in or close to their own village. This will maximize the use of local resources, including using one's own village as the place for field experience.

Since it is the project staff who are to motivate villagers to participate in the program, a related organizational component needed for project success is the involvement of existing village level organizations. The village will be expected to contribute certain inputs in return for the project benefits. Only project staff who have been provided some basic training in communications and community participation techniques can provide the backbone for this important component. The use of Mahila Mandals or women's clubs as a vehicle for information dissemination as well as soliciting their members to actively participate in problem identification and solving is socially sound. Many villages already have a Village Health Committee which looks after such things as village well water and sanitation problems. This is another group whose cooperation will be sought.

The long term sustainability of the project will depend on whether political support can be rallied behind it at the local level. It is for this reason, as well as ease in monitoring, that the project will be implemented in contiguous blocks rather than in a scattered manner.

II. Spread Effect

Since health care personnel stationed at government Primary Health Centers and sub-centers may have responsibility for project and non-project villages it is reasonable to expect that the knowledge they gain from the project areas will spread informally to

non-project villages. Beneficial effects of the project are also likely to be found in blocks in contiguous districts not yet covered by ICDS. These blocks will make suitable candidates for future ICDS expansion. The same is true of motivational messages which may be broadcast, for example, by radio. Listeners from non-project villages will hear the messages and benefit from them. Further spread effect will be enhanced if a political mass of support at local levels can be accomplished. The project is intentionally designed to actively involve local groups out of which can grow political support. Support already exists at the Central Government for greatly expanding the ICDS as part of the Prime Minister's 20 Point Program. Improvements to be made in ICDS with AID assistance should have a national application in other ICDS blocks. If AID's emphasis on targeting services to malnourished younger children and pregnant and nursing women leads to reduced malnutrition and mortality, these results may influence the government to modify its other ICDS programs in a similar way. There are 5,000 development blocks in the country and 1,000 of them are to have ICDS by 1985. Therefore the opportunity for introducing improvements tested in AID assisted blocks to other blocks is vast. After six years of program operation in a village the need for Title II foods should be greatly reduced, allowing a shift of these food resources to ICDS in new villages.

III. Social Consequences and Benefit Incidence

The targeted approach to this project clearly identifies moderately and severely malnourished children under three years of age and at risk pregnant and nursing women as the beneficiaries. It is planned that approximately 177,000 such women and children will receive supplementary food, health services and nutrition education annually during the project once all 4,000 anganwadis are operational. The supplement combined with intensive follow-up and educational/motivational messages will have direct impact through approximately 4,000 anganwadis. By 1987 approximately 3.3 million people will have been exposed to the project, since it is assumed that all persons in the village will hear of ICDS and will benefit either directly or indirectly.

If family purchasing power remains the same during the life of the project, and if the family cannot grow more food to supply the extra calories needed by the target group, then someone else in the family will have to eat less if more calories are to be made available for the target group after food aid is withdrawn or when the child graduates from the anganwadi. In its 1979 profile of protein-calorie adequacy the National Nutrition Monitoring Bureau found that 58% of rural households had adequate protein-calorie intake, yet there was only 37% protein-calorie adequacy in children 1-4 year of

age. Thus, in 21% of rural households, a shift in intrafamilial food distribution would be feasible without producing a protein calorie deficit for other family members. Any negative consequences of an intra-familiar food shift may be offset over time, however, by the reduction in young child mortality, the desire to have fewer children because fewer die, and consequent smaller families. If adult men and older children were to eat less to make up the deficit of younger children and pregnant and nursing women, the negative nutritional impact on them would be minimal. To some extent the diet of women who are neither pregnant nor lactating could also be reduced to offset the deficit.

Annex 17

Section 611(e) Certification
Integrated Child Development Services

This project is intended to assist the Government of India develop a comprehensive approach to alleviate child malnutrition and mortality in Indian villages through supplementary feeding programs and the delivery of nutrition education and health services to those children and pregnant and nursing women most at-risk. Grant funds will finance technical assistance, training, research, minimal assistance to food processing plants, and project monitoring and evaluation. Loan funds will finance furniture and equipment and an annually diminishing percentage of staff and operating costs.

I, Priscilla M. Boughton, Principal Officer of the Agency for International Development in India, do hereby certify that in my judgment the Government of India and the Governments of Gujarat and Maharashtra have both the financial capability and the human resources to carry out, maintain, and utilize this project effectively. This judgment is based upon the analyses contained in the Project Paper, as well as upon the successful maintenance and utilization of projects in India previously financed or assisted by the United States.

Priscilla M. Boughton
USAID/India

Baseline and Quarterly Surveys

Baseline Survey - The AWW should make a map of the village showing location and number of each household. A serial number should be assigned to each family. The AWW should visit every household in the village, measure every 0-6 year old child and interview every 15-44 year old woman who is married.

Quarterly Survey - The AWW should assemble all 0-6 year old children in the villlage and all 15-44 year old women as a group every three months in January, April, July and October. She should check the family records to identify those failing to attend and visit their households to complete the survey. The AWW should measure every 0-6 year old child in the village and interview every 15-44 year old woman every quarter.

During the baseline and quarterly surveys, the AWW should do the following:

A. Family Records -- complete them. Add births, deaths, in migrants,cause of dea Record birth weight from child's weight chart in grams and colour (green $\geq$ 2.5 kg., yellow 2-2.5 kg., and red $<$ 2 kg.) for all new borns during the quarter. Delete records for out migrant families.

B. Children (0-6 years)

1. Weigh all 0-11 month old children and record on child's weight and arm circumference card. Revisit if child is absent.

2. Measure Arm Circumference (AC) of all 12-72 month old children with color strip and record red, yellow or green on child's weight and arm circumference card. Revisit if child is absent.

3. Record names of all 0-72 month old children and their nutrition status in register III. Enroll all malnourished 6-72 month old children in supplementary nutrition program.

C. Women (15-44 years old and married)

1. Complete woman's card. Revisit if woman is absent.

2. Record names of all pregnant women or women nursing an infant under 6 months in Register III and enroll in supplementary nutrition program.

3. Refer pregnant women to Female Multi-Purpose Worker (FMW) at Sub-Center for Ante-Natal check-ups; Tetanus Toxoid Immunization and iron/folic acid supplements. The FMW should weigh the woman and complete her card in duplicate (1 to be maintained by AWW and 1 by FMW).

D. Next to family serial number in quarterly survey register #_____ state whether contacted yes/no.

AWW Quarterly Summary of Survey of Anganwadi

(To be sent on quarterly basis along with monthly reports for January, April, July, October - Circle month)

1. Number of families* contacted _____

2. Total number of families* in village _____

** 3. % Families contacted _____
(Divide line 1 by line 2 x 100)

4. Child Nutrition Survey

	Months of age 0-5	6-11	12-36	37-72	Total
a. Total number in village (Family Records)					
b. Number Measured (Wt./AC Register III)					
c. Number Malnourished (For 0-11 by weight for age II, III, IV grade; for 12-72 by red/yellow AC (from Register III)					
** d. % Malnourished (Divide line C by line B x 100)					

** e. % measured (Divide total line B by total line A x 100) _____

5. Births and Deaths (from family records)

BIRTHS

a. Number live births _____

b. Number still births _____

c. Number Babies weighed at Birth _____

d. Number Low Birth Weight (Red/Yellow <2500 grams) _____

** e. % Low Birth Weight (Divide line D by line C x 100) _____

* Include only families with children less than 6 years old or women 15-44 years old.

** Percentages to be completed by Mukhya Sevika.

DEATHS (Number)

f. 0-11 months _____

g. 12-36 months _____

h. 37-72 months _____

i. 0-72 months Total _____

Mary Ann Anderson
USAID
October 15, 1982

DISTRICT ANNUAL SUMMARY OF IMPACT ON MALNUTRITION AND MORTALITY
(FROM CDPO'S MONTHLY PROGRESS AND QUARTERLY SURVEY REPORTS)

DATE _____ NAME OF DISTRICT _____

Name of Block	% of Families Contacted		% of 0-72 month old children measured (Wt./Ac)		% Malnourished (months of age)						% Low Birth Weight		Annual Child Death Rates Per 1,000		% Fed 18+ days Per Month					
					1st Qtr. Jan.			4th Qtr. Oct.			1st Qtr. Jan	4th Qtr. Oct.	0-11 mos.	12-36 mos.	6-36 mo. Malnourished		Pregnant		Nursing	
	1st Qtr. Jan.	4th Qtr. Oct.	1st Qtr. Jan.	4th Qtr. Oct.	0-5	6-11	12-36	0-5	6-11	12-36					Jan.	Oct.	Jan.	Oct.	Jan.	Oct

Note: Retain 1 copy and send 1 copy to each CDPO, send 2 copies each to the state ICDS cell, to the Ministry of Social Welfare, New Delhi, and to USAID/New Delhi.

ANNEX 19

EVALUATION ARANGEMENTS

ICDS Impact Evaluation Surveys

Sample:

1. 4 anganwadis per block randomly selected x 19 blocks = 76 anganwadis.

2. All households in the village served by these 4 anganwadis surveyed.

   4 anganwadis x 170 children 0-6 years of age x 19 blocks = 12,920 children.

3. Each Block surveyed every 2 years.

Survey Technique for Each Round

Data Collection 2-2 1/2 months

Analysis 6 months

Report Writing 2 months

Gujarat - One team of 6 to complete 1 block in 1 week

Baseline	11	Blocks - 11 weeks
Follow-up	8 (82/83)	Blocks - 8 weeks
Follow-up	3 (83/84)	Blocks - 3 weeks

Maharashtra - One team of 6 to complete 1 block in 1 week

Baseline	8	Blocks - 8 weeks
Follow-up	2 (82/83)	Blocks - 2 weeks
Follow-up	6 (83/84)	Blocks - 6 weeks

Schedule:

Sept. 1983 - June 1984	Select Survey Consultants Design Evaluation Pre-test and Print Questionnaires and Procure Equipment.
July 1984 - Sept.1984	Hire and Train Survey Team
October - December 1984	19 Blocks Baseline Survey
October - December 1985	10 Blocks Follow-up Survey
October - December 1986	9 Blocks Follow-up Survey
October - December 1987	10 Blocks Follow-up survey
October - December 1988	9 Blocks Follow-up Survey
September 1989	Final Report Submitted

Information to be collected:

1. Weight, height, arm circumference and age of all childrer eating at anganwadi on day of survey -- surprise visit. Compare to AWW's register.

2. Number of pregnant and nursing women eating at anganwadi on day of survey by number of months pregnant or nursing and 'at-risk' status. Compare to AWW's register.

3. Weight, height, arm circumference and age of all other children 0-6 years of age in village -- household survey.

4. Census of total number of pregnant and nursing women in village by months of pregnancy or lactation -- household survey and determination of number 'at-risk'.

5. Participation of children 0-6 years of age in supplementary feeding by parents' recall of number of days in previous month and total number of months. Compare with AWW records.

6. Participation of Pregnant and Nursing Women in Supplementary Feeding by women's recall of number of days in previous month and total number of months. Compare with AWW records.

7. Percent coverage of all 6-36 months of age malnourished children with supplementary feeding: observed on day of visit and for 15 or more days in previous month by parents' recall.

8. Percent coverage of all at-risk pregnant and nursing women with supplementary feeding: observed on day of visit and for 15 or more days in previous month by women's recall.

9. Percent coverage of children 0-6 years of age with 2 doses of Vitamin A in previous year by parents' recall. Compare with AWW and health center records.

10. Percent coverage of pregnant women with 2 doses of tetanus toxoid and six months supply of iron and folic acid in previous year by women's recall. Compare with AWW and health center records.

11. Accuracy of family records and weight, arm circumference and women's cards. Compare with information collected on day of survey.

12. Child deaths in past year for 0-11 months group and 12-36 months group; live births and total 12-36 month population by parents' recall and family records.

13. Type of food and ration size being fed to severely malnourished children, other children, and pregnant/nursing women at anganwadi on day of visit.

14 Percent of at-risk pregnant and nursing women and mothers of malnourished children 0-36 months of age who received a home visit by the AWW in previous month by parents' recall and total number of visits received by each family in previous year. Compare with AWW records.

15. Percent of at-risk pregnant and nursing women and mothers of malnourished children 0-36 months of age who attended at least six of the monthly NHED sessions in the previous year by parents' recall. Check with AWW records.

16. Percent of at-risk pregnant women who received check-ups by the FHW or FHA during pregnancy (once, twice or more) by women's recall. Compare with health center records.

17. Percent of 'at-risk' nursing women whose infants were delivered by a trained person (trained dai, FHA, or FHW) by women's recall. Compare with health center records.

18. Percent of all malnourished children 0-36 months of age who had check-ups by the FHW or FHA during the previous year and frequency of health check-ups (once, twice, three or more times) by parents' recall. Compare with health center records.

19. Knowledge and behavior regarding the ICDS basic nutrition and health education messages.

20. Socio-economic status of participating families.

Findings:

1. Change in nutrition status and child mortality rates every 2 years in block.

2. Coverage of malnourished children 6-36 months and pregnant and nursing women by supplementary feeding and health check-ups.

3. Coverage of children 0-6 years of age with Vitamin A prophylaxis.

4. Coverage of pregnant women with 2 doses tetanus toxoid, six month supply or iron and folic acid, and delivery by a trained person (dai, FHW, etc.).

5. Coverage of mothers of malnourished children and pregnant and nursing women with NHED.

6. Verification of data collected by MIS.

7. Change in nutrition knowledge and behavior.

8. Extent of malnutrition prevention in younger siblings of children enrolled for suplementary feeding or whose mothers received NHED.

Annex 20

UNICEF INPUTS FOR ICDS PER AGREEMENT WITH GOVERNMENT OF INDIA

1. Materials & Equipment

   Weighing Scales for children (1 per anganwadi and training center)

   Arm Circumference Tapes (5 per Anganwadi)

   Paper for Growth Charts (1,110 kg per Block)

   Slide Projectors (1 per Training Center & Block)

   Slides (Training Centers & Block Offices)

   Duplicators (1 per Training Center & State & Block Office)

   Typewriters (1 per Training Center & State & Block Office)

2. Supervisory Transport

   Jeeps (1 per State, District, & Block ICDS Office)

   Bicycles (2 per Training Center & 5 per Block)

   Trailers (1 per Rural/Tribal Block)

3. Training

   Stipends, Training Grants, & Travel costs for basic training of CDPOs, MSs and AWWs (Partial support)

   Support to NIPCCD, ICCW and Training Centers

4. Monitoring & Evaluation

   Support to AIIMS

5. Personnel

   UNICEF Project Staff in Zone Offices

ANNEX 21

CRITICAL PERFORMANCE INDICATORS FOR AID ASSISTED ICDS

Critical Performance Indicator	Expected Completion Date	Responsible Party
Request for proposals (RFP) for all contracts issued	10/15/83	USAID, MOSW NIPCCD
All project equipment ordered, and import clearances and waivers processed	03/01/84	USAID, UNICEF ICMR, NIAID/NIH MOSW, state governments, ICCW
Final protocol and questionnairs printed for prevalence of maternal infection studies and tests of anthropometric indicators of fetal growth	04/30/84	ICMR, research institutes, US collaborators
All managerial, supervisory and technical staff at block (ICDS and health), district, state, MOSW, ICCW, SCCW, NIPCCD, USAID and research institutes hired	05/01/84	USAID, MOSW, NIPCCD, state governments, ICMR ICMR, research institutes
All contracts and agreements signed and staff on the job	06/30/84	USAID, MOSW, ICMR, NIPCCD
Impact evaluation designed	06/30/84	Home Sciences & Medical Colleges USAID, MOSW
Clearinghouses for NHED established at state governments' ICDS cells	07/31/84	State governments, TA Contractor
In-Service workshops designed and mobile teams trained	09/30/84	Workshop contractor, TA contractor, NIPCCD, USAID
Improved MIS designed	09/30/84	TA Contractor, AIIMS, MOSW, USAID, CARE

Critical Performance Indicator	Expected Completion Date	Responsible Party
All project equipment delivered to end users	09/30/84	UNICEF, MOSW ICMR, state governments
Reference laboratories for maternal infection studies established	10/31/84	ICMR, research institutes, US collaborators
Performance standards for workers and instructors developed	10/31/84	NIPCCD TA Contractor
NHED materials distributed to anganwadis by state clearinghouses	11/30/84	State governments
Syllabi for training CDPOs, MSs and AWWs revised	12/31/84	NIPCCD, TA Contractor, USAID
All villages identified, anganwadi workers recruited, and buildings donated	03/31/85	MOSW, state governments
Revised syllabi and performance standards in use in all training centers and ICDS blocks	06/30/85	NIPCCD, TA Contractor
Baseline impact evaluation survey reports completed	08/31/85	Home Science & Medical College
All managerial, supervisory and technical staff trained or oriented	12/15/85	NIPCCD, Training Centers, Training Consultants, TA Contractor
Prevalence of infection studies and tests of anthropometric indicators completed	03/31/86	ICMR, research institutes, US collaborators

Critical Performance Indicator	Expected Completion Date	Responsible Party
All anganwadi workers, trained	03/31/86	Training centers, MOSW, state governments
Improved MIS installed	05/15/86	MOSW, state governments, TA Contractor, Workshop Contractor
All anganwadis operational	05/15/86	MOSW, state governments, CARE
Protocol designed for birth weight interventions trials	09/30/86	ICMR, research institutes, US collaborators
Mid-project review completed	09/30/86	USAID
In-service workshops held for all MSs, AWWs and trained dais and their instructors	05/31/87	Workshop Contractor, NIPCCD, state governments
Year 2 follow-up impact impact evaluation survey reports completed	08/31/89	Home Science Medical Colleges
Year 4 follow-up impact evaluation survey reports completed	08/31/89	Home Science Medical Colleges
Final reports or intervention trials to improve birth weight completed	09/30/89	ICMR, research institutes, US Collaborators
End of Project review completed	09/30/89	USAID

ANNEX 22

References Cited in Integrated Child Development Services Project Paper

1. Central Bureau of Health Intelligence, Directorate General of Health Services, Ministry of Health and Family Welfare, Health Statistics of India, New Delhi, 1982.

2. Sample Registration System, Office of the Registrar General of India, 1977.

3. Puffer, R.R. Mortality of Infants and Children under Five Years of Age in India, Report to USAID/India, 1981.

4. Christian Medical College and Brown Memorial Hospital, Ludhiana, Punjab, Community Health Department, Ninth Annual Report, 1980.

5. Christian Medical College, Vellore, Longitudinal Studies in Human Reproduction, Monograph No. 6, 1973.

6. Office of the Registrar General, Ministry of Home Affairs, Survey of Infant and Child Mortality-A Preliminary Report, New Delhi, 1979.

7. Ministry of Health and Family Welfare, Report of the Working Group on Health for All by 2,000 A.D., New Delhi 1981.

8. Singh, Meharban Care of the Newborn Second Edition, New Delhi: Sagar Publications, 1981.

9. World Health Organization. The Incidence of Low Birth Weight: a Critical Review of Available Information. World Health Statistics Quarterly Vol. 33. No. 3: 197, 1980.

10. Ghosh, S., S.K. Bhargava and I.M. Moriyama. Longitudinal Study of the Survival and Outcome of a Birth Cohort, Vol II. Department of Pediatrics, Safdarjang Hospital, New Delhi, 1975.

11. Rao, P.S. and S.G. Inbaraj. Perinatal, Infant and Early Childhood Mortality, Longitudinal Studies in Human Reproduction, Monograph No. 6, Vellore, 1973.

12. National Nutrition Monitoring Bureau, Annual Surveys 1975-1978, Report for the Year 1979, National Institute of Nutrition, Hyderabad 1980.

13. Gopaldas, T, N. Srinivasan, 1. Varadarajan et al. Project Poshak, CARE India, New Delhi, 1975.

14. Kielmann, A.A. and C. McCord, Weight for Age as an Index of Risk of Death in Children, LANCET 1247-1250, June 10, 1978.

15. India Council of Medical Research, Recommended Dietary Intakes for Indians, New Delhi, 1981.

16. An Evaluation Report of the P.L. 480 Title II Program in India, Community Systems Foundation: Ann Arbor, Michigan, 1979.

17. Programme Evaluation Organization, Evalutation Report on the Integrated Child Development Services Projects (1976-78), Planning Commission, Government of India, New Delhi, 1981.

18. All India Institute of Medical Sciences, ICDS Baseline and Repeat Survey Reports, 1976-1980, New Delhi (unpublished).

19. Morocco: Food Aid and Nutrition Education. A.I.D. Project Impact Evaluation Report No. 8, A.I.D./Washington, 1980.

20. Sahn, D.E. The Integrated Maternal and Child Nutrition Project in India: Recommendations Based on a Review of Past Experiences. Community Systems Foundation: Ann Arbor, 1980.

21. Anderson, M.A., J.E. Austin, J.D. Wray et al. Supplementary Feeding Study I in Nutrition Intervention in Developing Countries, Harvard Institute for International Development, Oelgeschlager, Gunn, and Hain Publishers, Inc: Cambridge, Massachusetts, 1981.

22. Beaton, G.H. and H. Ghassemi, Supplementary Feeding Programmes for Young Children in Developing Countries. UNICEF and ACC Sub-committee or Nutrition: New York, 1979.

23. Knudsen, O.K. Economics of Supplemental Feeding of Malnourished Children: Leakages, Costs, and Benefits. World Bank Staff Working Paper: Washington, 1981.

24. Nutrition. A.I.D. Policy Paper. Bureau for Program and Policy Coordination. A.I.D.. Washington D.C. 1982.

25. Food and Agricultural Development. A.I.D. Policy Paper. Bureau for Program and Policy Coordination. A.I.D.: Washington, D.C., 1982.

26. Recurrent Costs. A.I.D. Policy Paper. Bureau for Program and Policy Coordination. A.I.D.: Washington, D.C., 1982.