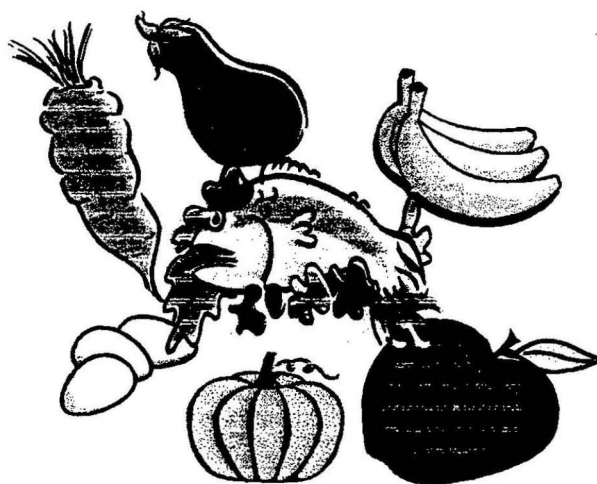


Institute of Integrated Rural Development

Health and Nutritional Status of 'Target Population' in Kachua Thana, Bangladesh

Baseline Survey 1999



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TABLE OF CONTENTS

Abbreviations	...	...	...	...	...	...	i
Acknowledgements	...	...	...	...	...	...	iii
Executive summary	...	...	...	...	...	...	iv
1. INTRODUCTION	...	...	...	...	...	...	1
1.1 Preamble	...	...	...	...	...	...	1
1.2 Nutritional situation in Bangladesh	...	...	...	...	...	...	3
1.3 Health situation in Bangladesh	...	...	...	...	...	...	7
1.4 Bangladesh National Plan of Action for Nutrition (NPAN)	...	...	...	...	...	...	14
1.5 Bangladesh Integrated Nutrition Project (BINP)	...	...	...	...	...	...	15
1.6 The IIRD initiative	...	...	...	...	...	...	15
2. PLANNING OF THE DATA COLLECTION	...	...	...	...	...	...	17
3. OBJECTIVES OF THE BASE-LINE SURVEY	...	...	...	...	...	...	18
3.1 General objective	...	...	...	...	...	...	18
3.2 Specific objectives	...	...	...	...	...	...	18
4. STUDY DESIGN AND METHODOLOGY	...	...	...	...	...	...	20
4.1 The conceptual framework	...	...	...	...	...	...	20
4.2 Study area	...	...	...	...	...	...	20
4.3 Sampling design	...	...	...	...	...	...	20
4.4 Study population and sample size	...	...	...	...	...	...	22
4.5 Sampling procedure	...	...	...	...	...	...	23
4.6 Survey techniques	...	...	...	...	...	...	24
4.7 Data collection procedure	...	...	...	...	...	...	26
4.8 Training of the interviewers	...	...	...	...	...	...	26
4.9 Internal and external quality assurance	...	...	...	...	...	...	26
4.10 Data management and analysis	...	...	...	...	...	...	26
4.11 Ethical considerations	...	...	...	...	...	...	26

5. RESULTS	...	...	...	...	...	27
5.1 Demographic Aspects	...	...	...	...	...	27
5.1.1	Distribution of population by age and sex	...	...	...	...	27
5.1.2	Marital status	...	...	...	...	28
5.1.3	Household composition	...	...	...	...	28
5.1.4	Education	...	...	...	...	28
5.1.5	Occupation	...	...	...	...	29
5.2 Socio-economic Situation	...	...	...	...	...	34
5.2.1	Homestead and cultivable land ownership	...	...	...	...	34
5.2.2	Number of days manual labour sold	...	...	...	...	34
5.2.3	Ownership of tube-well used	...	...	...	...	35
5.2.4	Organisational membership	...	...	...	...	35
5.2.5	Distribution of households by types of vegetables grown	...	...	...	...	35
5.2.6	Distribution of households by type of trees grown	...	...	...	...	36
5.3 Water and Environmental Sanitation	...	...	...	...	...	40
5.3.1	Source of water for drinking and washing	...	...	...	...	40
5.3.2	Use of sanitary latrine	...	...	...	...	40
5.4 Antenatal and Postnatal Care	...	...	...	...	...	42
5.4.1	Mean age at marriage and pregnancy	...	...	...	...	42
5.4.2	Fertility	...	...	...	...	42
5.4.3	Problem during pregnancy	...	...	...	...	43
5.4.4	Treatment of problem during pregnancy	...	...	...	...	43
5.4.5	Health and nutrition services	...	...	...	...	44
5.4.6	Life style during pregnancy	...	...	...	...	45
5.4.7	Family planning	...	...	...	...	45
5.4.8	Place of last delivery	...	...	...	...	46
5.4.9	Change in food habit during postnatal period	...	...	...	...	46
5.5 Breast Feeding and Weaning Practices	...	...	...	...	...	54
5.5.1	Type of first feeding after birth	...	...	...	...	54
5.5.2	Feeding of colostrum	...	...	...	...	54
5.5.3	Exclusive breast feeding	...	...	...	...	54
5.5.4	Weaning practice	...	...	...	...	54
5.5.5	Type of weaning food given	...	...	...	...	55

5.6	Child Care and Immunisation	...	...	...	...	58
5.6.1	Immunisation	...	...	...	...	58
5.6.2	Vitamin A capsule intake	...	...	...	...	59
5.7	General Morbidity	...	...	...	...	62
5.7.1	Incidence of diseases	...	...	...	...	62
5.7.2	Treatment of diseases and health care seeking behaviour					63
5.7.3	Knowledge and attitude ...	...	...	...	...	63
5.7.4	Breast feeding during diarrhoea	...	...	...	...	64
5.8	Health and Nutrition of Knowledge: Behaviour and Practice	...	...	...	...	69
5.8.1	Knowledge on simple hygienic practices	...	...	...	...	69
5.8.2	Knowledge on causes, prevention and management of diarrhoea	...	...	...	...	70
5.8.3	Knowledge about major nutrition problems	...	...	...	...	71
5.8.4	Knowledge about arsenic problem...	...	...	...	...	72
5.9	Nutritional Status	...	...	...	...	76
5.9.1	Nutritional indicators	...	...	...	...	76
5.9.2	Classification of nutritional status	...	...	...	...	76
5.9.3	Study population	...	...	...	...	78
5.9.4	Prevalence of malnutrition among under-5 children (Z-score classifications)					78
5.9.5	Prevalence of malnutrition by age and sex	...	...	...	...	79
5.9.6	Prevalence of PEM in under-5 children according to Gomez classifications	...	...	...	...	79
5.9.7	Prevalence of malnutrition among women of reproductive age					80
6.	DISCUSSION	...	...	...	...	84
7.	RECOMMENDATIONS AND PROGRAMME IMPLICATIONS	...	...	...	...	88
	REFERENCES	...	...	...	...	89
	ANNEXURES	...	...	...	...	91

ABBREVIATIONS

ANC	Antenatal Care
ANCC	Antenatal Care Centre
ARI	Acute Respiratory Infection
ASA	Association for Social Advancement
BDHS	Bangladesh Demographic and Health Survey
BINP	Bangladesh Integrated Nutrition Project
BMI	Body Mass Index
BRAC	Bangladesh Rural Advancement Committee
BRAC/RED	BRAC, Research and Evaluation Division
BSCIC	Bangladesh Small and Cottage Industries Corporation
BUP	Bangladesh Unnayan Parishad
CBNC	Community Based Nutrition Component
CED	Chronic Energy Deficiency
CNC	Community Nutrition Centre
CNO	Community Nutrition Organiser
CNP	Community Nutrition Promoter
DoB	Date of Birth
EPI	Extended Programme for Immunisation
FAO	Food and Agriculture Organisation of the United Nations
GDP	Gross Domestic Product
GMP	Growth Monitoring and Promotion
GoB	Government of Bangladesh
HDI	Human Development Index
HKI	Helen Keller International
ICDDR,B	International Centre for Diarrhoeal Diseases Research, Bangladesh
ICN	International Conference on Nutrition
IDD	Iodine Deficiency Disorders
IEC	Information Education and Communication
IIRD	Institute of Integrated Rural Development
IMF	International Monetary Fund
IMR	Infant Mortality Rate
INFS	Institute of Nutrition and Food Science (Dhaka University)

LBW	Low Birth Weight
MMR	Maternal Mortality Rate
NCHS	National Centre for Health Statistics (USA)
NGO	Non-governmental Organisation
NPAN	National Plan of Action for Nutrition
NRHS	Nutrition Related Health Services
ORS	Oral Rehydration Saline
PEM	Protein-energy Malnutrition
PNC	Postnatal Care
PUO	Pyrexia of Unknown Origin
SD	Standard Deviation
SES	Socio-economic Situation
SNB	State of Nutrition in Bangladesh
SWOT	Strengths, Weaknesses, Opportunities and Threats
TBA	Traditional Birth Attendant
TFR	Total Fertility Rate
TGR	Total Goitre Rate
THC	Thana Health Complex
ToR	Terms of Reference
TT	Tetanus Toxoid
UNICEF	United Nations Children's Fund
VAC	Vitamin A Capsule
WHO	World Health Organization

ACKNOWLEDGEMENT

The baseline survey was funded by WUSC. The authors thank IIRD for requesting Research and Evaluation Division (RED) of BRAC to conduct this baseline survey. Mr. William Christensen, Mr. Hasan Ali, Mr. M. Siddiqur Rahman, Mr. Eunus Ali, Dr. Ariful Alam, and Mr. Rafiqul Islam Bhuiyan, of IIRD are deeply acknowledged for their continuous cooperation. Dr. AMR Chowdhury, Director Research, BRAC deserves special thanks for his continuous guidance and suggestions in conducting the survey. Mr. Fazlul Karim, Dr. Syed Masud Ahmed and Mr. Samir R. Nath of RED, BRAC deserve thanks for their suggestions in drafting the questionnaire. Mr. Kh. Badrul Alam and Mr. Swapan Dev Roy helped in processing and analysing the data. Mr. Abdur Razzaque helped in word processing and formatting of the report. Mr. Md. Mizanur Rahman supervised and coordinated the fieldwork. The study would not have completed on time without hard work and commitment of 58 interviewers who were involved in data collection in Kachua *thana*. The authors are indebted to Mr. Hasan Shareef Ahmed for editing this report. Lastly, our acknowledgement would not be completed if we did not mention the cooperation of the IIRD target population in Kachua *thana* who gave time and support to the field workers.

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EXECUTIVE SUMMARY

Introduction

The state of nutrition in Bangladesh is precariously poor. The diet, being heavily deficient in calories and seriously imbalanced, leads to the obvious consequences of widespread protein-energy and micronutrient malnutrition among infants, children and women. This is a great loss of human resources potential for productivity and much of the low per capita gross domestic product (GDP) and low human development index (HDI) of the country (0.336) is attributable to this scourge of malnutrition.

The overall health situation of the Bangladeshi population is also far below any acceptable standard. This is particularly true for women and children with worst possible health statistics in terms of both morbidity and mortality. For example, the maternal mortality rate has been over 600 per 100,000 live births for many years. This has now improved slightly to about 470 per 100,000 live births. The latter figure is still one of the highest in the world. Similarly, 1 in 10 infant in Bangladesh does not live up to his/her first birthday; the infant mortality rate is around 80 per 1000 live births.

The above circumstances had led the Institute for Integrated Rural Development (IIRD) to find out innovative and appropriate programs to overcome the deplorable health, nutrition and basic education scenario of the people of some selected areas in Bangladesh. The proposed project titled "Shadaron Shikha O Prathomik Shastho Sheba Prokolpo (SSPSSP)" has been formulated on the basis of that realisation. The Kachua Thana under Chandpur District is one such area where such a project has been taken up.

On request from IIRD, the Research and Evaluation Division (RED) of BRAC undertook a baseline survey among the target households of the project area under Kachua thana of Chandpur District.

Objectives

The objective of the baseline survey was to collect benchmark information on overall health and nutritional status of the IIRD target population in Kachua thana on the basis of some selected measurable process and impact indicators. The survey results can be used for monitoring of the ongoing project activities over time and evaluation of the impact at various stages of the programme implementation.

The specific objectives of the survey were to:

1. register under-five children and pregnant and lactating mothers through house to house visits among 12,600 target families identified by IIRD;
2. collect information on household level demographic factors such as household size and age structure by sex;
3. collect information on selected socio-economic indicators at household level, e.g., education , occupation , landholding size, ownership of household tube-well, selling of physical labour, household water sources and defecation practices;
4. collect key information on knowledge and practice on control of diarrhoea, acute respiratory infection, essential obstetric care, and immunisation;
5. identify the patterns of caring practices at household levels for caring of babies up to 5 years of age (who, what and how are the specific cares usually given by the caregivers, e.g., mother/caretaker/father);
6. know breast feeding, complementary feeding, and weaning practices among children under 5 years of age;
7. undertake anthropometric survey of the children under five years of age for assessing their nutritional status, i.e., weight-for-age (W/A), height-for-age (H/A), and weight-for-height (W/H);

8. undertake anthropometric survey of women of child bearing age for assessing their nutritional status, i.e., body mass index (BMI);
9. ascertain the level of knowledge and extent of practice, and existing programmes on ANC, delivery practice and PNC;
10. assess the vitamin A coverage among children;
11. assess the knowledge on the consequences of iodine and vitamin A deficiency and the use of iodised salt at household level;
12. assess the knowledge on causes and prevention of anaemia;
13. assess the quality of existing health care services available in the project area; and
14. recommend on priority areas requiring public health intervention.

Study design and methodology

Study area

The study area was Kachua thana under Chandpur district.

Study population and sample size

The study population was under-5 children and women of reproductive age (15-49 years) belonged to the target (poor) households of IIRD. A total of 730 under-5 children and 718 women of reproductive age from 30 randomly selected villages of 9 unions in the thana were selected.

Quantitative Survey

A questionnaire was prepared to cover the three population groups (children, pregnant and lactating mothers) on the basis of the objectives of the survey. The questionnaire was first phrased in Bangla and after pre-testing was finalised and translated in English. The finalised Bangla version of the questionnaire was used for the data collection.

Qualitative Survey

Qualitative data were obtained by rapid assessment procedures to get an in-depth understanding of the local problems. The technique included focus group discussion (FGD), matrix ranking and in-depth key informant interview. Surveys were done to interview the mothers, fathers, community level leaders and grassroots level project staff. A number of checklists were prepared to guide the qualitative data collection.

Data collection procedure

There were a total of 6 teams of interviewers (two in each team) to collect the data. The interviewers took the list of IIRD target population in a village and randomly selected 25 children under 5 years of age from as many households as were required. All reproductive aged women of these households were also included in the survey.

Training of the interviewers

The interviewers were given a weeklong extensive training that included both classroom lectures and field practice. The training focused on:

- i. explaining the project and its objectives;
- ii. interview technique using the questionnaire; and
- iii. measurements of weight and height (bathroom scale for adults, Salter scale for children, and length board for height/recumbent length measurements).

Internal and external quality assurance

The quality of data collection of the interviewers was assured both internally and externally. For internal quality assurance, variations among the interviewers in measurements of height and weight were checked and brought to minimal by repeated demonstrations. External quality assurance was accomplished by investigation after checking the quality of the data collected by the interviewers.

Data management and analysis

All survey forms were edited manually to verify their correctness. Quantitative data were analysed using SPSSWIN software package.

Ethical Considerations

The purpose of the study was explained to the respondents at the community level. The informed consent of the respondents was taken after describing the activities involved on their part if included in the study.

Results and discussion

The present health and nutrition baseline survey was conducted on the target households (poor) of IIRD, which were selected on the basis of certain criteria, fulfilling of which would indicate being very poor and downtrodden. In other words, the poorest section of Kachua population was the study population and therefore the findings of the survey would in no way reflect the health and nutrition situation of the average population of the thana. However, since the demographic, socio-economic, health and nutritional characteristics of the poor in Bangladesh has a little variation between regions, the present survey might be considered as representative to reflect the socio-economic, health and nutritional status of the poor people of the country as a whole.

The demographic characteristics of the target households were interesting: the male female ratio (107:100) was comparable to the national figure (106:100), but the proportion of children below 15 years was as high as 54.4%, which is much higher than the national figure (41.7%) (12). The proportion of under-5 children was 23.9%, which is almost double the national figure of 13.2%. Contrary to the national situation, the proportion of children aged <5 years in the target households was much higher (23.9%) than children aged 5-9 years (18.0%).

These data indicate that the gradual trend of decline in the fertility rate seen all over the country in recent years is not yet visible in the present study. Indeed, the fertility rate is high in the population (4). About quarter of the mothers have given birth to 5-6 children. **Family planning is, therefore, an urgent issue in Kachua among the target households selected by IIRD.**

The educational scenario of the study households is rather discouraging. Among the household heads, aged 30-40 years or more, the prevalence of literacy was only 15.7%. Among the younger generation, literacy rate was little better (28.1%), indicating that the light of education was slowly trickling down. However, it is not anyhow comparable to the way the rest of the population is recovering from the curse of illiteracy. **Education**

should, therefore, be a strong component of the IIRD intervention programme with top priority.

As expected, the target population is very poor. About 74% of the household heads being day labourers and another 11% earning their livelihood through some small businesses. Nearly 83% sold more than 100 days of manual labour in a year. This is a strong indicator of poor economic status used in many studies. More than two-thirds of them (67%) had small homestead (less than 0.05 acre) and another 13% were homeless. Around 84% had no cultivable land. More than two-thirds of them perceived that they were in negative economic balance. Their income did not meet the daily necessities as per the expectation. Only 9% had their own tube-well and the rest either shared tube-well or used the tube-well owned by others. This is another indicator of poor economic condition. Nearly two-thirds of the households did not produce (or possess) any valuable tree (fruit bearing or otherwise). Thus, the indicators mentioned above show the deplorable socio-economic condition of the IIRD target households in Kachua thana. **Poverty alleviation should, therefore, be the most important issue in the IIRD program.**

Despite very poor, the study population was found to use tube-well water for drinking universally (>99%). However, in terms of sanitation only about 19% household used safe latrine and the rest defecated in holes, bushes and open places, which are considered unsafe and unhygienic. **Sanitation, therefore, is an important issue, which the IIRD programme should take as a challenge.**

Due to poverty and lack of education, general morbidity was highly prevalent in these communities. Moreover, their health seeking behaviour was also not satisfactory. For example, around 85% of the mothers reported they never went for ante or post-natal check ups mainly due to financial constraints. In antenatal care centres, there was actually no fees charged. Only when some medicines were necessary, they had to buy those. Because of this cost involvement, the pregnant and the lactating mothers and their husbands were reluctant to avail ante natal care. Another possible reason for this was the distance of the nearest health centre-- 0.5-1.50 km in 40.8% cases and more than that in case of the rest.

The status of iron intake during pregnancy, and vitamin A intake shortly after delivery was found unsatisfactory, although the status of TT vaccination during pregnancy was somewhat satisfactory (65.6% coverage). **Ante and postnatal health check ups as well as other health and nutrition services need to be strengthened in the IIRD programme to save the mothers from death due to maternity.**

As reported, breastfeeding was universal in the study mothers and feeding of colostrum was also high (90%). However, there was still a strong tendency to put honey or oil in the mouth of the baby just after birth. The issue of exclusive breastfeeding was not clearly understood by the mothers. **This needs to be addressed during the health and nutrition education sessions.**

The status of complementary feeding was also not satisfactory. Many mothers started it already at 1-4 months, thus defeating the spirit of exclusive breastfeeding. **The IIRD programme may take this into account seriously.** Two nutritious foods - *khichuri* (mixture of rice and lentils) and fruits were reported to be used by many mothers as complementary food. **However, it is important to ensure that the mothers really add these nutritious foods during weaning as a regular practice.**

Childcare in terms of immunisation was found almost comparable to the national figure except for measles vaccine. The coverage of measles vaccination was, however, poor (37%). **This is yet another area where IIRD programme can give more stress.**

Knowledge on simple hygienic practices e.g., washing hand before eating, feeding, or after defecation, was found unsatisfactory. Many mothers did not wash their hands at all before feeding the child. Negligence was also seen in washing hand after cleaning the bottom of the baby after defecation, presumably due to the general notion that child's stool is not 'harmful'. **IIRD programme may look into it seriously.**

Diarrhoea was found a common disease among the target households. Mothers knew the cure of it, the ORS, and even most of them knew how to prepare it correctly. However, the use rate of ORS was rather low (17%). One reason for this may be that the mothers like to pay more time and attention to the ailing child and, therefore, preferred packed ORS packet available at stores than home made preparations. Nutritional knowledge among the target households was precarious. This was not unexpected. The

causes of goitre, nightblindness, and anaemia were not known by many educated mothers. So, the study mothers should not be blamed for this ignorance. IIRD may propagate the knowledge so that the people can take care of themselves.

The final outcome of poverty, lack of knowledge and lack of initiative in health and nutrition service seeking behaviour is retarded growth. Indeed, the children of the target households were highly malnourished -- their weight and height being significantly lower than the national average. The national average figures are already 20-40% lower than the NCHS median reference value. The children of Kachua grade themselves even lower than that. Stunting (64.6%), wasting (27.9%) and underweight (71.2%) are therefore at their extremes. Malnutrition is also highly prevalent among the women of childbearing age (30.4%). **To improve the situation, there is an urgent need to undertake targeted nutritional intervention in Kachua thana.**

So, on the whole, **the target households of Kachua thana need immediate health and nutrition intervention.** IIRD has indeed a big scope to do a lot for them to increase their human development index (HDI) in terms of education, health and nutrition. Poverty alleviation takes a central position in this intervention programme.

Recommendations and programme implications

Based on the findings of the baseline survey conducted on the target households in 9 unions of Kachua thana, the following recommendations are made:

- Targeted nutrition supplementation programme should be implemented as a short-term measure to reduce the severity of malnutrition among the IIRD target population in Kachua thana.
- Poverty alleviation should be the central theme of the IIRD intervention programme, through self-employment and income generation.
- Family planning is a burning issue among the target households. IIRD may give utmost thrust on this issue.

- Efforts should be made to bring down the high rate of illiteracy among the target population.
- Lack of sanitation and simple hygiene practice is a serious problem in Kachua, as elsewhere in the country. This may be a priority issue in IIRD intervention programme.
- Ante and postnatal health check-up and health and nutrition services should be geared up.
- Health seeking behaviour during illness as well as during pregnancy and lactation should be improved.
- Strong motivation is needed to stop any pre-lacteal feeding practices.
- Exclusive breastfeeding should be encouraged through intensive campaign.
- EPI coverage should be increased, particularly of measles. VAC coverage should be increased to 100%.

Health and Nutritional Status of Target Population in Kachua Thana: A Baseline Survey

1. INTRODUCTION

1.1 Preamble

The food and nutrient intake pattern in Bangladesh is generally far from satisfactory. The present average Bangladeshi diet is not only deficient in total energy by about 10% (actual intake, 1,868 kcal vs. desirable intake, 2,050 kcal/capita/day), the diet is also seriously imbalanced; 82% of total calories of this diet come from cereals (1).

On the other hand, the intake of fruits and vegetables, the major vitamin and mineral providers, is seriously low. As such, people suffer from both energy and micronutrient deficiencies, which finally result in protein-energy malnutrition (PEM). Women of reproductive age and young children aged under-5 are the worst victims of malnutrition.

Since food distribution inequity is heavily weighted on the poor, a small proportion of the population enjoys adequate intake and nutrition or even more, but a great majority of the population do not have access to food and nutrition they need. They suffer from two types of hunger, perceptible and hidden.

1. **Perceptible hunger** (hunger of the stomach) occurs due to intake of inadequate quantity of food, which may or may not be good in quality. The pangs of this type of hunger make people run in the quest of food, in many instances at the cost of human dignity.

2. **Hidden hunger** (hunger of body cells) occurs due to intake of inadequate quality of food. Even if someone can manage to eat full-bellied a bowl of food, his body cells will suffer from the hunger of the micronutrients, the vitamins and minerals - if the food eaten is deficient in these vital nutrients. This type of hunger is not perceived immediately but, if continued chronically, its consequences appear as great havoc.

Hunger of any type reduces body vitality, work capacity, productivity, resistance to diseases and infections (increased morbidity) - all leading to reduced household income,

and increased poverty and social unrest. Around 20% of the rural poor go hungry chronically, because they do not have any means to produce or procure food (2). Hunger is the cause and not just merely a symptom of poverty. They are completely out of any development activity. Most of the time they are busy in the quest for food. Most of their energy is spent in the process of procuring food for the next meal.

1.1.1 Poverty profile in Bangladesh

The main (but not necessarily the absolute) impediment to growth is poverty. Poverty is a broad horizon under which the questions of income, employment, food security, health, education, housing and wellbeing, quality of life, and over and above all, the opportunity of a human being to demonstrate his/her optimal resource capacity, all remain unanswered and unmet. It affects human dignity and development.

A recent study has found the prevailing development paradigm wanting in two crucial areas of human development: poverty alleviation and reduction of inequality between nations as also between segments of populations within a nation (2). The study indicates, in spite of going through the International Monetary Fund (IMF) and World Bank initiated process for a decade and a half, the developing countries in general, particularly countries like Bangladesh in the least developed category, present a grim picture, even grimmer than ever in particular cases.

Except for a 3-point decline in extreme poverty, from 28% in 1991/92 to 25% in 1995/96, there has been no improvement in the poverty profile of Bangladesh. The percentage of the absolutely poor remains the same as it was in 1991/92 i.e. 48%. In terms of the number of people involved, the situation has worsened significantly. Today, in an estimated total population of 123 million, the number of people absolutely poor is 59 million, and extremely poor 31 million against 52 million and 30 million respectively, in 1991/92 (3). Besides, these figures are calculated on the basis of access to food only. According to estimates made on the basis of basic-needs approach, allowing for a 'lower' level and 'upper' level of non-food consumption in addition to the minimum calorie requirement of 2,050 kcal per person per day, 53% of the population is

absolutely poor and 36% extremely so. Converted into numbers, 65 million people are absolutely poor and 44 million extremely poor in Bangladesh.

Socio-economic inequality in Bangladesh is not only acute but has been increasing. As of 1995/96, the bottom 5% of the population secured less than 1%, and the bottom 20% just 5.7% of the national income. In fact, the income distribution worsened between 1991/92 and 1995/96 in both rural and urban areas. Nationally, the share of the bottom 5% declined from 1.1% to 0.9% and that of the bottom 20% from 6.5% to 5.7%.

1.1.2 Gender disparity

Gender disparity and discrimination are also pervasive in Bangladesh. Women are disadvantaged both at home and in society. Most women in Bangladesh work long hours, substantially contributing to household economy and welfare of the family. Since 1989, some unpaid activities performed by women are recognised as economic pursuits, qualifying more women than before to be included in the labour force. But, in practice, not much has changed. The reality is, women's position at home remains subordinate. They have little or no control over household assets and means of production even when formally owned by them.

Illiteracy is much more pronounced among women. As of 1997, adult illiteracy among women was 66% against 50% among men. Net enrolment at primary level for girls was 77% against 85% for boys. Women are also disadvantaged and discriminated against in the labour market.

1.2 Nutritional situation in Bangladesh

The state of nutrition in Bangladesh is precariously poor. The diet, being heavily deficient in calories and seriously imbalanced, leads to the obvious consequences of widespread protein-energy and micronutrient malnutrition among infants, children and women. This is a great loss of human resources potential for productivity. Much of the low per capita Gross Domestic Product (GDP) and low Human Development Index (HDI) of the country (0.336) is attributable to this scourge of malnutrition (3).

1.2.1 Chronic energy deficiency in women

The nutritional status of women in Bangladesh is alarmingly poor. Socio-cultural traditions, women's reproductive role and its nutritional demands compounded with poverty, are among the factors responsible for such situation. The effect of inadequate nutrition on women's life is visible in many forms, such as high percentage of anaemia, low resistance to diseases and stress, and lack of opportunities for mental and physical developments.

Chronic energy deficiency is widespread in women of the country. The prevalence of severe undernutrition (Body Mass Index or BMI<16) is 10.6% in urban slums and 8.4% in rural areas. However, the prevalence of mild to moderate undernutrition is much higher in rural (38.3%) than in urban areas (30.1%). Surprisingly, the proportion of women having BMI $\geq$ 20 is almost double in urban areas (27.6%) than in rural areas (15.9%), indicating high rural-urban disparity in energy deficiency among women in Bangladesh (4).

1.2.2 Low birth weight

Low birth weight (LBW) is one of the most important indicators of maternal malnutrition before and during pregnancy, which among other factors determines the nutritional status of child throughout his/her later life.

The average birth weight of infants in Bangladesh is 2.5 kg (5), which is similar to WHO cut-off for LBW. The average weight gain during pregnancy is 4.7 kg in rural mothers and 5.7 kg in urban mothers (4). Both the above values are below the desired level of 8-9 kg indicating prevalence of malnutrition in Bangladesh as a whole, but more in rural than in urban mothers. The lower weight gain during pregnancy in rural mothers is reflected by having higher percentage of LBW babies in rural areas (46.7%), compared to urban areas (27%) (5). However, a recent study in an urban slum of Dhaka City showed the prevalence of LBW as 39.0% (4). These figures are one of the highest in the world and are a matter of great concern.

1.2.3 Protein-energy malnutrition in children

Protein-energy malnutrition (PEM) is highly prevalent among children under-5 in Bangladesh, with much higher prevalence in rural than in urban areas. Only 8.2% of rural children are normally nourished compared to 13.9% of urban children. Similarly, the prevalence of severe malnutrition is also higher among rural children (5.7%) than among urban children (5.0%). Prevalence of severe malnutrition among girls is slightly higher (10.8%) than among the boys (8.1%). Otherwise, nutritional status of female and male children in Bangladesh is not statistically different (1).

1.2.4 Prevalence of stunting and wasting

Table 1.1 shows that both acute (wasting) and chronic (stunting) PEM markedly rise in the age group 12-35 months in both male and female children, but while wasting declines after that, stunting stays at about the same level (1). This is the usual age at which children are given complementary food. The situation points to faulty or improper weaning practice, which needs to be dealt with. The study also provides insights into the role of behavioural aspects in causing malnutrition at this age.

Table 1.1. Prevalence of stunting and wasting in under-6 children by age and sex.

Age in (month)	Stunting (%)		Wasting (%)	
	Male	Female	Male	Female
6-11	56.7	38.8	8.4	8.2
12-23	59.6	65.2	35.1	25.2
24-35	54.8	69.6	18.3	20.7
36-47	61.8	68.5	11.8	15.8
48-59	61.9	54.2	14.3	11.2
60-71	61.9	59.9	9.7	17.7
All	59.8	60.9	17.0	17.0

Source: INFS, 1998

1.2.5 Micronutrient malnutrition

Micronutrient deficiencies are a major public health concern in Bangladesh. As elsewhere in the world, deficiencies of vitamin A (including beta-carotene), iodine and iron are the most common and widespread in the country with their serious health consequences.

Iron deficiency anaemia: Iron deficiency anaemia is the most common micronutrient deficiency in the country, especially affecting young children and women of reproductive age. Uncorrected anaemia can lead to learning disabilities, an increased risk of infection and diminished work capacity and even to death of women during pregnancy and at child birth. More than 70% of women aged 15-49 years and children aged 0-14 years suffer from anaemia. The highest prevalence is observed in pregnant women (56%), while its prevalence in adult men is also quite high, 69% (6).

Vitamin A deficiency: Vitamin A deficiency and its consequences including blindness, poor growth, increased severity of infections and death, are fully preventable, making their control one of the most effective child survival strategies. Vitamin A deficiency leads to xerophthalmia in children. Nightblindness has been one of the most disturbing public health problems in Bangladesh. According to a recent national survey, the prevalence of nightblindness among pre-school children in Bangladesh was 0.67% (7). This is less compared to the prevalence of 3.5% in 1982-83. The promotion, protection, and support of breastfeeding are effective ways of preventing vitamin A deficiency in infants and young children. Vitamin A is found in milk, butter, egg yolk, liver and some of the fatty fish. Dark green leafy vegetables are good sources of vitamin A (beta-carotene). Carrot is also an excellent source. However, absorption of beta-carotene from diet is very variable and depends on the quantity and quality of dietary fat.

Iodine deficiency disorders: The total population in Bangladesh is at risk of developing iodine deficiency disorders (IDD) because of low dietary iodine intake. Iodine content in soil, water, and foodstuff is low due to recurrent rains and flooding. The major consequences of iodine deficiency are goitre, reproductive failure, increased mortality and abortion. Iodine deficiency during foetal life causes brain damage resulting in faulty neurological development and mental retardation (cretinism). All these symptoms taken together are termed as IDD. According to the latest IDD survey (1993), the total goitre

rate (TGR) (grade 1+grade 2) in Bangladesh is 47.1%. The women of childbearing age (15-44 years) and girls aged 5-14 years are most affected with TGR of 55.6 and 53.0%, respectively. Nearly 69% of the total population in Bangladesh suffer from physiological iodine deficiency (urinary iodine excretion <10 micro gm/dl). In this parameter also, the

females of both age groups are more affected than their respective male counterparts (8-9). The prevalence of cretinism in the country is 0.5%. This means that around 500,000 people in Bangladesh suffer from mental retardation due to iodine deficiency in their early life.

1.3 Health situation in Bangladesh

The health status of the individual is one of the two immediate determinants of nutritional status. An individual must be free from infections and all kinds of diseases to ensure proper food absorption, biological utilisation and its metabolism. In general, health programmes, particularly targeted to under-five children, adolescent girls and pregnant and/or lactating women, are expected to have a major impact on their nutritional status. Therefore, there is an immediate need to strengthen Nutrition Related Health Services (NRHS) (e.g., control of diarrhoea, other infectious diseases and worm infestation) to provide basic health services to the at risk population.

1.3.1 Prevalence of major diseases in total population

Diarrhoea, gastritis, and common cold top the list, accounting for 9.3%, 9.9% and 6.0% of total illness episodes respectively (4). Diarrhoea prevalence is even higher (12.43%) when diarrhoea with vomiting is considered. About 5.3% prevalence of fever with unspecified neurological manifestations, reaching up to 15% when the prevalence of all types of fevers are added together, is also a major health problem. Considerable prevalence of scabies (3.9%) and cough (3.3%) indicate unhygienic environment and unhealthy lifestyle among the population. The prevalence of hypertension, measles and typhoid are 1.84%, 1.73% and 1.54% respectively (4).

1.3.2 National disease profile in children

The national disease profile shows that diarrhoea topples the list, being 44% in children aged below 15 years, skin diseases (37%), acute respiratory infection (ARI) (26%), worm infestation (26%), deficiency diseases (22%), pyrexia of unknown origin (PUO) (15.5%), and eye diseases (9.7%) (Table 1.3.2).

Table 1.3.1. Prevalence of diseases per 1000 population by sex and symptoms.

Types of diseases/symptoms	Both sex (%)	Male (%)	Female (%)
Total	100.00	100.00	100.00
Acid secretion, heart burn, dysphasia, gastritis, peptic ulcer	9.93	9.32	10.51
Diarrhoea	9.72	10.33	9.16
Cold	6.00	7.04	5.02
Other fever with unspecified neurological manifestations	5.30	5.68	4.94
Continuous fever	4.20	4.33	4.08
Scabies, abscess, patchra	3.95	5.05	2.93
Rheumatism	3.58	3.46	3.668
Cough	3.35	4.01	2.74
Fever with chills	3.24	3.95	2.58
Diarrhoea with vomiting and fever	2.71	3.09	2.36
Asthma	2.66	2.91	2.42
Influenza	2.48	2.77	2.20
Intermittent high fever	2.20	1.93	2.44
Severe headache/dizziness	1.92	1.27	2.53
Hypertension	1.84	1.21	2.42
Menstruation disorders	0.00	0.00	3.33
Measles	1.73	1.73	1.72
Abdominal pain, blood in stool	1.68	1.01	2.31
Typhoid	1.54	1.76	1.34
Stools with disorder smell	1.53	1.86	1.24
Chicken pox	1.46	1.64	1.29
Breathing problems	1.42	1.36	1.48
Other symptoms/diseases	24.42	22.68	26.03
Total	100.0	100.0	100.0

Source: SNB 1995

Table 1.3.2. National disease profile in under-15 children.

Name of the disease	Percentage (approx.)
Diarrhoeal diseases	44.0
Skin diseases	37.0
Acute respiratory infection	26.0
Intestinal worm infestation	26.0
Deficiency diseases	22.5
Pyrexia of unknown origin (PUO)	15.5
Eye disease	9.7
Ear disease	8.0
Injuries	5.0
Peptic ulcer	5.0
Dental disease	3.0
Bronchial asthma	3.0
Nightblindness	2.0
Hepatitis	1.0
Tuberculosis	0.39
Whooping cough	0.2
Measles	0.09
Poisoning	0.09
Chicken pox	0.05
Filariasis	0.03
Mental diseases	0.03
Kala-azar	0.02
Tetanus	0.02
Diphtheria	0.01
Total	100.0

Source: Health Information Bureau, 1993

Diarrhoea: Diarrhoea is one of the important public health problems especially in children. Surveys show that 30% of death of the children is due to diarrhoea (4). The total number of deaths is 260,000 per year. Five percent children below 5 years and 21% below 2 years suffer from diarrhoea in every 24 hours. The average attack rate of diarrhoea in children below 2 years is 3-4 times per year. Watery diarrhoea is more common in children aged below 1 year, while bloody and persistent diarrhoea is more common in children between 1 and 5 years. It has been observed that 93.5% of the mothers knew the use of ORS but only 52% reported its use (4).

The interaction between infection and malnutrition is evident among Bangladeshi children. A recent survey showed that approximately a fourth of the children had at least one diarrhoea episode in the preceding three months of the study. Children suffering from diarrhoea were twice as likely to suffer from acute malnutrition as those without diarrhoea, and the risk of severe wasting increased with the number of episodes. The immediate causes of death in infancy are diarrhoea, respiratory infections

and neonatal tetanus. Low birth weight and malnutrition enhance death risk due to these diseases. Roughly two-thirds of under-five deaths are due to such enhancement, 75% being associated with mild and moderate malnutrition.

Acute respiratory infection: Next to diarrhoea, ARI is the second largest cause of morbidity and mortality among children in Bangladesh. One-fourth of the deaths in under-5 children is due to ARI. The prevalence of ARI is about 24% in children under three years, the prevalence being higher among under-2 (28%) than in older children (18.5%) (Table 1.3.3) (4).

Table 1.3.3. Prevalence of acute respiratory infection in children.

Characteristics	Prevalence (%)
<i>Age</i>	
< 6 months	28.7
6-11 months	29.7
12-23 months	24.5
24-35 months	18.5
<i>Sex</i>	
Male	26.6
Female	21.2
<i>Area</i>	
Urban	24.8
Rural	23.9
<i>Mother's education</i>	
No education	23.6
Primary complete	25.0
Secondary	21.6
All children	24.0

Source: SNB 1995

No significant differences in ARI prevalence by sex or urban-rural residence was seen. Also, unlike many other health problems, mother's education appears to have little influence on ARI prevalence in children.

Worm infestation: Worm infestation is a major problem of many developing countries. In Bangladesh, 36 million children suffer from different worm infestations. Eighty to ninety percent of them suffer from roundworm infestation and 40-50% suffer from hookworm infestation. In two surveys it was found that one-third of the food eaten by

children were consumed by worms, and on average 20 ml of blood per individual per day was sucked by hookworm amounting to a total of 0.4 million litter per day (4).

Rheumatic fever and rheumatic heart diseases: Rheumatic fever and the consequent heart diseases are a threat to the underdeveloped countries of the world. The disease predominantly affects children aged 5-15 years. It was found that incidence of this disease was 7.5 per thousand. Hospital statistics show its incidence of 3.19 per thousand. The heart disease from rheumatic fever is 26% in Bangladesh (4).

1.3.3. Mortality trends

Infant mortality rate: During 1986-1994, the infant mortality rate (IMR) had shown a downward trend from 160 to 77 per 1,000 live births. The IMR is significantly lower in urban than in rural areas, and in girls than in boys. The higher IMR in rural compared to that in urban areas corresponds to higher maternal malnutrition, higher LBW rate, less access to health care facilities, and overall poorer socio-economic condition in rural areas. The lower mortality in girls than boys may be due to lower infection rate among females.

Under-five mortality rate: There has been a downward trend also in the under-5 mortality rate in recent years, falling from 160 per 1,000 live births in 1988 to 137 per 1,000 live births in 1994. Again, mortality rate is higher in rural than in urban areas at all times.

Leading causes of child mortality: The most leading causes of death in under-5 children have been analysed to be ARI (18%), malnutrition (17%), diarrhoea (13%) and LBW (11%). Neo-natal tetanus (8%) and measles (7%) are also important causes (Table 1.3.4) (4).

Maternal mortality rate: Like infant mortality and under-5 mortality rates, maternal mortality rate (MMR) also showed a significant decrease during 1988 and 1990, from 5.7 to 4.8 per 1000 live births. But since 1990, MMR did not show any significant decrease till 1994. Again, MMR is higher in rural areas (4).

Leading causes of maternal death: Maternal mortality is a serious public health issue in Bangladesh. Every year, 480 women die per 100,000 live births. The combination of early marriage and relatively high fertility compounded by anaemia and other malnutrition

problems (PEM, IDD) contributes to the death of around 21,000 every year, 1 in every 25 minutes. The major causes of maternal death are anaemia, tetanus, hypertension-induced eclampsia and haemorrhage (4).

Table 1.3.4: Causes of under-5 child mortality in Bangladesh.

Causes	Percent
Acute respiratory infections	18.0
Malnutrition	17.0
Diarrhoea	13.0
LBW	11.0
Neo-natal tetanus	8.0
Measles	7.0
Whooping cough	2.0
Others	24.0

Source: SNB 1995

Immunisation: Immunisation covered under the Expanded Programme on Immunisation (EPI) in Bangladesh protects children from six major but preventable infectious diseases, viz., tuberculosis, measles, diphtheria, whooping cough, tetanus and poliomyelitis. This programme has made an immense success. The immunisation coverage for children aged 12-23 months for DPT, polio and measles is very satisfactory, covering over 90% in some regions (Khulna District) and over 70% in other regions. The number of deaths from measles was 45,000 per year. Measles vaccination has reduced the mortality by about half now (4).

Like immunisation coverage in children, the immunisation coverage in mothers against tetanus is also satisfactory, around 80%, highest in Khulna region (86.9%) and lowest in Chittagong region (67%). Death from neonatal tetanus is expected to be less than 50,000 per year compared to the previous figure of 1,50,000 per year (4).

1.3.4 Safe water, environmental sanitation and lifestyle

Safe water and environmental sanitation: In Bangladesh, about 80% of all illnesses

are related to water-borne diseases. Raw sewage contamination in innumerable water system in Bangladesh is the major factor for transmission and spread of 32 communicable water-borne diseases including diarrhoea, cholera, typhoid, dysentery and shigellosis. Surface water, which is a major source of water for human use, is often polluted by industrial wastes, indiscriminate defecation and unhygienic disposal of human waste (only 41% of the population having access to sanitation facilities).

Water- and faecal-borne diseases are amongst the major causes of morbidity and mortality in the country. It is one of the priorities in environmental sanitation and disease control. This intervention aims to provide safe water and latrines for the population. Among the various water sources, tube-well and tap are considered sources of safe drinking water.

Safe drinking water has been more and more ensured in both rural and urban areas in recent years, increasing from 89% in 1990 to 97% in 1995. Urban areas always have a higher coverage than the rural area (4).

Installation of sanitary latrines showed significant improvement in the last five years. In 1990, only 21% of the households used sanitary latrines, which has doubled up to 41% in 1995. Sanitation in urban areas is much better than in the rural areas. In 1995 about 36% of the rural households were using sanitary latrines compared to 79% in urban areas (4).

1.4 Bangladesh National Plan of Action for Nutrition (NPAN)

The health and nutritional scenario described above is not unique of Bangladesh. Almost the same picture is seen across the majority countries of Asia, Africa and South America. Health and malnutrition problems are of global nature.

To reduce malnutrition world wide, an International Conference on Nutrition (ICN) was held in December 1992 in Rome, jointly organised by Food and Agriculture Organization (FAO) and WHO. All 159 participating countries, including Bangladesh, unanimously adopted a World Declaration and pledged to prepare a National Plan of Action for Nutrition (NPAN) to identify activities to be taken for eliminating hunger and reducing all forms of malnutrition by the year 2010. The Bangladesh NPAN was

approved by the government in 1997 (10).

1.5 Bangladesh Integrated Nutrition Project (BINP)

Within the umbrella of the NPAN, the government has already instituted, in 1996, a 6-year comprehensive national nutrition programme called the Bangladesh Integrated Nutrition Project (BINP). The goal of the project is to reduce malnutrition in Bangladesh to the extent that it ceases to be a public health problem and to improve the nutritional status of its population, particularly under-5 children, women and adolescent girls (11).

The project has three components:

- a. National level nutrition activities with four sub-components:
 - i. Programme development and institution building,
 - ii. IEC development,
 - iii. Strengthening existing nutrition activities, and
 - iv. Project Management, Monitoring and Evaluation.
- b. Community-Based Nutrition Component (CBNC), and
- c. Inter-sectional Nutrition Programme Development.

The CBNC is the core component of the project. The first activity under this component is community mobilisation, which involves: the formation of women's groups and building a rapport with them; learning the specific local context as relevant to the proposed project activities; identifying suitable women to work as Community Nutrition Promoters (CNP) and Community Nutrition Organisers (CNO); determining the appropriate mechanism for the procurement of raw materials, preparation, packaging and delivery of supplementary food; and agreeing on a suitable location for a Community Nutrition Centre (CNC). The central activity of this component is Growth Monitoring and Promotion (GMP) with a strong element of Information Education and Communication (IEC) (11).

1.6 The IIRD Initiative

The above circumstances had led the Institute for Integrated Rural Development (IIRD) to find out innovative and appropriate programmes to help overcome the deplorable health, nutrition and basic education scenario in some selected areas of Bangladesh.

As such, IIRD has initiated a project entitled "*Shadaron Shikha O Prathomik Shastho Sheba Prokolpo (SSPSSP)*" in Kachua thana under Chandpur District.

1.6.1 Difference in Strategy between BINP and IIRD

The basic difference in the strategy of BINP and IIRD is that in BINP CBNC, all children and mothers go to the CNC once a month for growth monitoring. In IIRD, the community workers visit house-to-house among the target population for growth monitoring. In BINP, children and mothers who are found to suffer from malnutrition (according to certain set criteria) are enrolled in the CNC and asked to come to the CNC every day to receive supplementary food for 90 days. In IIRD, malnourished mothers and children are enrolled in a day care centre where they are given the supplementary food. The children coming from the distant villages receive food for 7-9 days at the centre and then the community workers visit their houses to motivate their mothers to continue the feeding until they recover (reach >80% weight-for-age NCHS median). On the other hand, children coming from households located within the same village close to the centre continue to receive the feeding daily at the centre until they recover. The IIRD project background is given in Annexure I.

2. PLANNING OF THE DATA COLLECTION

The baseline survey was planned to develop and conduct in a participatory manner. The participation of the stakeholder groups in planning the baseline survey was ensured at 3 levels:

- a. At women groups level (credit group and school management committee), members of the groups organised by IIRD had an important role in discussion and their feedback was main considerations before, during and after the survey. Participation process of these women in this project was determined through discussions. Health related behaviour of women was identified.
- b. Focus-group discussion was organised in each village at the time of the survey. IIRD considered the comments of the community and the needs of the people.
From this level following data were collected:
 - Status of community in relation to health nutrition and education.
 - Existing social services provided by different agencies.
 - What the villagers think about the services.
 - Identification of future interventions in the field of health and education.
- c. All target families were involved through a formal house to house survey. Following data were collected:
 - All under-five children and pregnant women and lactating mothers were registered. This registration was updated periodically through the household visits of day-care supervisors.
 - Socio-economic and household information was collected through an in-depth sample survey.
 - Sex desegregated data were collected.
 - Before going to the baseline survey the components of the survey were discussed and finalised with the community members. At the time of analysis of the results, IIRD also shared the results with the stakeholder groups and discussed with them. This was done especially at women groups level.

3. OBJECTIVES OF THE BASELINE SURVEY

3.1 General Objective

The baseline survey aimed at collecting benchmark information on overall health and nutritional status of the IIRD target population on the basis of some selected measurable process and impact indicators in Kachua thana. The baseline survey results would be used for monitoring of the ongoing project activities over time and evaluation of the programme impact at various stages of programme implementation. To collect information for the baseline survey the following specific objectives were planned:

3.2 The specific objectives of the survey were to:

1. register under-five children and pregnant and lactating mothers through house-to-house visits among 12,600 target households identified by IIRD (Annexure II);
2. collect demographic information at household level such as, household size, age, and sex;
3. collect information on selected socio-economic indicators at household level, e.g., education, occupation, landholding size, ownership of household assets, types of living house, selling of physical labour, number of meals/day, household water sources and defecation practices;
4. collect key information on knowledge and practice on control of diarrhoeal diseases, acute respiratory infection, essential obstetric care, immunisation;
5. To know exclusive breast feeding, weaning practices feeding, infant and child feeding practices among children under-5;
6. undertake anthropometric survey of children under-5 for assessing their nutritional status, i.e., weight-for-age (W/A), height-for-age (H/A), and weight-for-height (W/H);
7. undertake anthropometric survey of adult non-pregnant women (BMI) for assessing their nutritional status;
8. ascertain the level of knowledge and extent of practice, and existing programmes on ANC, birth care practices and PNC;
9. know vitamin A coverage of children in the household;

10. assess the knowledge on the consequences of iodine deficiency, use of iodised salt at household level;
11. assess the knowledge on cause and prevention of anaemia;
12. assess the quality of existing health services available in the project area; and
13. recommend priority areas requiring public health intervention.

The Terms of Reference (TOR) for RED, BRAC to conduct the baseline survey is given in Annexure III.

4. STUDY DESIGN AND METHODOLOGY

4.1 The conceptual framework

The conceptual framework for the baseline survey is based on the understanding that has developed through the review of literatures available, discussions with IIRD staff and practical field experiences as described in the preceding sections. A schematic diagram of the conceptual framework for the study is shown in Figure1.

4.2 Study area

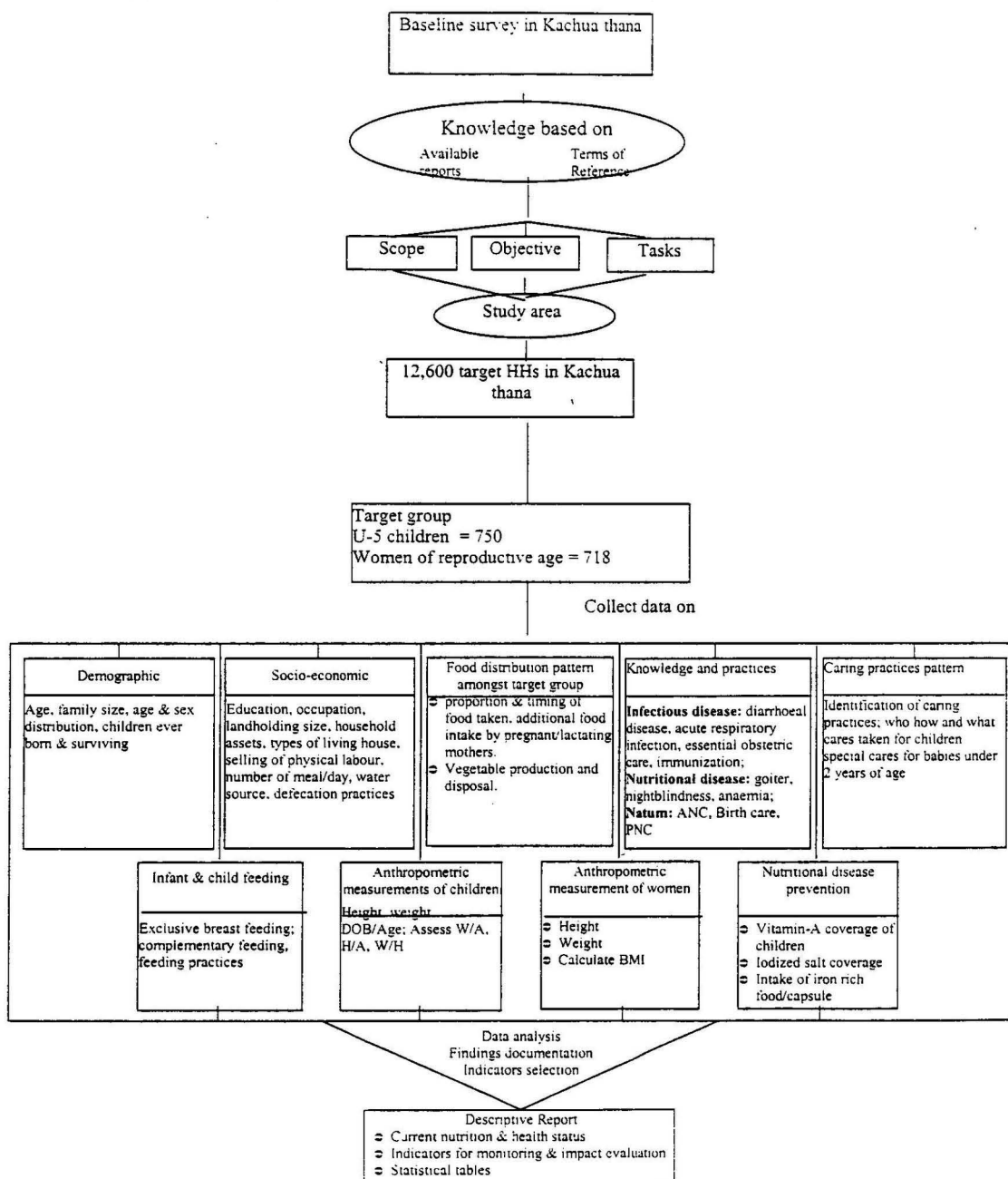
The study area was the Kachua thana under Chandpur district.

4.3 Sampling design

As it appears from the objectives of the study, the nature of the present survey is different from many of the frequently conducted surveys. A number of parameters and indicators in different population groups are involved, which make the task of selecting a single sample size difficult.

The primary consideration of the sample size calculation in this particular context is to have an estimate on the prevalence of nutrition-related disorders in different target groups. It was therefore necessary to keep in mind the expected changes in nutritional status over a period of time due to IIRD intervention. In this case, we considered that a reduction of malnutrition by 25-50%, as outlined in the Bangladesh National Plan of Action for Nutrition, would be achieved depending on the type of indicator examined. A number of major outcome indicators for different population groups that are related to the objectives were considered in the sample size calculation. The indicators for children aged under-5 are wasting (weight-for-height < -2 Z-score), stunting (height-for-age < -2 Z-score) and under-weight (weight-for-age < -2 Z-score). The indicator for women of reproductive age is chronic energy deficiency (CED) (BMI < 18.5). A decision on the required precision of the estimate derived from the sample was also needed. In this case, a confidence interval of 95% was considered. Cost and time needed to complete the survey are two basic and very important considerations in deciding the final sample size.

Figure 1. Conceptual framework of the base-line survey.



4.4 Study population and sample size

The study population was under-5 children and women of reproductive age (15-49 years) belonged to the target (poor) households of IIRD.

Before embarking on the selection of a sample and data collection, one has to know the minimum sample size which would permit the estimation of the prevalence level (or proportion) of malnourished individuals for a predetermined confidence interval. Also, in deciding on an appropriate sample size for a survey, one is faced with the need to strike a balance between precision and cost. Ideally one would decide on the precision needed and calculate the sample size accordingly. In practice however, resources are sometimes limited and the best one can do is to calculate what sort of precision is achieved with the resources available.

For the present baseline survey, the EPI-Info computer software package was used in the calculation of sample size, keeping the above issues in mind (CDC, 1994). The package used the following assumptions and formulae in calculating the sample size. We used this package to estimate the sample size of under-5 children using indicators such as wasting, stunting, and under-weight and that of women of reproductive age using indicators such as chronic energy deficiency (CED). The calculated sample size and the required number of households for each of the above indicators (95% confidence interval or CI) for each thana by population groups are given in Table 4.4.1.

Table 4.4.1 Minimum required sample size at 95% CI for 12,600 target households in Kachua thana.

Indicator	Population group	Current prevalence (%)	Sample size/ thana (random sampling)	Sample size/ thana (cluster sampling)
Stunting	U-5 children ¹	70	310	620
Wasting	U-5 children	20	238	476
Under-weight	U-5 children	50	366	732
Chronic energy deficiency (CED)	Adult women ²	40	359	718

According to the 1991 population census the proportion of: 1=under-5 children is 13%; 2=adult women is 22%;

Table 4.4.1 shows that the sample size is highest for estimating the prevalence of

under-weight among under-5 children, which is 732 children. It is assumed that the number of households required to get the 732 children will be adequate to get the required number of women, i.e., 718 women. Thus, the goal of the sampling is to get at least 732 under-5 children and 718 women of reproductive age from the target households. Since the IIRD project includes a total of 12,600 households, estimates on a number of indicators, which require a larger sample size (such as IMR, U5MR, MMR, LBW) cannot be estimated with sufficient statistical power and significance.

4.5 Sampling procedure

A multistage cluster sampling strategy was followed in Kachua thana as the primary sampling unit, villages as the secondary sampling units and children as the ultimate sampling units. This scheme is more advantageous than simple random sampling.

4.5.1 Primary sampling units

The study was carried out among 12,600 households in 9 unions of Kachua thana.

4.5.2 Secondary sampling unit

Thirty villages were selected from 9 selected unions according to the standard probability proportion to size (PPS) method as detailed below:

1. All villages were listed with their respective target household size;
2. A cumulative total of the households was prepared;
3. The grand total was divided by the desired number of villages to get the sampling interval k ;
4. A number was then randomly selected between 1 and k ;
5. This number was located in the cumulative total column. This procedure identified the first village to be selected;
6. k was then added to the number chosen in step (iv). The village which had this number on the cumulative total column was the next one to be selected;
7. In this way, step (vi) was repeated till 30 villages were selected.

4.5.3 Ultimate sampling units (under-5 children)

For selecting the ultimate sampling units (i.e., the study children), a list of all target households in each selected village was given to the interviewers. From this list, 25 under-5 children were selected by a systematic random process. In any case, if the required number of children were not available in the sampled village, the interviewers moved to the closest village to get the required number of children.

4.6 Survey

Both quantitative and qualitative techniques were employed for data collection.

4.6.1 Quantitative survey

A questionnaire was prepared to interview the sampled households on the basis of the objectives of the survey. The questionnaire was first phrased in Bangla and after pre-testing was finalised in Bangla and then translated in English. The finalised Bangla questionnaire was used for the data collection.

The questionnaire covers an in-depth information on the following: demographic and socio-economic factors, water and sanitation, ante and post-natal care, knowledge and practices related to feeding and food taboos, child care and immunisation, breast feeding and weaning practices, family planning, health and nutritional status.

Anthropometric survey: Height and weight of the study population were measured. Salter scale was used to take weight of children aged 6-59 months. Bathroom scale was used to take weight of adult women. Height and recumbent length of children aged 6-23 months were measured by a wooden height board, which have been used by the Nutritional Surveillance Project of HKI in Bangladesh. All identified pregnant women were excluded from the anthropometric survey.

4.6.2 Qualitative Survey

Qualitative data were obtained through rapid assessment procedures to get an in-depth understanding of the local problem with respect to health care seeking behaviour, weaning practices, food taboos, and existing health facilities. Focus group discussion (FGD), key informant interview, matrix ranking and in-depth observations were the included in the qualitative survey. Different groups of women, men in the community as

well as grassroots level project staff were interviewed. A checklist was prepared based on a previous field visit and discussion with the target population to guide the qualitative survey.

Free-listing

Free-listing technique was used to collect the name of the common illnesses in the community. Randomly selected 57 women were included in the FGD and 7 men were interviewed as the key informants. The main objective of the free-listing was that the community people could mention the illnesses separately for children, men and women.

Severity ranking

Three FGDs were also held with women groups to identify the severity of the illnesses commonly occur among all population groups. They were asked to rate the illnesses in order of severity. After ranking the illnesses they were asked to explain their reasoning for doing so.

Matrix ranking

FGDs were held to elicit information about the treatment behaviour of the community. In this exercise twenty seeds were given to the women to distribute in each matrix cell to indicate the health services available in the community. All matrix rankings were followed by the focus group discussion to understand the reasons of the choices of treatment.

Key informant interview

Thirteen men and women belonging to different occupation were selected as key informant. They were interviewed in-depth and in an informal manner. They were asked to name the common illness situation in the village. They also mentioned the treatment behaviour in the community.

Focus group discussion (FGD)

Six FGDs were held exclusively with women. A total of 50 women aged 16 to 58 years participated. All of them were married and most of them were illiterate. The women expressed freely about the health situation in their locality and their idea and reasoning about treatment and health care seeking behavior.

4.8 Data collection procedure

There were a total of 6 teams of interviewers (two in each team) to collect the data in 30 selected villages of 8 unions of Kachua thana. The interviewers took the list of IIRD target population in a village and randomly selected 25 children under 5 years of age from as many households as were required. All women of reproductive age of these households were included. Spouses of the household heads (women in most cases) served as the main respondents.

4.9 Training of the interviewers

The interviewers were given a weeklong extensive classroom and practical training on:

- i. Briefing on the project and its objectives.
- ii. Measurements of weight, height and recumbent length (for under-2 children).

4.10 Internal and external quality assurance

The quality of data collected was assured both internally and externally. For internal quality assurance, variations among the interviewers in measurements of height and weight were all checked and brought to minimal by repeated demonstrations. External quality assurance was accomplished by investigation after checking the quality of the data collected by the interviewers.

4.11 Data management and analysis

All survey forms were edited manually to verify their correctness. Quantitative data were analysed using SPSSWIN software package.

4.12 Ethical Considerations

The purpose of the study was explained to the respondents at the community level. The informed consent describing the activities involved on their part if included in the study was taken from the household heads.

5. RESULTS

5.1 Demographic aspects

5.1.1 *Distribution of population by age and sex*

The total population in the sampled households was 3,928, of whom 2,032 (51.7%) were male and 1,896 (48.3%) were female. The male-female ratio was 107:100, very close to the 1991 national census figure (106:100) (Table 5.1.1).

While male-female proportion was in agreement with national level data, the age-specific distribution of the present survey population was strikingly different (Table 5.1.1). As expected from the relatively high levels of fertility in the past, younger age group population (<15 years) at the national level comprised a major proportion of the total population. But in the target population of Kachua, this is more evident from the proportion of children below 15 years being as high as 54.4%, compared to the national figure of 41.7% (BDHS, 1997). More striking is the finding that the proportion of children under 5 years of age was 23.9%, almost double the national figure of 13.2%. Likewise, the proportion of people aged 50 years and above was only about half the national value (6.3% vs. 11.5%).

While at the national level, the proportion of children aged 5-9 years is higher than that of children aged <5 years (14.5% vs. 12.9%) (12), the situation is not quite so in IIRD targeted population in Kachua. Here, the proportion of children aged 5-9 years is 19.1% compared to the staggeringly high figure of 26.4% for children aged less than 5 years.

The above features very well indicate that Kachua thana is yet to benefit from the family planning campaign that is going on in the country for the last few decades. It is, however, to be remembered that the households studied in the present baseline survey were the target households which were very poor, and met other criteria of low socio-economic status to be included in the health and nutrition intervention programme of IIRD. The demographic structures of the very poor households are likely to be different from that of the average of the whole community.

The detailed distribution of the study population by age groups and the union-wise households and population coverage are given in Tables 5.1.2 and 5.1.3 respectively.

5.1.2 Marital Status

The marital status of the population aged 15 years and above is shown in Table 5.1.4. The Table shows that of the males 81.1% are married and 18.0% are unmarried. Of the females, 77.8% are married and 11.6% unmarried. This clearly shows that more males remain unmarried than females, which is a common social practice. In Bangladesh parents try to get their daughters married at the earliest convenient opportunity. Interestingly, the divorce rate was found minimal, only 0.6%.

5.1.3 Household composition

Table 5.1.5 shows that 97.4% of the household heads are males and that only a few households (2.6%) are headed by females. This is found almost universal all over Bangladesh.

The average household size in Kachua was found 6, which is higher than the latest national estimate of 5.3 (12). More than two-thirds of the households have 3-6 members (Table 5.1.6). Excluding the wife, a large majority of the household members are sons (32.1%) and daughters (26.2%) of the household head, while only 3.8% members were their parents (Table 5.1.7). This indicates that either the parents in most households were dead or they live separately from their sons. The latter possibility is indicative of the recent trend in the increase of "nuclear" families, where the sons do not like to see their parents living with them mainly due to economic pressure.

5.1.4 Education

Table 5.1.8 depicts an appalling picture of the education level of the household heads in the study area. Only 15.7% of the household heads have had received education to be considered as literate. This is in sharp contrast with gradual spread of education over time in Bangladesh, as a result of which the literacy rate has sharply increased to 67% for men and 56% for women (12). Kachua thana thus appears to be one of the 'disadvantaged' regions in Bangladesh in terms of educational status. Only 10% of the household heads completed primary and 1.2% completed secondary schooling. The situation is somewhat better for other family members aged 6 years and more. All such members taken together, the literacy rate was 28.1%, with 24.3% completing primary

education. Males and females showed comparable educational level (Table 5.1.9). The household heads are now gradually getting interested in sending their next generation to school.

The 1996-97 Bangladesh Demographic and Household Survey (BDHS) showed that nation-wide the proportion of men who never attended school decreased from 52% in the oldest age group (65 years or more) to 17% among those aged 10-14 years; for women, the decline was found even more striking, from 87% to 17%. **Removal of backwardness of Kachua thana in education should be a strong priority in any intended intervention programme.**

5.1.5 Occupation

About only one-third (38.6%) of the household heads had their primary occupation as agriculture and the remainder (61.4%) had non-agricultural occupation (Table 5.1.10). In rural Bangladesh, the picture generally is opposite, with nearly two-thirds of the population being directly or indirectly engaged in agricultural occupation. Agricultural or non-agricultural alike, as much as 73.7% of the household heads were day labourers, with another 10.9% running some small businesses (Table 5.1.11). This occupation scenario already reflects the poor economic status of the households of the present survey.

Table 5.1.1: Distribution of population of study households by age and sex.

Age group (years)	Male		IIRD 1999 Female		Total		BDHS 1996-97
	No.	%	No.	%	No.	%	%
<5	520	25.6	420	22.2	980	23.9	13.2
5-9	381	18.8	327	17.2	708	18.0	14.8
10-14	260	12.8	232	12.2	492	12.5	13.7
15-49	746	36.7	793	41.8	1540	39.2	46.8
50+	124	6.1	124	6.5	248	6.3	11.5
Total	2032	100.0	1896	100.0	3928	100.0	100.0

Table 5.1.2: Distribution of the study population by age and sex.

Age group	Both sex		Male		Female	
	Number	%	Number	%	Number	%
< 6 months	44	1.1	21	1.0	23	1.2
6-11 months	104	2.6	55	2.7	49	2.6
12 -23 months	177	4.5	99	4.9	78	4.1
24-35 months	153	3.9	86	4.2	66	3.5
36-47 months	223	5.7	134	6.6	89	4.7
48 -59 months	240	6.1	125	6.2	115	6.1
5-9 years	708	18.0	381	18.8	327	17.2
10 -14 years	492	12.5	260	12.8	232	12.2
15 -19 years	227	5.8	103	5.1	124	6.5
20 -24 years	170	4.3	43	2.1	127	6.7
25-29 years	321	8.2	89	4.4	232	12.2
30 -34 years	297	7.6	141	6.9	156	8.2
35 - 39 years	286	7.3	188	9.3	98	5.2
40-44 years	167	4.3	131	6.4	36	1.9
45-49 years	95	2.4	62	3.1	33	1.7
50 -54 years	61	1.6	36	1.8	25	1.3
55 + years	164	4.2	78	3.8	86	4.5
All	3928	100.0	2032	100.0	1896	100.0

Table 5.1.3: Union-wise households and population profile.

Union	Households		Both sex		Male		Female	
	Number	%	Number	%	Number	%	Number	%
North Kachua	47	6.8	290	7.4	153	7.5	137	7.4
Pathior	69	10.0	383	9.8	201	9.9	182	9.8
Sachar	127	18.4	726	18.5	365	18.0	361	18.5
Bitara	153	22.2	838	21.3	420	20.7	416	21.3
Koraia	51	7.4	331	8.4	177	8.7	154	8.4
East Shahadebpur	68	9.9	424	10.8	230	11.3	194	10.8
West Shahadebpur	81	11.8	414	10.5	226	11.1	188	10.5
Kadla	63	9.1	385	9.8	193	9.5	192	9.8
North Gohati	30	4.4	139	3.5	62	3.1	77	3.5
All	689	100.0	3924	100.0	2027	100.0	1901	100.0

Table 5.1.4: Distribution of population by marital status and sex.

Age group	Both sex		Male		Female	
	Number	%	Number	%	Number	%
Unmarried	271	14.7	161	18.0	110	11.6
Married	1464	79.4	727	81.1	737	77.8
Widow/widower	97	5.3	8	0.9	89	9.4
Divorce & separated	11	0.6	-	-	11	1.2
All	1843	100.0	896	100.0	947	100.0

Table 5.1.5: Distribution of population by sex of the household heads.

Sex	Number	%
Male	671	97.4
Female	18	2.6

Table 5.1.6: Distribution of population by family size.

Family size	Number	%
1	1	0.1
2	10	1.5
3	52	7.5
4	124	18.0
5	147	21.3
6	148	21.5
7	109	15.8
8	50	7.3
9	26	3.8
10	13	1.9
11	5	0.7
12	2	0.3
13	2	0.3

Table 5.1.7: Distribution of household members by relationship with the head of household.

Relationship with household head	Number	%
Self	689	17.5
Wife	675	17.2
Son	1261	32.1
Daughter	1030	26.2
Father	35	0.9
Mother	112	2.9
Brother	30	0.8
Sister	18	0.5
Sister-in-law	26	0.7
Other	52	1.3
All	3928	100.0

Table 5.1.8: Distribution of household heads by education.

Literacy status	Number	%
Illiterate	581	84.3
Class I-IV	72	10.4
Class VI-IX	25	3.6
SSC	8	1.2
HSC	3	100.0
All	689	

Table 5.1.9: Distribution of population (age 6 years and above) by education.

Literacy status	Both		Male		Female	
	Number	%	Number	%	Number	%
Illiterate	2150	71.9	1059	70.0	1091	73.9
Class I-IV	727	24.3	385	25.4	342	23.2
Class VI-IX	94	3.1	53	3.5	41	2.8
SSC	11	0.4	9	0.6	2	0.1
HSC	7	0.2	7	0.5	-	-
All	2989	100.0	1513	100.0	1476	100.0

Table 5.1.10: Distribution of household heads by sector occupation.

Occupation	Number	%
Agriculture	266	38.6
Non-agriculture	423	61.4
All	689	100.0

Table 5.1.11. Distribution of household heads by primary occupation.

Occupation	Number	%
Day labour (in agriculture)	235	34.1
Day labour (in non-agriculture)	273	39.6
Business	75	10.9
Service	44	6.4
Farmer (with land)	31	4.5
Fishing	6	0.9
Household work	6	0.9
Rural transport	3	0.4
Job less	11	1.6
Others	5	0.7
All	689	100.0

5.2 Socio-economic situation

5.2.1 *Homestead and cultivable land ownership*

The results reveal that the target households are really poor, which becomes evident from the area of their homestead and the amount of cultivable land they own. As many as 71.8% households have only small homesteads (5-50 decimals) and another 12.8% have no homestead at all (Table 5.2.1). A little more than 84.2% of the households have no cultivable land of their own, i.e., they are landless (Table 5.2.2). Added to this is another 14.7% who possess only a small cultivable land of 50 decimals or less, i.e. they are 'functionally landless'. So the total landless stands at a 98.9%. This is not be compared with the national landlessness prevalence (little over 50%). It very well indicates that the target households selected by IIRD are almost all really very poor having no real land of their own.

5.2.2 *Number of days manual labour sold*

Sale of manual labour is a strong indicator of the economic status of a population. Those who sell manual labour for more than 100 days in a year to earn their livelihood are considered as poor.

Table 5.2.3 shows that 82.7% of the household heads fall in this group, indicating high prevalence of poverty among the targeted households. Only 17.3% of the household heads are well-to-do enough not to sell manual labour for others for so many days of the year. This is, however, not to say that these households are rich and self-sufficient.

The poor economic condition is also reflected by self-perceived year-wise income-expenditure balance sheet. More than two-thirds of the households felt they were in deficit i.e., their income does not meet the dire necessities of their lives. About 22% of the total target household were always in deficit throughout the year. Only 3.9% of the households informed that they had a surplus balance and 27.6% neither deficit nor surplus (Table 5.2.4).

It is, however, very difficult to assess what the households actually mean by being in positive balance or no deficit balance. In poor rural households, people usually

measure their income-expenditure balance mostly in terms of food. The other necessities of life (health, care, housing, and education) are second priorities. In this context, it needs to be seen what exactly the households meant by being in positive balance (3.9%) or just in balance (27.6%).

5.2.3 Ownership of tube-well used

In many surveys, possession of some household assets like *almirah*, wristwatch, bicycle, or the construction materials of roof, floor and walls are considered as indicators of economic solvency. In the present survey, because the study households were all poor, we did not try to get information on this. Instead, we wanted to use another indicator - ownership of the tube-well they use. In rural Bangladesh, use of tube-well water for drinking is now almost universal. Only 9.1% of the households have their own tube-well and the remaining vast majority either shares the tube-well (20.6%) or uses tube-well owned by others (63.0%) (Table 5.2.5).

5.2.4 Organisational membership

Only 34.0% of the household heads reported to be members of an NGO working in their locality, which also indicates that nearly two-thirds of the households do not have the capacity, desire or motivation to become member of structured organisations and benefit from their activities. This shows an overall backwardness of the households in coping with the modern society. More than three-quarters of those who were members of an NGO, were members of IIRD operated credit programme. Only 5.1% were members of Grameen Bank and 2.3% of ASA (Association for Social Advancement) (Table 5.2.6). This shows that IIRD has a great scope of changing the lot of the poor people of Kachua through their development interventions.

5.2.5 Distribution of households by types of vegetables grown

The respondent mothers were asked if they produced any vegetables around their homestead. The study shows that 402 out of 689 (58.3%) replied negatively. As reported earlier, 12.8% of the households have no homestead at all and 71.8% have only a small homestead (5-50 decimals), not enough for growing any appreciable quantity of fruits and vegetables. Nevertheless in rural Bangladesh, the science of *Lau*

and *Chal-Kumra* growing on the rooftop is very common. Therefore, it is very surprising why so many households (more than half) having at least a homestead were not producing any vegetables at all. This can be an important issue in nutrition education intervention programme in the target households.

Sweet pumpkin (*Misti kumra*) is the most favoured vegetable (100%) in the households who produce some vegetables around their homestead, followed by *lau* (58.8%) (Table 5.2.7) Beans, spinach, *koyda*, *Jigga* are also produced in some households (around 10-12%). *Lal shak*, which is a very common vegetable in the villages, is produced by a very few households (0.7%), presumably due to lack of land.

5.2.6 Distribution of households by type of trees grown

Again, nearly two-thirds of the households reported that they did not produce (or possess) any trees (fruit bearing or other). This also is appalling. Among those who produce (or have) trees, mango was found to be the most common (68.5% households) among the fruit-bearing trees, followed by coconut (27.4%). Among the non-fruit bearing trees, *Koroi* was produced by some (21.3%) households (Table 5.2.8).

The data of the two tablets mentioned above (vegetables and trees) were computed not in terms of scores, so number of households producing more than one vegetable (and which vegetables) is not shown. The Tables only provide some information on the pattern of vegetable and fruit production among the study households.

Table 5.2.1: Distribution of households by homestead landholding.

Homestead land (in decimal)	Number	%
No land	88	12.8
5 –25	357	51.8
26-50	138	20.0
51 – 75	45	6.5
76 & above	61	8.9
All	689	100.0

Table 5.2.2: Distribution of households by cultivable landholding.

Cultivable land (in decimal)	Number	%
No land	580	84.2
<50	101	14.7
51-100	7	1.0
101& above	1	0.1
All	689	100.0

Table 5.2.3: Distribution of households by selling of manual labour for more than one hundred days of the last year.

Sold manual labour >100 days	Number	%
Yes	570	82.7
No	119	17.3
All	689	100.0

Table 5.2.4: Distribution of households by perceived economic status in last year.

Economic status	Number	%
Surplus	27	3.9
Balance	190	27.6
Deficit	318	46.2
Always deficit	154	22.4
All	689	100.0

Table 5.2.5: Distribution of households by ownership of tube-well.

Ownership of tube-well	No.	%
Own tube-well	63	9.1
Shared tube-well	142	20.6
Tube-well owned by other HH	434	63.0
Govt. & NGOs	43	6.2
No tube-well	7	1.0
All	689	100.0

Table 5.2.6: Distribution of households by membership of NGOs.

Membership status	Number	%
IIRD	179	26.0
Grameen Bank	35	5.1
ASA	16	2.3
S.P.D	4	0.6
None	455	66.0
All	689	100.0

Table 5.2.7: Distribution of households by different types of vegetables produced around homestead.

Types of vegetables	Number	%
<i>Lau</i>	169	24.5
Sweet pumpkin	287	41.1
Indian Spinach	37	5.4
Papaya	6	0.9
Bringle	4	0.6
<i>Koyda</i>	30	4.3
<i>Data</i>	16	2.3
<i>Jinga</i>	37	5.4
Ladies finger	1	0.1
Beans	35	5.1
<i>Lal shak</i>	2	0.1
<i>Dundul</i>	9	5.1
Squash	4	0.3
Tomato	1	0.6
<i>Kchure shak</i>	1	0.1
None	405	58.8
All		

Multiple answers were considered.

Table 5.3.1: Distribution of households by access of water.

Source and use of water	Number	%
<i>For drinking</i>		
Tube-well	682	99.0
Pond	7	1.0
<i>For cooking</i>		
Tube-well	58	8.4
Pond	620	90.0
River/canal	11	1.6
<i>For washing utensil</i>		
Tube-well	50	7.3
Pond	630	91.4
River/canal	9	1.3

Table 5.3.2: Distribution of households by type of latrine used.

Type of latrine	Number	%
Sanitary/ring slab	117	17.0
Pit	11	1.6
Hole	271	39.3
Open defecation	290	42.1
All	689	100.0

5.4 Antenatal and postnatal care

A total of 701 ever-married mothers were included in the present survey. Of them 70 were pregnant women and 631 were lactating mothers. Information was obtained about antenatal and postnatal care received during last pregnancy and the knowledge, attitude and health seeking behaviour of the mothers.

5.4.1 Mean age at marriage and pregnancy

Early marriage is common in Bangladesh, so is therefore its consequence - early childbearing. The age at which childbearing occurs has important demographic implication in a country as a whole as well as for health and welfare of mother and child. In countries where this age could be deferred or postponed (i.e., increase in age at marriage), the overall fertility has declined and population boom has ceased to be a problem in these countries. In countries like Bangladesh, this did not happen as yet, but recent surveys provides some hope -- an increase in age at first birth and a decline in fertility rate (12).

In the present survey, the mean age at marriage was found 16 years and the mean age at first pregnancy was 17.8 years (Table 5.4.1). The minimum age at first marriage was recorded as 8-9 years for a number of girls, indicating that the scourge of early marriage has not yet been totally abolished from the country, despite decades long campaign against it.

5.4.2 Fertility

To get information on fertility, each study mother was asked about the number of children they gave birth to (whether or not currently living with her or had died). The median fertility was 4. Results shows that 68.8% of the mothers have more than two children (Table 5.4.2).

However, as much as 32.0% mothers reported to have given birth to 5-6 children or more. This is perhaps the reason why fertility in the survey population found to be so high, compared to the national average. **Family planning is therefore a burning issue in Kachua.**

5.4.3 Problem during pregnancy

More than three-fourths of the mothers (76.2 %) stated that they had no visible or perceptible problem during their last pregnancy (Table 5.4.3). The major problems that were stated by the pregnant women were pain (unspecified), oedema and weakness (Table 5.4.4). It was revealed during the FGDs that almost all mothers (85.4%) felt very weak during pregnancy and that no antenatal check-up facility was available to them. Most mothers did not perceive problems associated with pregnancy to the extent to be complained about because, they did not have any treatment choice available to them and they had to continue the regular household tasks anyway.

5.4.4 Treatment of problems during pregnancy

When the mothers who went for treatment were asked where or to whom they went for treatment for any problem during pregnancy, 48.5% of them (10.4% of the total mothers) went to village doctor (untrained) and only 6.6% (1.8% of total mothers) to Thana Health Complex. As much as 32.3% of the mothers stated that they had nothing to do and did not go anywhere (Table 5.4.5).

Antenatal check-up: More than 85.4% of the mothers reported that they never went to antenatal care centre (ANCC) for check-up during their last pregnancy (Table 5.4.6). When asked why they did not go for antenatal check-up during pregnancy, two major replies were (a) due to lack of money (45.0%) and (b) they did not feel like going to the ANCC (39.9%) (Table 5.4.7). Not too many mothers complained against the doctors or the services they received. None mentioned about the distance of the ANCC from their residence. Long distance has been shown in many studies to be a strong factor discouraging the mothers to visit ANCC. In fact, the centres were found in most cases far away from home particularly in this baseline survey.

Postnatal check-up: Like antenatal check-up, postnatal check-up was also hardly practised by the mothers; only 15.5% went for post natal care (Table 5.4.8). The mothers reported visits for postnatal care at Family Welfare Centre (2.6%), Thana Health Complex (6.9%), or the nearby ANC centres (5.6%) (Table 5.4.9). Again, lack of money was the reason for 45.7% of the mothers and 47.2% did not feel that the check-up was necessary (Table 5.4.10).

Distance of place of residence from the centres was not mentioned as a cause by an appreciable number of mothers. However, the distance of the centres from the residence was 0.5-1.5 km in 40.8% instances, 3-4 km in 25.7% instances and 5 km or more in about 20% instances (Table 5.4.11). Most of the mothers walked to the centres (72.0%); the rest used a *rickshaw* (13.8%) or other transports (14.2%) (Table 5.4.12). Time taken to reach the health care centres was one hour in 79.0% cases and 2 hours for 18.5% cases (Table 5.4.13).

More than half the mothers (51.2 %) expressed satisfaction in the service obtained from health care centres. The others were not so happy.

It becomes evident from the findings that most mothers did not visit health care centres, although they were not perceived to be too far away and were within walking distance. Time taken to reach was also perceived to be not too long. There were not many complaints about the quality of service received in these centres. This indicates lack of motivation or lack of awareness on the part of the mothers to visit these centres. Only visible reason they mentioned for not visiting the centres was poverty (lack of money). **These are some points, which the IIRD programme management should further investigate into.**

5.4.5 Health and nutrition services

Iron intake: More than 9 out of 10 mothers (92.0%) did not take any iron tablet during their last pregnancy (Table 5.4.14). Of those who took iron tablet, nearly 90% (7.1% of total mother population) took it for only 1-3 months.

Vitamin A intake: Of the 631 lactating mothers, only 18.1% took (or were given) a dose of vitamin A capsule (VAC) and the rest did not take or receive any (Table 5.4.15).

Tetanus toxoid (TT) vaccination: Nearly two thirds of the mothers (65.6%) received TT vaccination during their last pregnancy (Table 5.4.16).

Food intake pattern during pregnancy: Nearly half of the mothers (48.9%) reported that they made some changes in their food intake pattern during their last pregnancy and only 18.7% did not do so. Some 32.4% of the mothers did not have any opinion about it (Table 5.4.17). About 63.4% of the mothers who said they did not know about change in food intake during pregnancy (16.7 % of total study mother population), said it because other foods (or more foods) were not available (Table 5.4.18). This is a reflection of the poverty status of the target households in the study thana.

5.4.6 Life style during pregnancy

The mothers were asked whether they did all their household chores during pregnancy as before or they thought they should refrain from doing some heavy work. Nearly 90% of the mothers replied they did all their household works during pregnancy and did not think there was any necessity to refrain from any work (Table 5.4.19). The remaining 10% (69 mothers) replied, they refrained from heavy work like digging mud or carrying weights (e.g., paddy husking) (Table 5.4.20).

It indicates that how hard working our mothers are or how deplorable their economic condition is, that majority of them have to do heavy work -- and all necessary household work -- even during pregnancy, whereas it is very necessary that mothers take enough rest, particularly during late pregnancy. Also, in Bangladesh, chronic energy deficiency is very common among the women of childbearing age. Hard work and not enough rest during pregnancy make them even more depleted of energy, which finally contributes to the birth of LBW babies. Prevalence of LBW in Bangladesh is around 40-50% (4).

5.4.7 Family planning

The mothers were asked whether they used any contraceptive method and if yes, what methods they adopted. Only 43.9% of the mothers replied in the affirmative. Of them 59% of them (24.7% total study mothers) used pills and 36.5% (15.3% of total mother population) got injection (Table 5.4.21). Use of condom was very uncommon (only 2 out of 293 husbands used it).

5.4.3 Place of last delivery

Delivery in rural Bangladesh is still an event which usually occurs at home, either in her own home (husband's) or in her parent's home. Very few pregnant mothers are taken to clinic for delivery. The present survey shows that about 89% of last deliveries occurred at husband's home and 10.4% at parents' home (Table 5.4.22).

Non-trained traditional birth attendants (TBA) (43.8%) and relatives (43.6%) were the caregivers during delivery. Only 12.3% of the deliveries were supervised by trained TBAs (Table 5.4.23).

5.4.9 Change in food habit during postnatal period

The lactating mothers were asked if any food restriction was imposed upon them after delivery of the child and if yes, what food was restricted and who made this restriction. Almost half (46.3%) replied food restriction was imposed on them (Table 5.4.24). The most common foods that were restricted were fish (72.7%) and meat (29.4%) (Table 5.4.25). These two foods are rich sources of "First class" (complete) protein of high nutritional quality which the mothers need most both during pregnancy (to support foetal growth) and lactation (for synthesis of milk).

The people making this restriction are mostly the in-laws (usually the mother-in-law) (87.5%) (Table 5.4.26). This is indeed very unfortunate that our mothers are so ignorant about nutrition and the nutritional needs, particularly during pregnancy and lactation. This ignorance and food taboos are transmitted from mother to daughter who subsequently becomes a mother. It propagates through generations.

Table 5.4.1: Mean age at marriage and first child.

Indicator (year)	Number	Mean	Stad. deviation	Minimum	Maximum
Age at first marriage	701	15.99	3.22	8	33
Age at first child	701	17.84	4.02	12	29

Table 5.4.2: Fertility of the study mothers.

Fertility	Number	%
0	12	1.7
1	76	10.8
2	131	18.7
3	131	18.7
4	127	18.1
5	89	12.7
6 and above	135	19.3
All	701	100.0

Table 5.4.3: Distribution of mothers by health problems during last pregnancy.

Problems	Number	%
Yes	167	23.8
No	534	76.2
All	701	100.0

Table 5.4.4: Distribution of mothers by nature of problems during last pregnancy.

Problems	Number	%
Super natural (<i>Batash lagha</i>)	4	2.4
Pain	74	44.3
Oedema	22	13.2
Diseases	33	19.8
Tetanus	2	1.2
Weakness	36	21.6
Prolong delivery	6	3.6
Fever	20	12.0
Did not felt problem	534	76.2

Multiple answers were considered

Table 5.4.5: Distribution of mothers by health seeking behaviour.

Health seeking behaviour	Number	%
Village doctor & homeopathic allopathic	81	48.5
<i>Tabij</i>	24	14.4
Thana health complex	11	6.6
Money problem	3	1.8
Nothing to do	54	32.3
Don't know	1	0.6
Home delivery	2	0.3
No need for any treatment	534	76.2

Multiple answers were considered

Table 5.4.6: Distribution of mothers by visit of antenatal care centre during last pregnancy.

Visited	Number	%
Yes	95	13.6
No	599	85.4
Do not Know	7	1.0
All	701	100.0

Table 5.4.7: Distribution of mothers by reasons for not seeking antenatal care during last pregnancy.

Reasons	Number	%
Lack of money	270	45.0
Health centre is far away	9	1.5
Don't felt	239	39.9
Doctor does not care	3	0.5
Don't know about health care	28	4.5
Negligence	7	1.2
In-laws do not like	38	6.3
Illness	2	0.3
Others	3	0.5
All	599	100.0

Table 5.4.8: Distribution of mothers by visit for postnatal care during last pregnancy .

Visited	Number	%
Yes	97	15.5
No	527	84.5
All	624	100.0

Table 5.4.9: Distribution of mothers by places visited for postnatal care during last pregnancy.

Places visited	Number	%
FWC	16	2.6
Thana health complex	43	6.9
ANCC in village	35	5.6
Others	3	0.5
Did not visit	527	84.5
All	624	100.0

Table 5.4.10: Distribution of mothers by reasons for not visiting health centre for postnatal care during last pregnancy.

Reasons	Number	%
Lack of money	241	45.7
Did not need	249	47.2
Difficult to go	5	0.9
Far away	7	1.3
Neglect from Dr. & HC	8	1.5
Don't know	11	2.1
In-laws did not like	16	3.0

Table 5.4.11: Distribution of mothers by distance of health care centre from home.

Distance (km)	Number	%
0.50-1.50	286	40.8
2.00-2.50	97	13.8
3.00-4.00	180	25.7
5.00-7.00	97	13.8
8.00 and above	41	5.8
All	701	100.0

Table 5.4.12: Distribution of mothers by mode of transport for visiting health care centre.

Way of visiting	Number	%
Walk	505	72.0
<i>Rickshaw</i>	97	13.8
Boat	6	0.9
Tempo	68	9.7
Bus	25	3.6
All	701	100.0

Table 5.4.13: Distribution of mothers by time taken to reach the health care facilities.

Time needed (minute)	Number	%
10-60	554	79.0
70-120	130	18.5
120+	17	2.4
All	701	100.0

Table 5.4.14: Distribution of mothers by duration of iron tablet intake during last pregnancy.

Duration (months)	Number	%
1-3	50	7.1
4-7	6	0.9
Do not intake iron tablet	645	92.0
All	701	100.0

Table 5.4.15: Distribution of lactating mothers by intake of vitamin A capsule after their last delivery.

VAC taken	Number	%
Yes	114	16.3
No	510	72.8
Do not remember	77	11.0
All	701	100.0

Table 5.4.16: Distribution of mothers by TT vaccination during their last pregnancy.

TT vaccination	Number	%
Yes	460	65.6
No	441	34.4
All	701	100.0

Table 5.4.17: Distribution of mothers by perception of necessity for change in food intake during last pregnancy.

Changed food habit	Number	%
Yes	343	48.9
No	131	18.7
Do not know	227	32.4
All	701	100.0

Table 5.4.18: Distribution of mothers by reasons for not changing of food intake during last pregnancy.

Reasons	Number	%
Foods were not available	117	32.7
Foetus could grow bigger	3	0.8
Difficult to move and work	5	1.4
Don't know	6	1.7
Normal food intake	227	63.4
All	358	100.0

Table 5.4.19: Distribution of mothers by their opinion on work restriction during last pregnancy.

All sorts of works can be performed	Number	%
Yes	632	89.2
No	69	10.8
All	701	100.0

Table 5.4.20: Distribution of mothers by their opinion on types of work restriction during pregnancy.

Types of work restricted	Number	%
Don't carry weights	31	4.4
Avoiding heavy work	19	2.7
Paddy husking and dig mud	27	3.9
Cooking	21	3.0
Others	3	0.4
Did not feel any problem	632	90.2

Table 5.4.21: Distribution of couples by use of contraceptive methods.

Contraceptive methods	Number	%
Pill/Tablet	166	25.7
Injection	104	16.1
Condom	2	0.3
Ligation	11	1.7
Do not use any methods	362	56.2
All	645	100.0

Table 5.4.22: Distribution of mothers by place of last delivery.

Place of delivery	Number	%
Husband's home	616	89.4
Father's home	73	10.6
All	689	100.0

Table 5.4.23: Distribution of mothers by type of birth attendant during last delivery.

Nature of birth attendant	Number	%
Trained TBA	77	12.3
Non-trained TBA	273	43.8
Relatives	272	43.6
Village doctor	2	0.3
All	624	100.0

Table 5.4.24: Distribution of mothers by food restriction during postnatal period.

Food restricted	Number	%
Yes	289	46.3
No	335	53.7
All	624	100.0

Table 5.4.25: Distribution of mothers by food reservation during postnatal.

Types of food	Number	%
Meat	85	29.4
Fish	210	72.7
Lintel	11	3.8
Chili	20	6.9
<i>Kali Jira</i>	13	4.5
Potato	5	1.7
Dry Fish	5	1.7
Egg	9	3.1
Vegetable	12	4.2
Dry Food	9	3.1
Pumpkin/Bringle	1	0.3
Hot Rice	1	0.3
Mesh Carry	1	0.3
Banana	1	0.3
Milk	3	1.0

Table 5.4.26: Distribution of mothers by decision-maker for food restriction during postnatal period.

Sources	Number	%
In-laws	253	87.5
Husband	1	0.3
Learned from others (Self)	14	4.8
Tradition	3	1.0
Relatives	18	6.2
All	289	100.0

5.5 Breastfeeding and weaning practices

5.5.1 Type of first feeding after birth

Nearly two-thirds of the mothers (64.1%) gave honey and nearly one-third (30.5%) gave mustard oil in the mouth of the baby just after their birth (Table 5.5.1). Only 3.5% breast-fed their baby before giving anything else.

The above data thus show that the idea of exclusive breastfeeding is yet to get its feet on the ground among the mothers of Kachua thana. Despite so much of campaign in favour of breast-feeding, mothers still give honey or oil, with the old idea that the babies will remain healthy.

5.5.2 Feeding of colostrum

Irrespective of whether or not the mothers gave something in the mouth of the baby before the breast, the mothers were asked whether they fed their first milk (colostrum) to their babies or they discarded it. About 88% of the mothers fed colostrum to their babies (Table 5.5.2.). Nearly half of the mothers (47.3%) gave colostrum within one hour of birth (Table 5.5.3). This is a very positive finding that these days, the mothers do not discard their first milk as before and they give it within the first hour of life of the baby.

5.5.3 Exclusive breastfeeding

Only breast milk given to the children up to fourth month of age is defined as exclusive breastfeeding. The results revealed that 94% of the study children were reported to be exclusively breast-fed (Table 5.4.4). This high rate of exclusive breastfeeding practice found in this study is based on the answers reported by the mothers and thus not necessarily reflect the actual practice.

5.5.4 Weaning practice

When the mothers were asked when they first gave some solid food to their babies, as many as 45.2% of the mothers replied that they started giving solid food from 5 to 8 months after birth. Only 6.4% gave solid food during 1-4 months of age and 39.5%

Table 5.5.6: Distribution of mothers by type of weaning food given to the last child as reported by them.

Types of weaning food	Number (n=560)	%
<i>Suji</i>	36	5.8
Rice	296	52.8
<i>Khichuri</i>	304	54.3
Fruits	206	36.8
Cow/Goat milk	63	11.2
Milk powder	5	0.9
Egg	12	2.1
Pooped rice	12	2.1
Biscuit	53	9.4
Bread	5	0.8
Others	28	5.0

Multiple answers were considered.

5.6 Child care and immunisation

5.6.1 Immunisation

In the present survey, we examined the percentage of children who have taken all the three doses of DPT and polio. Because many parents forget to have their children get all the vaccines by 12 months of age, they complete the doses in the 2nd year. We, therefore, extended our vaccination period from 12 months to 24 months and calculated the coverage of each vaccine accordingly. Of the 315 under-2, 77.5% took the first dose of DPT, 66% took the second dose and 58% took the third dose (Table 5.6.1). The overall DPT coverage was around 58%. It could not be ascertained how many children took all three doses successively.

Similarly, 74%, 64% and 55% of the children took the first, second and the third dose of polio vaccine respectively. The BCG coverage was found 67% and as expected, the vaccination coverage against measles was the lowest (despite age extension), only 37% (Table 5.6.2).

The survey results show that in the target households, EPI coverage is far from satisfactory for all vaccines, particularly measles. **EPI campaign should, therefore, be a priority area in the IIRD intervention programme.** Particular attention should be given to measles, because it sharply depletes vitamin A stored in the body. Children with vitamin A deficiency are likely to become blind due to one episode of measles.

An analysis of sex differential in EPI coverage of children under 12 months of age, revealed that boys and girls were almost equally covered by DPT, polio and measles. However, there was a significant difference between boys and girls in BCG coverage, for girls being much lower (46.3%) compared with that for boys (63.8%) (Table 5.6.3). The reason for this may be of social characteristics, but further investigation is needed to find the real cause. However, sex differential in BCG coverage was completely absent in children aged 12-23 months (Table 5.6.4).

A simple summarised version of age-wise immunisation coverage can be seen in Table

5.56. Full immunisation coverage in infants (below 12 months) is only 22.8%, while in children aged 12-23 months it increased to 77.2%. On the contrary, partial immunisation in children under-1 is high (68.7%), but partial coverage is low (31.3%) in older children.

5.6.2 Vitamin A capsule intake

Vitamin A supplementation in under-5 children was first initiated by the government in early 1970s with UNICEF assistance. The programme was undertaken to save children from nightblindness, total blindness and death, which occurred due to severe chronic vitamin A deficiency. The prevalence of nightblindness of that time was around 4%. Over the last two decades, the prevalence has now come down to below 1% (latest HKI estimate is 0.67%) (7).

The present survey shows that VAC coverage in the target children of Kachua thana is 75.4% (Table 5.6.5), which may be improved further. **Increasing VAC coverage to 100% should therefore be a target of the IIRD health and nutrition intervention programme.** More attention should be given to the girls whose coverage is about 10% lower than that of the boys (Table 5.6.6).

Table 5.6.1: Immunisation status of children by age (n=315).

Age (months)	1 st dose	DPT 2nd dose	3rd dose	1 st dose	OPV 2nd dose	3 rd dose	BCG	Measles
< 12 months								
%	73.8	56.9	49.4	66.9	51.3	43.1	55.0	18.1
Number	118	91	79	107	82	69	88	29
12-23 months								
%	81.3	75.5	67.1	81.9	76.8	67.1	78.7	63.2
Number	126	117	104	127	119	104	122	89
All								
%	77.5	66.0	58.0	74.0	64.0	55.0	67.0	37.0
Number	244	208	183	234	201	173	210	118

Table 5.6.2: Immunisation status by age and sex (< 12 months children).

Indicator	Boys		Girls	
	Number	%	Number	%
DPT				
1 st dose	62	77.5	56	70.0
2 nd dose	43	53.8	48	60.0
3 rd dose	37	46.3	42	52.5
OPV				
1 st dose	58	72.5	49	61.3
2 nd dose	41	51.3	41	51.3
3 rd dose	35	43.8	34	42.5
BCG	51	63.8	37	46.3
Measles	15	18.8	14	17.5

Table 5.6.3: Immunisation status among children aged 12 –23 month by age and sex.

Indicator	Boys		Girls	
	Number	%	Number	%
DPT				
1 st dose	70	82.4	56	80.0
2 nd dose	64	75.3	53	75.7
3 rd dose	58	68.2	46	65.7
OPV				
1 st dose	69	81.2	58	82.9
2 nd dose	63	74.1	56	80.0
3 rd dose	57	67.1	47	67.1
BCG	68	80.0	54	77.1
Measles	54	63.5	44	62.9

Table 5.6.4: Child immunisation status by age.

Child immunisation status	Number	%
Full immunisation		
> 12 months	28	22.8
12-23 months	95	77.2
Total	123	100.0
Partial immunisation		
> 12 months	132	68.7
12-23 months	60	31.3
Total	192	100.0

Table 5.6.5: Distribution of children aged 6-59 months by intake of vitamin A capsule.

Vitamin A capsule intake	Number	%
Yes	641	75.4
No	209	24.6
Total	850	100.0

Table 5.6.6: Intake status of vitamin A capsule by sex.

Vitamin A capsule intake	Number	%
Boys	362	56.5
Girls	279	43.5
All	641	100.0

5.7 General Morbidity

5.7.1 Incidence of diseases

During household interviews, the respondents were asked about the diseases their family members suffered during the last 15 days preceding the survey. The following section gives a description of the common diseases, which were mentioned by the respondents. Diarrhoea and nutritional diseases are not included in these morbidity patterns, because these diseases were described separately (see sections 5.8 and 5.9).

The morbidity pattern among adults is shown in Table 5.7.1. The most common diseases reported were (in order of incidence) fever of unknown aetiology, dysentery, cough, skin diseases, respiratory troubles and jaundice. Dysentery was more prevalent in males than in females (almost double), but all other diseases were almost equally prevalent in males and females.

In a recent study of 40 thanas under BINP, a sizeable proportion of the households reported to have had tuberculosis (2). In the present survey, no mention was made of tuberculosis, but fever and cough were reported. It is likely that some of these cases (with cough and fever) were actually tuberculosis patients. **The IIRD programme personnel should see to this point more elaborately.**

A closer examination of the incidence of these diseases among household members by age revealed that children under-5 were more (Table 5.7.2). The children were particularly vulnerable to dysentery as is indicated by wide age difference, 30.6% among children under 5, but 17.9% among older children and 10.9 % among adults. Same was the case with eye infection and skin diseases.

We also analysed the data to see if there was any difference in incidence of diseases between very poor (selling manual labour for more than 100 days of the year) and those who are a little better off (selling manual labour for less than 100 days of the year). There was clear difference between these two groups of population with respect to dysentery, which was more prevalent among the very poor compared to that among

the somewhat better-off (Table 5.7.3). Other diseases were more or less equally prevalent in the two groups of population.

In under-5 children, fever was most prevalent, followed by diarrhoea. Acute respiratory infection (ARI) was also present in a few children. Again, Table 5.7.4 shows that under-2 children were much more vulnerable to diarrhoea than children aged 2-5 years (12.5% vs. 26.9%). In fact, prevalence of diarrhoea is the biggest threat to life of the infants, which gradually decreases with age.

5.7.2 Treatment of diseases and health care seeking behaviour

The respondents were asked whether or to whom they first went for treatment of any family member if became sick. The most favoured reply (43.7%) was to go to the dispensary (drug shop) and take medicine according to the advice of the shopkeeper (Table 5.7.5). Treatment by paramedics was also quite common (22.9%) but *Kabiraji* treatment was used by a few (7.2%). On the other hand, 11.2% of the households went to (or called) qualified physicians for treatment. Some 15.7% of the households did not go for (or receive) any treatment at all. In older days, rural people used to have treatment mostly by traditional system. The above data show that even in an impoverished community, the people now tend to get treatment more or less with modern medicine. This is a reflection of change of knowledge and attitude of the people over time.

5.7.3 Knowledge and attitude

To understand the knowledge and attitude of the community on treatment of diseases, a detailed matrix ranking technique was used during FGDs. It was observed that the people follow different treatment behaviour for different illnesses. Table 5.7.6 shows that diarrhoea and dysentery in children were managed at home. In the preliminary stage of diarrhoea and dysentery they used home treatment by home made ORS and some medicine bought from pharmacy. We also found that when children had jaundice they sought *kobiraji* treatment. Eye and throat infections and also for itching and skin diseases, they used modern health facilities at the Thana Health Complex.

Matrix ranking technique was also applied for understanding of knowledge and attitude of treatment of diseases in adults. It was revealed that mild or moderate dysentery was

treated/managed at home. Other diseases were treated outside home using *Kabiraji*, homeopathy or modern medicine. For example, modern medicine was viewed as a first choice to treat burning sensation in urinary tract, ear and tooth infections, gonorrhoea and cancer. On the other hand, *Kabiraji* treatment was found popular to treat diseases such as gout (joint pain), *sutika* (female disease) and asthma. Interestingly, homeopathy treatment was ranked quite poor in the treatment of any disease, but was still an average choice to treat many diseases (Table 5.7.7).

We also tried to go deep into the problem of treatment seeking knowledge and attitude through intensive FGDs with very poor households (selling >100 days of manual labour per year) as well as with those who are little better-off (selling <100 days). We did not find much qualitative difference between the two groups in treatment knowledge, attitude and behaviour. Both groups had dispensary as the first choice, followed by treatment with para-professionals, qualified physicians and home remedies (Table 5.7.8). There were, however, some quantitative differences: more better-off went to qualified physicians than the very poor; again, more of the poor had no treatment than the somewhat better-off (Table 5.7.8).

5.7.4 Breast feeding during diarrhoea

The lactating mothers were asked what they did when their baby had diarrhoea - did they stop breastfeeding, or decreased or increased it. Nearly 80% of the mothers replied that they continued breastfeeding as before. Around 10% stopped breastfeeding and another 10% decreased it (Table 5.7.9).

Table 5.7.1: Distribution of diseases by sex in last 15 days.

Types of diseases	Both		Male		Female	
	Number	%	Number	%	Number	%
Fever	256	54.4	131	51.0	125	58.4
Dysentery	108	22.9	74	28.8	34	15.9
Cough	11	2.3	5	1.9	6	2.8
Low pressure	1	0.2	-	-	1	0.5
Measles	4	0.8	3	1.2	1	0.5
Skin diseases	14	3.0	7	2.7	7	3.3
Eye infection	4	0.8	2	0.8	2	0.9
Respiratory troubles	14	3.0	7	2.7	7	3.3
Pain	22	4.7	10	3.9	12	5.6
Pregnancy troubles	1	0.2	-	-	1	0.5
Jaundice	5	1.1	2	0.8	3	1.4
Others	28	5.9	14	5.4	14	6.5
Don't remember	3	0.6	2	0.8	1	0.5

Table 5.7.2: Distribution of types of diseases by age.

Types of diseases	< 5 years		6-14 years		15 years +	
	Number	%	Number	%	Number	%
Fever	132	51.2	54	64.3	70	54.3
Dysentery	79	30.6	15	17.9	14	10.9
Cough	5	1.9	3	3.6	3	2.3
Low pressure	-	-	-	-	1	0.8
Measles	4	1.6	-	-	-	-
Skin diseases	13	5.0	-	-	1	0.8
Eye infection	1	0.4	1	1.2	2	1.6
Respiratory troubles	4	1.6	4	4.8	6	4.7
Pain	4	1.6	3	3.6	15	11.6
Pregnancy treble	-	-	1	1.2	-	-
Jaundice	2	0.8	2	2.4	1	0.8
Others	12	4.7	1	1.2	15	11.6
Don't remember	2	0.8	-	-	1	0.8

Table 5.7.3: Distribution of diseases among household heads by days of selling labour.

Indicators	≤100 days		>100 days		All	
	Number	%	Number	%	Number	%
Fever	36	56.3	140	50.5	176	51.6
Dysentery	11	17.2	77	27.8	88	25.8
Cough	2	3.1	7	2.5	9	2.6
Low pressure	-	-	-	-	-	-
Measles	-	-	3	1.1	3	0.9
Skin diseases	2	3.1	9	3.2	11	3.2
Eye infection	2	3.1	-	-	2	0.6
Respiratory troubles	-	-	8	2.9	8	2.3
Pain	1	1.6	13	4.7	14	4.1
Pregnancy trouble	-	-	1	0.4	1	0.3
Jaundice	2	3.1	2	0.7	4	1.2
Others	7	10.9	15	5.4	22	6.5
Don't remember	1	1.6	2	0.7	3	0.9

Table 5.7.4: Distribution of children under by types of common diseases and by age.

Indicators	0-23 months		24-59 months	
	Number	%	Number	%
Fever	71	33.0	65	30.2
Diarrhoea	58	26.9	27	12.5
ARI	3	1.4	2	0.9

Table 5.7.5: Health care-seeking behaviour of persons reported to have illness during last 15 days.

Health care sought	Number	%
None (no treatment)	74	15.7
Home remedies	36	7.6
Traditional/Kabiraji	34	7.2
Dispensary	206	43.7
Para-professional	108	22.9
Qualified doctor	53	11.2

Table 5.7.6: Matrix ranking of perceived health services for common illnesses of the children.

Severity ranking	Disease	Home remedy	Kabiraj	Homeopathy	Modern/ THC*
1	Diarrhoea	8	5	5	2
2	Dysentery	10	4	2	4
3	Fever	6	5	4	5
4	Jaundice	4	10	0	6
5	Measles	7	6	5	2
6	Eye & throat infection	0	0	8	12
7	Itching /skin diseases	5	4	0	11
8	Pneumonia	0	6	3	7

*Thana Health Complex

Table 5.7.7: Matrix ranking of perceived health services for common illnesses of men and women.

Severity ranking	Disease	Home remedy	Kabiraj	Homeopathy	Modern/ THC*
1	Hyperacidity	5	4	4	9
2	Gout	3	10	0	5
3	Ear/teeth infection	6	0	4	10
4	Vertigo	3	2	5	10
5	<i>Sutika</i>	7	8	3	2
6	Fever	3	2	6	9
7	Dysentery	10	4	3	3
8	Diarrhoea	6	2	5	7
9	Prolapse	0	9	4	7
10	Burning sensation of limbs	4	0	4	12
11	Caterrhoea (watering from eye)	0	0	6	14
12	Gonorrhoea	0	10	0	10
13	Tumour	0	8	5	7
14	Cancer	0	0	0	20
15	Anorexia	4	6	6	6
16	Asthma	0	8	4	6

*Thana Health Complex

Table 5.7.3: Health care seeking behaviour of persons reported to have illness during last 15 days by labour selling status.

Treatment sought	≤100 days		>100 days	
	Number	%	Number	%
None (no treatment)	8	13.0	19	18.0
Home remedies	9	14.0	22	8.0
Traditional/ <i>Kabiraji</i>	5	8.0	22	8.0
Dispensary	24	35.0	124	45.0
Para-professional	14	22.0	57	21.0
Qualified doctor	11	17.0	29	10.0
Do not know	-	-	2	1.0

Table 5.7.9: Breastfeeding practices during an episode of diarrhoea.

Practices	Number	%
Decreased breastfeeding	5	9.6
Stopped breastfeeding	5	9.6
Increased breastfeeding	1	1.9
As usual	41	78.8
All	52	100.0

5.8 Health and nutrition knowledge: behaviour and practice

The overall health situation of the Bangladeshi population is also far below any acceptable standard. This is particularly true for mothers and children with worst possible health statistics in terms of both morbidity and mortality. For example, the maternal mortality rate has been over 600 per 100,000 live births for many years. This has now improved slightly to about 470 per 100,000 live births (13). The latter figure is still one of the highest in the world. Similarly, one in every 10 infants in Bangladesh does not live up to his/her first birthday; the infant mortality rate is around 80 per 1,000 live births (13).

Needless to say, a major factor contributing to this poor state of health of mothers and children is lack of education, knowledge, awareness and motivation about proper behaviour on health, hygiene and nutrition. In many cases, lack of initiative and/or facilities to reach to the health centres and to receive health services therefrom, is yet another factor.

5.8.1 Knowledge on simple hygienic practices

Washing hand before eating and before feeding children: The respondent mothers were asked whether they washed their hand before eating and before feeding the child and if they did, with what. In both cases, washing hand with plain water was almost universal (99.4% and 98.7% respectively). Washing hand with soap was very uncommon (only 3 out of 689 respondents). However, 6 mothers replied that they did not wash their hands at all before feeding their children (Table 5.8.1).

Almost similar situation was found in a baseline survey of 40 thanas under the Bangladesh Integrated Nutrition Project (BINP) (2). The mothers did wash their hands, but only with water. Similar to the findings of the present survey in Kachua thana, high rates of negligence and/or ignorance was seen in mothers of many thanas before feeding their children (15% to 30 %). **This is, therefore, an issue which should be taken seriously during an intervention programme in Kachua thana.**

Washing hand after defecation: The mothers were asked how they washed their

hands after defecation and how they washed their hands after cleaning the anus of their children after defecation. Washing hand with mud was common in both cases while 49.3% of the mothers did so after their own defecation, only 40.6% mothers did the same practice after cleaning anus of their children after defecation. Washing hand with water only was also very common, again more mothers (41.4%) did so when cleaning the child than when cleaning themselves (33.7%) (Table 5.8.2).

This gives a first hand impression that mothers attach less precaution during cleaning their children properly after defecation, probably from the general notion that child's faeces is not harmful! This, however, needs to be verified through further studies.

Unlike washing hand before eating or feeding, nearly 8% of the mothers washed their hand with soap water after defecation (self or child) and another 10% mothers wash with ash. This should be considered as a plus point for the mothers in Kachua and the percentage are comparable in other areas of the country (2).

5.8.2 Knowledge on causes, prevention and management of diarrhoea

Incidence of diarrhoea: Diarrhoea was reported to be a common disease in Kachua, as in the rest of the country. Ninety-two percent of the respondent mothers reported about diarrhoea occurring once or more among their children at some stage of their life (Table 5.8.3).

Causes of diarrhoea: Respondent mothers were asked an open-ended question on what were the possible causes of diarrhoea (in other words how to prevent diarrhoea by avoiding their known or perceived causes). Several options were given for the mothers with liberty to name one or more causes. It was found that opinion in favour of "eating dirty food" scored the highest (35.5%), followed by "unclean eating habit" (23.6%) and "eating contaminated food" (22.1%) (Table 5.8.4). About 7.5% of the mothers mentioned "eating food exposed to fly" or "overeating" as a cause of diarrhoea. All above causes mentioned by the mothers are in fact the direct or indirect causes of diarrhoea. It indicates that the mothers, though majority of them was not literate, had at least some idea on causes of diarrhoea. Since diarrhoea is over and above all a water-borne disease, unfortunately no opinion was reported about "unclean water" as

one of the causes. Also 24.1% of the mothers did not have any knowledge about the cause of diarrhoea.

The data thus indicate that although diarrhoea is a very common disease occurring very often among children and others, the mothers have only superficial knowledge about its cause, and many mothers even do not know at all about the actual cause. This is, therefore, yet another issue in health education intervention programme of IIRD.

How to treat diarrhoea: The respondent mothers were first asked if they heard about ORS. Over 90% replied in the positive (Table 5.8.5). Then they were asked whether they knew how to prepare it. The interviewers were asked to record 'know' if the mothers could tell the formula correctly (half litre water, one palm-full of *gur* and one pinch of salt). Around 81% of the mothers could tell the formula correctly (Table 5.8.6).

ORS use rate: However, when the mothers were asked what they did for the treatment of diarrhoea, most (83.2%) were in favour of ORS being bought from the market. Only 35.8% respondents went in favour of home-made ORS (Table 5.8.7). This shows an ORS use rate of only 30%, much lower than the use rate of about 50-60% found in previous studies (13). The results clearly show that majority of the rural mothers (most of whom are illiterate) have some idea about the causes and prevention of diarrhoea. They know about ORS as an effective means of treatment. They even know how to prepare it. But for some reasons only one-third of the mothers used home-made ORS. The reasons for this should be investigated. One reason may be the availability of high quality ORS preparations at low cost in the market. Secondly, the mothers probably do not like to undertake the 'difficult task' of making the ORS and spend time for it.

5.8.3 Knowledge about major nutrition problems

Knowledge on goitre: Nearly 95% of the respondent mothers did not know the cause of goitre (Table 5.8.8). Yet, some 19 mothers (2.8%) could tell the real cause, iodine deficiency. It is indeed not to be expected that illiterate poor rural women would know the cause of an uncommon disease like goitre. It is, therefore, somewhat surprising that some women could tell the cause. In fact, there has been a lot of campaign in the mass media and also from various organisations in favour of the importance of iodine in

human nutrition and the diseases that result from its deficiency. It is perhaps the outcome of such campaigns.

Consumption of iodised salt: Only 29% of the respondent families consumed iodised salt and 60.4% did not (Table 5.8.9). Some 10% did not know what salt they take. Most mothers (88.5%) identified iodised salt from the label of the packet. There is thus, a big difference between the data obtained in Kachua thana and the data provided by BSCIC which show more than 99% salt produced and sold in the market being iodised and the percentage of rural households actually consuming it (only 29%). Again, the mere label on the packet does not really ensure salt being really properly iodised or not (14).

Anaemia and night blindness: Similar to goitre, very few respondent mothers knew the actual cause of anaemia (0.9%) and nightblindness (0.7%). Majority of the mothers did not have the correct idea about how to prevent or cure these nutritional disorders (Table 5.8.10 and 5.8.11).

The above results show a poor level of knowledge of the IIRD target mothers about the major nutritional disorders, their causes and remedy. The above three diseases are together known as micronutrient malnutrition. **IIRD should give adequate attention to improve the situation.**

5.8.4 Knowledge about arsenic problem

The respondents were asked if they heard about arsenic problem and whether their tube-well water was contaminated with arsenic. More than 92% of the respondents expressed their ignorance about the problem. Only 7 out of 689 respondents had some knowledge about the consequences of drinking arsenic contaminated water.

Table 5.8.1: Distribution of mothers by practices of hand washing before eating and child feeding.

Practices	Before eating		After feeding	
	Number	%	Number	%
Wash with soap and water	3	0.4	3	0.4
Wash with only water	685	99.4	680	98.7
Do not wash	1	0.1	6	0.9
All	689	100.0	689	100.0

Table 5.8.2: Distribution of mothers by practices of hand washing after defecation.

Practices	Self		Child	
	Number	%	Number	%
Wash with soap and water	54	7.8	54	7.8
Wash with ash and water	63	9.1	70	10.2
Wash with mud and water	340	49.3	280	40.6
Wash with only water	232	33.7	285	41.4
All	689	100.0	689	100.0

Table 5.8.3: Distribution of children by point prevalence of diarrhoea.

Diarrhoea prevalence	Number	%
Yes	634	92.0
No	55	8.0
All	689	100.0

Table 5.8.4: Distribution of mothers by their knowledge on causes of diarrhoea.

Causes of diarrhoea	Number (n = 634)	%
Eating food exposed to fly	28	4.4
Dirty food	225	35.5
Unclean eating habit	150	23.6
Due to breast milk	24	3.8
Contaminated food	140	22.1
Overeating	48	7.5
Others	9	1.4
Do not know	153	24.1

Multiple answers were considered

Table 5.8.5: Distribution of mothers by their knowledge on oral rehydration saline (ORS).

Knowledge on ORS	Number	%
Yes	638	92.6
No	51	7.4
All	689	100.0

Table 5.8.6: Distribution of mothers by their knowledge on preparation of ORS.

Knowledge on ORS preparation	Number	%
Know	559	81.1
Do not know	130	18.9
All	689	100.0

Table 5.8.7: Distribution of mothers by ORS use-rate during diarrhoea.

Treatment practices	Number (n=643)	%
Home made ORS	230	35.8
ORS bought from the market	535	83.2
Continue normal diet	5	0.7
Medicine	4	0.6
Did nothing	13	2.0

* Multiple answers considered

Table 5.8.8: Distribution of mothers by knowledge about the causes of goitre.

Causes of goitre	Number	%
Iodine deficiency	19	2.8
Vitamin deficiency	17	2.5
Do not know	653	94.8
All	689	100.0

Table 5.8.9: Distribution of mothers by iodised salt consumption practices.

Iodised salt consumption	Number	%
Yes	200	29.0
No	416	60.4
Do not know	73	10.6
All	689	100.0

Table 5.8.10: Distribution of mothers by their knowledge on causes of anaemia.

Causes of anaemia	Number	%
Iron deficiency	6	0.9
Vitamin deficiency	167	24.2
Do not know	516	74.9
All	689	100.0

Table 5.8.11: Distribution of mothers by their knowledge on causes of nightblindness.

Causes of night blindness	Number	%
Vitamin A deficiency	5	0.7
Vitamin deficiency	64	9.3
Inadequate intake vegetables & fruits	75	10.9
Others	3	0.3
Do not know	542	78.7
All	689	100.0

5.9 Nutritional status

5.9.1 Nutritional indicators

Stunting, underweight and wasting are all manifestations of physical retardation caused by protein-energy malnutrition (PEM). Normally, age, levels of food intake and their proper absorption in the body, are the critical factors for gaining height and weight. Stunting is regarded as a condition where height-for-age is found to be less than expected. This is known as chronic undernutrition. Underweight is said to occur when weight for age is found to be less than expected. Wasting is a situation where weight-for-height is found to be less than normal and is known as acute undernutrition.

Nutritionists and planners are more concerned with physical retardation among children, than among adults. This is mostly because malnourished children are much more vulnerable than malnourished adult population as far as their capacities to cope with morbidity are concerned. (1). This is best exemplified in the differential mortality rates between children and adults in most developing countries. Again, once a person has become stunted during his/her childhood, he/she can never make it up after becoming an adult, thus depriving him/her of ever attaining the full genetic potential for growth. Anthropometric measurements which can help determine the magnitude of stunting, underweight and wasting, in a poverty-stricken country, are of great importance because these clearly highlight the need for social intervention to help people to escape from such disorders (1).

5.9.2 Classification of nutritional status

Standard deviation score (SD score or Z score): For anthropometric measurements of under-5 children, the standard deviation score or Z-score classification is used widely. Children whose scores according to anthropometric indices were found to be less than - 2 SD or below the NCHS (National Centre for Health Statistics) standard reference have been classified as being physically retarded.

The scores for severe and moderate stunting, wasting, and underweight are given below:

Height-for-age

Normal	:	- 2SD and above
Stunting or chronic malnutrition	:	Less than - 2SD

Weight-for-height

Normal	:	- 2SD and above
Wasting or acute malnutrition	:	Less than - 2SD

Weight-for-age

Normal	:	- 2SD and above
Underweight	:	Less than - 2SD

In each case, as the scores go down and down, the severity of situation increases. For example, a score of - 3SD or below indicates malnutrition in its most severe form.

Body Mass Index (BMI): For population 10 years and above, the nutritional indicator that is usually used is the Body Mass Index (BMI). BMI is calculated by dividing weight in kilograms by the square of height in meters. In adults it is used with age to define over-weight or thinness. The normal range for BMI is taken as 18-25. People having BMI >25 are said to be obese while those having less than 18.5 are considered as malnourished. BMI value less than 16 indicate severe undernutrition.

Gomez classification: One of the other most commonly used classifications of PEM in children is Gomez classification, which is based on a deficit in weight-for-age. This classification categorises children into first, second or third degree malnutrition on the basis of percentage deviation from the NCHS reference median weight-for-age, using arbitrary cut-off points as described below:

Normal	:	90% of median and above
Mild (First degree)	:	89.9 – 75.0 %
Moderate (Second degree)	:	74.9 – 60.0%
Severe (Third degree)	:	Less than 60%

This baseline survey used both the classifications in line with the latest National Nutrition Survey (INFS) and the Bangladesh Child Nutrition Survey (BBS).

5.9.3 Study population

The anthropometric measurements were done on children under 5 years of age and women of reproductive age. In the original protocol, the minimum sample size for children was targeted as 750 and that for women was 718. In actuality the number of children measured was 804 (107.2% of target) and the number of women measured was 690 (96.1% of target) (Table 5.9.1). Since BMI during pregnancy is not a valid indicator of nutritional status, the identified pregnant women were excluded from this survey.

5.9.4 Prevalence of malnutrition among under-5 children (Z-score classifications)

Table 5.9.2 shows the mean, standard deviation, and minimum and maximum height and weight and other indicators of the surveyed children aged 6-59 months. The mean height of under-5 children of the target households was found as 80.4 cm (SD 11.6 cm) with the national rural value of 85.5 cm (SD 12.3 cm). The Kachua target children were thus, on average, 5 cm smaller than the average rural children of Bangladesh. The average weight of the Kachua children was 9.6 kg (SD 2.8 kg), the national average being 10.8 kg (SD 2.9 kg). The Kachua children were thus, also underweight by about 1 kg. Ironically, the national average values of height and weight of rural Bangladeshi children were already only 90.5% and 74.5% of the NCHS reference median respectively. The Kachua values were naturally even lower, 58.3% and 66.6% respectively. The deplorable nutritional status of Bangladeshi children in general and areas like Kachua in particular can be easily understood.

The mean height-for-age Z-score of surveyed children was - 2.7 (SD 1.9) and the weight-for-age Z-score was 1.3 (SD 1.4). All these figures are higher in the negative side than the national average figures respectively. According to Z-score classification described earlier, the children were, on average, seriously stunted and underweight,

but not much wasted.

Distribution of children by different indicators shows that nearly two-thirds (64.6%) were stunted (42.2% severely) and 70.9% were underweight (34.8% severely). The prevalence of wasting was low, around 28% (8.7% severely) (Table 5.9.3 and 5.9.4). This shows that, although the prevalence of stunting and underweight was high, the weight of a large proportion of these stunted children was more or less proportional to their existing heights.

5.9.5 Prevalence of malnutrition by age and sex

Distribution of prevalence of malnutrition by age and sex shows that stunting, wasting and underweight prevalence were highest in children aged 12-23 months. But then while prevalence of wasting decreased with age (42.3% at 12-23 months to 19.5% at 48-59 months). There was no such clear trend in either stunting or underweight (Table 5.9.5). Similar were the findings of the previous national surveys. The highest degree of malnutrition, both stunting and wasting, at 12-23 months of age corresponds with the timing of weaning i.e. feeding complementary food along with breastfeeding. The complementary food that is served to children from the age of 6-7 months in poor rural households is usually poor in nutritional quality (both protein and energy-wise). The children start suffering from PEM from this age, the largest impact being manifested at somewhat later age, i.e. 12-23 months.

The reason for children recovering from wasting with age is due to their ability to adapt their body weight according the height attained. But stunting or underweight, which is the result of long-term malnutrition, becomes irrecoverable, particularly in situation where the family diet is not supportive for a catch-up.

Not much sex difference was found in the prevalence of stunting or wasting in the present survey population. Similar situation was also found in the recent national nutrition survey (1).

5.9.6 Prevalence of PEM in under-5 children according to Gomez classifications

We also expressed the results on PEM according to the Gomez classification. Despite

some limitations, this classification is still the most widely used for its relative simplicity. According to this classification, only 7.3% of the target children were found normal (not malnourished) and the vast remainder were malnourished to various degrees, 33.2% mildly, 43.5% moderately and 15.9% severely (Table 5.9.6). No sex difference was discernible. In contrast, the prevalence of severe malnutrition among the rural under-5 population as found in the 1995-96 national nutrition survey was 5.7% (1).

5.9.7 Prevalence of malnutrition among women of reproductive age

Of the total 690 women of reproductive age, 640 were married and 50 were unmarried. The mean BMI was 20.0 (SD 3.5), ranging from 12.7 to 32.3. All women taken together, 24.6% were found to have BMI 17-18.4, i.e., mild chronic energy deficiency (CED), 9.1% had BMI 16.0-16.9, i.e., moderate CED and 6.7% had BMI <16.0, i.e. severe CED. This makes over 40% of total surveyed women being malnourished with mild to severe CED (Table 5.9.7). Severe CED was more prevalent among unmarried women (14.0%) than among married women (6.1%). Mild CED was more prevalent among married women (21.7%) than among unmarried women (12.0%).

There was not any visible age difference in the prevalence of CED among women, except that the women aged 40 and above appeared to be suffering more (17.5%) than women of younger age (4.3-9.0%) (Table 5.9.8).

Table 5.9.1: Study population for anthropometric measurements.

Study population	Number	% Target
Children < 5 years	804	107.2
Reproductive age women	690	96.1
All	1494	101.7

Table 5.9.2: Mean, standard deviation and range of anthropometric status indicators of under-5 children.

Indicators	Mean	Std. Deviation	Minimum	Maximum
Height (cm)	80.4	11.6	49.0	117.0
Weight (kg)	9.6	2.8	2.4	20.0
Height-for-age z-score	-2.7	1.9	-9.6	4.9
Weight-for-age z-score	-2.6	1.3	-7.0	2.4
Weight-for- height z-score	-1.3	1.4	-6.8	5.3

Table 5.9.3: Distribution of under-5 children by height-for-age, weight-for-height and weight-for-age z-score of NCHS reference value.

Indicators	-3.00 and below	-2.99 to -2.00	-1.99 to -1.00	-0.99 to +0.99	+1.00 to +1.99	+2.00 and above
<i>Height-for-age</i>						
Number	339	180	153	116	7	9
%	42.2	22.4	19.0	14.4	0.9	1.1
<i>Weight-for-height</i>						
Number	70	154	265	275	27	13
%	8.7	19.2	33.0	34.2	3.4	1.6
<i>Weight-for-age</i>						
Number	280	293	162	66	2	1
%	34.8	36.4	20.1	8.2	0.2	0.1

Table 5.9.4: Summary of prevalence of malnutrition in under-5 children.

Indicators	Number	%	95% confidence interval (%)
Stunting (Height-for-age z-scores <-2sd)	519	64.6	68.6 , 60.6
Under weight (Weight-for-age z-scores <-2sd)	570	70.9	76.9, 66.9
Wasting (Weight-for-height z-scores <-2sd)	222	27.6	33.6 , 21.6

Table 5.9.5: Prevalence of malnutrition in children by age and sex.

Indicators	Both		Male		Female	
Age group (months)	Number	%	Number	%	Number	%
<i>Stunting</i>						
(Height-for-age z-scores <-2)						
6-11	50	52.0	29	56.9	21	46.7
12-23	115	70.6	68	73.9	47	66.2
24-35	94	68.1	49	62.8	45	75.0
36-47	123	60.9	70	59.3	53	63.1
48-59	137	66.8	73	68.2	64	65.3
<i>Underweight</i>						
(Weight-for-age z-scores <-2)						
6-11	53	55.2	29	56.9	24	53.3
12-23	128	78.5	75	81.5	53	74.6
24-35	107	77.5	62	79.5	45	75.0
36-47	141	69.8	81	68.6	60	71.4
48-59	141	68.8	71	66.4	70	71.4
<i>Wasting</i>						
(Weight-for-height z-scores<-2)						
6-11	22	22.9	10	19.6	12	26.7
12-23	69	42.3	46	50.0	23	32.4
24-35	42	30.4	29	37.2	13	21.7
36-47	49	24.3	28	23.7	21	25.0
48-59	40	19.5	24	22.4	16	16.3

Table 5.9.6: Distribution of under-5 children by nutrition status according to Gomez classification.

Nutritional status	Both		Male		Female	
	Number	%	Number	%	Number	%
Normal	59	7.3	31	7.0	28	7.8
Mild	267	33.2	149	33.4	118	33.0
Moderate	350	43.5	202	45.3	148	41.3
Severe	128	15.9	64	14.3	64	17.9
All	804	100.0	446	100.0	358	100.0

Table 5.9.7: Distribution of women of child bearing age (15-45 years) by body mass index (BMI) categories.

BMI	All		Unmarried		Married	
	Number	%	Number	%	Number	%
<16.0	46	6.7	7	14.0	39	6.1
16.0-16.9	63	9.1	6	12.0	57	8.9
17.0-18.4	170	24.6	10	20.0	160	25.0
18.5- 19.9	145	21.0	6	12.0	139	21.7
20.0+	266	38.6	21	42.0	245	38.8
All	690	100.0	50	100.0	640	100.0

Table 5.9.8: Distribution of women of child bearing age (15-45 years) by BMI and age.

BMI	Number	Age							
		<20		20- 29		30- 39		40 & above	
		No.	%	No.	%	No.	%	No.	%
<16.0	46	8	9.0	17	5.5	10	4.3	11	17.5
16.0-16.9	63	11	12.4	21	6.8	24	10.4	7	11.1
17.0-18.4	170	19	21.3	77	25.1	63	27.3	11	17.5
18.5- 19.9	145	13	14.6	68	22.1	53	22.9	11	17.5
20.0+	266	38	42.7	124	40.4	81	35.1	23	36.5
All	690	89	100.0	307	100.0	231	100.0	63	100.0

6. DISCUSSION

The present health and nutrition baseline survey was conducted on the target households of IIRD, which were selected on the basis of certain criteria, fulfilling of which would indicate being very poor and downtrodden. In other words, the poorest section of Kachua population was the study population and therefore the findings of the survey would in no way reflect the health and nutrition situation of the average population of the thana. However, since the demographic, socio-economic, health and nutritional characteristics of the poor in Bangladesh has a little variation between regions, the present survey might be considered as representative to reflect the socio-economic, health and nutritional status of the poor people of the country as a whole.

The demographic characteristics of the target households were interesting: the male female ratio (107:100) was comparable to the national figure (106:100), but the proportion of children below 15 years was as high as 54.4%, which is much higher than the national figure (41.7%) (12). The proportion of under-5 children was 23.9%, which is almost double the national figure of 13.2%. Contrary to the national situation, the proportion of under-5 children in the target households was much higher (23.9%) than children aged 5-9 years (18.0%).

These data indicate that the gradual trend of decline in the fertility rate seen all over the country in recent years is not yet visible in the present study. Indeed, the fertility rate was high in the population (4.0). About quarter of the mothers have given birth to 5-6 children. **Family planning is, therefore, an urgent issue in Kachua among the target households selected by IIRD.**

The educational scenario of the study households is rather discouraging. Among the household heads, aged 30-40 years or more, the prevalence of literacy was only 15.7%. Among the younger generation, literacy rate was little better (28.1%), indicating that the light of education was slowly trickling down. However, it is not anyhow comparable to the way the rest of the population in the whole country is recovering from the curse of illiteracy. **Education should, therefore, be a strong component of the IIRD intervention programme with top priority.**

As expected, the target population is very poor. About 74% of the household heads

being day labourers and another 11% earning their livelihood through some small businesses. Nearly 83% sold more than 100 days of manual labour in a year. This is a strong indicator of poor economic status used in many studies. More than two-thirds of them (67%) had small homestead (less than 0.05 acre) and another 13% were homeless. Around 84% had no cultivable land. More than two-thirds of them perceived that they were in negative economic balance. Their income did not meet the daily necessities as per the expectation. Only 9% had their own tube-well and the rest either shared tube-well or used the tube-well owned by others. This is another indicator of poor economic condition. Nearly two-thirds of the households did not produce (or possess) any valuable tree (fruit bearing or otherwise). Thus, the indicators mentioned above show the deplorable socio-economic condition of the IIRD target households in Kachua thana. **Poverty alleviation should, therefore, be the most important issue in the IIRD program.**

Despite very poor, the study population was found to use tube-well water for drinking universally (>99%). However, in terms of sanitation only about 19% household used safe latrine and the rest defecated in holes, bushes and open places, which are considered unsafe and unhygienic. **Sanitation, therefore, is an important issue, which the IIRD programme should take as a challenge.**

Due to poverty and lack of education, general morbidity was highly prevalent in these communities. Moreover, their health seeking behaviour was also not satisfactory. For example, around 85% of the mothers reported they never went for ante or post-natal check ups mainly due to financial constraints. In antenatal care centres, there was actually no fees charged. Only when some medicines were necessary, they had to buy those. Because of this cost involvement, the pregnant and the lactating mothers and their husbands were reluctant to go to the ANCC. Another possible reason for this was the distance of the ANCC from home -- 0.5-1.50 km in 40.8% cases and more than that in case of the rest.

The status of iron intake during pregnancy, and vitamin A intake shortly after delivery was found unsatisfactory, although the status of TT vaccination during pregnancy was somewhat satisfactory (65.6% coverage). **Ante and postnatal health check ups as**

well as other health and nutrition services need to be strengthened in the IIRD programme to save the mothers from death due to maternity.

As reported, breastfeeding was universal in the study mothers and feeding of colostrum was also high (90%). However, there was still a strong tendency to put honey or oil in the mouth of the baby just after birth. The issue of exclusive breastfeeding was not clearly understood by the mothers. **This needs to be addressed during the health and nutrition education sessions.**

The status of complementary feeding was also not satisfactory. Many mothers started it already at 1-4 months, thus defeating the spirit of exclusive breastfeeding. **The IIRD programme may take this into account seriously.** Two nutritious foods - *khichuri* (mixture of rice and lentils) and fruits were reported to be used by many mothers as complementary food. **However, it is important to ensure that the mothers really add these nutritious foods during weaning as a regular practice.**

Childcare in terms of immunisation was found almost comparable to the national figure except for measles vaccine. The coverage of measles vaccination was, however, poor (37%). **This is yet another area where IIRD programme can give more stress.**

Knowledge on simple hygienic practices e.g., washing the hand before eating, feeding, or after defecation, was found unsatisfactory. Many mothers did not wash their hands at all before feeding the child. Negligence was also seen in washing hand after cleaning the bottom of the baby after defecation, presumably due to the general notion that child's stool is not 'harmful'. **IIRD programme may look into it seriously.**

Diarrhoea was found a common disease among the target households. Mothers knew the cure of it, the ORS, and even most of them knew how to prepare it correctly. However, the use rate of ORS was rather low (17%). One reason for this may be that the mothers like to pay more time and attention to the ailing child and, therefore, preferred packed ORS packet available at stores over home made preparations.

Nutritional knowledge among the target households was precarious. This was not unexpected. The causes of goitre, nightblindness, and anaemia were not known by many educated mothers. So, the study mothers should not be blamed for this

ignorance. IIRD may propagate the knowledge so that the people can take care of themselves.

The final outcome of poverty, lack of knowledge and lack of initiative in health and nutrition service seeking behaviour is retarded growth. Indeed, the children of the target households were highly malnourished -- their weight and height being significantly lower than the national average. The national average figures are already 20-40% lower than the NCHS median reference value. The children of Kachua grade themselves even lower than that. Stunting (64.6%), wasting (27.9%) and underweight (71.2%) are therefore at their extremes. Malnutrition is also highly prevalent among the women of childbearing age (30.4%). **To improve the situation, there is an urgent need to undertake targeted nutritional intervention in Kachua thana.**

So, on the whole, **the target households of Kachua thana need immediate health and nutrition intervention.** IIRD has indeed a big scope to do a lot for them to increase their human development index (HDI) in terms of education, health and nutrition. Poverty alleviation takes a central position in this intervention programme.

7. RECOMMENDATIONS AND PROGRAMME IMPLICATIONS

Based on the findings of the baseline survey conducted on the target households in 9 unions of Kachua thana, the following recommendations are made:

- Targeted nutrition supplementation programme should be implemented as a short-term measure to reduce the severity of malnutrition among the IIRD target population in Kachua thana.
- Poverty alleviation should be the central theme of the IIRD intervention programme, through self-employment and income generation.
- Family planning is a burning issue among the target households. IIRD may give utmost thrust on this issue.
- Efforts should be made to bring down the high rate of illiteracy among the target population.
- Lack of sanitation and simple hygiene practice is a serious problem in Kachua, as elsewhere in the country. This may be a priority issue in IIRD intervention programme.
- Ante and postnatal health check-up and health and nutrition services should be geared up.
- Health seeking behaviour during illness as well as during pregnancy and lactation should be improved.
- Strong motivation is needed to stop any pre-lacteal feeding practices.
- Exclusive breastfeeding should be encouraged through intensive campaign.
- EPI coverage should be increased, particularly of measles. VAC coverage should be increased to 100%.

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IIRD PROJECT BACKGROUND

General background

IIRD has developed intervention in Kachua thana. It has developed necessary infrastructure and an experienced team of workers, which will be helpful in implementing the project. Some socio-economic and demographic indicators of Kachua thana are as follows:

- i. There is a high rate of illiteracy
- ii. Local primary education is mostly of very poor quality due to lack of motivation of teachers, lack of community participation, overcrowding, poor infrastructure environment and inadequate resources for education.
- iii. More than half the families of this area are totally landless or functionally landless (having less than one half acre cultivable land). Parents often prefer to employ than educate their children.
- iv. The majority of the people do not have access to basic health care and are unaware of fundamental principles of sanitation and hygiene. Even many local medical practitioners and medical shop owners have inadequate health knowledge.
- v. There is a high rate of malnutrition especially among children and women.
- vi. There are inadequate curative facilities; these also are under-staffed and have shortage of basic equipment, medical supplies and operating resources.
- vii. There is a low rate of women's participation in development.
- viii. There is not sufficient development activity presently being undertaken in this area by government and non-governmental organisations to overcome growing pauperisation of the local population.

Area profile and IIRD involvement

The area of Kachua is 236 sq. km. having a population of about 327,000 of whom 60% are illiterate. IIRD carried out a survey at Kadla union of Kachua thana in 1991 and established its project office at Subidpur of Karaia union and started integrated development activities there. At present, IIRD is working with 12,600 target families in 168 villages of 9 unions of the thana.

Problem analysis

The undesirable situation in Kachua thana leads to the core problem "Poor quality of life". The causes behind this core problem are:

- i. Poor health and nutrition status of target population, and
- ii. Limited access to basic primary and functional education.

These are considered to be the major problems. Each of these problems was analysed separately to find the contributing factors.

Target population

The project intends to work intensively with the poorest, about 12,600 out of 39,300 households in 9 unions of Kachua thana. The main criteria used to select the target groups are landless and assetless families, marginal and small farmers who possess a maximum of 0.5 acre of land (including homestead), and families whose income does not exceed Tk. 445 (Canadian Dollar 14.50) per capita per month. Additional criteria are families, which have inadequate to sub-human housing conditions and whose members have maximum two meals per day.

Organisation analysis

IIRD was founded in 1987 as a Bangladeshi NGO. It was founded for creating a model of integrated rural development for Bangladesh. For IIRD, development is a participatory process, which empowers people to identify, analyse and devise creative solutions to their own problems. IIRD is people-focused rather than program-focused. IIRD's target population are mainly the landless poor, women, children of the poor, the homeless, the unemployed, marginal and small farmers and traditional artisans. The target population does not need to come to IIRD offices to get help, rather IIRD staff

visit them at their doorstep.

Poverty eradication is IIRD's central thrust. Activities and programmes are tailored to needs of the people. IIRD belief that only the people themselves can bring about change through individual and co-operative actions and supported by opportunities provided by IIRD. The organisation also believes that the rural poor will be able to take full responsibilities for implementing and management of most programmes initiated by IIRD within reasonable time (approximately 10 years).

Objectives of IIRD:

1. To reduce poverty level by 50% in each thana within 10 years;
2. To increase literacy rate by 40% among the target families within 5 years;
3. To empower target people, especially the women, by mobilising savings and providing micro credit;
4. To increase income by promoting income generation activities in 5 sectors (i.e., poultry, social forestry, fisheries, sericulture and vegetable cultivation);
5. To develop rural infrastructure like roads, culverts, bridges, water regulators, etc;
6. To create rural entrepreneurship and create employment through cottage and micro-industries;
7. To improve and sustain availability of primary health care (PHC) services including sanitation and safe drinking water; and
8. To create a more balanced, dynamic and ecologically sustainable food production system appropriate for each working area.

IIRD's stakeholders

IIRD has three groups of stakeholders:

- I. Internal: field staff, technical staff, operational management staff, senior management, and board members of IIRD;

- ii. External: groups that are directly related to IIRD, such as target people and donors; and
- iii. Institutions: different government and non-government agencies, community-based organisations and other similar organisations trying to assist the poor of the same areas.

The project

Goal and objectives of the SPPSPP

The overall goal of the SPPSPP is to promote sustainable improvements in the quality of life of the poor of Kachua thana. Since the project will be working on a certain strategy, the specific objectives of the project will be as follows:

- i. To provide an integrated health and nutritional service which will ensure for the poor the following benefits:
 - provide basic mother and child health care services to the poor;
 - monitor growth of infants and provide nutritional supplements for malnourished and undernourished, as well as for needy pregnant mothers;
 - promote improved health, nutrition, sanitation, and hygienic education for the target people;
 - improve supply of essential drugs, strengthen existing health facilities, which offer treatment of common diseases; and
 - encourage people to use health, immunisation and family planning services provided by the government.
- i. To strengthen curative services of the government Thana Health Complex (THC) and a clinic (Gulbahar Under-Five Clinic) as a support for the integrated health and nutritional service project.
- ii. To upgrade knowledge and skills of under-qualified medical practitioners and medicine shop keepers through regular training and supply of basic support

materials.

- iii. To promote homestead nutritional activities among the poor so that they become more capable of meeting their basic nutritional needs and able to get improved reliable income for maintaining a minimum healthy standard of life.
- iv. To provide two years' primary education for children of the poor and assist them to continue their education in government schools from class three.
- v. To improve the existing primary education system in the working area by providing training to administrators, teachers, school committee members and parents of school children for 89 local institutions.
- vi. Provide help for infrastructure development, upgrading of equipment, teaching and learning materials for local primary schools.

Project components

The Project has the following components:

- i. Baseline survey
- ii. Health and nutrition
 - Nutrition supplementation programme
 - Curative health care program
 - Homestead nutritional promotion programme
- iii. Basic and functional education
 - IIRD's feeder school programme
 - Energising the local primary school system
 - Support training

Registration form
Basic education and primary health care project
(For children under 5 years)

Union _____ Village _____

[illegible]

Interviewer's name

Date _____

Basic education and primary health care project
(Women of 15-49 years of age)

[illegible]

Date _____

TERMS OF REFERENCE

According to the TOR, the **tasks** that were agreed to perform by RED are as follows:

1. To conduct a household registration of under-five children, pregnant and lactating mothers among the target 12,600 households in 9 unions of Kachua thana (Please see the registration form in Annex II)
2. To develop a sampling plan following an appropriate and widely used sampling methodology and produce an operational sampling guideline for the personnel to be involved in data collection at field level (Please see the questionnaire in Annex IV).
3. To prepare methodology and specific guidelines for collection of qualitative information.
4. To develop an instruction manual for quantitative data collection and methodology along with specific guidelines for collection of qualitative information in consultation with IIRD.
5. To develop a comprehensive data entry/validation and analysis plan.
6. To produce a report on the findings covering the indicators in line with the survey objectives and submit to IIRD.
7. To develop a MIS format to be used for regular monitoring activities (Please see the monitoring forms in Annex V).
8. To submit disk copy of the final report and raw data to IIRD.

Annexure IV

N= code
e.g. 1=yes, 2=no

Confidential
Research purpose
only

Health and nutrition survey in Kachua

Union ☐ Village ☐

Para Household no ☐

Name of the respondent Line no ☐

Description of household members

Line no.	Name	Relation with HH head	Sex	Age	Marital status	Education	Occupation	Weight (kg)	Height (cm)
1	2	3	4	5	6	7	8	9*	10*

3 = Relation

1 = Household head
2 = Wife of HH head
3 = Son
4 = Daughter
5 = Father
6 = Mother
7 = Brother
8 = Sister
9 = Sister/daughter in laws
10 = Servant
Others (Please specify)

4 = Sex

1 = Male
2 = Female
1 = Unmarried
2 = Married
3 = Widowed
4 = Separated
5 = Divorced

6 = Marital status**7 = Education**

0 = Never went to school/not passed any class yet
1 = Passed class1
2 = Passed class2
3 = Passed class3
4 = Passed class4
5 = Passed class5
.....continued so on

8 = Occupation

1 = Agriculture
2 = Service
3 = Business
4 = Daily labour (agriculture)
5 = Daily labour (Non-agriculture)
6 = Fishing
7 = Household work
8 = Village transportation
9 = Unemployed
10 = Student
Others (please specify)

*Column 9 & 10 is applicable only for children U-5 and non pregnant women aged between 15 to 49 years

Socio-economic information

Serial	Question	Answer	Code
1	How much land (in decimal) is owned by your household?	Homestead Cultivable	
2	What varieties of vegetable do you plant on your homestead land?	Do not cultivate Lao Pumpkin Indian spinach Papaya Others (specify)	0 1 2 3 4
3	What varieties of fruit tree do you have?	Mango Blackberry Jack fruit Papaya Others (specify)	1 2 3 4
4	Did any member of your household sell more than 100 days of manual labour in last year?	Yes No	1 2
5	What is your perception about the income-expenditure ratio in last year?	Surplus Balance Occasional deficit Always deficit	1 2 3 4
6	Is any member of this HH is a member of any NGO? If yes, please specify	No IIRD Grameen Bank Proshika Others (Specify)	0 1 2 3

Health and hygiene

Serial	Question	Answer	Code
1	What is the source of drinking water for your HH?	Own tube-well Other's tube-well Shared tube-well Others (Specify)	1 2 3
2	What is your source of cooking water?	Tube-well Pond River/canals/bill	1 2 3
3	What is your source of water for washing utensils?	Tube-well Pond River/canals/bill	1 2 3
4	Have you heard the presence of arsenic in tube well water of this locality?	Yes No	1 2
5	What are the health problems linked to drinking arsenic contaminated water?	_____ Do no know	8

Serial	Question	Answer	Code
6	How do you wash hands before a meal?	Use soap	1
		Only water	2
		Do not wash	3
7	How to you wash hands after defecation	Use soap	1
		Only water	2
		Do not wash	3
8	What type of latrines do you use?	Ring slab	1
		Pit	2
		Ditch	3
		Bushes \ open land	4
9	How do you wash hands after defecation?	Use soap	1
		Use Ash	2
		Use mud	3
		only water	4
10	How do you wash your hands to clean your child after defecation	Use only water	1
		Use Ash	2
		Use mud	3
		only water	4
11	Have you heard about oral saline?	Yes	1
		No	2
12	If yes, do you know how to prepare it at home?	Yes	1
		No	2
13	If yes, how do you prepare it? (The interview must listen properly before making the decision)	Knows proper procedure	1
		Do not know	8
		Others (Specify)	
14	Did your child ever have diarrhoea?	Yes	1
		No	2
15	What are the causes of diarrhoea?	1.	
		2.	
		3.	
16	How do you treat diarrhoea at home?	Home made saline	1
		Buy prepared saline	2
		Continue Normal diet	3
		Do nothing	4
		Others (Specify)	

Morbidity

1. Did any member of your family suffer from any major disease in last 15 days?

Line no.	Diseased person's name	Signs/symptoms (as reported by respondent/)	Treatment sought (Mention if more than one)	Duration (days)	Did you continue breast feeding (applicable for U-2 children)
1	2	3	4	5	6

Column 4

Column 5

Column 6

- | | | |
|--|----------------------|---------------|
| 1 = Home treatment with traditional medicine | 96 = Still suffering | 1 = As usual |
| 2 = Home treatment with modern medicine | | 2 = Decreased |
| 3 = ORS/Sharbat | | 3 = Stopped |
| 4 = MBBS or LMF doctor | | 4 = Increased |
| 5 = Paramedics (PC/FWV/CHW/HA etc.) | | |
| 6 = <i>Kabiraj</i> / Homeopathic | | |
| 7 = <i>Fakir/Tabiz/Panipora/telpora</i> etc. | | |
| 8 = Medicine shopkeepers (allopathic) | | |
| 9 = Others (please specify) | | |
| 10 = No measures taken | | |

Serial	Question	Answer	Code
2	Did any of your family members die last in 12 months?	Yes No	1 2
3	If yes, please mention his/her relationship with the HH head?		
4	What was the cause of death according to your idea?	_____ _____	
5	How old was he/she at the time of death?	Old person years Children < 2 months	

Nutritional deficiency diseases

Serial	Question	Answer	Code
1	Do you know the most important cause of goitre?	Iodine deficiency	1
		Vitamin deficiency	2
		Do not know	8
		Others (specify)	
2	Was the salt that you bought last time iodinated?	Yes	1
		No	2
		Do not know	8
3	If yes, how did you know it?	From the label on the packet	1
		testing by ourselves	2
		Hearing from the others	3
4	Do you know the most important cause of anaemia?	Iron deficiency	1
		Vitamin deficiency	2
		Do not know	8
5	Do you know how anaemia can be prevented?	Iron tablets	1
		Vitamin tablets	2
		Vegetables and fruits	3
		intake	8
		Do not know	
6	Do you know the most important cause of night blindness?	Deficiency of vitamin A	1
		Vitamin deficiency	2
		Low vegetable & fruit	3
		intake	8
		Do not know	
7	How night blindness can be prevented?	Intake of Vitamin A	1
		Intake of vitamin tablets	2
		Vegetables and fruits	3
		intake	8
		Do not know	

Information on pregnant mothers

Respondent's name: _____

Line no.

Husband's line no.

Serial	Question	Answer	Code
1	At what age you got married?	_____ years	
2	How many years after your marriage was the first child born?	_____ years Not applicable	9
3	How many times you become pregnant (including the present one)?		
4	If currently pregnant, what is the duration of this pregnancy?	_____ times	
5	How many children do you have?	_____ weeks	
6	Did you ever experience miscarriage within 28 weeks of pregnancy?	Yes No	1 2
7	If the yes, how many times?	_____ times	
8	Do you know the causes of abortion?	_____ _____ Do not know Not applicable	8 9
9	Did you ever give birth to a dead child (after 29 weeks of pregnancy)?	Yes No	1 2
10	If yes, at which week of pregnancy did the accident occur?		
11	Do you know the causes of the miscarriage?		
12	Are you facing any problem with respect to this pregnancy?	Yes No	1 2
13	If yes, please mention the type of problem faced.	1. 2. 3.	
14	Where do you usually go for seeking help in case any pregnancy related problem?	1. 2. 3.	
15	Where do you usually go for health check up?	Union health centre Thana health centre ANCC/Village level health check up centre Others (Specify) Do not go any where/did not go Not applicable	1 2 3 4 5 9

Serial	Question	Answer	Code
16	If you do not go for a health check up – why not?	1. 2.	
17	If you have gone to the health centre, how many times?		
18	What is the mode of transportation to reach the health centre?	Walk Rickshaw Boat Tempo Bus Others (Specify)	1 2 3 4 5
19	How far is the nearest health centre from your house?	miles	
20	How much time is needed to go to the health centre?	hours	
21	What is the transportation used to go to the centre?	Walk Rickshaw Boat Tempo Bus Others (Specify)	1 2 3 4 5
22	Are you satisfied with the service offered at health centre?	Very much satisfied Moderately Not at all	1 2 3
23	Do you take iron tablets during this pregnancy?	Yes No	1 2
24	If yes, what is the number of tablets consumed in last month?		
25	Have you been vaccinated against tetanus during this pregnancy?	Yes No	1 2
26	If yes, how many times?		
27	Is there any need to change food habits during pregnancy?	Yes No Do not know	1 2 8
28	If no, why?	1. 2. 3. Do not have enough food	99
29	If yes, what kind of change is needed?	1. 2. 3.	

Serial	Question	Answer	Code
30	Have you restricted any food so far during this pregnancy?	Yes	1
		No	2
31	If yes, what are the foods that are restricted?	1. 2. 3.	
32	Do you perform all HH works during pregnancy?	Yes	1
		No	2
33	If no what are the activities that you do not perform?	1.	
		2.	
		3.	
		Not applicable	9
34	Did you use any method of contraception before this pregnancy?	Yes	1
		No	2
35	If yes, what was it?	Pills	1
		Injection	2
		Condom	3
		Others (Specify)	
36	Where did you deliver your last child?	At home	1
		Father's home	2
		THC	3
		UHC	4
		District hospital	5
		Backyard	6
		Atur ghar	7
		Not applicable	9

Information on lactating mothers and other married women

Respondent's name

Line no.

Husband's line no.

Serial	Question	Answer	Code
1	How old were you at the time of your marriage?	_____ years	
2	How many years after your marriage was the first child born?	_____ years Not applicable	9
3	How old is your last child?		
4	How many children do you have?		
5	Did you experience any miscarriage within first 28 weeks of any of your pregnancies?	Yes No	1 2
6	If the answer is yes, how many times?		
7	Do you know the reason behind the abortion?	_____ _____ Others (Specify) Not applicable	8 9
8	Did you give birth to any dead child (after 29 days of pregnancy)?	Yes No Not applicable	1 2 9
9	If the answer is yes, at which week of pregnancy did the accident occur?		
10	Do you know the causes of miscarriage?		
11	Did any of your child die after birth?	Yes No	1 2
12	If yes, how many?		
13	What was/were the cause/causes of death?	1. 2. 3. 4. Do not know 5. Not applicable	8 9
14	Have you faced any problem in last pregnancy?	Yes No	1 2
15	If yes, please mention the type of problem faced.	1. 2. 3.	

Serial	Question	Answer	Code
16	What measure did you take to solve the problem?	1. 2. 3.	
17	Where did you visit for antenatal check up during last pregnancy?	Union health centre Than health centre ANCC/Village level health check up centre Do not go any where/did not go Not applicable	1 2 3 4 9
18	If not, why?	1. 2.	
19	Did you receive any postnatal check up after last pregnancy?	Yes No	1 2
20	If yes, where did you go?	Union health centre Than health centre ANCC/Village level health check up centre Do not go any where/did not go Others (Specify) Not applicable	1 2 3 4 9
21	If not, why?	1. 2. 3.	
22	How far is the nearest health centre from your house?		miles
23	How much time is needed to go to the health centre?		hour
24	What is the mode of transportation to go to the centre?	Walk Rickshaw Boat Tempo Bus Others (Specify)	1 2 3 4 5
25	What is the level of your satisfaction with respect to your visit in a health centre?	Very much satisfied Moderately Not at all	1 2 3

Serial	Question	Answer	Code
26	Did you take iron tablets in last pregnancy?	Yes No	1 2
27	If yes, how many months did you continue taking the tablets?		
28	If yes, what is the number of tablets consumed?		
29	Have you had vaccination against tetanus during pregnancy?	Yes No	1 2
30	If yes, how many times?		times
31	Is there any need for changing food habit during pregnancy?	Yes No Do not know	1 2 8
32	If no, why?	1. 2. 3. 4. Do not have enough food	
33	If yes, what kind of changes are needed?	1. 2. 3.	
34	Did you restrict any food during last pregnancy?	Yes No	1 2
35	If yes, what are the types of food restricted?	1. 2. 3.	
36	Did you do all usual HH works during pregnancy?	Yes No	1 2
37	If no, what were the activities that you restricted?	1. 2. 3. Not applicable	9
38	Are you using any method of contraception now?	Yes No	1 2
39	If yes, what kind of method is that?	Pills Injection Condom Others	1 2 3

Serial	Question	Answer	Code
40	Where did you deliver your last child?	At home	1
		Father's home	2
		THC	3
		UHC	4
		District hospital	5
		Backyard	6
		Atur ghar	7
		Not applicable	9
41	Who attended you during your last delivery?	Trained birth attendant	1
		Untrained birth attendant	2
		Relatives	3
		Village doctor	4
		Nurse/FWV	5
		MBBS doctor	6
42	Did you take VAC after delivery?	Yes	1
		No	2
43	Is there any need for changing food habits during lactation?	Yes	1
		No	2
44	If the answer is yes, what are the changes that you made?	1.	
		2.	
		3.	
45	Have you restricted yourself from taking any food during lactation?	Yes	1
		No	2
46	If yes, what are the types of food?	1.	
		2.	
		3.	
47	Who informed you not to take those foods?	Mother in law	1
		Sister in law	2
		Husband	3
		Others	

Food habit and care of the child

Serial	Question	Answer	Code
1	What was given to the newborn for the first time?	Given nothing Water/sarbat Honey Mustard oil Colustrum Others (Specify)	1 2 3 4 5
2	Did you feed colostrm to your baby?	Yes No	1 2
3	If yes, how long after birth was it given?		
4	If no, why not?	1. 2. 3.	
5	At which month (after birth) you have started giving supplementary food?	months Not applicable	
6	What have you given as supplementary food?	Suji Rice Kichuri Fruit Cow's milk Egg Others (specify)	1 2 3 4 5 6

Information on immunisation

Line no.	Name	Sex	Mother's line no.	Father's line no.	Age in month	DPT 1=Yes 0=No			Polio 1=Yes 0=No			BCG 1=Yes 0=No		Measles 1=Yes 0=No	Consumed VAC in last winter? Y=1, N=0
						1	2	3	1	2	3				

Name of the interviewer

Date

Annexure-V

Village

112

Unit

--	--

Name of the supervisor

130

Union: ☐ Village: ☐

[illegible]

Name of the supervisor _____

132

Village _____

133

Unit	Name of the supervisor	

117

Union ☐ Village ☐ ☐ ☐ ☐

[illegible]

Unit

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 Name of the supervisor _____

119

Kachua Integrated Development Project
Basic Education & Health Project
Monthly Report on health and Nutrition

Month:

Total # of HH

Name of the supervisor:

Unit:

Growth Monitoring of Children under 5 years of age

- | | | | | |
|--|---|---|------|------------------|
| 1. Total no. of children registered | M | F | T(x) | Cumulative total |
| 2. No. of children weighed | M | F | T(y) | Cumulative total |
| 3. % of children weighed ($\frac{x}{y} \times 100$) = | | | | |
| 4. No. of newborns registered | M | F | T(a) | Cumulative total |
| 5. No. of birth weights taken | M | F | T(b) | Cumulative total |
| 6. No. of low birth weight newborns | M | F | T(c) | Cumulative total |
| 7.. % of birth weight taken ($\frac{b}{a} \times 100$) = | | | | |
| 8. % of low birth weight newborns ($\frac{c}{a} \times 100$) = | | | | |
| 9. No. of children <60% NCHS median wt. for ht. (z) = | | | | Cumulative total |
| 10. % of children <60% NCHS median weight for height ($\frac{z}{y} \times 100$) = | | | | |
| 11. No. of (children <1 year) infants (q) = | | | | |
| 12. No. of infants (< 1year of age) with growth faltering (not gaining 600 grams in three successive weighings) (p) = | | | | |
| 13. % of infants with growth faltering ($\frac{p}{q} \times 100$)= | | | | |
| 14. No. of children between 12 to 24 months (s) = | | | | |
| 15. No. of children (12 th month – 24 th month) with growth faltering (not gaining at least 300 grams in 3 successive weighings) (r) = | | | | |
| 16. % of children (between 12 to 24 months) with growth faltering ($\frac{r}{s} \times 100$) = | | | | |

17. Prevalence of 2 major causes of growth faltering

	Name of the disease/cause	Number of patients found	%
1	Diarrhoea		
2	ARI		
3	Others (note the name)		

18. No. of children given supplementary food in day care centre (w) =

19. No. of children with 7 days of enrollment in feeding programme (v) =

20. % of children receiving supplementary food in day care centre ($\frac{w}{v} \times 100$) =

21. Total no. of meals given (e) =

22. Total no. of meals targeted (f) =

23. % of meals received by the children ($\frac{e}{f} \times 100$) =

24. No. of children given supplementary food at household level (u) =

25. No. of children who passed 7 days of enrollment, but still in feeding programme (k) =

26. % of children given supplementary food at household level ($\frac{u}{k} \times 100$) =

27. No. of children coming out of feeding program Cumulative total

28. No. of children graduating from the programme (completed 5 years of age)

29. % of Vitamin A capsule coverage $\frac{\text{Total no. of children received VAC}}{\text{Total no. of children 6-59 months}} \times 100$

30. % of newborns given colostrum this month $\frac{\text{No. of newborns received colostrum}}{\text{Total no. of newborns}} \times 100$

31. % of children given exclusive breast feeding $\frac{\text{No. of children given EBF}}{\text{Total no. of children who passed their 4th month}} \times 100$

32. EPI coverage (% of children) $\frac{\text{No. of children covered by EPI programme}}{\text{No. of eligible children for EPI schedule}} \times 100$

33. No. of children died before 1 year of age

34. No. of children died before 5 years of age

35. Total no. of children referred to hospital

THC _____ Satellite clinic _____ Gulbahar Clinic _____ Total _____

36. No. of children having growth card (*grc*) =

37. % of children having growth card ($\frac{grc}{x} \times 100$) =

Pregnant and lactating mothers

1. Total no. of mothers registered Pregnant (*pt*) =

Lactating (*lt*) =

Total Cumulative total

2. No. of mothers weighed

Pregnant (*pw*) =

Lactating (*lw*) =

Total Cumulative total

3. % of pregnant mothers weighed ($\frac{pw}{pt} \times 100$) =

4. % of lactating mothers weighed ($\frac{lw}{lt} \times 100$) =

5. No. of mothers eligible for supplementation: Pregnant (*pes*) =

Lactating (*les*) =

Total

6. No. of mothers received supplementation: Pregnant (*prs*) =

Lactating (*lrs*) =

Total

7. % of pregnant mothers received supplementation ($\frac{prs}{pes} \times 100$) =

8. % of lactating mothers received supplementation ($\frac{lrs}{les} \times 100$) =

9. No. of pregnant mothers who had gone through ante natal checkup (ANC) (*anc*) =

10. No. of lactating mothers who had gone through post natal checkup (PNC) (*pnc*) =

11. % of pregnant mothers who had gone through ANC ($\frac{anc}{pt} \times 100$) =

12. % of lactating mothers who had gone through PNC ($\frac{anc}{lt} \times 100$) =

13. No. of mothers consumed (at least 30) iron tablets Cumulative total

14. No. of lactating mothers taken VAC within 2 weeks of delivery Cumulative total

15. No. of mothers graduating from the programme Cumulative total

16. No. of mothers referred to hospital for reasons other than ANC and PNC

Pregnant: THC	Satellite clinic	Gulbahar Clinic	Total
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Lactating: THC	Satellite clinic	Gulbahar Clinic	Total
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17. No. of abortions & still births (*abr*) =

18. % of abortions and still births ($\frac{abr}{tp} \times 100$) =

19. Mode of labour	Hospital
	Trained TBA
	Untrained TBA
	Relatives

20. No. of mothers died during pregnancy or within 6 weeks after delivery

Total	Cumulative
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Signature of supervisor

Date _____