REVIEW OF LITERATURE

Chapter II

REVIEW OF LITERATURE

"In every community there is work to be done. In every nation there are wounds to heal. In every heart there is the power to do it." Marianne Williamson

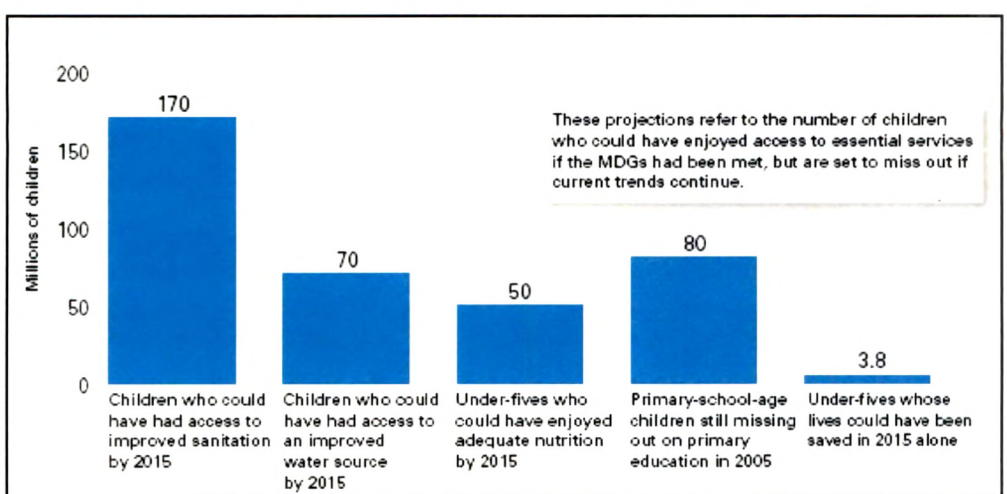
In Gujarat many NGOs manage and implement ICDS services. However, nutrition and health care services under the voluntary sector and their impact on the nutritional status of beneficiaries have not been adequately studied. In particular for ICDS, research on NGOs managing ICDS is very scanty. Further, for studying the evaluation of program implementation holistically in the context of an overall system in a socio cultural context, the methodology of health systems research is valuable and needs to be used for nutrition program evaluation. The focus of this research was towards improving child feeding and child nutrition by enhancing the effectiveness of selected ICDS services for children 0-3 years in an NGO system (using the framework of Health Systems Research). In view of this, the relevant literature was reviewed and is presented under the following heads.

- **The Child Malnutrition Scenario**
  - Prevalence of Malnutrition in Children
  - Malnutrition: When does it peak?
  - Causes and Consequences of malnutrition
  - Controlling malnutrition in children under three years
- **Integrated Child Development Services (ICDS)**
  - Functioning of ICDS (objectives and services)
  - Quality of Implementation of ICDS services and its impact of ICDS on nutritional status of children - Evaluation Studies
  - New initiatives in ICDS scheme
  - Implementation of Behaviour Change Communication in the context of ICDS
- **Non - Government Organizations (NGOs)**
  - Evolution of NGOs over Time: A Historical Perspective
  - Partnership between NGOs and the Government
  - NGOs in the ICDS system
  - Examples of successfully run NGO projects, their activities and impact on beneficiaries
- **Health Systems Research (HSR)**
  - Need for HSR
  - Characteristics / Components of HSR
  - HSR in India

The Child Malnutrition Scenario

Meeting the Millennium Development Goals (MDGs) and the broader aims of the Millennium Declaration would transform the lives of millions of children, who would be spared illness and premature death, escape extreme poverty and malnutrition, gain access to safe water and decent sanitation facilities and complete primary schooling. However, at the current rates of progress on the MDGs, millions of children who could have been reached might be missed out (Figure 2.1). Meeting the goals is therefore, a matter of life or death, of development or regression, for millions of children. It will also be crucial to the progress of their countries and societies. (The State Of The World's Children, UNICEF 2006)

Figure 2.1 At Current Rates of Progress on the MDGs: Millions of Children Who Could Have Been Reached Will Miss Out



(SOWC UNICEF, 2006)

Nutrition and MDGs

Tackling the global nutrition problem is essential to attaining several of the MDGs, as seen below.

Goal	MDG
2	Achieve universal primary education
3	Promote gender equality and empower women
4	To reduce under five mortality by two thirds
5	Improving maternal health
6	Combat key diseases – HIV/AIDS, malaria

Role of Nutrition in attaining MDGs

MDG 2 and 3 - Undernutrition affects children's school attendance and performance and reflects biases in access to food and health services, areas in which women play a key role for their families. Thus, the goals on education and gender equality are unlikely to be achieved if the problem of undernutrition is not addressed.

MDG 4 – Reduction in under five mortality rate by two third – cannot possibly be achieved without improving the nutrition of young children and mothers.

MDG 5 and 6 - Improving maternal health and combating key diseases are also intimately linked to nutrition, given that an undernourished body is in every way more vulnerable (SCN 2004).

Prevalance of Undernutrition in Children: The Global and Indian Scenario

One fourth of the world's children (under 5years) are moderately to severely underweight and nearly one third (31%) are stunted.

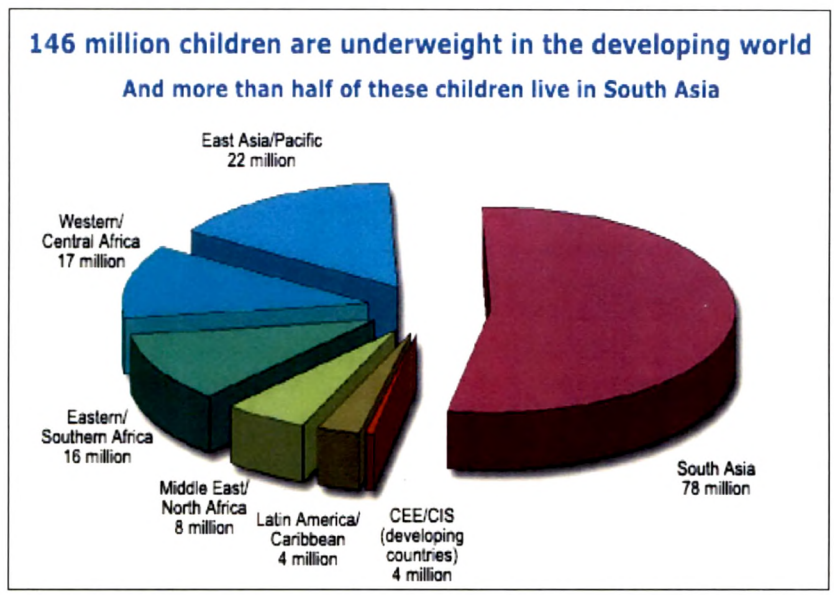
Table 2.1 Prevalence of Undernutrition in Children <5years

	Percent Children			
	India	**South Asia**	**Developing countries**	**World**
Under weight <5years Moderate and severe	46	45	26	25
Wasting <5 years Moderate and severe	19	18	11	11
Stunting <5years Moderate and severe	38	38	30	28

(The State of the Worlds' Children, UNICEF 2009)

South Asia has the highest levels of underweight (low weight-for-age 45%), stunting (low height-for-age 38%) and wasting (low weight-for-height 18%) affecting all under-five children in the region (UNICEF 2009) (Table 2.1). Out of the 146 million underweight children (under 5years) living in developing countries, South Asia accounts for more than half of these children (Figure 2.2).

Figure 2.2 Number of Underweight Children in the Developing Countries



Source: UNICEF 2006

India, Bangladesh and Pakistan, part of South Asia, together accounts for half the world's underweight children, despite being home to less than one third (29%) of the developing world's under-five population (UNICEF 2006).

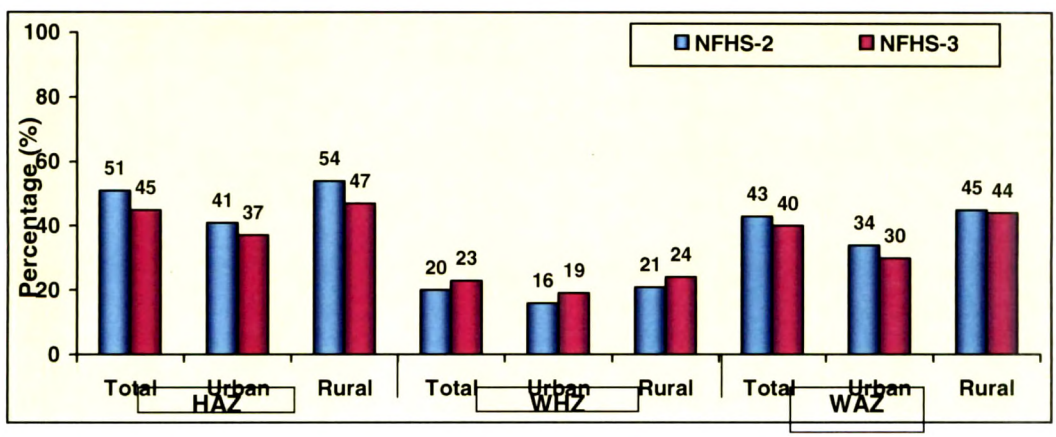
The Development Paradox

The paradox is that while India is now in the front ranks of fast growing global economies, with a vibrant economic growth rate of around 7%, nearly 30% of the global burden of child deaths is borne by India. Economic growth is a slow and undependable way of eliminating child undernutrition. While poverty in India is reduced to 26% - underweight prevalence in children under three years remains high, reinforcing the argument that economic growth is a necessary, but not sufficient condition for improvements in young child survival, nutrition and development.

Figure 2.3 highlights the high prevalence of underweight, stunting and wasting in India. Since the acceptance of the International WHO standards (2007) (by the world including India) as the reference standard for anthropometry, NFHS-2 and NFHS-3 have been presented using these WHO standards There has been *no marked* reduction in percentage of underweight and stunted children from the period of National Family Health Survey-2 (NFHS-2) to NFHS-3. Moreover, prevalence of wasting *increased* during this six year period. The proportion of children in the severely undernourished category (more than three standard deviations below the median of the reference population) is also notable: HAZ 22% and WAZ 16%.

Region wise prevalence indicates higher prevalence of undernutrition (weight-for-age and height-for-age below –2z scores) in rural areas than in urban areas (NFHS-3). However, when the urban poor are separately considered, they turn out to be the most disadvantaged. More than half of India's urban poor children are underweight. In most States, undernutrition among urban poor children is worse than the rural or urban average figures (Agarwal and Sangar 2005).

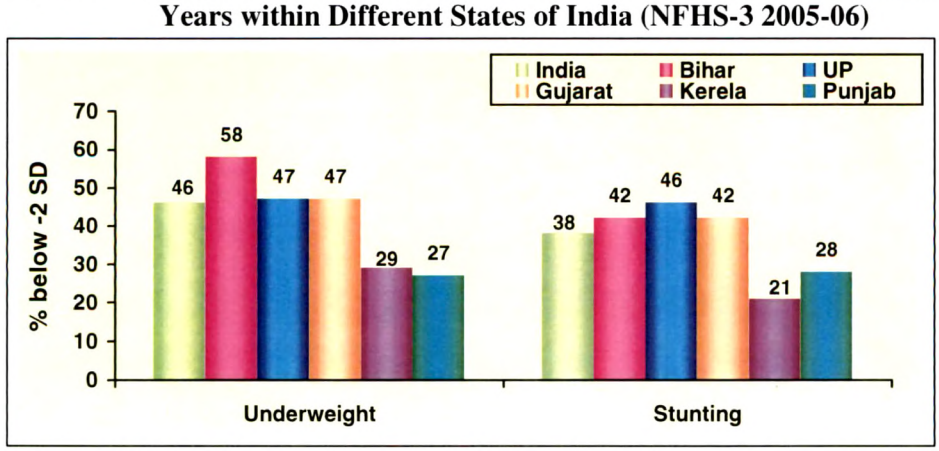
Figure 2.3 Prevalence of Undernutrition (<-2SD) in Children Under Three years (India)



Emerging trends – Interstate Comparison

The NFHS-3 data (2005-2006) is showing some positive improvements in nutritional status of under three children in a few states (Orissa, Chhattisgarh and Maharashtra), but is revealing stagnation of some key health and nutrition parameters in Gujarat. Gujarat, despite being among the prosperous and better developed states on the economic front, has a markedly high prevalence of undernutrition similar to the other underdeveloped states. (Figure 2.4)

Figure 2.4 Comparison of Prevalence of Undernutrition in Children Under Three Years within Different States of India (NFHS-3 2005-06)



Malnutrition: When does it peak?

Children are at highest risk of nutritional deficiency and growth retardation between the ages of 6 and 24 months. However, faltering in length and weight follow distinctly different age-specific patterns. Faltering in length extends through the first 40 months of life, though is most pronounced during the first 18 months. In contrast, faltering in weight is concentrated between 3 and 12 months (Vir 2001). After 12 months of age, a child may be stunted and of low weight-for-age; however, his weight-for-height ratio rapidly improves. This suggests that after 12 months, weight gain can be adequate even while the process of stunting continues for another two years. As a result, while failure to gain weight adequately is a signal of inadequate nutrition and/or illness, adequate weight gain does not necessarily mean that a child is growing taller appropriately. Thus, interventions should be sustained until the third year of life because faltering continues until this age (Shrimpton 2001).

Consequences of Malnutrition

Poor nutrition during the critical formative years of infancy and early childhood has both immediate and long-term consequences.

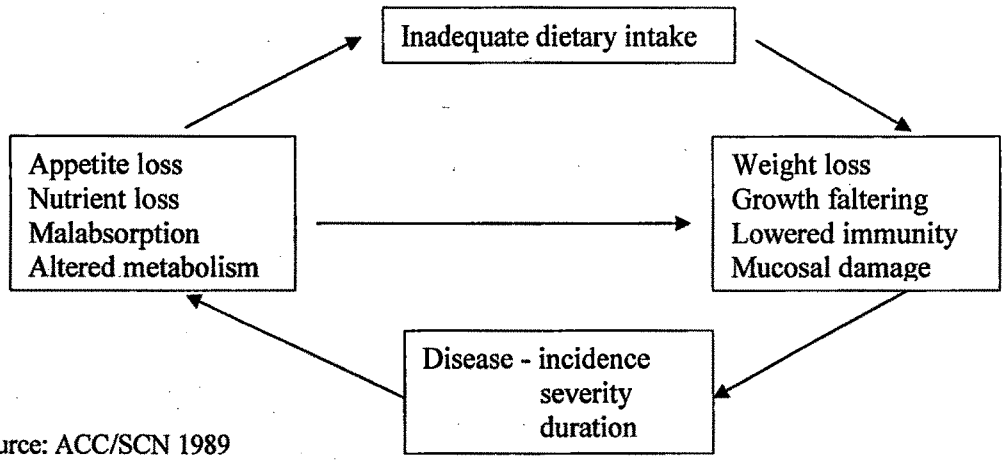
Increased Mortality Rates

Undernutrition is implicated in more than half of all child deaths worldwide. It is an underlying cause of an estimated 54% of all under five deaths (Pelletier and Frongillo 2003). Undernourished children have lowered resistance to infection; they are more likely to die from common childhood ailments like diarrhoeal diseases and respiratory infections, and for those who survive, frequent illness saps their nutritional status, locking them into a vicious cycle of recurring sickness and faltering growth. Their plight is largely invisible: three quarters of the children who die from causes related to malnutrition were only mildly or moderately undernourished, showing no outward sign of their vulnerability. Eliminating malnutrition would remove one-third of the global burden of disease and increase child survival (Mason et al 2003).

Nutrition – Disease Interactions

Inadequate dietary intake may cause death without the influence of any disease, and disease (e.g., measles or malaria) may cause death even in well nourished children. However, the most common cause of death is the combination of inadequate dietary intake and disease. Disease may affect dietary intake (i.e., through anorexia) and inadequate dietary intake may cause disease through compromised immunity (Figure 2.5)

Figure 2.5 The Inadequate Dietary Intake – Disease Cycle



Source: ACC/SCN 1989

Poor Cognitive Development and Lowered Physical Work Capacity

Early childhood stunting is closely associated with poor cognitive and educational performance in children (Pollitt et al 2007). Stunting and underweight result in reduced physical work capacity. Adults who survive malnutrition as children are less physically and intellectually productive and suffer from higher levels of chronic illness and disability (UNICEF 1998). Productivity losses, poor cognitive development, and increased health care costs in malnourished populations lead to significant economic losses at both the individual and national level.

Causes of Malnutrition in Children

According to UNICEF (1990) the synergistic interaction between the two **immediate causes** (inadequate dietary intake and disease) fuels a vicious cycle that accounts for much of the high morbidity and mortality in developing countries.

Three groups of **underlying factors** are household food insecurity, inadequate maternal and child care, and poor health services in an unhealthy environment.

Food insecurity: A high percentage of household expenditure allocated to food is an indicator of household food insecurity. Household food security is necessary but not sufficient for adequate nutrition. The means to achieve household food security i.e. time and energy may compromise the ability of the family to provide ***adequate care for its young children and the women (care-givers). Access to healthy environment and health care*** is one underlying precondition for adequate nutrition.

Inappropriate complementary feeding and child care practices: Among childcare practices, an important contribution to undernutrition is inappropriate breast feeding (BF) and complementary feeding (CF) practices. There is a large variation in CF practices in different states of India ranging from premature introduction of CF in western and south-west states to delayed introduction in the eastern and northern states. Even within a state or district, there are variations. The culture of child feeding is deeply rooted in perceptions of the mother and the family. Practice is also conditioned by constraints relating to work status and time availability of mothers and the availability of a secondary care-giver in the family. Economic and educational status separately and positively correlates with better child feeding practices (Gillespie 1997).

A key factor affecting all underlying determinants is ***poverty***. Poor households and individuals are unable to achieve food security, have inadequate resources for Care, and are not able to utilize (or contribute to the creation of) resources for health on a sustainable basis.

Fortunately, among various nutrition care practices, BF and CF are relatively less influenced by poverty since:

- Poor BF-CF practices are found even in affluent households.
- Desirable BF-CF practices do not necessarily involve large amount of household resources and these can be achieved even at low levels of income.
- Strong traditional beliefs exist in the area of BF-CF, which can be positively changed through effective Behaviour Change Communication (BCC), even if income levels do not improve.

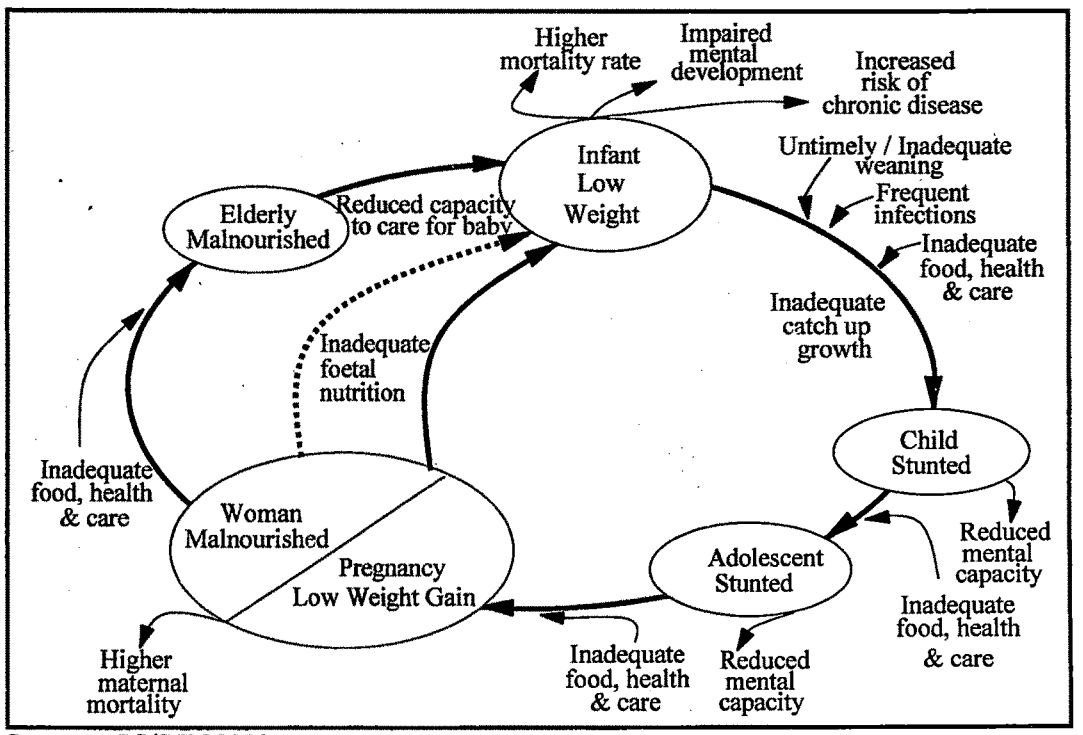
Undernutrition Throughout the Life Cycle

Undernutrition often starts *in utero* and may extend throughout the life cycle. Undernutrition occurs during pregnancy, childhood, and adolescence, and has a cumulative negative impact on the birthweight of future babies (Figure 2.6).

A baby who has suffered Intrauterine Growth Retardation (IUGR) as a foetus is born malnourished, and has a much higher risk of dying in infancy. Survivors are unlikely to catch up significantly on this lost growth and are more likely to experience developmental deficits. Moreover, the consequences of being born malnourished extend into adulthood. Strong epidemiological evidence suggests a link between maternal and early childhood undernutrition and increased adult risk of various chronic diseases.

A stunted girl is likely to become a stunted adolescent and later a stunted woman. Apart from direct effects on her health and productivity, adult stunting and underweight increase the chance that her children will be born with Low Birth Weight (LBW). And so the cycle turns (Allen and Gillespie 2001). ref not cited.

Figure 2.6 Undernutrition Throughout the Life Cycle



Source: ACC/SCN 2000

Controlling Malnutrition in Children Under Three

It is much more effective to prevent malnutrition, before it occurs – than to only deal with it after it has set in, because growth and development deficits in young children are cumulative and often irreversible. Accelerated large-scale reductions in the unacceptably and persistently high malnutrition rates are only possible when there is clear emphasis on early action.

The above analysis calls for priority attention to an integrated early childhood development and child health approach as the most effective way of breaking the intergenerational cycle of malnutrition, poverty and gender discrimination. Integrated interventions for young children emerge as the natural entry point for a comprehensive human development strategy - and as a powerful instrument for ensuring equality of opportunity to present and future generations of the disadvantaged.

It is estimated that among children living in 42 countries with 90% of global deaths, a package of effective nutrition interventions, which include promotion of exclusive and continued BF, CF, vitamin A and zinc supplementation have the potential to save 25% of childhood deaths each year (Jones 2003).

Infant and young child feeding (IYCF) practices and maternal nutrition can also be a significant contributor to the achievement of managing MDGs as shown in Table 2.2.

Table 2.2 Contribution of Breastfeeding, Complementary Feeding and Related Maternal Nutrition to the MDGs

MDGs	Goals and Targets	Contribution of IYCF
Goal 1	Eradicate extreme poverty and hunger	Breast feeding significantly reduces early childhood feeding costs. EBF and continued BF for two years with appropriate CF is associated with reduction in underweight, and contributes about 30% of the energy needed during the second year of life.
Goal 2	Achieve universal and primary education	BF and responsive CF are prerequisites for readiness to learn, contributing to both cognitive development and socialization.
Goal 4	Reduce child mortality	Infant mortality could be reduced by 15% with improved BF alone.
Goal 5	Improve maternal health	The activities called for in the Global Strategy include increased attention to support for mother's nutritional and social needs. BF is associated with decreased maternal postpartum blood loss, decreased breast cancer and decreased bone loss post menopause. BF also contributes to the increased duration of birth intervals, reducing maternal risks of pregnancy too close together.

Source: SCN 2003

To have sustainable solutions for the long term, effective interventions are available to reduce stunting, micronutrient deficiencies, and child deaths. If implemented at sufficient scale, they would reduce Disability-Adjusted Life-Years (DALYs) by about a quarter in the short term. Of the available interventions, counseling about breast feeding and fortification or supplementation with vitamin A and zinc has the greatest potential to reduce the burden of child morbidity and mortality. Improvement of complementary feeding through strategies such as counseling about nutrition for food-secure populations and nutrition counseling, food supplements, conditional cash transfers, or a combination of these, in food-insecure populations could substantially reduce stunting and related burden of disease. Although available interventions can make a clear difference in the short term, elimination of stunting will also require long term investments to improve education, economic status, and empowerment of women (Bhutta et al 2008)

A number of direct and indirect nutrition interventions have been undertaken by different sectors of the Government of India with a view to promote nutrition-health of the people.

Some of the **direct nutrition interventions** are as under:

- Ministry of Women and Child Development: Integrated Child Development Services (ICDS) Scheme, Nutrition Program for Adolescent Girls (NPAG), Nutrition Advocacy and Awareness Generation Programs of Food and Nutrition Board (FNB)
- Ministry of Health and Family Welfare: Iron and Folic Acid (IFA) Supplementation of pregnant women, weekly IFA supplementation of adolescent girls, Vitamin A supplementation of children of 9-36 months age group and National Iodine Deficiency Disorders Control Program
- Department of Elementary Education and Literacy: Mid Day Meal for primary school children

Some of the **Indirect Interventions** include:

- Department of Agriculture and Cooperation: Increased Food Production, Horticultural Interventions, Food and Public Distribution, Targeted Public Distribution System
- Rural and Urban Development: Food for Work Program, Poverty Alleviation Program, Safe Drinking Water and Sanitation, National Rural Employment Guarantee Scheme
- Ministry of Health: National Rural Health Mission, Integrated Management of Neonatal and Childhood Illnesses (IMNCI) and Various Public Health Measures
- Department of Elementary Education and Literacy: Sarva Siksha Abhiyaan and Adult Literacy Program (Ministry of WCD, GOI 2006)

Integrated Child Development Services (ICDS)

Functioning of ICDS (Objectives and Services)

Launched on 2nd October 1975 in 33 Community Development Blocks, ICDS today represents one of the world's largest programs for early childhood development. ICDS is the foremost symbol of India's commitment to her children – India's response to the challenge of providing pre-school education on one hand and breaking the vicious cycle of malnutrition, morbidity, reduced learning capacity and mortality, on the other. It takes a holistic approach to child development and attempts to improve both his/her prenatal and post natal environment. The ICDS program provides an integrated approach for converging all the basic services for improved childcare, early stimulation and learning, health, nutrition, water and environmental sanitation aimed at the young children, expectant and

lactating mothers, other women and adolescent girls in a community. ICDS promises hope to millions of vulnerable women and children as it helps and supports them during the periods of food insecurity and critical growth. It is the most comprehensive program and it has wide recognition and international support. It also provides a unique convergent interface between people and the different programs of states, NGOs and international bodies like WFP, UNICEF, CARE, World Bank.

Beneficiaries: The services under the scheme are being provided to about 655 lakh beneficiaries, comprising about 544 lakh children (0-6 years) and about 111 lakh pregnant and lactating mothers through a network of 9.5 lakh Anganwadi Centres (AWC) (http://wcd.nic.in/udisha/htm/abouticds.htm 2006)

Objectives of ICDS

- Lay the foundation for proper psychological development of the child
- Improve nutritional & health status of children 0-6 years
- Reduce incidence of mortality, morbidity, malnutrition and school drop-outs
- Enhance the capability of the mother and family to look after the health, nutritional and development needs of the child
- Achieve effective coordination of policy and implementation among various departments to promote child development

Services of ICDS

A package of following services are provided under the program

(i) Supplementary Nutrition
(ii) Immunization
(iii) Health check-up
(iv) Referral services
(v) Treatment of minor illnesses
(vi) Nutrition and health education to women.
(vii) Pre-school education to children in the age group of 3-6 years.

The three services namely immunization, health check-up and referral are delivered through public health infrastructure viz. Health Sub Centres, Primary and Community Health Centers under the Ministry of Health & Family Welfare.

As the present study deals with selected nutrition related ICDS services (Supplementary Nutrition, Growth Monitoring and Nutrition Health Education) which have a major impact on nutritional status of children; a review is presented on these services in the following pages.

Supplementary Nutrition: Children less than six years and pregnant and lactating women avail of supplementary feeding support for 300 days in a year. It is an attempt to bridge the protein-energy gap between the recommended dietary allowance and average dietary intake of children and women. The feeding is aimed at supplementing and not substituting for family food. It also provides an important contact opportunity with pregnant women and mothers of infants and young children, to promote improved behavioral actions for care of pregnant women and young children. The effort is to provide, on an average, daily nutritional supplements as indicated below:

Beneficiaries	Calories (cal)	Protein (g)	Old Rates (Beneficiary per day)	Revised Rates (Beneficiary per day)
Children (6-72 months)	500	12-15	Rs.2.00	Rs.4.00
Severely malnourished children	800	20-25	Rs.2.70	Rs.6.00
Pregnant & Lactating Mothers	600	18-20	Rs.2.30	Rs.5.00

The Ministry of Women and Child Development has issued the revised nutritional and feeding norms and cost norms of supplementary nutrition program in ICDS scheme (Ministry of Women and Child Development 2009)

Growth Monitoring: Growth Monitoring and nutrition surveillance are two important activities that are undertaken to prevent growth retardation and take early remedial measures to prevent growth faltering. Growth monitoring is expected to be linked to counseling to increase the capability of mothers and families for improving childcare and feeding practices. Children below the age of three years of age are weighed once a month and children 3-6 years of age are weighed every quarter. In Gujarat, however all the children are weighed every month. Weight-for-age growth cards are maintained for all children below six years. This helps to detect growth faltering and helps in assessing nutritional status. Besides, severely malnourished children are given special supplementary feeding and referred to health sub-centers and Primary Health Centers.

Nutrition Health Education: Nutrition Health Education (NHE) is a key element of the work of the anganwadi worker (AWW). This promotes the long term goal of capacity - building of women - especially in the age group of 15-45 years - so that they can look after

their own health, nutrition and development needs as well as that of their children and families. All women in this age group are expected to be covered by this component. NHE comprises basic health, nutrition and development information related to childcare and development, infant feeding practices, utilization of health services, family planning and environmental sanitation. Community education is imparted through counseling sessions, home visits and demonstrations. AWWs use fixed day immunization sessions, mother-child protection days (*Mamta Day*), growth monitoring days, small group meetings of mothers / *Mahila Mandals*, community and home visits, local festivals/gatherings for nutrition, health and developmental education.

Monitoring and Evaluation

Ministry of Women and Child Development (MWCD) has the overall responsibility of monitoring the ICDS scheme, using its extensive network for gathering community level information on implementation. A Central Cell established in the Ministry collects and analyses the periodic work reports in prescribed formats received from the State Governments.

A comprehensive Management Information System (MIS) for ICDS has been in existence for a long time. The MIS ensures a regular flow of information and feedback between each AWC and the project, between each ICDS project and the State Government, and between the State Government and the Government of India. Records are maintained at every AWC relating to the number of children and pregnant women and lactating mothers in every family, a record of immunization of every child in the catchment area of the AWCs, a register for supplementary nutrition for children and pregnant and lactating mothers. Selected information from the Anganwadi level is included in the MIS at the block, district, state and national levels. This information helps to monitor the number of children and women receiving supplementary nutrition, pre-school education, immunization as well as information relating to nutritional status of children.

The data generated in all the AWCs are recorded in the prescribed records and registers maintained at the AWCs. Supervisor is responsible for the collection of various periodic reports from the AWWs. On an average 25 AWCs are supervised by a Supervisor. Every month Supervisors collects the prescribed monthly progress reports (MPRs) from these AWWs and submit to the Child Development Project Officer (CDPO), in-charge of the Project at the Block level. Various quantitative inputs are first gathered from AWCs and are

compiled at the project level. The Child Development Project Officers (CDPOs) at the project level then consolidate this information. In district where five or more than five ICDS Projects are operationalised, there exists an Office of District Program Officer. CDPO/DPO is required to take necessary corrective measures for effective implementation of the Program. CDPO/DPO sends the prescribed CDPOs' MPR to the State Governments every month. State Government in-turn, sends the consolidated reports on selected indicators to Government of India.

Training Component of ICDS

The National Training component of ICDS is aimed at improving the quality of ICDS services in the country by providing for improved training of ICDS functionaries all over the country; strengthening/establishing training centres, developing training materials, etc. During 1999-2006, a World Bank assisted country wide training program called 'UDISHA', strengthened the quality of implementation in ICDS. The program had three main components: Regular Training (wherein basic job training is provided to ICDS functionaries); Other Training (wherein innovative, area specific trainings are provided) and Information Education and Communication (IEC). The program has also focused on eliminating the heavy backlogs in job and refresher training of all functionaries. Capacities of existing Anganwadi Training Centres (AWTCs) and Middle Level Training Centre (MLTCs) have been further strengthened to take up such increased responsibilities and new AWTCs and MLTCs have also been established for the purpose.

Training Division

The Training Division at National Institute of Public Cooperation and Child Development (NIPCCD) is specifically entrusted with the responsibility of planning, coordinating and monitoring of the training of ICDS functionaries. Its responsibilities include building-up of training infrastructure and capabilities of institutions engaged in the training of ICDS functionaries; preparation and revision of syllabi; and preparation and procurement of training material including audio-visual aids.

Quality of Implementation of ICDS services and its Impact on Nutritional Status of Children - Evaluation Studies

The ICDS program has been the subject of a large volume of research; however most evaluations have focused on the quality of infrastructure and inputs, and the execution of activities and there have been few rigorous evaluations of the program's impact on

nutritional status or health behaviors of beneficiaries. This could be because there are few sources of data that permit the comparison of outcomes among recipients and non-recipients of the program. Some studies have found that the program is associated with improvements in nutritional status, while other studies have failed to find a positive effect. To remain focused, a few recent and relevant ICDS evaluation findings are presented below which have covered a large sample and are more comprehensive in nature.

Highlights of ICDS Evaluations

I Integrated Nutrition and Health Project (INHP II) – CARE program (2006)

A recent evaluation has been conducted by CARE under its INHP-II RACHNA program. This project was implemented in partnership chiefly with the Department of Women and Child Development and the Department of Health and Family Welfare of the GOI, along with NGOs and CBOs. This was a USAID supported project and technical assistance was obtained from BASICS II.

Objective of INHP-II: To improve the health and nutritional status of women and children under two.

Study area / sample size: 6.6 million women of childbearing age and children under two (especially girls) in 9 states of India (Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and West Bengal).

Interventions included antenatal care, nutrition counseling and birth preparedness; home-based newborn care; maternal and child immunization; child feeding advice; Vitamin A for children; and supplementary nutrition.

Strategies included:

- Promotion of closer convergence between the ICDS and the RCH to encourage mothers to utilize RCH services by facilitation of "Nutrition and Health Days" (NHDs) when the AWW and ANM provided immunization to children under two and antenatal care to pregnant women at the AWC.
- Health talks and take-home rations of supplementary food were provided as an incentive for attendance.
- Appointment and training of "change agents" within the community. Volunteers were assigned to families, and provided health and nutrition information, promoted positive health behaviors and encouraged ICDS participation.

Impact of the program:

- Above half (53%) of pregnant women in the intervention areas received three or more antenatal checkups, compared to 38% in the non-intervention areas.
- Most women (65%) in the intervention areas initiated breastfeeding within one hour of delivery, compared with 38% in the non-intervention areas.
- Higher proportions of children in the intervention areas were breastfed exclusively for six months, introduced to complementary feeding appropriately, given more nutritious complementary foods, vaccinated against measles by the age of 12 months and received Vitamin A supplementation.

II Three Decades of ICDS – An Appraisal (NIPCCD 2006)

Objectives:

- To assess the existing status of implementation of ICDS program in terms of coverage, outreach, coordination, convergence, and innovations introduced by States and NGOs
- To compare the differences in implementation of the ICDS program in rural, urban and tribal areas and in NGO-run projects; and
- To identify gaps and problems in the implementation of ICDS

Sample Size / Study Area: 150 ICDS projects from all 35 States and Union Territories covering rural, urban and tribal projects.

Salient Findings

Reduction in prevalence of malnutrition

Proportion of children 0-3 years (%)	1992	2006
Grade I	35	16
Grade II	22	7
Grade III–IV (severely malnourished)	7	1

Supplementary Feeding Program (SF)

- There was not much difference in coverage of women under Supplementary Nutrition registered in AWCs run under World Bank-assisted ICDS projects, AWCs under NGO-run ICDS projects and regular ICDS projects.
- Maximum coverage of pregnant women was found in tribal AWCs of regular ICDS projects (62%) and NGO-run ICDS projects (58%). In NGO-run ICDS projects, all registered nursing mothers availed of benefits from AWCs in tribal and urban areas.

- Children (6 months-3 years): More registration of male children (59%) than female children (55%) was seen. However, percentage of female children availing of supplementary nutrition was quite high (82%) as against male children (75%).
- Acceptability of Supplementary Nutrition: Majority of the Anganwadi workers (80%) reported that food was totally acceptable to children and mothers. They found it well prepared, tasty and enjoyed its consumption. AWWs reported that food was less acceptable by beneficiaries in the States of Rajasthan (68%), Assam (67%), Orissa (65%), Haryana (55%), Meghalaya (40%), Uttaranchal (40%) and the lowest was reported from Uttar Pradesh (26%).
- A significant number of AWCs (53%) reported interruptions in regular distribution of SF.

Growth monitoring

- AWWs weighed (64%) of new born children.
- 82% AWWs adhered to the guidelines and weighed children below 3 years once in a month.

Nutrition and Health Education (NHE)

- NHE was reported to be conducted once a month by three fourth (69%) of the AWWs.
- Only a few AWWs organized this activity as per expressed needs of beneficiaries.
- One-tenth (7%) of the AWWs also reported to conduct this activity once in two months.
- Data demonstrated that on an average less than 20% mothers participated actively in tribal, rural and urban AWCs for NHE.

Home visits: Number of home visits in urban projects was highest (47 families per month) whereas AWWs of tribal projects visited 43 families. Majority of the AWWs (90%) reported early registration, care of pregnant and lactating mothers and ensure regularity and punctuality of children in attending AWCs as their foremost purpose of home visits.

Observed Data

The observation data was a contrast to the reported data and showed poor implementation in many aspects. There was poor attendance of target groups in NHE sessions; non-availability of growth charts in 10% AWCs and non-availability of materials/aids for NHE. Of those NHE materials which were present, majority were not found to be in regional or local languages. These aids were procured from the CDPOs as well as during their training.

Even though one of the stated objectives was to compare GO-NGO, the comparison was limited to coverage of service and no comparison was reported for quality of implementation which is vital for impact to be seen. Further, this national level appraisal did not include assessment of impact of ICDS on beneficiaries.

III ICDS-III (World Bank Assisted) -Borrower's (Government of India) Evaluation Report (1999-2006)

Objective:

- To accelerate the improvement of the nutrition and health status of children 0-6 years and women, by increasing the quality and impact of the ICDS program in selected states.
- To strengthen the ICDS program in all 35 States/UTs, by improving the quality of training of ICDS functionaries through '*Udisha*'.

Study Area / Study Sample: The study was carried out in five states: Uttar Pradesh, Rajasthan, Maharashtra, Tamil Nadu, and Kerela. After re-structuring in 2003, the States of Madhya Pradesh, Bihar, Chhattisgarh, Jharkhand, Orissa, and Uttaranchal were also included in the project.

***The impact indicator was*:** 'Reduction in severe and moderate malnutrition in 0-36 month old children at the rate of 2% points per year in project blocks (as against non-project & non-ICDS Blocks) presuming a secular trend of 1% point in the country'.

Quality Improvement Activities

Information, Education and Communication (IEC): IEC was one of the major interventions in the project. The project laid special emphasis on IEC by focusing on communication for behavior change (BCC) for appropriate child caring practices in the households. A major shift in the IEC strategy was in addressing the needs of under-3s through family based interventions instead of centre-based interventions. States adopted various methodologies for implementing the IEC. Some of the media tools and channels which were used by different states are :- (i) interpersonal communication through home visits and nutrition and health education session, (ii) social mobilization through door-to-door contacts, rallies, mobile video van, *gramin mela* (rural fair), exhibitions, special campaign days, (iii) Print/Electronic/Audio-Visual Media such as brochures, ICDS newsletter, booklets and guidelines, flip-books, leaflets, pamphlets, calendars, hoardings & boards, audio jingles, TV spots, wall paintings and documentary films. Many states did not limit the IEC interventions to the ICDS blocks under the project, but also covered the entire state. This was a good and positive aspect of the scheme.

Capacity Building of ICDS Functionaries

The National Training component of ICDS-III Project was aimed to provide for improved training of ICDS functionaries all over the country; strengthening/establishing training centres and developing training materials. The project achieved its main objective of clearing the backlogs of job training through UDISHA. The performance figures were 84% for all categories of functionaries under job training and 68% under refresher training.

Monitoring & Evaluation

- Monitoring of key Project Monitoring Indicators (PMIs) were taken up through a specially structured quarterly progress reports. Computerized MIS was developed through Technical Agencies and implemented in the states. Information on key PMIs have regularly been compiled and analyzed for review and taking appropriate corrective actions to accelerate implementation. The impact has been overall on understanding the importance of M & E activities, which resulted in timely execution of some of the key activities in the project.
- Conducting periodic evaluation studies through baseline/endline surveys, operational research (OR), and continuous social assessments (CSA) in the five original Project States: during the project period, a total of 27 operational research studies covering the issues of local child caring practices, supplementary nutrition, communications need assessment, convergence with health, need assessment of under three children, functioning of village level monitoring committees, efficacy of IFA supplementation, IEC and community participation were conducted.

Impact of IEC and Training: The Baseline (BLS) was compared with the Endline Survey (ELS) after a period of 5 years.

The ELS showed significant improvements in household behaviors regarding IYCF practices.

	BLS (%)	ELS (%)
Children under 3 years who were breastfed within 2 hours of birth	37	51
Children age 6-9 months who received complementary feeding	38	64
Children age 6-36 months consumed Vitamin-A rich food	53	71
Moderate to severe undernutrition (impact)	45	36*

($p<0.0001$)

As per the endline evaluation, the impact indicator was achieved to the extent of 89.5% of the target i.e. if the target was 10% points reduction in five years of effective project implementation, the actual achievement was 8.95% points as per the endline survey.

Awareness of infant breastfeeding practices among the AWWs improved. According to 50% of AWWs, the service delivery of preschool activities, household survey, immunization, creating awareness on health and hygiene among mothers and nutrition education to adolescent girls improved due to training.

IV FOCUS Study on Children Under Six (2006)

Objective: To assess the quality of functioning of ICDS in different states.

Sample Size / Study Area: The study was conducted in six states: Chhattisgarh, Himachal Pradesh, Maharashtra, Rajasthan, Tamilnadu and Uttar Pradesh. The report was put together by Citizens' Initiative for the Rights of Children Under Six (CIRCUS).

Salient findings

Contrasting results in different states

- In Tamilnadu: Anganwadis were open throughout the year, nutritious food was available there every day, regular health services were also provided, and pre-school education program was in good shape.
- In Uttar Pradesh: A bland, monotonous "ready-to-eat" mixture (called *panjiri*) was distributed to children and some hasty filling or fudging of registers. There was rampant corruption from top to bottom, and no sign of any significant impact of ICDS on the well-being of children.
- ICDS thrived in the states where it received attention and care: adequate resources, regular training, proper facilities, close monitoring, imaginative planning, and responsible administration, among other enabling factors.
- Where these enabling conditions were missing, anganwadis did not do well. The states of Tamilnadu, Maharashtra and Himachal Pradesh with better run ICDS AWCs were termed as "Active States", and Rajasthan, Uttar Pradesh and Chhatisgarh were termed as "Dormant States".

Direct observation results

- Nearly 80% of the sample anganwadis in all states were open at the time of the investigators' unannounced visit.
- In majority of the sample anganwadis, supplementary nutrition was provided at the time of the survey.
- About two thirds of the sample mothers stated that their child attended ICDS regularly, and they were weighed at regular intervals.

- Services which were neglected in all the FOCUS states were: referral services, home visits and NHE sessions. In some of the better anganwadis in Maharashtra and Tamil Nadu, NHE meetings were held on the same pre-designated days as the health check-ups.
- In Rajasthan and Uttar Pradesh, most mothers had no inkling that such services were available and generally did not look at the AWW as someone who could help them in the event of health or nutrition problems in the family. AWWs rarely visited pregnant and lactating mothers at home or counseled them in other ways.

Proportion (%) of sample mothers who reported that:	Active States	Dormant States	Overall
Home visits were made by AWWs	42	19	30
Their child was weighed regularly at AWC	82	47	64
Their child's growth chart was discussed with them	44	24	36
Health checkups were available at the AWC	58	21	38

Difficulties faced in delivering optimal services

- Each AWW had to maintain as many as twelve registers. Filling registers took 6 hours of the AWW's time every week, on average. This means a full day of work, for which no allowance was made either in terms of time used or in terms of remuneration.
- In rural areas, the AWW was often the only woman who could be conveniently "mobilised" for duties at the village level e.g. "family planning targets"; in many states they were asked to help with the formation or management of "self-help groups".

Demotivating Aspects of the Work Environment of AWWs

Difficulties faced by AWWs	%
Mobilized for non ICDS duties in last six months	79
Remuneration is inadequate	71
AWC equipments are inadequate	61
Did not receive salary last month	60
Training is inadequate	34
Did not receive any pre-service training	25

Training: The training programs in Tamilnadu were regular compared to other states which partly reflected the "decentralized" nature of training arrangements. Some of these teams had developed training programs, involving joint training of ICDS and Health Department staff. Decentralized training centers also made it easier for AWWs to attend extended training programs away from home.

VI Social Assessment of ICDS in Gujarat – Kanani and Zararia (1996)

Objective: To find out whether the socially and economically disadvantaged families benefit from the ICDS project in terms of nutrition, health and preschool education.

Study Area / Study Sample: Five different geographical regions of Gujarat were selected for the study: Urban, Rural, Tribal, Draught Prone and Coastal. Two AWCs from each study site (total 10 AWCs) were selected.

Salient Findings

Availability and utilization of ICDS services

- Supplementary feeding, immunization and pre-school education were recalled as the regularly available services and they were the ones most frequently utilized by the beneficiaries simply because they were available and accessible to the people. However, it was noted that even those services reported to be utilized were often not utilized in a manner to yield any marked impact on health or nutritional status.
- Children were regularly weighed and mothers were informed about the weight of their children but this did not help in improving nutritional status of children as AWWs did not counsel the mothers to improve IYCF and health care practices. This clearly indicated that training of functionaries was oriented more towards information giving rather than skill development and effective counseling.

Community participation

- It was most active in AWCs where
  - people were aware of the ICDS services and their benefits,
  - services were regular and well implemented, and
  - quality of care in ICDS was good.

This in turn was related to the motivation of the AWWs and supportive supervision. The type of community contribution in rural areas included giving land or building; materials like utensils, toys; voluntary time of community members for anganwadi activities; assistance in camps and special events; and conflict resolution.

Nutrition Health Education

- The observations on field revealed that implementation of NHE program was weak, and traditional child feeding and health care practices which are detrimental to maternal and child health and nutrition, continued to prevail.
- The NHE activities in communities tended to be sporadic, unplanned and without support of attractive and effective audio visual aids.

- The basic orientation of the ICDS implementation authorities towards NHE appeared to be one of imparting information to mothers rather than facilitating behavioural change in mothers.
- Almost all AWCs visited did not have any books; charts; posters or other audio visual aids for imparting NHE to mothers.
- The NHE component was not monitored in ICDS like other activities such as immunization, leading to neglect of this service at field level.
- NHE was poorly utilized. Busy mothers had little interest, as they were not convinced of its benefits and did not consider NHE sessions to be interesting and worthy of their time.

Monitoring and Supervision

- Effective goal oriented monitoring aided by a rational Management Information System (MIS) was absent; as a result, the impact of the services was diluted.

VII National Evaluation of ICDS by NIPCCD (1990-92)

Objective: To undertake a comprehensive review of the scheme and its status at the national level after a decade and a half (1990) of its inception.

Study Area / Study Sample: 100 ICDS projects (54 rural, 28 tribal and 18 urban) from 98 districts of 25 states; 7 AWCs from each project by multi-stage random sampling technique.

Salient Findings showed that utilization of ICDS services by pregnant women was poor; supervision and on the job training were lacking both by the supervisors and CDPOs, undernutrition among young children beneficiaries was high and IYCF practices of the mothers were unsatisfactory.

This reveals that over the years (from 1990s to 2005-06) i.e. from 1992 evaluation to the recent 2006 evaluation, no substantial change and improvement has been in the ICDS system.

Eleventh Five Year Plan Goals for India

Keeping in view the mandate of the Millennium Development Goals and the unmet goals of X Five Year Plan, the following National Nutrition Goals are recommended for the XI Five Year Plan to be met by 2012 (ICDS and Nutrition in the Eleventh Five Year Plan (2007-2012))

- Reduce the prevalence of underweight in children under 5 years to 20%.
- Eradicate the prevalence of severe undernutrition in children under five years.
- First hour breastfeeding rates to increase to 80%.

- Exclusive breastfeeding rates to increase to 90%.
- Complementary feeding rate at six months to increase to 90%.
- Reduce prevalence of anemia in high risk groups (infants, pre-school children, adolescent girls, pregnant and lactating women) to 25%.
- Eliminate vitamin A deficiency in children under 5 years as a public health problem and reduce sub-clinical deficiency of vitamin A in children by 50%
- Reduce prevalence of Iodine Deficiency Disorders to less than 5%.

The following recommendations were made for consideration in the 11th Plan to address the aforesaid emerging issues as identified by the Sub-Group on 'ICDS & Nutrition'.

1. **Achieving ICDS Universalisation with Quality – Targeting both in terms of area and population groups**
   Although the total number of children beneficiaries has increased to 51%, there still exists a significant gap in reaching out to all children under 6 years in the country. As per Census 2001, of the 15.8 crore children in the age group 0-6 years only 5 crore children are covered under the supplementary nutrition program in ICDS.
2. **Strengthening HR management in ICDS**
   ★ To bring about the change in behaviors in caregivers of malnourished children: hire the right AWW worker, provide training and build accountability through responsibility and incentives; develop a mechanism to ensure additional remuneration based on their performance.
   ★ Develop effective supervision mechanism with an appropriate Supervisor to AWW ratio. Redefine the role of Supervisors according to the emerging needs.
   ★ Develop a performance appraisal system for AWWs.
3. **Addressing Nutritional Issues- Eradicating severe malnutrition**
   To operationalize nutritional interventions for the management of undernutrition:
   ★ Teach the mothers on care of children with home available foods; give appropriate health and nutrition advice. If needed provide once a week take home food supplement.
   ★ Implement IYCF guidelines with clear goals to make all stakeholders aware of the correct feeding practices. Indicators on IYCF, such as initiation within one hour, exclusive breastfeeding upto 6 months, and appropriate complementary feeding at six months may be included in the monthly appraisal of AWW. Monthly growth monitoring of all under-3 children should ensure 100% weighing efficiency and counseling families for improved child care behaviors. Growth monitoring and promotion under ICDS should be utilized to monitor undernutrition among children.

4. **Strengthening Nutrition & Health Education**

★ Redesign the NHE component under ICDS with a particular emphasis on Mahila Mandals to a more comprehensive parenting support initiative.

★ While the Nutrition & Health Education will remain to be a continuous activity at the AWC, a fixed day in a month to be called as 'Mother & Child Day' (MCD) in place of Nutrition & Health Day (NHED) will be mandatory to be observed by each AWC. The Supervisor and ANM would monitor the session on health and nutrition issues both for the mother and children. Participation of parents, local PRI members, NGOs and Mahila Mandals during MCDs may be encouraged.

★ Ensure universal early registration of pregnancy, antenatal care (ANC) of the pregnant women, immunization of women and children, IFA supplementation and more specifically one to one counseling for behavior change on infant feeding practices and improved care during each MCD.

★ Focus on improving over all dietary intakes and promoting consumption of iron and folate-rich foodstuffs to meet RDA for all macro and micronutrients through NHE.

5. **Advocacy, Communication and Social Mobilization**

★ Develop state specific IEC strategy and implement interventions after assessing the communication needs for a particular community / region.

★ Identify local communications needs and use multiple channels including folk media and mass media in addition to inter-personal communication (IPC) through AWWs and community level volunteers.

★ Take up a periodic and concerted campaign on appropriate infant feeding practices including early and exclusive breastfeeding, complementary feeding at six months of age along with newborn care.

6. **Strengthening Training and Capacity development**

★ Plan, implement and monitor training functions at state levels by a competent technical body who would provide dynamic guidelines for determining training content from time to time, which should be fully aligned to carefully determined program priorities.

★ Carry out a state specific Training Need Assessment (TNA) of ICDS functionaries, based on their educational level, length of service and understanding of the issues.

7. **Strengthening Monitoring & Evaluation**

Emphasis would be to develop a Nutrition Information System in ICDS to gauge the progress in respect of all nutrition related outcome and process indicators.

★ A system of concurrent evaluation of ICDS (of outcomes, nutritional status of the children) at the national level through external research agencies/professional bodies and also in each individual state/UT at the end of every three to five years would be established. Evaluation of NGO run ICDS projects vis-à-vis those run by the State Governments would be taken up periodically.

★ Issue/area specific operational research studies and periodic social assessments would be introduced to make mid-course corrective actions. Periodic district level nutrition surveys would also be taken up.

★ Home visit planner to help AWW to prioritize and plan home visits to households at critical periods of life cycle would be introduced.

★ The existing large number of reports/registers/proformas, which the AWW has to fill up, will be reduced to ease her burden. A more user- friendly and simple reporting system/MIS would be developed.

New initiatives in ICDS scheme

ICDS IV (World Bank assisted)

The World Bank has completed six projects in support of the ICDS program since 1980 with an overall investment of over US$ 700 million in an effort to contribute to improving malnutrition and early childhood development in India. The Government of India has now expressed strong interest in continuing the World Bank support for the next five-year cycle, which is referred as the ICDS IV project to be implemented during 2008-09 to 2012-13.

Project Design – Five Key Principles

- ***Better Targeting*** - More intensive efforts and resources will be targeted to the high burden areas.
- ***Flexibility*** in terms of management and program implementation is also sought to be built up in the project design.
- ***A simplified, evidence and outcome-based program design*** - The new project will include a simplified program definition with a clear focus on evidence and outcomes.
- ***Stronger convergence*** at the operational level will be forged with health (RCH & NRHM) to maximize the potential for nutrition outcomes. Convergence opportunities

may include joint training of AWWs, ASHA and ANMs, joint supervision visits, jointly observed Mother-Child Health / Nutrition Days (*Mamta Day*), etc.

- ***Strong Monitoring & Evaluation*** - The project will put into place a strong M&E component to enable collection of timely, relevant, accessible, high-quality information and to use this information to improve program functioning by shifting the focus from inputs to results, outlays to outcomes, and for creating accountability for performance.

Special Targeting Strategies

(a) Targeting under 3s for health and nutrition

★ Need assessment for under-3 children based on local customs, socio-economic status of the households and geographical region.

★ Ensuring appropriate infant feeding practices through campaign and awareness generation

★ Introduction of multiple feedings with a mix of on-the-spot and take-home ration approaches

★ Universal growth monitoring and growth counseling through nutrition and health days *(Mamta Day)*/ home visits

★ Ensuring timely immunization

★ Providing necessary micronutrients

(b) Targeting 3-6 year olds for ECE

★ Need assessment for 3-6year old children based on local customs, socio-economic status, language of the households and geographical region.

Project Components & Interventions

The project will have two major components: i) Nutrition and ii) ECE. The nutrition component will primarily focus on the "window of opportunity" between pre-pregnancy through 3 years of age, and the ECE component will focus on preschool education for children 3-6 years of age.

Nutrition Component: A two-pronged strategy is proposed wherein there would be:

★ specific measures to improve the quality of services in the entire country on one side

★ additional measures to improve the coverage and effectiveness of ICDS in the high-burden States/Districts where prevalence of malnutrition is more.

High burden States/Districts: Based on the findings of the study titled "*Mapping and Profile of Target Districts*" carried out by the World Bank, eight states viz., Uttar Pradesh, Madhya Pradesh, Maharashtra, Rajasthan, Bihar, Chhattisgarh Jharkhand and Andhra

Pradesh have been selected for intensive support under the project. While the first seven States have been selected due to highest concentration of child malnutrition, Andhra Pradesh has been selected in view of State's best practice experiences in the activities of Mother's Committees/Self Help Groups and community participation in development activities, which can serve as a model for other States to follow. About 160 districts from these states have been identified for intensive support under the project.

Training/Capacity Building

The National Training Component of WCD/ICDS-III Project, christened as '*Udisha*', has been implemented during 1999-2006 with a focus on eliminating the heavy backlogs in job and refresher training of all functionaries all over the country and also introducing 'innovative (other)' training. After the closure of the project on 31 March 2006, the training program has been continued with domestic resources during FY 2006-07, following the pattern of Project *Udisha*. During the Eleventh Five Year Plan (2007- 2012), training and capacity building of ICDS functionaries would continue to be on the forefront of the agenda in ICDS.

The Training component will have three major sub-components:

(a) Capacity Building of the ICDS Field Functionaries

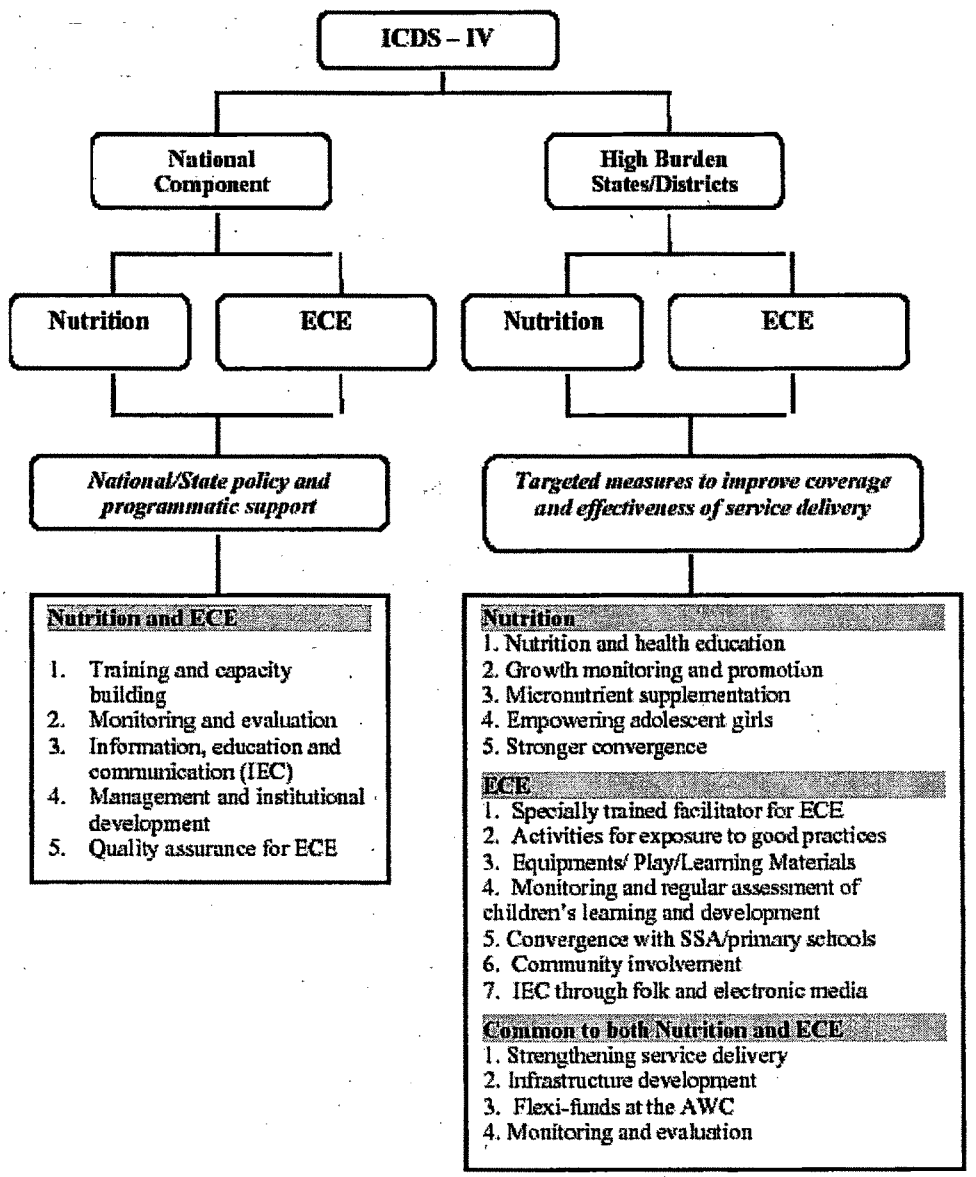
(b) Capacity Building of the family members and the community, especially the mothers

(c) Capacity Building of the Key Project Management Staff

Project Implementation Plans (PIPs)

A key component in the preparation of the ICDS-IV project is the formulation of State Project Implementation Plans (State PIPs) alongwith District Annual Plans (DAPs) by the eight selected States (Jharkhand, Andhra Pradesh, Uttar Pradesh, Rajasthan, Chhattisgarh, Madhya Pradesh, Maharashtra, Bihar) and a central PIP on national and central component of the project by the CPMU, MWCD. The State PIPs will outline how the participating States intend to utilize the additional resources to be made available to them for strengthening the implementation of the ICDS program (ICDS-IV PROJECT, Project Concept Note, 14 September 2007).

Figure 2.7 Components of ICDS-IV Project



Despite the fact that ICDS - IV has given prominence to nutrition and within it to nutrition education and communication, unfortunately few interventions have focused on strengthening this component in ICDS.

Implementation of Behaviour Change Communication (BCC) in the context of ICDS

BCC entails the components of IEC and interpersonal communication. (Hubley model has been discussed in METHOD Chapter)

- It teaches the importance of infant nutrition to the caregivers, through which they can promote optimal development of their children.

- Parents who are nutritionally aware can pass on appropriate eating habits to their children.
- Pregnant women, by making the right food choices, can increase their chances of a healthy pregnancy and a normal birth weight newborn.
- In program situations, BCC/NEC can be a powerful tool for promoting community participation and empowerment and can also enhance the use of available nutrition-health services.

BCC through NHE service is a key element of the work of the AWWs in ICDS. The components of NHE comprise basic health and nutrition messages, NHE sessions, home visits and demonstrations related to childcare, infant feeding practices, utilization of health services, and environmental sanitation.

Very few projects are reported in literature which have incorporated BCC as one of their strategies to improve IYCF practices of mothers and nutritional status of children under 3 years in ICDS. Few examples of such interventions are presented below.

A large community based study in Haryana confirmed that care and feeding practices can be improved if information and support are given to families and caregivers through various channels within the health system and community. The study evaluated the effect of interventions to improve exclusive breastfeeding during the first six months and complementary feeding practices thereafter and the impact on infant diarrhoeal diseases and growth. In the intervention communities, the opportunities used for counseling were: monthly home visits for children up to 12 months, weighing once every 3 months for children below 2 years conducted by AWWs, immunization clinics run by the auxiliary nurse midwives, and sick child contacts with health care providers, monthly neighbourhood meetings by the community representatives with caretakers of children below 2 years and women's groups meetings. The key findings of this study were that exclusive breastfeeding rates were high (at 3 months) while the 7-day diarrhoea prevalence (at 3 and 6 months) was lower in the intervention as compared to the control communities. The complementary feeding practices (meal frequencies, energy intake and active feeding) also improved substantially in the intervention group. Further, intervention group children had significantly higher lengths at 12 months of age but there was no impact on weight (Bhandari et al 2003 and Bhandari et al 2004).

Another study conducted in seven villages of Agra, assessed the effect of a nutrition and health intervention through trained grandmother groups (Village Health Groups) from Positive Deviant families on newborn care, breastfeeding practices, morbidity ad growth of infants in first 6months of life. Mothers of 100 infants (0-6) months in each intervention and comparison villages were selected to study the newborn care and breastfeeding practices. The intervention strategies used were: Context-responsive demand generation through home visits; ensuring reach and quality of existing government health services/supply (strengthen linkages with the ANMs and AWWs); bimonthly supportive supervision of VHGs by the researchers. The key findings of the study were: mean number of diarrhoeal episodes and ARI episodes per infant decreased in intervention area vs. comparison area; decrease in low birth weight infants (21% intervention vs. 28% comparison); reduction in prevalence of underweight and stunting. The findings reported a need for re-orientation of the ICDS functionaries to the consultative processes involved in working with the community groups for common community benefits. At field level, formation and facilitation of mothers committee by AWWs should be effectively monitored by facilitators of NGOs. Further, capacity building and supportive supervision of village-level service providers should be ongoing, appreciative focusing on building both their technical and programmatic skills (Sethi 2008).

ICDS partnership with NGOs

Many NGOs in Gujarat support the government by managing and implementing ICDS. However, little is known of the quality of services rendered by them and their impact on the nutritional status of beneficiaries. Presented below is some information on the evolution of the NGOs, their strengths and weaknesses and their role with the government in the context of ICDS.

Evolution of NGOs Over Time: A Historical Perspective

Non-Governmental Organizations (NGOs) have existed for centuries; indeed, in 1910 some 130 international groups organized a coordinating body called the Union of International Associations. The term "non-governmental organization" was coined at about the time of the founding of the United Nations (UN) in 1945 to distinguish private organizations from inter-governmental organizations (IGOs), such as the UN itself. Many large international NGOs, such as Amnesty International, the International Federation of Red Cross and Red Crescent

Societies, Oxfam International, CARE, Save the Children, and the World Wildlife Fund, are transnational federations of national groups. Most NGOs are small, grassroots organizations not formally affiliated with any international body, though they may receive some international funding for local programs (Britannica Online Encyclopedia.mht).

NGOs are increasingly becoming an important force, in part because they are expected to be efficient and effective; innovative, flexible, independent, and responsive to the problems of poor people at the grass-roots level. The growth of NGOs over the past two decades has given them an increasingly important role and has led them to forming a distinctive sector within civil society. They have been engaged in all sectors of social life, such as relief, rehabilitation, health, education, development programs, peace, human rights, and environmental issues, using finance raised from voluntary, private sources, and donor agencies, and managing themselves autonomously at local, national and international levels (Bagci 2007)

NGOs exert influence on the policies and programs of governments and IGOs by participating in the meetings at which norms, principles, treaties, and conventions are negotiated, disputes settled, and resources allocated. NGOs usually are apolitical organizations that have a local nonpartisan status, engendering greater acceptance by government and the community. They strive for outcomes that are sustainable (Britannica Online Encyclopedia.mht). Very often they play an effective role as they understand the local environmental problems. NGOs draw up need-based programs and give greater attention to promote people's participation and building people's institutions to implement developmental programs which are meant for the poor people.

According to the Report of Commonwealth Foundation (1994), NGO activities can be grouped under two headings. These are:

a) Care and Welfare

Service and delivery, mobilizing resources, research and innovation, human resource development, public information

b) Change and Development

These organizations are structured on the following lines:

Welfare organizations, development organizations, environmental organizations, indigenous people's organizations, women's organizations, youth organizations, human right

organizations, environmental groups, income generating projects, job creation programs, children's organizations, disabilities organizations, worker's organizations.

Considerable variation exists among NGOs which is reflected in their voluntarily chosen ideologies, modalities of catalyzing change, their scale of operations and their connectedness or remoteness from grassroots action. Based on these variations, Ved (1999) gave a typology of NGOs.

- Private philanthropy: their basic motivation is relief and welfare.
- Intermediary organizations: their main agenda is to conduct research, support and training or to bring grassroots NGOs together on a common platform with a common agenda.
- Grassroots development support organizations: these are involved in implementing grassroots development projects and promoting groups;
- Membership organizations: including local people's groups and organizations with local leaders such as artisan groups, women's self-help groups or users' groups.
- State sponsored or dependent NGOs (GONGOs): a new breed of NGOs promoted by government but outside the rigid framework of government, to gain flexibility (particularly from accounting and financial procedures) and sometimes to reduce interference from political processes.
- Social Action Groups: work to change governance processes and structures; adopt mobilization and confrontation as methods to challenge existing structures and mindsets; are not interested in implementing projects.

The Strengths of NGOs

Porter et al (1991) states that the main characteristics of NGOs are their ability to reach poor communities in remote areas that have few basic resources or infrastructure, and where government services are limited or ineffective; they have the ability to promote local participation in the design and implementation of public programs by building self-confidence and strengthening the organizational capability among low-income people; they use low-cost technologies, streamlined services and low operating costs; and they are innovative and adaptable in the identification of local needs, can build upon resources and transfer technologies developed elsewhere.

According to Robinson (1992) NGOs are good at reaching the poorest in the sense of involving them in the development activities and raising their living standards. NGOs are

also effective working with disadvantaged women and improving women's economic and social status or effectively challenging prevailing patterns of discrimination.

Rajasekharan (2006) reviewed certain favourable conditions and limitations studied by various researchers, which may enable or disable the functioning of the NGOs and affect their impact. Conditions for successful NGO projects include: beneficiary participation, effective management, skilled and committed staff, favorable external environment, carefully prepared and designed projects, flexibility in the process of approach and simplicity (in strategy and structure).

The Weaknesses of NGOs

Many researchers have studied the weaknesses of NGOs in terms of their activities, organizational behaviour and sustainability of the proposed projects. NGOs are commonly criticized by the capacity of their projects. They are taken as micro level activities and NGOs are recognized as 'micro level actors' (Brown and Korten 1991). It is said that NGOs do not have the ability of evaluating and acting at regional or national level. Another issue of criticism mostly relates to the survival or sustainability of projects at community level. Because it is argued that running of the externally introduced projects is difficult by the local people when the outsiders (NGO staff) withdraw their activities in the region. This is the most serious question on the NGO activities. Local people's ability to sustain cooperatives, organization, committees without the guidance and support of professionals is very difficult in developing countries. It needs ability to develop relations with governmental officials and the ability to continue the activities within the complex bureaucratic structure of state mechanisms. According to Rajasekharan, the limitations of NGOs include: poor reached more than the poorest, men benefit more than women, costs are higher than previously estimated, limited potential for sustainability and replicability, and they tend to work locally and not to expand impact through promoting change in public policy.

The Indian Scenario

Volunteerism has been a part of Indian culture. India has a rich history of remarkable work carried out by the NGOs be it welfare or development. Until 1988, information about the integrated nutrition, health and family planning efforts undertaken by voluntary organization in rural areas was not easily available. The 'Anubhav' series of Ford Foundation, with a view to disseminate the findings of some innovative projects, complied the data from several voluntary organizations in India such as Child In Need Institute (CINI) in West Bengal, the

Comprehensive Health and Development Project (CHDP) at Pachod in Maharashtra, the Rural Unit for Health and Social Affairs (RUHSA) in Tamil Nadu and Society for Education Welfare and Action (SEWA Rural) in Gujarat (Anubhav Series 1988). These efforts undertaken by the voluntary organizations have been chiefly in the rural areas and have demonstrated unambiguously remarkable coverage and change. The voluntary organizations were able to achieve notable progress in health services as shown in several indicators of health and wellbeing such as reduction in the prevalence of morbidity and mortality rates and in major nutritional deficiency disorders.

Presently, a large number of NGOs operate at national, regional and local levels, each one with its own focus on specific areas of urban and rural development. India is estimated to have more than 2 million NGOs at present and the figure is continuously increasing. Some of the important NGOs in India are India Red Cross Society, Child Relief and You (CRY), CARE, CHETNA and SEWA-Rural. The NGOs which operate at the village level can play an important role in the field of mobilization, motivation, empowerment and getting participation of people in programs aimed at reducing poverty. Therefore the NGOs are best placed to:

(a) promote the development of sustainable people's organization

(b) make accessible to the rural poor the various government programs and schemes leading to the reduction of food and nutrition insecurity

(c) facilitate access to technical and financial assistance provided by various Government institutions to the rural poor; and

(d) collaborate with relevant government institutions to strengthen the governance and the functioning of the Panchayat System with the involvement and active participation of community.

NGOs and Community Health-Nutrition

Sharma and Bhatia (1996) described the historical evolution of NGO community health programs in India. It evoluted during the independence movement and grew in the 50s-60s in response to the failure of the government to meet health needs. The recognized need for new approaches to all aspects of community development and the endorsement of primary health care in the 70's encouraged the government for the formation of NGOs that were fueled with foreign funds and run by professionals. They further analyzed the current status of NGOs in the field of community health in India and tried to predict its future trends. Data

were collected from a manual review of the literature in the library of the national headquarters of the Voluntary Health Association of India.

After looking at the strengths and weaknesses of the NGOs as well as the opportunities and threats they face, the authors concluded that the NGOs should:

- enhance linkages between community health and development
- build collective force
- use participatory training
- integrate modern medicine with traditional medicine
- promote more efforts for disadvantaged groups
- integrate gender issues in their programs
- incorporate health behavior interventions
- work as partners with foreign donors
- work with the government on planning as well as implementation
- avoid duplication of services
- attract professionals without becoming commercialized, and
- create international networks

Partnership between NGOs and the Government

India has been a forerunner among developing countries in addressing the problems of food and nutrition insecurity of the poor through various Government intervention programs. The Public Distribution System (PDS), Integrated Child Development Services and the National Mid-day Meals Programs are some of the major programs, which have been implemented by the Government of India. However, due to poor coverage, implementation and lack of participation by the people, these programs have not been able to make the necessary impact in reducing the high level of poverty and malnutrition.

The top-down approach of the various Government programs has resulted in failure to create the necessary impact to realize the program objectives. Most of the Government programs have not succeeded because of non-involvement of local communities in the designing, implementing and monitoring of programs. It is also found that the concept of accountability, people's participation and role of Civil Society is missing, which has added to the financial burden of each country, ultimately resulting in more borrowings from outside agencies including the World Bank and other Financial Institutions (Rajasekharan 2006).

Need for NGO-Government Convergence

Practical needs draw NGOs and government towards each other.

Government agencies prefer working with NGOs:

- to enhance people's participation in their programs;

- to extend coverage of programs to areas and groups that are poorly served by government staff;
- to test and replicate innovative approaches; and
- to achieve greater cost effectiveness

In turn NGOs seek collaboration with government:

- to access technical or managerial resources;
- to gain legitimacy or recognition;
- to adapt a program to their area;
- to obtain appropriate solutions to development problems;
- to enhance people's participation in government programs; and
- to promote greater accountability and transparency, and promote reforms in public systems.

NGOs in the ICDS system

Following the introduction of ICDS, the implementation of the program is chiefly through the existing government infrastructure both in the rural, tribal and urban areas. However, with the enormous expansion of the scheme to cover 50% of the total population and now universalization, it has been increasingly recognized that the involvement of the government sector alone in its implementation would be inadequate and that there is a need for involving voluntary organizations in the implementation of the ICDS scheme. Towards this goal, a policy of involving the voluntary sector in supplementing government's efforts was enunciated in the Seventh Five Year Plan (Seventh Five Year Plan, GOI 1985).

Agarwal et al (2006) suggested achieving quick expansion of the ICDS services through Public-Private-Partnerships. According to the authors, examples from Gujarat, Madhya Pradesh, Karnataka, Delhi and other States show that NGOs can very efficiently manage one-two ICDS projects in a city. Further, contracting out ICDS projects to NGOs would avoid program disruptions owing to transfer of officers as is commonly noted in the Government system. The private institutions can link the community with its other programs such as Self-Help Groups to maximize the benefits to people. If the NGO entrusted with managing an ICDS project also runs a health facility, the community would receive greater benefits in terms of the health services.

A few examples of successfully run NGO projects, their activities and impact on beneficiaries are cited below.

Voluntary Health Association of India (VHAI)

VHAI is a non-profit, registered society formed in the year 1970. It is a federation of 27 State Voluntary Health Associations, linking together more than 4500 health care institutions and grassroots level community health programs spread across the country.

VHAI's primary objective is to 'make health a reality for the people of India' by promoting community health, social justice and human rights related to the provision and distribution of health services in India. It tries to achieve these goals through campaigns, policy research, advocacy, need-based training, media and parliament interventions, publications and audio-visuals, dissemination of information and running of health and development projects in some difficult areas.

Since January 2002, VHAI is also working as a Regional Resource Centre (RRC) with support from the Ministry of Health and Family Welfare, Government of India. For an effective implementation of the RCH program RRC-VHAI has been instrumental in providing technical and managerial support and information to the NGOs (Mother and Field NGOs) as well as State Governments from Rajasthan, Himachal Pradesh, Uttarakhand, J&K and New Delhi.

The key areas of RRC-VHAI's functioning include capacity building of MNGOs, FNGOs and District Health functionaries; advocacy with Governments to address critical health concerns; increased access of NGOs to disaggregated data, training, communication material and information on policies and programs.

Society for Education Welfare and Action (SEWA-Rural)

SEWA Rural is a voluntary development organization involved in health & development activities in rural - tribal areas of South Gujarat at Jhagadia since 1980. The focus of all its programs has been vulnerable sections of society i.e. the women, children & elderly. It works on the principles of **Social Service, Scientific Approach and Spiritual Outlook**

Its activities include Kasturba Hospital serving more than 1500 surrounding villages; Community health project aiming to reduce maternal & newborn mortality in Jhagadia block with 1,71,000 population; Training in primary health care for the workers of voluntary and govt. sectors; Comprehensive Eye Care Program covering 2 million spread in four districts; Vocational Training Centre for rural tribal youth followed by job placements; Various women related activities (empowerment, awareness & economic) for last 15 years.

Systematic evaluations about experiences of community health project were done by two external agencies, which have been well documented in the book titled "Making of a Primary Health Centre: The SEWA Rural Experience". The rich experience and its lessons are of considerable relevance not only to NGOs or Government, but to all those involved and interested in community health work.

Quality of health services delivered through Voluntary Organizations (VO) vs. Government Organizations (GO) – A Comparative Study

Saiyed (1998) studied the availability, utilization and impact of nutrition and health services in preschool children (0-36 months) and pregnant mothers in an urban slum setting under two different health delivery systems in Baroda: voluntary vs. government.

Study area and Sample size: A total of 610 preschool children (0-36 months) were selected from the ICDS centers under the Baroda Municipal Corporation and a Voluntary Trust. Comparisons were made within the three groups as VO4 and GO4 which were functioning for four years and GO10 that had been in operation for ten years.

Salient Findings: The GO 10 sector achieved better and higher coverage for many of the services such as immunization, vitamin A and growth monitoring, but impact on nutritional status of children did not show any appreciable difference between the voluntary and government sector. The morbidity profile also did not differ between the two sectors.

Of all the services, immunization was optimally utilized by the under three and growth monitoring was carried out for 80% of the children. Supplementary food, vitamin A distribution, and iron supplementation were relatively neglected and sporadically utilized in urban areas.

All anthropometric indices, i.e. height for age, weight for age and weight for height (% NCHS), were highly favorable when the complete package of all services was utilized, compared to 'partial use' or 'non use of services' by beneficiaries. Mean weight-for-age as well as weight-for-height were significantly higher in the full use group compared to the partial and no use group combined: 85% of NCHS vs. 74% for weight-for-age and 96% vs. 88% for height-for-age. The number of children who did not report any morbidity was significantly higher when they utilized all services completely. Further full use of single services, for example only supplementary food did not have a significant impact on the nutritional status.

Although it has generally been considered that the voluntary sector is able to establish a better rapport with the community and as a result is able to elicit better utilization of health services in the urban setting, no differences were seen between the Voluntary Organization and Government sector in service utilization or nutritional status.

Cooperative for Assistance and Relief Everywhere (CARE)

CARE began operations in India in 1950 and today works in eight Indian states: Andhra Pradesh, Bihar, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Uttar Pradesh and West Bengal. Food projects have been the center of CARE India's activities since the early 1960s. Since 1982, CARE has been an active supporter of the Indian government's Integrated Child Development Services (ICDS) program. A nutrition and health program that serves millions of poor women and children, ICDS is the largest program of its kind in the world. CARE helps strengthen the capacity of ICDS Anganwadi centers (rural health centers) to provide basic services that include the management of diarrhea and respiratory infections, immunization, growth monitoring, health and nutrition education, and Vitamin A supplements. CARE also provides supplementary food rations to millions of malnourished children, adolescent girls and pregnant and nursing mothers through ICDS. CARE India is involved in several primary health care, small enterprise development and girls' education projects, and provides emergency relief to victims of natural disasters and political turmoil as needed. The pillar of CARE's programming in India has been the Integrated Nutrition and Health Program (INHPI & II), which targets nursing mothers and children under the age of two, especially girls. This high-impact program integrates nutrition, family planning and primary health care in some of India's neediest areas. The RACHNA program of CARE India included two projects: the INHP II and Chayan Project. The recent working paper series places in domain the results and lessons of five years of CARE-India'a RACHNA program (2001-06).

Details of RACHNA Prg have been mentioned earlier in ICDS section

Centre for Health Education, Training and Nutrition Awareness (CHETNA)

Under the umbrella of Nehru Foundation for Development, Centre for Health Education, Training and Nutrition Awareness (CHETNA) emerged as an independent activity in 1978.

Vision: CHETNA envisions an equitable society where disadvantaged people are empowered to live creative, fulfilling and healthy lives.

Mission: CHETNA works to empower children, young people and women, especially from marginalized social groups, to take control of their own, their families and their communities' health.

CHETNA works on the issues of women, young people and children, developing health communication material, networking and advocating for comprehensive and gender sensitive women, young people's and children's policies and programs.

CHETNA designs illustrative print education material in simple local languages. Many of the printed health education materials have been mass-produced by Government of India and Government of Gujarat to be used in their programs.

By networking with other partner NGOs at state, national and international levels, CHETNA works to bring forward the voices and realities of communities at the policy formation and program planning levels. It organizes consultations and ensures participation of the community level stakeholders and civil society. It is identified as a Regional Resource Centre (RRC) for Reproductive and Child Health (RCH) for Gujarat state and the Union Territories of Daman, Diu and Dadra Nagar Haveli by Government of India. As the RRC, CHETNA extends its support to Non Government Organizations to systematically and effectively implement the programs related to women, young people and children. RRC-CHETNA is an important link between the CBO/NGOs and the Health department both at the state and national level.

The framework of Health Systems Research described in the next section is useful to study the NGO functioning as regards implementation of health and nutrition programs, including ICDS.

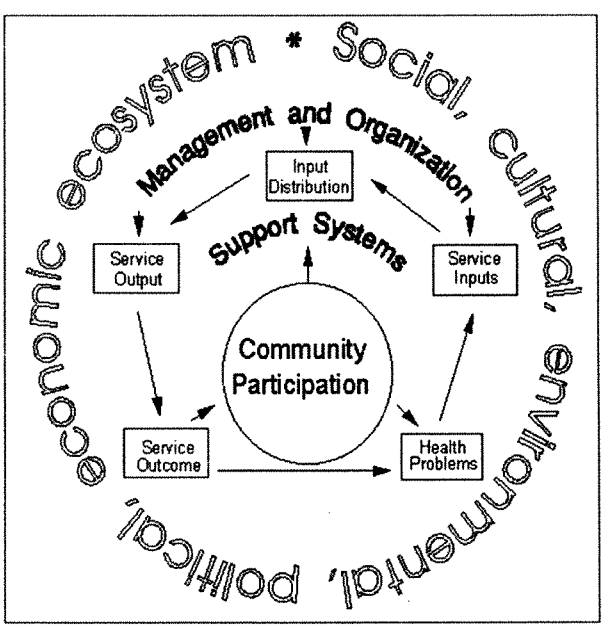
Health Systems Research (HSR)

Although research has made major contributions to health by providing knowledge of the causes of diseases and by developing the technology to cure and prevent disease and promote health, Health For All is far from being achieved.

Health and health services have come to be seen in a broader social, cultural and economic context, the interrelated parts of which constitute the health system. It comprises three important elements:

- the community
- the health service delivery system and
- the environment in which both of them are located.

These three are highly interdependent. Health needs - objective and subjective - of the community are mostly determined by environmental ecology, i.e. its socio-cultural, demographic, economical and political surroundings.



Health problems and health needs, in turn, should determine the orientation of the health care system. If the health care system is to serve the community within a given environment, there must be a close 'fit' between these three elements.

Countries suffering from poor economics, wars and drought usually have poorly functioning health services. However, even within less favourable environments, some services function better than others. A very important factor is the quality of information on which policy makers base their decisions. Health policy makers need answer to questions like:

- What are the *health needs* of (different groups of) people, not only according to health professionals but also according to the people themselves? Can shared priorities be agreed upon?
- To what extent do the present *health interventions* cover these priority needs? Are the interventions acceptable to the people in terms of culture and cost, especially to the poor? Are they provided as cost-effectively as possible?
- Given the *resources* we have, could we cover more needs, or more people, in a more cost-effective way?
- Could cooperation with the private/NGO sector be improved? Could donor agencies help solve well-defined bottlenecks in the system?
- Is it possible to better *control the environmental factors* which influence health and health care?

Since the end of the 1970's, Health Systems Research (HSR) has developed and evolved to answer many of these questions and is ultimately concerned with improving the health of people and communities, by enhancing the efficiency and effectiveness of the health system as an integral part of the overall process of socio-economic development, with full involvement of all partners.

Importance of HSR

What would make health systems research vibrant, stimulating and a socially rewarding activity is when policy makers and administrators realize the potential of health systems research as an instrument of effecting or introducing systematic and scientific changes in the health systems in a country. This can only materialize when sustained research on policy planning and implementation strategies are taken up on a continuous basis over a period of

time and HSR is interwoven as an integral component of all the program and policies which promote the health status of a society.

Using scientific methods, HSR aims to provide insight into health problems and:

- makes possible a greater understanding of health care on general development.
- assists in more rational health planning.
- results in health care that is more effective and better adapted to the cultural and emotional needs of the people.
- promotes greater self-reliance in health matters by actively involving individuals, families and the community in the solution of their problems.

According to the HSR Training Series report Varkevisser (2003), Health Systems Research is:

- problem and action oriented - it studies specific problems to find feasible, practical and affordable solutions;
- participatory - requiring active and continuous collaboration between those who identify the problems to be studied, those who are the main potential users of the research results (the system managers) and those who search for the facts and suggest alternative solutions (the researchers);
- multisectoral - deriving its inputs from various social and economic sectors;
- multidisciplinary - requiring contributions from a wide variety of disciplines, e.g. doctors, nurses, epidemiologists, economists, social scientists; best obtained through a team approach (which in itself presents technical and managerial challenges); and
- is replicable - the methodologies used are replicable, they can be applied to similar problems in different countries.

To ensure that the research is relevant and appropriate, everyone directly concerned with a particular health or health care problem should be involved in the research project(s) focused on it. This may include policymakers, managers from the health and other public services involved, health care providers and the community itself. Their involvement is critical if the research activities are to make a difference; for example,

- If decision-makers are only involved after completion of the study, the report may just be shelved.
- If staff of health and other public services are only involved in data collection and not in the development of the proposal or in data analysis, they may not be motivated to collect accurate data or carry out the recommendations.

- If the community is only requested to respond to a questionnaire, the recommendations from the study may not be acceptable.
- If professional researchers are not involved in the implementation of recommendations, they may have little concern for the feasibility of the recommendations.

The roles that various types of participants will play in the research project will depend on the level and complexity of the particular study as well as its area of focus.

Health Systems Research in India

According to a review by Murali (1992) on status of health systems research in India, historically, the creation of the Indian Council of Medical Research as a nodal agency for promoting medical research marked the recognition of health research by the Indian government. The creation of a task force on operations research for improved delivery of health services by the Government of India in 1974 was another major step towards HSR promotion in India.

Various research institutions such as the National Institute of Nutrition, Central Technical Committee promoting research activities under the ICDS, and national institutes working in several areas of health research have contributed towards strengthening of various national health and nutrition programs.

The HSR related studies in India have been carried out in the areas of health need assessment, communicable and non communicable diseases, human power development, IEC, managerial processes, health organizations, health economics, health care delivery systems, health service utilization, KAP of health service providers and their clients, health behavior, and evaluative studies on several national health and nutrition programs.

The three basic components of a health system are (IDRC 1991) in the context of ICDS:

- **A set of cultural beliefs about health and nutrition forming the basis for health seeking and promoting behaviour:** In the context of ICDS services, the parents or the mothers may not send their children to avail the AW services unless they perceive their child to be very weak or ill. Even the pregnant women and lactating mothers may not come for antenatal and post natal services unless there is a perceived need.
- **The institutional arrangements within which health related behaviour occurs:** Health and nutrition practices are influenced by family structures and social relationships such as women's status in society for e.g. patriarchal structures have low social status of women as well as girl child, along with detrimental social practices like early marriage,

family pressure to bear a son soon after marriage, traditional practice of intro household food distribution which favour males- all these influence health and nutrition practices as well as nutritional status. Thus, ICDS has to deal with these social arrangements to make a difference. Further, the quality of available ICDS services will influence the mother's interactions with the system, her use of services and consequently her health andthat of her family.

- **The socio-economic/political/physical context in which the health behaviour occurs and the system in which the nutrition services in the ICDS operate:** Rural, Tribal and Urban environments are very different and will influence the way ICDS functions in government systems. Similarly, if NGOs are managing ICDS, the nature of the envolvment, interest and time given to ICDS, additional resources put in for ICDS and their monitoring system will all determine the quality of implementation and impact of ICDS.

From the above review, it is evident that we have inadequate knowledge and understanding of the various aspects of management of ICDS run by NGOs, especially in this region. Hence, the present Health Systems Research study was undertaken in rural Vadodara in NGO – implemented ICDS. The objectives and the study design are given in the next chapter.