

**A Study of
Food Related Nutritional Deficiency in KBK
Districts of Orissa**

Sponsored by :

**Planning Commission
Govt. of India**



**Agricultural and Rural Development Consultancy Society (ARDCOS)
115, Basundhara Aptt, Rasulgarh, Bhubaneswar – 751010**

**Orissa
2007**

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Dr. Gyana Chandra Kar
Hony. President & CEO

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ABBREVIATIONS

1	ANM	Auxiliary Nurse and Midwifery
2	APL	Above the Poverty Line
3	AWC	Awanganwadi Centre
4	AWW	Awanganwadi Worker
5	BCG	A Vaccine to Prevent Primary Tuberculosis
6	BMI	Body Mass Index
7	BPL	Below the Poverty Line
8	C D Block	Community Development Block
9	CED	Chronic Energy Deficiency
10	CHC	Community Health Centre
11	CPI	Critical Period of Intervention
12	Cu T	Copper T
13	DPT	A vaccine against Diphtheria, Pertussis and Tetanus
14	HDI	Human Development Index
15	H H	House-hold
16	IAY	Indira Awas Yojana
17	ICDS	Integrated Child Development Scheme
18	IEC	Information Education and Communication
19	KAP	Knowledge Attitude and Practice
20	KBK	Kalahandi, Balangir and Koraput Districts of Orissa
21	LTAP	Long Term Action Plan
22	MDM	Mid-Day-Meal
23	MHU	Mobile Health Unit
24	NAC	Notified Area Council
25	NFBS	National Family Benefit Scheme
26	NFHS	National Family Health Survey
27	NGO	Non-Government Organisation
28	NNMB	National Nutrition Monitoring Bureau
29	NOAP	National Old Age Pension
30	OAP	Old Age Pension
31	OBC	Other Backward Class

32	O P	Oral Pill
33	PDS	Public Distribution System
34	PEM	Protein Energy Malnutrition
35	PEO	Programme Evaluation Organisation
36	PHC	Primary Health Centre
37	PTA	Parent Teacher's association
38	RDA	Recommended Dietary Allowances
39	RLTAP	Revised Long Term Action Plan
40	S C	Scheduled Caste
41	SGRY	Swampoon Gramin Rojgar Yojona
42	SGSY	Swarna Jayanti Gram Swarojgar Yojana
43	SHG	Self Help Group
44	SNP	Supplementary Nutrition Programme
45	SOAP	State Old Age Pension
46	S T	Scheduled Tribe
47	T G	Target Group
48	TSC	Total Sanitation Campaign
49	T T	Titanous Toxoid
50	WFP	World Food Programme
51	WHO	World Health Organisation

EXECUTIVE SUMMARY

1. The Nutrition Profile:

Malnutrition continues to be the wide spread problem in Orissa even though there has been significant improvements in food production and advancements in science during the last fifty years. Not only that various poverty alleviation programmes had been implemented in the past to bring in overall economic improvements of the poor but also many nutrition related programmes like the Integrated Child Development Scheme (ICDS), including Supplementary Nutrition, Nutrition and Health Education, Health Care, Immunisation and Childhood Care and pre-School Education (ECCE), National and State Old Age Programme (NOAP and SOAP), Mid-day-Meal Programme (MDM), Emergency Feeding Programme etc have been launched in the State for past many years. This apart, other social security programmes as well as programmes exclusively benefiting women are also being launched in the state. Malnutrition is, therefore, a very serious problem and a real challenge before the administration and the society at large.

2. The Study Area:

The undivided districts of Kalahandi, Balangir and Koraput of Orissa, popularly known as the KBK region is a typical region that has drawn the attention of the world because of persistent poverty and mal-nutrition as a result of multifaceted undeveloped characteristics despite quite a large number of development endeavours have been put in place by the State, Centre and various non-government organisations in this region. As it is Orissa is continuing to be poor as compared to all other states in the country as per the official estimates released by Government of India at various intervals. But the fact remains that this KBK region has specific rudimentary problems as compared to the rest of Orissa for which the region continues to remain backward.

3. The Agency:

For the above reasons, Planning Commission felt it necessary to initiate a detailed investigation to reveal the factual position of the food related nutritional deficiencies prevalent among the vulnerable groups like the children and the women in the reproductive age group living in the backward area like the KBK region in the State of Orissa. This assignment has been entrusted to the Agricultural and Rural Development Consultancy Society (ARDCOS), Bhubaneswar by the Planning Commission.

4. Study Objectives:

It was, therefore, proposed to launch a study in all the 8 constituent districts in the KBK region in a scientific manner to assess the magnitude of food related nutritional deficiencies among the children, in the age group of 0 to 14 and the adults with special reference to the women in the reproductive age. The broad objectives of the study were to ascertain the food related nutritional deficiencies among the women and children. The objectives were of the following nature.

- i. The nature and the quantity of food intake among different socio-economic class in the region and the extent of their awareness on the quality of their food intake.
- ii. Prevalence of health and hygiene practices among different socio-economic class.
- iii. Access of the house holds to different food and nutrition related programmes launched by the Government.
- iv. Food precautions taken, antenatal check-ups and vaccinations done in case of pregnant women.
- v. Birth control measures undertaken for limiting the number of issues.
- vi. Care taken in case of nursing mothers.
- vii. Present health condition of the children and the women in the reproductive age.
- viii. Adherence to the growth chart among infants.
- ix. Status of immunisation among the children.
- x. The role played by the Anganwadies in caring 3-5 year children and availing of MDM among school age children.
- xi. Adherence to the growth and development indicators among the children.
- xii. Assessment of food related nutritional deficiencies through appropriate techniques.
- xiii. Suggesting policy prescriptions to tackle the problem of food related nutritional deficiency in the region.

5. Study Design:

For the detailed study, it was decided to cover all the eight constituent districts of the KBK region. Two very backward blocks from each district were selected in the first instance and then 3 villages were selected from each of the 16 sample blocks through simple random sampling procedure. As many as 10 house holds were selected from each of the 48 sample villages that formed the ultimate sampling unit for detailed investigation under the study. In the process, 480 sample house holds in all were selected for detailed study in the field.

6. Study Instruments:

Although 10 households each were selected from the list of households in each of the sample villages as the ultimate sampling units, the objectives of the study was to examine the prevalence of food related nutritional deficiencies if any among the children in the age group 0-14 and the women in the reproductive age group of 18-44. For obvious reasons, a single study instrument was not considered sufficient for the purpose of carrying out the detailed investigation. Appropriately, a set of four study instruments namely (a) the Household Schedule, (b) the Women Schedule, (c) the Child Schedule and (d) the Assessment Schedule which were administered on the subjects of observation.

7. The Field Work:

A team of well qualified and adequately experienced personnel were recruited exclusively for the purpose of this study. The team comprised of 4 Field Investigators and a Team Leader was given intensive training for three days with the help of the Subject Matter Specialist (Nutrition Specialist) specifically engaged for the purpose of this study. The Subject Matter Specialist was associated with this study right from the conceptualisation of the study to the end of drafting of the report.

8. Samples Executed:

In all, 480 house holds were studied in the eight districts of the KBK region as per the sampling scheme explained earlier. In the 480 sample house holds, the total population size was 1730 of whom 892 were males and 838 were females. Among 1730 persons, there were 465 women in the reproductive age group including three with early mother-hood, 389 boys and 322 girls up to the age of 14 years. These 1176 persons were subjected to detailed investigation through administration of the assessment schedule.

9. Coordination and Supervision:

For ensuring quality outputs through this study, the Senior Executives of the ARDCOS including the Subject Matter Specialist had taken pains to coordinate and supervise the work under the study at all levels. Besides, the Regional Office of the PEO at Bhubaneswar was all along associated with the study at all stages of operation such as finalisation of study instruments, pre-testing, training, supervision, scrutiny and tabulation of data as per the stipulations of the Planning Commission.

10. Summary Conclusions:

In course of this research study, the following conclusions emerged on the basis of field observation.

- 10.1 About 72 per cent of the study households depend on wage labour and that too from non-agriculture sources. Being very poor and having hardly any productive assets, dependence on non-agricultural wage employment has been resorted to by majority of the households.
- 10.2 The total literacy among the members of the sample household was 47 per cent and the female literacy was abysmally low i.e. 36 per cent.
- 10.3 About 35 per cent children in the school going age were out of schools and only 65 per cent attending schools. Most of the out of school children were engaged in other activities like taking care of the youngest siblings and attending to some small economic activities like collection of fire wood, rearing domestic animals etc as an economic support to the family.
- 10.4 While 95 per cent households are taking two square meals a day, 5 per cent households take only one square meal a day. Majority of the households (89 per cent) take other dietary intake only once a day, 6 per cent take twice a day and 5 per cent do not take other dietary intakes during a day at all. A large number of households taking one square meal a day belong to Malkangiri district. More so in the said district of Malkangiri, 35 per cent of the households do not take any other dietary intakes at all other than the principal square meals.
- 10.5 Only 3 per cent of the households have household latrine facility and none of the households in Malkangiri, Nuapada, Rayagada and Sonepur districts have latrine facilities in their homes.
- 10.6 It was good to observe 97 per cent of the sample households have their access to safe source of drinking water if not cent per cent.
- 10.7 In 36 per cent of the households, adults are consuming alcohol majority of whom belong to Malkangiri district. Unfortunately, however, 8 per cent of the children in Malkangiri district also consume alcohol.
- 10.8 There were as high as 71 per cent sample households whose annual household per capita income was less than Rs.2500/-. More so, there were only 3 per cent sample households whose annual per capita household income was more than Rs.6000/-.

- 10.9 Households, whose per capita food consumption was less than 3.5 kg a week or alternatively less than 500 gms a day, was 34 per cent. There were hardly 1 (one) per cent of the households who were consuming more than 7 kg a week per capita or alternatively more than one kg a day. This implies that irrespective of the type of food, the total food consumption among the households in the KBK region is almost half of the recommended dietary allowances.
- 10.10 Apart from low income group of households, some higher income group of households were also consuming lower quantity of food, may be due to other expenditures on undesirable items like alcohol apart from attaching higher priority to meeting other obligations at the cost of food consumption etc.
- 10.11 Irrespective of quantity, only 57 per cent households consume animal protein, 18 per cent milk and milk products, 10 per cent roots and tubers and 10 per cent fruits. Consumption of milk and milk products is lowest in Malkangiri districts followed by Rayagada that provides essential nutritional requirements for the body.
- 10.12 Consumption of protein is usually among higher income groups. Protein consumption ranges from 330 gms to 1380 gms with an average of 410 gms per capita per week. Around 75% of the households are consuming between 0-500 gms of protein per capita per week. Consumption of protein is considerably less among the households in KBK region as compared to the recommended dietary allowances.
- 10.13 In only 6 per cent sample households there was awareness, attitude and the practice of consuming various kinds of fortified food was present. This is certainly a very low figure. The knowledge, attitude and practice of consuming various kinds of fortified food is higher among the higher income groups.
- 10.14 Very negligible percentage of the households have received the benefit under the schemes of TSC and Swajaldhara which have adequate bearing on the health, hygiene and sanitation of the people.
- 10.15 While the percentage of households accessing the ICDS and AWC is quite satisfactory, the same in case of MDM and PDS is appreciably low.
- 10.16 Access of households to PDS is only 41 per cent. There being adequate number of fair price shops the possible reasons for not using PDS commodities

by large majority of the households may be due to lack of purchasing power in the hands of poor people in the region.

- 10.17 Among the eligible couples, in 52 per cent cases both the male and female were illiterate and in 73 per cent cases either of them was illiterate which is a serious deterrent in gathering knowledge about various poverty alleviation and rural development programmes meant for them and to enjoy the benefits of such programmes.
- 10.18 The study reveals that as high as 66 per cent of the men are getting married before the age of 25 and similarly, as high as 43 per cent of the women are getting married before the age of 18. There were 69 per cent of the couples where either the husband or the wife had entered into marital life before the prescribed age.
- 10.19 As regards the present health condition of the women, they have expressed that they have been experiencing not so very serious health problems even though the study does not reveal any picturesque position. This indicates that they have been contented with their present health condition.
- 10.20 The study reveals that mothers with lower educational profile have gone in for higher number of issues and the rate of survival of children goes on decreasing with the number of issues.
- 10.21 Among the eligible couples who were supposed to adopt some kind of family planning measures, as low as 21 per cent had only adopted such measures and the women are the sole contributory to that. Of course, education of the couples has some bearing on that.
- 10.22 There were 27 pregnant women in the sample households. Ante-natal check ups, immunisation and iron supplementation was observed to have been done in case of 74 per cent of pregnant women and food precaution taken in case of 44 per cent of pregnant women.
- 10.23 Only 27 per cent of the mothers were allowing breast feeding to their children beyond one year. Breast feeding is not also adequate in many cases.
- 10.24 It was observed that there had been serious neglect on the part of the parents for introduction of semi-solid during 6-12 months followed by solid supplementation at one year which is mostly due to lack of their awareness.
- 10.25 Immunisation of children through BCG, DPT and Polio vaccines is some what satisfactory. But in respect of other vaccines, it is not so very encouraging.

- 10.26 The study reveals that majority of the children have expressed to have been satisfied with their present health condition as compared to their condition during last year as also as compared to other children of their age. However, it is observed that psychologically the parents have hardly replied that their children are better as compared to other children although they do not feel their children to be in worse health condition.
- 10.27 Out of the children in the age group of 3-5 years, as high as 51 per cent were availing health care facilities through Anganwadi Centres.
- 10.28 From the detailed field study it is revealed that 58 per cent (as against the ideal of 100 per cent) of the school going children were receiving the benefit of MDM. A sizeable proportion of them (i.e., 42 per cent) were not able to receive the benefit of MDM as a result of not attending schools.
- 10.29 On physical observation it reveals that the number of women and children exhibiting the signs and symptoms relating to abnormally smooth tongue, thyroid swelling, bending bone, muscle wasting and motor weakness are very less and on the organs like the hair, facial appearance, eye, cornea, lip, teeth, chest, foot and skin, the percentage is very high in the range 33-47 per cent.
- 10.30 The study reveals that the number of signs and symptoms of malnourishment among the children and women increases according to their age. However, the number of signs and symptoms among women are more as compared to the children.
- 10.31 The nutritional deficiencies as observed through signs and symptoms on different parts of the body are mostly related to the food stuff rich in Vitamins A, C, D, E, B Complex, Amino Acid, Calcium and the food stuff that provides protein energy and the. The relevant food values are can be made available in fish, meat, milk, egg, yellow fruits, dry fruits, green vegetables, tomato, germinated wheat, sun flower and cotton seed oil, root vegetables, ragi, all plants, rice pram, wheat, millet, sea food, ground nut, germinated gram etc.
- 10.32 The study has also taken care to measure the problem of malnutrition through assessment of body weight as compared to the height of a person by using the study instrument "body mass index (BMI)" which is the ratio of the body weight in Kg to the square of the height in Mts.
- 10.33 It is revealed that about 50 per cent of the women are in the range of acceptable weight, 5.81% of them are obese and 1.93% are seriously obese.

The 7.84% of the women in the overweight category need some kind of attention to bring them to the normal weight range. But the serious concern is that as high as 26.67% of the women are in the underweight category and 15.05% in the category of severely underweight. Added together, the cases of 41.72% of the women are serious and therefore they need special intervention to bring them to the normal weight category which is of urgent and immediate concern.

- 10.34 The study reveals that both boys and girls have problems of underweight as well as problems of overweight. On the whole, 66.84 per cent of children in the age group 2-14 were in the range of healthy weight, which is slightly lower in case of girls as compared to the boys. On an average 18 per cent of the children are in the category of "Overweight at Risk" or "Overweight" and the problem is slightly higher among the boys as compared to the girls.
- 10.35 As high as 14.53 per cent among the children were in the underweight category. The percentage of underweight girls is 17.80 as compared to 11.84 among the boys which indicates the problem of malnutrition is acute among the girls as compared to boys.
- 10.36 The problem of malnutrition among women is quite high as compared to the children. This indicates that the women give little bit of preference to their children to fulfil their food requirement as compared to themselves.
- 10.37 In course of field survey, it was observed that most aspects of the dietary schedule as well as the problems of health and nutrition are not clearly known to the rural mass and more specifically to the women in the households who happen to hold the complete charge of food management among the members in the family. No food precautions are usually taken in respects of pregnant and lactating mothers. On the other hand, certain food restrictions are usually imposed on the pregnant and lactating mothers on account of prevailing blind belief and food faddism that not only adversely affects the mothers but also it invites multifarious risk for the child.

11. Summary Recommendations:

Based on the emerging conclusions, a set of recommendations as given below have been suggested which will help in taking policy initiatives with a view to improve the problem of food related malnutrition in the KBK region in Orissa with special reference to the children and women in the reproductive age group

- 11.1 All out of school children should be brought to schools so that, not only they shall receive general education but also receive the benefit of MDM and some education on health and hygiene including nutrition.
- 11.2 It is expedient to create an atmosphere among the households in the KBK region to avail opportunities under the Total Sanitation Campaign and Swajaldhara. Availing toilet facility through establishment of Community Sanitary Complex under the TSC will also solve the purpose to a great extent. This will have positive bearing on the health, hygiene and sanitation.
- 11.3 Efforts should be made to eradicate alcoholism among the adults as well as children in KBK districts through motivation. It will enable the poor households to spend little more on health, hygiene, food and education out of the savings generated that will have positive bearing on their nutrition.
- 11.4 The drive to eradicate alcoholism, to be fruitful, should come from within the community and the community based Women Self Help Groups shall be the best option who should be given adequate encouragements and incentives to carry on the drive to its logical end as it can penetrate to household levels through its members.
- 11.5 To enhance purchasing powers in the hands of the poor households in the KBK region, the people in the area shall have to be educated enough to take advantage of the recently launched employment guarantee scheme with a view to providing a minimum 100 days of employment during a year to the BPL households.
- 11.6 Since protein intake among the rural areas is very less an appropriate strategy need to be evolved like including sale dry fish and Soyabin which are rich with protein through the fair price shops.
- 11.7 With a view to ensuring consumption locally produced nutritious food and more specifically at household levels, various ventures under SGSY need to be tiny ones like rearing of one or two goats, keeping two to three indigenous variety of hens etc. should be thought of. This will provide milk as well as animal protein at the household levels apart from getting some income through sale of off-springs.
- 11.8 The present motivation and education campaign of the Health and Family Welfare wing on limiting the number of issues and increasing the rate of child survival should focus on the illiterate couples.

- 11.9 IEC activities in motivating and educating couples on Family Planning measures, the women SHGs existing in the area could be taken into confidence and encouraged to shoulder the responsibility who can go to the household levels and achieve desired results. The focus should be on illiterate couples.
- 11.10 It is necessary to launch adequate motivation and training programme on the need of qualitative food supplement of requisite quantity for the pregnant women for ensuring physical and mental growth of the child and safety of the mother through well baby clinics if there be any run by NGOs. This campaign can be more effective if the local women SHGs could be taken into confidence and encouraged to shoulder the responsibility of motivation and education.
- 11.11 It is necessary to launch adequate motivation and training programmes on the need for withdrawal of breast feeding and solid supplementation for children beyond one year through 'well baby clinics' if there be any run by NGOs. This campaign can also be more effective if the local women SHGs are encouraged to spread this message. Besides, cheap variety of weaning food should also be made available.
- 11.12 Semi-solid supplementation being quite important from the point of nutritional requirement of the children below one year, it is essential to motivate and educate the parents through well baby clinics or through women SHGs for popularisation of semi-solid supplementation after the age of six months.
- 11.13 It is necessary that apart from ensuring cent per cent immunisation, creation of awareness and keenness among the rural poor families in the KBK region on the benefit of immunisation should receive first priority. The consequences of not getting the children immunised with examples should also be taught to them through participatory mode.
- 11.14 There is an urgent need for adequate motivation of the parents to send their children to AWCs along with other children to receive health care facilities regularly. It may be little bit difficult to break the age old eventually yield some tangible result.
- 11.15 To ensure cent per cent enrolment of children in schools, it is recommended that there should be door to door motivation campaign and persuasion by the Parent-Teachers Association (PTA) sufficiently prior to the reopening of schools.

- 11.16 To up-keep the health and nutritional status of women and children in rural areas, a lot many interventions like the ICDS, SNP, MDM and Maternity and Child Health (MCH) programmes including the Janani Surakshya Yojana have been initiated long since for providing health and nutritional benefits to the women. Even now there has not been universal acceptance of these programmes particularly by rural / tribal poor households. It is, therefore, recommended that greater thrust should be given to these programmes through IEC programme for hundred per cent acceptance.
- 11.17 Each pregnant woman shall be taken as an 'entry point'. The entry points should be identified in the earliest opportunity and intensive motivation and education in respect of each entry point should be continuous and results monitored at regular intervals during the critical intervention period (CIP). Each entry point will include the expectant mother and the unborn child. The critical intervention period shall commence from the date of identification of the entry point and continue till end of lactation of the mother or till completion of three years of the baby.
- 11.18 No one would deny the necessity to reduce the prevalence of malnutrition in the community and more specifically among the women in the reproductive age and the children. It is, therefore, essential that special programmes aiming at reducing the malnutrition among them should be launched. The objectives of all the existing techniques remaining in tact, it is expedient to think of some paradigm shift in the strategy of these schemes. The strategies should include building up the capability among the people in the community so that they can realise and appreciate their problems and take appropriate precautionary measures even in absence of any programmes for them. This can only be possible through continuous and participatory motivation and education through entry points.
- 11.19 To ensure regular association of the Women SHGs in the programme some incentives should be given to the SHG to encourage them to achieve good results. Some provision for awards and rewards should also be there. Besides, certain events should be organised at intervals where the "entry points" should assemble and share their experiences and feel free to express their problems. They may also come up with some good practices for adoption.
- 11.20 The materials for the intensive IEC programme for the entry points shall be in the form of Handout in local language to be distributed to each pregnant

woman. An illustrative content for the Handout has been suggested, vide Annexure-4.8.

11.21 The suggested intensive IEC activity to yield desired results, also should include some of the health and nutrition related environmental issues of the following nature;

- i. Removal of illiteracy among the women,
- ii. Socio-economic measures for uplifting the status of the economically backward and deprived women,
- iii. Control of food price through efficient public distribution system,
- iv. Distribution of food supplements for pregnant and lactating mothers through PDS,
- v. Promotion of breast feeding,
- vi. Development of low cost weaning food,
- vii. Continuing community education on health and nutrition as also birth spacing,
- viii. Expansion of immunisation programme,
- ix. Continuing community education on food and personal hygiene,
- x. De-worming of children,
- xi. Food fortification,
- xii. Organising periodic surveillance of population at risk,
- xiii. Rehabilitation of severe nutritional deficient cases,
- xiv. Improving the environment conducive to health and nutrition including health promotion, health protection, treatment and rehabilitation.

CHAPTER - I

INTRODUCTION

Food and nutrition have remained one of the darkest areas and the world has failed to tackle the situation completely. FAO in their report “The State of Food Insecurity in the World” 2003 has expressed doubt if the number of hungry people could be reduced to half its present size by the year 2015, unless efforts both at national and global levels are geared with redoubled commitments.

Food insecurity as also malnutrition looms large in certain regions and in certain population groups calling for food-based activities. This kind of activity is based on “development needs assessments” (as distinct from emergency needs assessment) and form an important component of “Food aid for Development” that formed a part of specific recommendations of Berlin Statement (International Workshop on Food Aid Contributions and Risks to Sustainable Food security - Sept. 2 - 4, 2003 at Berlin, Germany).

The quality Human Capital is seriously affected by food and nutrition deficiencies and, unless tackled early, may pose a serious obstacle to sustainable development. Quite often, the incidence as well as severity of nutritional food deficiencies in certain regions and in certain population groups is by passed by poverty reduction strategies launched by the government.

Hence, there is need for taking up region-specific studies to assess the magnitude of food-related nutritional deficiencies. Such an assessment would not only help the planners and administrators in appreciating the gravity of the problem and location of the malady, but also, adequately help them in preparing region-specific action plans in collaboration with participating bodies, organisations and donors to meet the challenges.

2. The Nutrition Profile:

Through the development endeavours over the five decades after independence, substantial results have been achieved in terms of overall economic growth and qualitative excellence in multiple directions. However, despite large amount of investments made in the past, considerable unintended neglect have been noticed in certain key sectors like nutrition, health, food security and education that have tremendous bearing on the qualities of life of

certain groups of people or a group of people living in certain regions. Malnutrition continues to be the wide spread problem in Orissa even though there has been significant improvements in food production and advancements in science during the last fifty years. Not only that various poverty alleviation programmes had been implemented in the past to bring in overall economic improvements of the poor, but also many nutrition related programmes like the Integrated Child Development Scheme (ICDS), including Supplementary Nutrition, Nutrition and Health Education, Health Care, Immunisation and Childhood Care and pre-School Education, National and State Old Age Programme (NOAP and SOAP), Mid-day-Meal Programme (MDM), Emergency Feeding Programme etc have been launched in the State for past many years. This apart, other social security programmes as well as programmes exclusively benefiting women are also being launched in the state.

According to the second National Family Health Survey (NFHS -II, 1998-99), 54% of children below three years are undernourished, with 21% suffering from severe under-nutrition (weight-for-age < 3SD). Moreover, between NFHS-I (1992-93) and NFHS-II (1998-1999), the proportion of children who are underweight more or less remained the same. However, the percentage of severely underweight children registered a marginal decrease between the two points NFHS-I and NFHS-II.

According to the National Nutrition Monitoring Bureau (NNMB) data (2000-2001), nearly two-thirds (65.9%) children below five years are underweight (weight-for-age < -2SD), of which 25% are severely undernourished (weight-for-age < -3SD) in Orissa. During the period between 1990-91 and 2000-2001, the prevalence of severe undernutrition in Orissa declined from 35.7 % to 25.2 %; while the corresponding decline for all the 10 states combined together coming under the NNMB is 9%. On the other hand, during the said period, the moderate malnutrition in Orissa registered an increase of 7.6%, while it registered a decline of 7.2% in case of all states. Among the 10 states covered in 2000-2001, Orissa continues to have the second highest level of under-nutrition. Compared with the aggregate figures for chronic energy deficiency (Body Mass Index-BMI<18.5) in adult men and women, the level in Orissa is higher. The chronic energy deficiency (CED) among adult men in the state is 38.6% as compared to

aggregate level of 37.4%, and the corresponding figures for CED among adult women are 46.0% as compared to aggregate level of 39.3%. The situation is further worse among the women belonging to the scheduled tribes, illiterate groups as well as women in the low income group.

Malnutrition is, therefore, a very serious problem and a real challenge before the administration and the society at large. Though, a good deal of literature suggests that economic growth impact fairly strongly on income poverty, there is also quite a bit of evidence that its impact on malnutrition has fairly a large time lag. On the other hand, since there is a high degree of concentration of malnutrition among the poor women and children, direct and indirect strategies to tackle malnutrition can lead to a much faster reduction in income poverty, irrespective of growth.

Adequate food intake, good health care and enjoyment of various childhood opportunities are prime factors contributing to the growth and development of a child. But the contributing factors in case of adults and more specifically among the women in the reproductive age group are not as simple as that, because of the very complex nature of their life style as they are to comply with many obligations like the social customs and many other compulsions such as economic, historical, political etc.

3. The Study Area:

The undivided districts of Kalahandi, Balangir and Koraput of Orissa, popularly known as the KBK region is a typical region that has drawn the attention of the world because of persistent poverty and mal-nutrition as a result of multifaceted undeveloped characters despite quite a large number of development endeavours have been put in place by the State, Centre and various non-government organisations in this region. As such, Orissa is continuing to be poor as compared to all other states in the country as per the official estimates released by Government of India at various intervals. But the fact remains that this KBK region has specific rudimentary problems as compared to the rest of Orissa for which the region continues to remain backward.

These undivided three districts in the KBK region have since been divided into eight districts i.e. Balangir, Kalahandi, Koraput, Malkanagiri, Nawarangpur,

Nuapada, Rayagada and Sonapur for the sake of ensuring efficient development administration. Development characteristics of a region which have their relevance to the level of poverty and mal-nutrition are percentage of scheduled tribes, families below the poverty line, literacy, and other qualities of life. Few development characteristics of the districts in the KBK region are presented in the Table No.1.1 given below for better appreciation.

Table No.1.1
District-wise Few Development Indicators in KBK Region

Sl	District	ST (%) 2001	Literacy 2001	% of BPL 2002 *	HDI 2004 **
(1)	(2)	(3)	(4)	(5)	(6)
1	Balangir	20.63	55.70	61.06	0.546
2	Kalahandi	28.65	45.94	62.71	0.606
3	Koraput	49.62	35.72	83.81	0.431
4	Malkangiri	57.43	30.53	81.88	0.370
5	Nawarangpur	55.03	33.93	73.66	0.436
6	Nuapada	34.71	42.00	85.70	0.581
7	Rayagada	55.76	36.15	72.03	0.443
8	Sonepur	9.78	62.84	73.02	0.566
	KBK Districts	38.41	43.33	71.97	N. A.
	Orissa	22.13	63.08	66.37	0.579

* : Percentage of families below the poverty line as per BPL Census 2002.

** : Human Development Index published in the Human Development Report of Orissa, 2004.

The above table reveals that while the percentage of STs in the State is 22.13, that in the KBK districts is 38.41 which is appreciably higher than the state average. Except Balangir and Sonapur all other districts have scheduled tribe population much higher the state average. All the districts in the KBK region have literacy below the state average. More so, the literacy in KBK district is only 43.33 per cent against a state average of 63.08 per cent. The percentage of people below the poverty line in KBK districts is 71.97 per cent against a state average of 66.37 per cent. Except Balangir and Kalahandi, the percentage of families below the poverty line is quite high as compared to the state average in case of all the remaining 6 districts of KBK region. Coming to the human development index, except Kalahandi and Nuapada, the HDI is less than the state average in case of the remaining 6 districts of KBK region.

In 1994, the Committee on the Constitution of Separate Development Board in Orissa (Known as P C Ghadei Committee) in its report have given a clear picture of the degree of backwardness of the blocks in the state. The Committee have identified 82 out of 314 blocks in the State as very backward of which 53 are situated in the KBK region. The district-wise picture of very backward blocks in the KBK region as identified by the Committee is presented vide Table No.1.2 given below.

Table No.1.2
District-wise Very Backward Blocks in KBK Region

Sl	District	Total Blocks	Very Back-ward Blocks	% to Total
(1)	(2)	(3)	(4)	(5)
1	Balangir	14	10	71.42
2	Kalahandi	13	8	61.54
3	Koraput	14	9	64.28
4	Malkangiri	7	5	71.43
5	Nawarangpur	10	5	50.00
6	Nuapada	5	4	80.00
7	Rayagada	11	9	81.82
8	Sonepur	6	3	50.00
	KBK Region	80	53	66.25
	Rest of Orissa	234	27	11.24
	Orissa	314	82	26.11

The above table reveals that more than 66 percent of the blocks in the KBK region are very backward as against 26.11 percent in the state as a whole and 11.54 percent in the rest of Orissa.

For the above reasons, Planning Commission felt it necessary to initiate a detailed investigation to reveal the factual position of the food related nutritional deficiencies prevalent among the vulnerable groups like the children and the women in the reproductive age group living in the backward area of KBK region in the state of Orissa. This assignment had been entrusted to the Agricultural and Rural Development Consultancy Society (ARDCOS), Bhubaneswar by the Planning Commission.

CHAPTER - II

PROFILE OF STUDY AREA

The KBK region, prior to 1994, was comprised of 3 tribal dominated districts of Orissa namely, Koraput, Bolangir and Kalahandi. These districts lying in western and southern parts of Orissa were reorganised into 8 districts in 1994. These new districts are Koraput, Malkangiri, Nabarangpur and Rayagada (constituent parts of erstwhile Koraput district), Kalahandi and Nuapada (constituent parts of erstwhile Kalahandi district) and Balangir and Sonepur (constituent parts of erstwhile Balangir district).

Smt. Indira Gandhi, the then Prime Minister of India was agashed by seeing the poverty and backwardness of district like Kalahandi and immediately decided to provide some special package to bring about all-round development of the region. Thus, came the KBK package under the caption, “Long Term Action Plan (LTAP)” which later was suitably modified and renamed as, “Revised Long Term Action Plan (RLTAP)” covering all the eight districts of the KBK region. Under KBK programme, elaborate steps were taken to improve the socio-economic conditions of the poverty stricken people of the area through provision of several services in the areas of health, food security, education, basic infrastructure and such other infrastructure that would help both directly and indirectly to the economic well being of the poor.

Apart from direct intervention through special programmes under RLTAP, several other National and State schemes such as SGRY, SGSY, NOAPs, NFBS etc. were geared up for achieving convergence of all the schemes with the primary objective of benefiting the poor.

The broad socio-economic and demographic features of each of the eight districts coming under the KBK region are presented vide Annexures-2.1 to 2.8. A perusal of the profile of the KBK districts brings out few distinctive features.

The eight KBK districts together account for 47,647 sq km of area out of the total area of 1, 55,707 sq km in the State accounting 30.60 per cent. The population in social categories like SC and ST in the KBK districts stood at 1,184,520 and 2,798,860 respectively as per 2001 census that accounts for 16.26 per cent and 38.41 per cent respectively to the total population in the KBK districts as against a state average of 16.53 per cent and 22.13 per cent respectively. Thus, it may be seen that in the KBK region as a whole bear a much bigger burden of the people belonging to the backward class.

The region is further marked by very low level of development considered from the point of socio-economic as well as human development indicators. The Human Development report, 2004 of Orissa ranks the districts in terms of Human Development Index (HDI) in descending order. The said ranking exercise puts Balangir at 21, Kalahandi at 11, Koraput at 27, Malkangiri at 30, Nawarangpur at 26, Nuapada at 14, Rayagada at 25, and Sonapur at 16 among the 30 districts in the State which shows that most of the districts in the KBK region stand towards the tail end in terms of HDI in the state. Coming to health sector, the said report puts Balangir at 14th, Kalahandi at 3rd, Koraput at 27th, Malkangiri at 29th, Nawarangpur at 23rd, Nuapada at 5th, Rayagada at 26th and Sonapur at 13th places in terms of Health Index. This implies that position of the KBK districts is not also encouraging in terms of Health Index.

Poverty in the region is massive. As per 2002 BPL Census, the percentage of families below the poverty line is 61.06% in Balangir, 62.71% in Kalahandi, 83.81% in Koraput, 81.88% in Malkangiri, 73.66% in Nawarangpur, 85.70% in Nuapada, 72.03% in Rayagada and 73.02% in Sonapur districts against a state average of 66.37 per cent.

These districts have an overwhelming burden of backward and primitive agriculture. The share of workers in primary sector to total main workers is very high. It is 81.20% in case of Balangir, 85.10% in case of Kalahandi, 81.20% in case of Koraput, 91.30% in case of Malkangiri, 88.60% in case of Nawarangpur, 86.90% in case of Nuapada, 82.90% in case of Rayagada and 83.60% in case of Sonapur districts. These 8 districts also have very low per capita income.

From the above socio-economic indicators it is very clear that unless concentrated and specific attention is given to these 8 districts they shall constitute a pocket of extreme poverty and backwardness.

Apart from the existing poverty eradication programmes like SGSY, SGRY, ITDP etc., some specific programmes have also been launched to bring about all round development of the people living in the KBK region through the Revised Long Term Action Plan (RLTAP) targeting every aspect of socio-economic development of the region. Food, nutrition and health care support programmes have also been launched in a big way that has bearing on malnutrition and malnutrition-related diseases.

The present study, therefore, aims at making an assessment of the health and nutrition profile of the families in different socio-economic groups in the KBK region with special reference to women and children and assesses the effectiveness of the programmes launched to prevent mal-nutrition, deterioration in the health of women in the reproductive age and the children. The study also aims at examining the access of the people to different programmes and the gaps, if any. In essence, it is not merely a study to estimate the numerical magnitude of malnutrition, but more importantly, examining the 'support system' and access to such a system by the people for whom the support system is meant for.

CHAPTER – III

STUDY OBJECTIVES AND METHODOLOGY

1. Study Objectives:

Children are the future of the nation and potential human capital. It is necessary that they are healthy and do not suffer from any kind of deficiency including food related nutritional deficiencies. All food and nutritional programmes of the world bodies like World Food Programme (WFP), International donors and National endeavours must address to the issues relating to food and nutrition among the children, more so, among the women in the reproductive age group. The nature and the extent of assistance required for the purpose could be assessed and suitable packages could be properly designed only when nutritional deficiencies existing if any can be properly assessed.

There are sufficient reasons to believe that the people living in the KBK region lack in their awareness on various aspects of life including lack of access to various amenities and opportunities created and also to the natural and environmental resources available around them. Ignorance and inadequate purchasing power to access the resources may have tremendous adverse effect on their health and nutritional standard. Curative measures for any kind of disorder and particularly for food related deficiencies should always be the second option to the adoption of suitable food habits depending on available opportunities. Avoiding important food related deficiencies like iron, iodine, vitamins etc that unwarrantedly invites serious health hazards reflected in the form of various symptoms like anaemia, weakness, lethargy, goitre, night blindness, loss of hair, angular stomatitis, pellagra, diseases relating to skin, bone, blood etc and various avoidable old age complains could be tackled through appropriate changes in their food habits based on the locally available resources over and above suitable programme, which of course, have been launched in the region.

It is, therefore, proposed to study all the districts in the KBK area in a scientific manner to assess the magnitude of food related nutritional deficiencies among the children, in the age group of 0 to 14 and the adults

with special reference to the women in the reproductive age. The objectives of the study aim at ascertaining the food related nutritional deficiencies among the target groups in the study area, assessing the food intake and food habit among the people as also the need for evolving suitable module of nutrition education. This would help in the formulation of appropriate policy on food fortification and devising appropriate training module on nutrition education for the people in the area.

To be precise enough, the proposed study envisages examining the following aspects as far as it relates to the children and the women in the reproductive age living in the KBK region.

- i. The nature and the quantity of food intake among different socio-economic class in the region and the extent of their awareness on the quality of their food intake.
- ii. Prevalence of health and hygiene practices among different socio-economic class.
- iii. Access of the house holds to different food and nutrition related programmes launched by the Government.
- iv. Food precautions taken, antenatal check-ups and vaccinations done in case of pregnant women.
- v. Birth control measures undertaken for limiting the number of issues.
- vi. Care taken in case of nursing mothers.
- vii. Present health condition of the children and the women in the reproductive age.
- viii. Adherence to the growth chart among infants.
- ix. Status of immunisation among the children.
- x. The role played by the Anganwadies in caring 3-5 year children and availment of MDM among school-going age children.
- xi. Adherence to standard the growth and development indicators among the children.
- xii. Assessment of food related nutritional deficiencies through appropriate techniques.

- xiii. Suggesting policy prescriptions to tackle the problem of food related nutritional deficiency in the region.

2. Study Design:

For the shake of detailed study, it was decided to cover all the eight constituent districts of the KBK region. Two very backward blocks from each district were selected in the first instance and then 3 villages were selected from each of the 16 sample blocks through simple random sampling procedure. As many as 10 house holds were selected from each of the 48 sample villages that formed the ultimate sampling unit for detailed investigation under the study. In the process, 480 sample house holds in all were selected for detailed study in the field. The district wise total blocks, sample blocks, sample villages and the sample house holds that formed sample units at various levels is indicated vide Table No.3.1 given below.

Table No. 3.1
Sample Units at Different Levels of Investigation

Sl. No.	District	Total Blocks	Sample Blocks	Sample Villages	Sample House Holds
(1)	(2)	(3)	(4)	(5)	(6)
01	Bolangir	14	2	6	60
02	Kalahandi	13	2	6	60
03	Koraput	14	2	6	60
04	Malkangiri	7	2	6	60
05	Nawarangpur	10	2	6	60
06	Nuapada	5	2	6	60
07	Rayagada	11	2	6	60
08	Sonepur	6	2	6	60
	Total	80	16	48	480

3. Study Instruments:

Although 10 households each were selected from the list of households in each of the sample villages as the ultimate sampling units, the objectives of the study was to examine the prevalence of food related nutritional deficiencies if any among the children in the age group 0-14 and the women

in the reproductive age group of 18-44. For obvious reasons, a single study instrument was not considered sufficient for the purpose of carrying out detailed investigation. Appropriately, a set of four study instruments were evolved as per the details given below which were administered on the subjects of observation.

- a. **The Household Schedule:** This schedule had been designed to collect back ground information on each of the selected household and to identify the members of the target group i.e. the women in the reproductive age group and the children present in each sample household.
- b. **The Women Schedule:** This schedule had been designed to collect back ground information on each of the women in the target group (reproductive age group) present in the sample household, the history of their motherhood status and the details relating to their health and nutrition as well as their children.
- c. **The Child Schedule:** This schedule had been designed to collect back ground information on each of the children in the target group present in the sample households, the history of their child-hood and the details relating to their health and nutritional status.
- d. **The Assessment Schedule:** This schedule had been designed with a view to assessing the present health and nutritional status of all the members in the target group i.e. the women in the reproductive age group of 18-44 and the children within 14 years present in the sample house-holds by way of physical observation of the signs and symptoms present on different parts of their body like the hair, face, eye, lip, tongue, teeth, neck, chest, abdomen, knee, nails, feet, skin, bone, and muscles etc that gave some indication of different kinds of food related nutritional deficiencies persisting in their body.

Apart from the above 4 study instruments, a block schedule was also devised to collect socio-economic data pertaining to the sample blocks.

4. The Field Work:

A team of well qualified and adequately experienced personnel were recruited exclusively for the purpose of this study. The team comprised of 4 Field Investigators and a Team Leader was given intensive training for three days with the help of the Subject Matter Specialist (Nutrition Specialist) specifically engaged for the purpose of this study. The Subject Matter Specialist was associated with this study right from the conceptualisation of the study to the end of drafting of the report. The field work was extended over a period of four months. Throughout the field work, a vehicle was exclusively provided to the study team for ensuring adequate mobility and effective field supervision. Besides, all logistic support was given to the team for ensuring working convenience.

5. Samples Executed:

In all, 480 house holds were studied in the eight districts of the KBK region as per the sampling scheme explained earlier. In the 480 sample house holds, the total population size was 1730 of whom 892 were males and 838 were females. Among 1730 persons, there were 465 women in the reproductive age group including three with early mother-hood, 389 boys and 322 girls up to the age of 14 years. These 1176 persons were subjected to detailed investigation through administration of the assessment schedule. The district wise abstract of the sample blocks, villages, sample population, males, females and the number of target group women and children is given vide Annexure-3.1 and further detailed break-up of the same is given vide Annexure-3.2.

6. Coordination and Supervision:

For ensuring quality outputs through this study, the Senior Executives of the ARDCOS including the Subject Matter Specialist had taken pains to coordinate and supervise the work under the study at all levels. Besides, the Regional Office of the PEO at Bhubaneswar was all along associated with the study at all stages of operation such as finalisation of study instruments, pre-testing, training, supervision, scrutiny and tabulation of data as per the stipulations of the Planning Commission.

CHAPTER - IV
STUDY FINDINGS

4.1 HOUSEHOLD CHARACTERSTICS:

As explained in previous chapters, the KBK region has some special features such as predominance of scheduled tribes, preponderance of poverty etc. As such it has to be first of all examined as to if the sample house-holds more or less confirm to such of the characteristics in absence of which the inference derived on the basis of field observations may not be considered reliable.

4.1.1 Social Class:

The district-wise sample households according to their social class are presented below vide Table No.4.1.

Table No.4.1
District-wise Sample Households According to Social Class

Sl.	District	S C	S T	Others	Total
(1)	(2)	(3)	(4)	(5)	(6)
1	Balangir	21 (35)	14 (23)	25 (42)	60 (100)
2	Kalahandi	17 (28)	11 (18)	32 (54)	60 (100)
3	Koraput	6 (10)	53 (88)	1 (2)	60 (100)
4	Malkangir	2 (3)	41 (69)	17 (28)	60 (100)
5	Nawarangpur	7 (12)	25 (42)	28 (46)	60 (100)
6	Nuapada	13 (22)	9 (15)	38 (63)	60 (100)
7	Rayagada	4 (7)	50 (83)	6 (10)	60 (100)
8	Sonepur	22 (37)	27 (45)	11 (18)	60 (100)
	Total (%)	92 (19)	230 (48)	158 (33)	480 (100)

Note: Figures in parentheses represents percentage to total.

The table above reveals that out of 480 sample households 92 (19%) belong to SC category and 230 (48%) to ST category. Thus in terms of social class, the sample households appear to be fairly representative of the households in the KBK region.

4.1.2 Economic Class:

Table No.4.2 given below presents the picture of economic class of the sample 480 households in different districts.

Table No.4.2

District-wise Sample Households According to Economic Class

Sl. (1)	District (2)	APL (3)	BPL (Card) (4)	BPL (No-Card) (5)	Total (6)
1	Balangir	5	54	1	60
2	Kalahandi	37	20	3	60
3	Koraput	3	50	7	60
4	Malkangiri	11	37	12	60
5	Nawarangpur	31	26	3	60
6	Nuapada	12	44	4	60
7	Rayagada	4	43	13	60
8	Sonepur	2	56	2	60
	Total	105	330	45	480
	(%)	(22)	(69)	(9)	(100)

Note: Figures in parentheses represent percentage to total.

It may be seen from the table that the percentage of families below the poverty line (BPL) whether they possess a BPL card or not constitute as high as 78 per cent. This reveals that the percentage of BPL families in the sample households are more or less at par with the overall position of BPL families in the KBK region.

4.1.3 Sources of Livelihood:

Table No.4.3 presented below gives the distribution of sample households according to their main source of livelihood.

Table No.4.3
District-wise Sample Households According to Main Source of Livelihood

Sl.	District	Main Sources of Livelihood					Total
		Cultivation	Ag. Labour	Non Ag. Labour	Service	Self-Employed	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Balangir	1 (2)	13 (21)	42 (70)	3 (5)	1 (2)	60 (100)
2	Kalahandi	15 (25)	9 (15)	32 (53)	0 (0)	4 (7)	60 (100)
3	Koraput	0 (0)	1 (2)	59 (98)	0 (0)	0 (0)	60 (100)
4	Malkangir	6 (10)	11 (19)	41 (68)	2 (3)	0 (0)	60 (100)
5	Nawarangapur	5 (9)	8 (13)	37 (62)	2 (3)	8 (13)	60 (100)
6	Nuapada	1 (2)	23 (38)	35 (58)	0 (0)	1 (2)	60 (100)
7	Rayagada	0 (0)	8 (13)	52 (87)	0 (0)	0 (0)	60 (100)
8	Sonepur	0 (0)	5 (8)	49 (82)	6 (10)	0 (0)	60 (100)
	Total	28	78	347	13	14	480
	(%)	(6)	(16)	(72)	(3)	(3)	(100)

Note: Figures in parentheses represent the percentage to total

The above table reveals that an overwhelmingly large number of sample households i.e. 347 (72 per cent) depend on wage labour that too from non-agriculture sources. Agricultural labour constitutes only 16 per cent while for 6 per cent households' cultivation is the main source of income. Self-employed households and those dependants on services represent only 3 per cent each. Examined district-wise, dependence on non-agriculture wage employment is highest for Koraput district (98 per cent), followed by Rayagada (87 per cent) and Sonepur (82 per cent). In Kalahandi district 25

per cent households depend on cultivation as their main source of livelihood. In Nuapada 38 per cent depend on agricultural wage employment as their main source of income.

Since all the KBK districts are highly backward with undulated landscape, hills, forests and difficult terrain, agriculture itself is very backward. Being very poor with hardly any productive assets, dependence on non-agricultural wage employment has, therefore, been resorted to by majority of the households.

4.1.4 Age Structure:

Distribution of sample population according to age and sex has been presented vide Table No.4.4 given below.

Table No.4.4

Sample Population According to Age and Sex

Age	Male	Female	Total
(1)	(2)	(3)	(4)
0 - 1	41 (5)	34 (4)	75 (4)
1 - 3	62 (9)	74 (9)	136 (9)
3 - 6	140 (16)	98 (12)	238 (14)
6 - 12	100 (11)	94 (11)	194 (11)
12 - 15	46 (5)	22 (3)	68 (4)
15 - 18	13 (1)	17 (2)	30 (1)
18 - 45	442 (50)	471 (56)	913 (53)
45 - 60	38 (4)	18 (2)	56 (3)
□60	10 (1)	10 (1)	20 (1)
Total (%)	892 (52)	838 (48)	1730 (100)

Note: Figures in parentheses represents percentage to total.

Data presented in the above table reveals that out of 1730 sample population as many as 892 (52 per cent) are males and 838 (48 per cent) are females. The age structure of both the sex appears to be more or less similar.

4.1.5 Literacy:

In all 1730 persons were studied in 480 sample households of whom 1281 were beyond the age of five who were supposed to become literate whether by way of receiving formal education or else otherwise. The literacy position among the 1281 persons above the age of five is presented below vide Table No.4.5.

Table No.4.5
District-wise Literacy among Sample Population above 5 Years

Sl.	District	Persons			Literate			Illiterate		
		M	F	Total	M	F	Total	M	F	Total
(1)	(2)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	Balangir	76	81	157	50	30	80	26	51	77
2	Kalahandi	88	85	173	80	70	150	8	15	23
3	Koraput	67	72	139	30	8	38	37	64	101
4	Malkangiri	78	75	153	31	16	47	47	59	106
5	Nawarangpur	78	68	146	51	29	80	27	39	66
6	Nuapada	93	98	191	70	45	115	23	53	76
7	Rayagada	89	72	161	30	9	39	59	63	122
8	Sonepur	80	81	161	38	18	56	42	63	105
	Total (% / Literacy)	649 (51)	632 (49)	1281 (100)	380 (59)	225 (36)	605 (47)	269 (41)	407 (64)	676 (53)

Note: Figures in parentheses represents percentage to total.

The above table reveals that although the total literacy among the members of the sample household is 47 per cent, the female literacy is abysmally low i.e. 36 per cent.

4.1.6 Level of Education:

Table No.4.6 presented below provides information on the educational attainment among 1281 persons in the sample households beyond the age of five.

Table No.4.6**Level of Education of 1281 Sample Population above 5 Years**

Sl.	Level of Education	Persons above 5 years		
		Male	Female	Total
(1)	(2)	(3)	(4)	(5)
1	Illiterate	269	407	676
2	Just Literate	0	0	0
3	Upto Primary	278	174	452
4	Upto High School	79	45	124
5	High School above	17	5	22
6	Graduation	5	1	6
7	P. G.	1	0	1
8	Technical	0	0	0
	Total	649 (100%)	632 (100%)	1281 (100%)

Although, out of 1281 persons above the age of five 676 were illiterates and 605 were literates, only 29 (2%) have gone beyond matriculation and above, of whom 23 were males and 6 were females. As such, higher education among the members of sample households appear to be very low. None of them have received any kind of technical education also. The table presented above gives a clear cut picture of the level of educational attainment among the members of the sample households.

4.1.7 Enrolment:

There were in all 711 children within the age of 14 in the 480 sample household including 365 within the age of five. The remaining 346 were beyond the age of five who are supposed to attend schools. As on the date of survey, the number of children in different age groups remaining out of school is presented vide Table No.4.7.

Table No.4.7
Out of School Children According to Age (Upto 14 Years)

Age	Total Children			Out of School Children		
	M	F	Total	M	F	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
*Upto 5 Yrs.	186	179	365	186	179	365
5	57	27	84	57	27	84
6	18	18	36	2	4	6
7	25	21	46	7	6	13
8	18	23	41	1	2	3
9	7	14	21	0	2	2
10	18	15	33	2	1	3
11	14	3	17	0	0	0
12	29	13	42	1	7	8
13	7	7	14	0	1	1
14	10	2	12	2	0	2
Total	203	143	346	72	50	122 (35%)
Grand Total	389	322	711	258	229	487

Note: *Belonging to non-school going age

The above table reveals that out of 346 children of school going age as many as 122 (35 per cent) are out of schools and only 65 per cent are attending schools. Some of the children, particularly within the age group of 5 might have joined the nearest school, but are most irregular and a few go to school just to avail the benefit of mid-day meal. But evidence shows that none of the 84 children who have completed the age of five have been attending schools at all. This indicates that admission into schools usually takes place at a delayed stage. Had all these children gone to school, they would have at least received the benefit of mid-day-meal programme while reading upto Class-V. Never the less, discussions with the household heads revealed that their children stay out of schools because of many other reasons including taking care of the youngest siblings and attending to some small economic activities like collection of fire wood, rearing domestic animals etc as an economic support to the family. However, had they attended schools, not only

many of them would have received the benefit of MDM but also received some education on health and hygiene including nutrition.

4.1.8 Occupation:

Out of the total population of 1730 persons in the 480 sample households, as many as 1019 were above the age of 15 belonging to the working age group. The occupational distribution of 1019 persons in the working age group is presented below vide Table No.4.8.

Table No.4.8
Occupation of Persons above the Age of 15

Sl	Occupation	No. of Persons		
		M	F	Total (%)
(1)	(2)	(3)	(4)	(5)
1	Cultivation	27	1	28 (3%)
2	Ag. Labour	79	29	108 (11%)
3	Non-Ag. Labour	352	331	683 (67%)
4	Salaried	12	1	13 (1%)
5	Self-employed	16	1	17 (2%)
6	Household	3	1	4 (negligible)
7	Others	0	132	132 (13 %)
8	No work	14	20	34 (3%)
	Total	503	516	1019 (100%)

Out of 1019 persons in the working group age, 985 (97 per cent) were having some occupation or other and only 3 per cent had no work. It may be seen from the above table that out of a total of 1019 persons, as many as 683 (67 per cent) were non-agricultural labourers. Only 11 per cent were agricultural labourers while 13 per cent were engaged in other household activities. Only 2 per cent and one per cent respectively were engaged in self-employment and salaried worker categories. Cultivation, however, was the occupation of about 3 per cents of the workers. This apart, 122 out of 346 children in the school going age who are out of school have also been engaged to certain extent in some kind of household activities or in small economic activities.

4.1.9 Food Intake:

Irrespective of other dietary intakes like tiffin and refreshments, a family usually takes two square meals a day. The sample households were asked regarding the frequency of their usual food intake per day in the family both square meals and as well as dietary intakes. The result obtained through the field survey in respect of 480 households is presented below vide Table No.4.9. Similarly, the distribution of 480 households according to the number of square meals and the number of other dietary intakes a day has also been presented vide Table No.4.10.

Table No.4.9

Households with Number of Square Meals and other Dietary Intakes

Sl.	District	Square Meals			Other Dietary Intakes				Total Intakes				
		1	2	Total	0	1	2	Total	1	2	3	4	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	Balangir	2	58	60	0	58	2	60	0	0	56	2	58
2	Kalahandi	0	60	60	0	51	9	60	0	0	51	9	60
3	Koraput	1	59	60	0	58	2	60	0	0	57	2	59
4	Malkangiri	17	43	60	21	38	1	60	11	21	32	1	65
5	Nawarangapur	0	60	60	1	51	8	60	0	1	51	8	60
6	Nuapada	1	59	60	4	55	1	60	0	4	54	1	59
7	Rayagada	0	60	60	0	59	1	60	0	0	59	1	60
8	Sonepur	2	58	60	0	56	4	60	0	0	56	3	59
	Total (%)	23 (5)	457 (95)	480 (100)	26 (5)	426 (89)	28 (6)	480 (100)	11 (2)	26 (5)	416 (87)	27 (6)	480 (100)

Note: Figures in parentheses represents percentage to total.

Table No.4.10
Households according to Square Meals and Other Dietary Intakes

Square Meals a day	Other Dietary Intakes a day			
	0	1	2	Total
(1)	(2)	(3)	(4)	(5)
1	11	11	1	23
2	15	415	27	457
Total	26	426	28	480

From the above tables it reveals that 457 (95 per cent) out of 480 households are taking two square meals a day while 23 (5 per cent) of the households take only square meal a day. Further, majority of the households i.e. 426 (89 per cent) take other dietary intakes only once a day, 28 (6 per cent) of the households take twice a day and 26 (5 per cent) do not take other dietary intakes during a day at all. Out of 23 households taking one square meals a day, of whom 17 belong to Malkangiri district. More so, in the said Malkangiri district, out of 60 household surveyed, 21 (35%) households do not take other dietary intakes at all other than the square meals.

Table No.4.10 high lights the gravity of the situation in respect of food intake among the households. It reveals that out of 480 households, 23 (%) take only one square meal a day of whom one takes two supplementary intakes, 11 one supplementary intake and 11 no supplementary intake at all. The 11 households taking one square meal a day with no supplementary intake at all are all from Malkangiri district.

4.1.10 Health and Hygiene:

To know the health and hygiene condition of the households, questions on the use of household latrines and the use of safe drinking water sources was asked and the response obtained through the field survey is presented below vide Table No.4.11.

Table No.4.11

District-wise Sample Households with Sanitary Facilities

Sl.	District	Sample Households	Households with	
			Toilets	Safe D / W
(1)	(2)	(3)	(4)	(5)
1	Balangir	60	1	60
2	Kalahandi	60	6	58
3	Koraput	60	1	59
4	Malkangir	60	0	49
5	Nawarangapur	60	5	59
6	Nuapada	60	0	60
7	Rayagada	60	0	60
8	Sonepur	60	0	59
	Total	480 (100)	13 (3)	464 (97)

Note: Figures in parentheses represents percentage to total.

It reveals that only 13 (3%) out of 480 households do have household latrine facility of which 6 are in Kalahandi, 5 in Nawarangpur and one each in Balangir and Koraput districts. Sample households in Malkangiri, Nuapada, Rayagada and Sonepur do not have household latrine facilities at all. It appears that the households in the KBK region are yet to avail the opportunity of the Total Sanitation Campaign (TSC) in a wide spread manner. However, a good thing has been revealed that 464 (97%) of the 480 sample households have their access to safe source of drinking water if not cent per cent. It is, therefore, expedient to create an atmosphere among the households in the KBK region to have household latrines under the Total Sanitation Campaign. Availing toilet facility through establishment of Community Sanitary Complex under the TSC will also solve the purpose to a considerable extent.

4.1.11 Consumption of Alcohol:

Consumption of alcohol is quite rampant in the KBK region. NGOs and women group have been trying to eradicate the addict through persuasion and resistance for last many years. The habit of consuming alcohol, however, continues, and apart from its ill effects on health, is a source of calorie for many. Table No.4.12 presents the distribution of sample households consuming alcohol.

Table No. 4.12
District-wise Alcohol Consuming Sample Households

Sl.	District	Sample HHS	HHS with Alcoholic Drinks	
			Adults (%)	Children (%)
(1)	(2)	(3)	(4)	(5)
1	Balangir	60	21 (35)	0
2	Kalahandi	60	22 (37)	0
3	Koraput	60	30 (50)	0
4	Malkangiri	60	44 (73)	5 (8)
5	Nawarangapur	60	17 (28)	0
6	Nuapada	60	14 (23)	0
7	Rayagada	60	21 (35)	0
8	Sonepur	60	3 (5)	0
	Total (%)	480	172 (36)	5 (1)

Note: Figures in parentheses represents percentage to total.

The above table reveals that out of 480 households surveyed, as many as in 172 (36%) households, adults are consuming alcohol. Its district-wise break up shows consumption of alcohol among adults is more pronounced (73%) in Malkangiri followed by Koraput (50%) and it is only 5% in case of Sonapur district. Surprisingly, children in 8 per cent of the households in Malkangiri district are consuming alcohol. Efforts should, therefore, be made to eradicate alcoholism in KBK districts through motivation with a view to reallocating their expenditure on alcohol health, hygiene, food and education which will have a positive bearing on their nutrition.

4.1.12 Household Income:

As explained in earlier chapters, the families in the KBK region are mostly poor. The field survey also reveals that the percapita household income of the sample households is only Rs.2352/- (Table No.4.13) that amounts to less than Rs.200/- a month. There are as many as 341 (71%) of the sample households whose annual household per capita income is less than Rs.2500/-. More so, there are only 17 (3%) sample households whose annual percapita income is more than Rs.6000/-.

Table No.4.13

Distribution of Percapita Household Income

Per capita Income (in Rs.)	No. of Households	% to total
(1)	(2)	(3)
0 – 1000	46	9
1000 – 1500	167	35
1500 – 2000	85	18
2000 – 2500	43	9
2500 – 3000	28	6
3000 – 4000	27	6
4000 – 5000	18	4
5000 – 6000	49	10
6000 – 7000	8	1
7000 – 8000	3	0.5
8000 – 10000	2	0.5
10000 – 15000	3	0.5
15000 and Above	1	0.5
Total	480	100
Average Income	2352	

4.1.13 Food Consumption:

Annexures-4.1, 4.2, 4.3 and 4.4 are the recommended dietary allowances for adult men, adult women, children and for adolescent boys and girls. Keeping in view the recommended dietary allowances, efforts were made to collect information on the quantity of food consumed per person per week irrespective of the type of food consumed. Based on the response received, the percapita consumption of food over a period of one week among the 480 households is presented below vide Table No.4.14.

Table No.4.14
Percapita Weekly Consumption of Food

(P C C in Kg.)

Percapita Consumption	0-1	1-2	2-3	3-3.5	3.5-4	4-4.5	4.5-5	5-6	6-7	7-8	Total	Avg. Cons.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Total	2	16	47	99	89	105	55	54	8	5	480	3.94
Percentage	1	3	10	21	19	22	11	11	2	1	100	

The recommended dietary allowances vide the 4 Annexure referred to above specify on an average a minimum of 600 gms of food intake per day for a 1-3 year old non-vegetarian child and a maximum of 1440 gms of food intake per day for an vegetarian adult man attending to heavy work. As such irrespective of the category of person, the average total food intake per person per day will be some where around 1000 gms. But the above table reveals that the weekly percapita consumption of food is of the order of 3.94 kg. Households, whose percapita consumption was less than 3.5 kg a week or alternatively less than 500 gms a day, are 164 (34%). There were hardly 5 (1%) of the households who were consuming more than 7 kg a week or alternatively more than one kg a day. This implies that irrespective of the type of food, the total food consumption among the households in the KBK region is almost half of the recommended dietary allowances that need further examination.

4.1.14 Income and Food Consumption:

Although, tables No.4.13 and No.4.14 give some broad idea on the overall level of percapita household income and the weekly percapita food consumption, one can not derive any inference on their association. However, Table No.4.15 presented below on the households according to percapita income and the weekly percapita food consumption provides some information on their association.

Table No.4.15
Households according to Percapita Income and Percapita Weekly Food Consumption

(P C I in Rs. / P C C in Kg.)

Per capita Income (Rs.)	Per capita Consumption (Kg.)										Total	Avg. Cons.
	0-1	1-2	2-3	3-3.5	3.5-4	4-4.5	4.5-5	5-6	6-7	7-8		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
0 – 1000	1	2	7	13	7	9	3	4	0	0	46	3.55
1000 – 1500	1	8	20	44	31	23	17	21	1	1	167	3.78
1500 – 2000	0	2	12	12	17	22	12	7	0	1	85	3.94
2000 – 2500	0	0	3	9	11	9	5	4	0	2	43	4.13
2500 – 3000	0	0	1	4	6	11	3	2	0	1	28	4.15
3000 – 4000	0	0	1	7	1	7	5	4	2	0	27	3.34
4000 – 5000	0	1	1	2	4	5	2	2	1	0	18	4.10
5000 – 6000	0	1	2	8	10	15	5	4	4	0	49	4.19
6000 – 7000	0	2	0	0	2	1	1	2	0	0	8	3.72
7000 – 8000	0	0	0	0	0	1	0	2	0	0	3	5.33
8000 – 10000	0	0	0	0	0	0	1	1	0	0	2	5.08
10000 – 15000	0	0	0	0	0	1	1	1	0	0	3	4.77
15000 and Above	0	0	0	0	0	1	0	0	0	0	1	4.25
Total	2	16	47	99	89	105	55	54	8	5	480	3.94
Average Income	1000	2276	1630	1913	2159	2912	2527	2664	4296	1883	2352	

Although not desirable, under certain constraints, food consumption is usually low among the low income group of households. Quantity of food consumption is supposed to increase with increase in income up to the desired level. The above table, however, reveals that some of the households with slightly higher income are also consuming lower quantity food percapita

even when some of the lower income group of households are consuming a little bit of higher quantity of food percapita. The possible reasons for the marginally higher income groups to be consuming lower quantity of food may be due to other expenditures on undesirable items like alcohol apart from attaching higher priority to meeting other essential obligations at the cost of food consumption etc. We have already noticed that alcohol consumption among the households in the KBK region is as high as 36 per cent. It, therefore, calls for lurching a vigorous a drive for eradicating alcohol consumption in the region through motivation and community education with special emphasis on food intake and nutrition. The drive to be fruitful, should come from within the community and the community based Self Help Groups shall be the best option who should be given adequate encouragements and incentives to carry on the drive to its logical end. Particularly, Women Self Help Groups would be the most appropriate instrument as they can penetrate to household levels through their members.

4.1.15 Consumption Food Items:

Although it is necessary to consume different kinds of food as per the recommended dietary allowances, there are hardly any household even among the well to do and the educated mass who keep to the recommended standards. Though not exact quantity, the households to have consumed different types food during the last one week is presented below vide Table No.4.16.

Table No.4.16
Households Consuming Different Food Items during Last Week

Sl.	Food Items	Balangir	Kalahandi	Koraput	Malkangiri	Nawgpur	Nuapada	Rayagada	Sonepur	Out of 480 HHs (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Cereals	60	60	60	60	60	60	60	60	480 (100)
2	Pulses	60	60	60	59	60	60	60	60	479 (99)
3	Vegetable	60	60	60	60	60	60	60	60	480 (100)
4	Roots and Tubers	10	4	4	4	13	4	3	5	47 (10)
5	Fruits	3	9	2	15	8	6	1	3	47 (10)

Sl.	Food Items	Balangir	Kalahandi	Koraput	Malkangiri	Nawgpur	Nuapada	Rayagada	Sonepur	Out of 480 HHs (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
6	Milk and Milk Prod.	12	12	5	1	15	11	9	19	84 (18)
7	Animal Protein	31	44	22	40	30	44	30	35	276 (57)
8	Sugar	60	60	60	51	59	60	60	60	470 (98)
9	Oil and fats	60	60	60	58	60	60	60	60	478 (99)
10	Salt	60	60	60	60	60	60	60	60	480 (100)

Note: Figures in parentheses represents percentage to total.

The above table reveals that while almost all households consume cereals, pulses, vegetables, sugar, oil and fat and salt (irrespective of the quantity), only 57 per cent households consume animal protein, 18 per cent milk and milk products, 10 per cent roots and tubers and 10 per cent fruits. Consumption of milk and milk -products is the lowest in Malkangiri districts followed by Rayagada (that provides essential nutritional requirements for the body) and this aspect has been discussed in further detail in subsequent sections. Fruit consumption is lowest in Rayagada district followed by Koraput, Balangir and Sonepur. Since different varieties of roots and tubers have their seasonal availability, its consumption will fluctuate accordingly.

4.1.16 Consumption of Protein:

Usually, households consume cereals and salt more or less in requisite quantity and make compromises on all other items. As evident from the above table, the households are compromising on the intake of milk and milk products in large majority cases. 479 out of 480 households are taking vegetable protein where as 276 (57%) of the households are taking animal protein. But, both the vegetable as well as animal protein food is costlier as compared to other food varieties. As such, one has to see the quantity of protein intake rather than the households taking the same. Table No.4.17 presents below the 480 sample households according to their percapita household income and the protein intake during the last week which is relevant in this regard.

Table No.4.17
Households According to Per capita Income and Weekly Per capita Protein Intake

(P C I in Rs. / P C C in Kg.)

Per capita Income (Rs.)	Per capita Protein Intake during Last Week (Kg.)						Total	Average
	0 - 0.5	0.5 - 1.0	1.0 - 1.5	1.5 - 2.0	2.0 - 2.5	2.5 - 3.0		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
0 – 1000	35	8	1	2	0	0	46	0.33
1000 – 1500	130	6	27	4	0	0	167	0.37
1500 – 2000	64	5	13	2	1	0	85	0.41
2000 – 2500	34	0	6	1	2	0	43	0.47
2500 – 3000	23	1	3	0	1	0	28	0.37
3000 – 4000	22	3	0	2	0	0	27	0.39
4000 – 5000	15	1	2	0	0	0	18	0.38
5000 – 6000	36	5	4	1	1	2	49	0.50
6000 – 7000	4	1	2	0	1	0	8	0.74
7000 – 8000	1	2	0	0	0	0	3	0.57
8000 – 10000	0	1	0	1	0	0	2	1.34
10000 – 15000	0	3	0	0	0	0	3	0.58
15000 and Above	0	0	1	0	0	0	1	1.30
Total	364	36	59	13	6	2	480	0.41
% to Total	75	8	12	3	1	1	100	

The above table reveals that higher is the per capita income higher is the level of protein consumption. It ranges from 330 gms to 1380 gms with an average of 410 gms per week. Although the average comes to 410 gms per capita per week, there are around 75% of the households consuming between 0-500 gms of protein per capita per week. In any case, the consumption of protein is considerably less than the recommended dietary allowances on which further discussions have been made in subsequent sections.

4.1.17 Fortified Food:

Except sugar, oil and fat, all other food items can be fortified either at household level or else commercially for consumption. Although fortified food can not totally replace the traditional food practice, consumption of fortified

food is essential on certain cases like iodised salt in place of normal salt without iodisation. In any case, people should have some Knowledge (K), Attitude (A) and Practice (P) on various types of fortified food available around them. Information on the knowledge, attitude and practice (KAP) on the use of fortified food available around was collected from each of the households and the result obtained thereof is presented below vide Table No.4.18.

Table No.4.18

**Households with Knowledge, Attitude and Practice (KAP)
on different Fortified Food Items in Different Income Groups**

Per capita Income Range	No. of HHs	KAP on all Items	Knowledge on Any one Item	Attitude on Any one Item	Practice of Any one Item
(1)	(2)	(3)	(4)	(5)	(6)
0 – 1000	46	0	6	6	1
1000 – 1500	167	0	38	32	0
1500 – 2000	85	5	32	25	5
2000 – 2500	43	3	16	5	3
2500 – 3000	28	1	9	4	1
3000 – 4000	27	4	12	7	4
4000 – 5000	18	5	8	6	5
5000 – 6000	49	8	20	11	8
6000 - 7000	8	1	4	2	1
7000 – 8000	3	1	2	2	1
8000 – 10000	2	0	1	0	0
10000 – 15000	3	2	2	2	2
15000 and above	1	0	1	1	1
Total	480	30	151	103	32
% to Total	100	6	31	27	7

*N.B – Items included under fortified food or processed food like cereals, pulses, vegetables, roots and tubers, fruits, milk product, animal protein (fish, meat, egg etc.) and salt.

It may be seen that 151 (31%) out of 480 households in all, had their knowledge on any kind of fortified food, 103 (27%) had their positive attitude on the consumption of fortified food and 32 (7%) were practically consuming some kind of fortified food. There were in all only 30 (6) households who had their knowledge, attitude and the practice in various kinds of fortified food. It

further reveals that the knowledge, attitude and practice of consuming various kinds of fortified food is higher among the higher income groups. In any case, the overall position of the knowledge, attitude and practice of consuming various kinds of fortified food among the sample households appears to be very low which need to be increased through motivation and education.

4.1.18 Access to Rural Development and Social Welfare Programmes:

A number of Rural Development and Social Welfare programmes have been launched by the Government of India as well as the State Government for benefiting the people, more specifically the BPL families in rural areas. Various rural development and social welfare programmes operating in the KBK region and number of sample households accessing those programmes is presented below vide Table No.4.19.

Table No.4.19

Households Accessing RD / SW Programmes

Sl.	Scheme	Accessing	Of which B P L
(1)	(2)	(3)	(4)
1	I C D S	443 (92)	340 (77)
2	O A P	13 (3)	12 (92)
3	A W C	429 (89)	331 (77)
4	M D M	163 (34)	124 (76)
5	PDS	199 (41)	188 (94)
6	SNP	9 (2)	8 (89)
7	SGSY	362 (75)	303 (84)
8	SGRY	385 (80)	323 (86)
9	IAY	25 (5)	25 (100)
10	PMGSY	135 (28)	126 (36)
11	TSC	4 (1)	4 (100)
12	SWAJALADHARA	0 (0)	0 (0)
	Total	480 (100)	375 (78)

Note: Figures in parentheses represents percentage to total.

Almost all the schemes enumerated in the Table No.4.19 except IAY, TSC and Swajaldhara have either a food component in the process of implementation of the programme or else the projects under the programme

envisage some kind of food related activity. The TSC and Swajaldhara schemes have their bearing on the health hygiene of the people. But as it appears that very negligible percentage of the households have received the benefit under these schemes. These schemes need to be implemented with much vigour in these districts. Irrespective of the percentage of sample households accessing all other programmes, the percentage of BPL households accessing individual programmes are more or less at par with the percentage of BPL households in these districts. There is nothing to comment on the low percentage of households accessing benefits under the OAP and SNP schemes as these are exclusively meant for specific target groups of people. While the percentage of households accessing the ICDS and AWC is quite satisfactory, the same in case of MDM and PDS is appreciably low.

Access to MDM is low because of the fact that quite a large percentage (35%) of the children in the school going age are remaining out of school. It is, therefore, necessary that there should be cent per cent enrolment with a view to increasing access to MDM that has bearing on the nutrition of the children.

In case of PDS, the access of the households is only 41 per cent. There being adequate number of fair price shops, there may be two possible reasons for not utilising PDS commodities by large majority of the households. First, the households might be self sufficient in food which is over ruled as the level of food consumption is quite low as compared to the recommended dietary allowances. The second possibility is lack of purchasing power in the hands of people in the region which may be true. Even though a number of employment generating programmes are operating in rural areas, it has perhaps not been possible to provide adequate employment opportunities thereby enhancing the purchasing power of the rural poor. However, the newly launched employment guarantee scheme with a view to providing a minimum 100 days of employment during a year to the BPL households may yield some tangible results in this regard. Since the protein intake among the rural areas is very less an appropriate strategy need to be evolved like including sale of dry fish and Soya bin which are rich with protein through the fair price shops.

One important Government scheme is the SGSY that encourages SHGs and individual beneficiaries to take up various categories of entrepreneurial activities including those related to food and nutrition such as rearing of cow, goat, sheep, poultry and food processing etc. In case of ventures in a slightly higher scale, the product is usually sold away that gets transported to outside the locality. With a view to ensuring local consumption and more specifically at household levels, the venture need to be tiny ones like rearing of one or two goats, keeping two to three indigenous variety of hens etc under the programme of SGSY should be thought of. This will provide milk as well as animal protein at the household levels apart from getting some income through sale of up-springs.

4.1.19 Population in the Target Group:

Although the households were the ultimate sampling units, the target population under this study were the women in the reproductive age group (18-44) and the children below 14 years on whom the study had its focus. Table No.4.20 presents the target population present among the 480 sample households.

Table No.4.20
Households According to Target Group of Persons

TG Size	TG Boys	TG Girls	TG Women	TG (All)
(1)	(2)	(3)	(4)	(5)
0	155	219	15	1
1	264	206	465	13
2	58	49	0	267
3	3	6	0	170
4	0	0	0	26
5	0	0	0	3
Total	480	480	480	480
T G Persons	389	322	465	1176

As observed, almost all the households except one had the target population of one category or other. There were in all 1176 target groups of

persons comprising of 389 TG boys, 322 TG girls and 465 TG women. As such, for the purpose further study on the target group of women and children, it was necessary to probe in detail in 479 sample households out of 480, detailed examination on which has been done in subsequent sections.

4.2 WOMEN IN THE REPRODUCTIVE AGE:

As explained in earlier sections, there were 465 women in the reproductive age including three who are enjoying their early motherhood before the age of 18. These 465 TG women belong to one each in 465 households out of 480 sample households in respect of whom the details of their health and nutritional aspects were collected.

4.2.1 TG Women in Different Age Groups:

The districts wise distribution of 465 TG women according to their age is presented below vide Table No.4.21.

Table No.4.21

Women in the Reproductive Age

Age	Balangir	Kalahandi	Koraput	Malkangiri	Nawara ngpur	Nuapa da	Rayag ada	Sone pur	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
15-18	1	0	0	1	0	0	1	0	3
18-21	9	6	9	9	2	4	6	15	60
21-24	7	7	15	15	16	2	20	12	94
24-27	12	10	11	20	16	25	8	12	114
27-30	8	7	10	2	11	11	4	8	61
30-33	7	13	3	10	6	13	5	7	64
33-36	5	8	7	2	5	2	8	3	40
36-39	2	2	1	0	2	0	3	0	10
39-42	3	3	2	0	0	2	2	1	13
42-45	1	3	0	1	0	0	0	1	6
Total	55	59	58	60	58	59	57	59	465

The table above reveals that out of 465 TG women, majority i.e. 436 (94%) are below the age of 35 and the remaining 6 per cent belong to the age

group beyond that. The nodal age of the TG women falls within the age group 24-27 in which there are as many as 114 (24%) of TG women.

4.2.2 Education of Eligible Couples:

Education of parents has tremendous bearing on the physical growth and cultural development of the children including health, hygiene and nutritional aspects. Table No.4.22 presents below the educational qualification of the husband and wife of 465 eligible couples.

Table No.4.22
Couples according to their Educational Qualification

Education of Husbands	Education of Wives							Total
	Illiterate	Just Literate	Upto Primary	Upto High School	High School Above	Graduation	PG	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Illiterate	243	0	4	0	0	0	0	247
Just Literate	0	0	0	0	0	0	0	0
Upto Primary	72	0	57	3	0	0	0	132
Upto High School	20	0	26	14	3	0	0	63
High School Above	3	0	5	8	0	0	0	16
Graduation	0	0	2	4	0	0	0	6
PG	0	0	0	0	1	0	0	1
Total	338	0	94	29	4	0	0	465

The table above reveals that as many as 243 (52%) of the eligible couples out of 465 are both illiterates and the level of educational qualification of the rest of 222 (48%) of the eligible couples is not also very high. Excepting few exceptions, the wives are usually less educated as compared to their male counterparts. The presence of a large number of illiterate women coupled with equally large number of males is deterrent in gathering knowledge about various poverty alleviation and rural development programmes meant for them and to enjoy the benefit of such of the

programmes. However, the recently launched scheme of Gramin Vikash Andolan of the Ministry of Rural development may be useful in this regard.

4.2.3 Age at Marriage:

Marriage at early age is not only injurious for the couples but also it invite health hazards for the children taking birth at very early age of their parents for which the prescribed age at marriage for women is minimum 18 and that for men is a minimum of 25. Marriage at early age will also adversely affect the knowledge about sex, reproduction, pre-natal and post-natal care as also practice of health, hygiene and sanitation having their bearing on health and nutrition. Table No.4.23 giving the distribution of 465 couples according to their age at marriage is presented below.

Table No.4.23
Distribution of Couples according to their Age at Marriage

Age of Husbands	Age of Wife				Total	% to total	Mean Age
	12-18	18 – 25	25 – 30	30-33			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
12-18	15	2	0	0	17	4	15.88
18-25	169	118	0	0	287	62	21.44
25-30	18	100	9	0	127	27	26.60
30-43	0	24	7	3	34	7	32.24
Total	202	244	16	3	465	100	23.43
% to total	43	53	3	1	100		
Mean Age	15.70	19.64	25.25	31.00	18.19		

The above table reveals that the mean age at marriage for the men was slightly more than 23 but well below 25 and the mean age at marriage for the women was slightly more than 18. But no inference can be drawn from this. The table clearly reveals that as many as 66 per cent of the men are getting married before the age of 25 and similarly as many as 43 per cent of the women are getting married before the age of 18. While only in case of 34 per cent of males are getting their marriage at the prescribed age that for the

females is 57 per cent. However there were only 143 (31%) of the couples where the prescribed age limit has been adhered to by both the men and the women. Alternatively, there were 69 per cent of couples where the man or the woman or else both have failed to adhere to the minimum prescribed age at marriage which needs to be avoided in future. For this, some kind of motivation and education programme highlighting the consequences of early marriage may improve the situation in future.

4.2.3 Present Health Condition:

The present health condition of the 465 women in the reproductive age as perceived by them was collected and the result is tabulated vide Table No.4.24 given below.

Table No.4.24
Present Health Condition of Women

Sl (1)	Health Condition (2)	No. of Women (3)
1	Excellent	0 (0)
2	Very good	4 (1)
3	Good	417 (90)
4	Bad	37 (8)
5	Very bad	7 (1)
	Total	465 (100)

Note: Figures in parentheses represents percentages.

Of the 465 women surveyed, none expressed to be in excellent health condition. However, 91 per cent expressed to have been enjoying either good or very good health condition and the rest 9 per cent expressed to have been enjoying either bad or very bad health condition. Although, this was the overall feeling expressed by the 465 women, there were 33 (7%) women who were having some ailment or other on the date of survey. The nature of sickness and the duration of their sickness is presented below vide Table No.4.25.

Table No.4.25**Nature and Duration of Sickness of Women**

Sl.	Sickness	Sick women with days of sickness					Total
		0-1	1-7	7-15	15-30	30+	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Fever	0	2	1	0	0	3
2	Cold and cough	0	1	1	1	0	3
3	Stomach problem	0	1	0	0	0	1
4	Gynaec problem	0	0	0	0	1	1
5	Malaria	0	1	0	0	0	1
6	Body pain	0	2	1	0	0	3
7	General weakness	0	4	4	6	7	21
	Total	0	11	7	7	8	33

One pertinent aspect relating to their health is their perception on their health condition as compared to the last year as also as compared to other women of their age. The response obtained is tabulated vide Table No.4.26 given below.

Table No.4.26**Comparative Perception of Women on their Present Health**

As Compared to Last Year		As Compared to Others	
Perception	Women (%)	Perception	Women (%)
(1)	(2)	(3)	(4)
Much Better	1 (1)	Much Better	69 (15)
Better	168 (36)	Better	328 (70)
Same	190 (41)	Same	43 (9)
Little Worse	106 (22)	Little Worse	23 (5)
Worse	0 (0)	Worse	2 (1)
Total	465 (100)	Total	465 (100)

Note: Figures in parentheses represents percentages.

The table reveals that majority of the women have expressed to have been satisfied with their health condition as compared to their condition during last year as also as compared to other women of their age. This being a relative satisfaction, we can not say that they are really enjoying a better health condition as on date. However, it implies that they are contented with their present health condition.

4.2.4 Number of Issues and Survival:

Out of 465 women, 4 were yet to become mothers. The rest 461 had issues ranging from 1-6. The women with number of issues and the number surviving is presented below vide Table No.4.27.

Table No.4.27
Number of Issues and Living Children to Women

Issues	Women	No of Children	Living Children	Survival Rate (%)
(1)	(2)	(3)	(4)	(5)
0	4	0	0	---
1	191	191	191	100
2	185	370	325	88
3	68	204	150	74
4	15	60	43	72
5	1	5	4	80
6	1	6	4	67
Total	465	836	717	86

The table above reveals that the overall rate of survival was of the order of 86 per cent. But the rate of survival goes on decreasing according to the increase in the number of issues. Education of parents and more specifically the education of the mother has a bearing on the number of issues. Table No.4.28 presented below gives the number of issues and the education of the Mothers.

Table No.4.28
Number of Issues according to Education of Mothers

No. of Issues	Education of Mothers				Total
	Illiterate	Upto Primary	Upto High School	High School Above	
(1)	(2)	(3)	(4)	(5)	(6)
0	4	0	0	0	4
1	136	44	11	0	191
2	131	40	10	4	185
3	54	7	7	0	68
4	11	3	1	0	15
5	1	0	0	0	1
6	1	0	0	0	1
7	0	0	0	0	0
Total	338	94	29	4	465

N.B: Four (4) numbers issue women excluded from the TG

Irrespective of level of education, all parents will usually go upto the second issue. From the table above it reveals that mothers with lower educational level have gone for higher number of issues. It is, therefore, necessary that the present motivation and education campaign of the Health and Family Welfare wing on limiting the number of issues should be carried on with much more vigour, with special focus on parents with low educational profile.

4.2.5 Family Welfare Measures:

Adoption of family planning practices can be better examined after accessing the potential women who are supposed to adopt such practices. Women with at least two living children are supposed to adopt such practices with a view to limiting the number of issues and those with less than two children may adopt temporary measures with a view to increasing the birth pace. The number of women according to the number of living children, those pregnant and those not as on the date of survey may be glanced through Table No.4.29.

Table No.4.29
Women with Number of Living Children

Living Children	No of Women		
	Total	Pregnant	Not Pregnant
(1)	(2)	(3)	(4)
0	5	1	4
1	247	17	230
2	176	9	167
3	30	0	30
4	7	0	7
Total	465	27	438

The table above reveals that out of 465 women, as many as 27 were pregnant as on the date of survey of whom as many as 9 had at least two living children, and the rest 18 had less than two living children. It gives a message that the 9 women with at least two living children could have avoided this pregnancy had the message of two child norm could have reached them and at the same time had they received the same in proper perspective. The message could not have any effect on these 9 women. The matter does not end here. We have to examine the status of the remaining 204 women with at least two living children but not pregnant who are supposed to adopt permanent methods of family planning. Besides, there are 234 women with less than two living children but not pregnant, who are supposed to adopt temporary methods for increasing the birth pace. For better appreciation, the family planning methods adopted by the 438 women who were not pregnant as on the date of survey is presented vide Table No.4.30.

Table No.4.30**Women not Pregnant according to Family Planning Methods Adopted**

Sl.	Device	No of Women
(1)	(2)	(3)
1	Sterilisation (Self)	48
2	Sterilisation (Spouse)	0
3	Cu T	2
4	Oral pills	27
5	Any other	14
6	None of the above	347
	Total	438

The table above reveals that only 91 (21%) of the couples have adopted some method or other where as the rest 347 (79%) have not adopted any method at all. Of the 91 women adopting any method, 48 (52%) have been sterilised and the rest 43 (48%) have gone in for Cu T, Oral Pills or else any other method. As regards sterilisation, the women have adopted the same in all cases and their male counterparts have not come forward. Adoption of family planning practices has to be jointly accepted and jointly shared where ever possible. Another aspect that needs to be examined as to the educational status of the couples adopting family planning practices. In this regard Table No.4.31 is relevant.

Table No.4.31**Family Planning Methods Adopted according to Education of Mothers**

Education of Husbands	Education of Wives		
	Illiterate	Literate	Total (%)
(1)	(2)	(3)	(4)
Illiterate	39	---	39 (43)
Literate	25	27	52 (57)
Total (%)	64 (70)	27 (30)	91 (100)

Note: Figures in parentheses represents percentages.

This table reveals that out of 91 couples adopting some kind of family planning practices, in 39 (43%) of the cases, both the husband and wife are illiterate and in 52 (57%) of the cases, at least one of them is literate which implies that literacy has some impact on the adoption of family planning practices. However, the message of limiting the number of children to two to be effective, both the husband and the wife should share the methods of family planning practices as far as possible. It is, therefore, recommended that the IEC activities in motivating and educating couples, the women SHGs existing in the area could be taken into confidence and encouraged to shoulder the responsibility who can penetrate to the household levels and achieve desired results.

4.2.6 Pregnant Women:

As indicated earlier, out of 465 women as many as 27 were pregnant all of whom were supposed to be enumerated and all of them would have received regular anti-natal check ups by the ANM of the nearest Sub-Centre where the local Anganwadi Worker has to ensure appropriate coordination. They are also supposed to get immunised (TT) and receive iron supplement apart from getting food supplement in their home. The various precautions taken in respect of the 27 pregnant women is presented vide Table No.4.32.

Table No.4.32

Precautions Taken in Respect of Pregnant Women

Sl.	Nature of Precaution	Number of Women
(1)	(2)	(3)
1	Food	12 (44)
2	Supplement (Iron Tablets)	20 (74)
3	Immunisation	20 (74)
4	Anti-natal Check Up	20 (74)
	Total	27 (100)

Note: Figures in parentheses represents percentage to total.

It appears good that out of 27 pregnant women immunisation, iron supplement and ante-natal check ups had been there in case of 20 (74%) of the women. However, it still indicates that the lower level machinery like the Sub-Centres and the Anganwadi Centres are yet to capture the remaining 7(24%) of the pregnant women for necessary follow ups. While large percentage of households are getting the benefit of ICDS programme through the Anganwadi Centres, there appears no reason as to why the rest of the pregnant women shall not receive any care through the programme of ICDS. Higher level supervision is necessary for ensuring enforcement of the system at the lower level to yield good results. Further, it is observed that only in case of 12 (44%) of the pregnant women, food precautions are being taken which is mostly household based even though the Anganwadi Centres take care of the same to certain extent. But food supplement is essential in case of all pregnant women for physical and mental growth of the child as well as the safety of the mothers. But except vigorous IEC activities in this regard, the development administration can not do much beyond unless there is realisation at the level of households. It is therefore necessary to launch adequate motivation and training programme on the need of qualitative and quantitative food supplement for the pregnant women for ensuring physical and mental growth of the child and safety of the mother through well baby clinics if there be any run by NGOs. This campaign can also be more effective if the local women SHGs could be taken into confidence and encouraged to shoulder the responsibility of motivation and education which can penetrate to the household levels and achieve desired results.

4.2.7 Breast Feeding:

Breast-feeding is not only important for survival of the child but also for its physical and mental growth as well as for ensuring immunity during infancy. Normally breast feeding should be allowed for at least six months and solid supplementation should start at one year through a process of semi-liquid supplementation during the period 6-12 months. As such breast feeding should at best continue till completion of one year of the child although with a reduced frequency beyond six months. As on the date of survey, there were as many as 74 mothers with children below one year who are supposed to

receive breast feeding. However, there were 27 mothers who were allowing breast feeding to their children beyond one year. The distribution of the 101 children according to their age and the number of breast feedings allowed may be seen from Table No.4.33.

Table No.4.33

Mothers according to Breast Feedings and Age of Children

Age of Child	No of Feedings per day					Total
	1	2	3	4	5	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0-1	0	8	5	29	32	74
1	6	12	0	1	0	19
2	8	0	0	0	0	8
Total	14	20	5	30	32	101

It reveals that children below one year receive breast feeding a minimum of twice a day and a maximum of 5 times a day. The 27 children above one year receive one or two breast feedings a day. The period of lactation having been exceeded one year in case of these 27 children, the milk secretion must have been reduced as also the milk secreted must not be containing requisite proportion nutrients. Continuance of breast feeding to a child during subsequent pregnancy of a mother is also not advisable and the child may have complications like diarrhoea, dysentery and indigestion. Beside, if breast feeding continues beyond one year, the child may not like to switch over to solid supplementation easily. Any kind of forceful solid supplementation may result in systemic disorders. In such cases also, it is necessary to launch adequate motivation and training programme on the need for withdrawal of breast feeding and solid supplementation for children beyond one year through well baby clinics if there be any run by NGOs. This campaign can also be more effective if the local women SHGs could be taken into confidence and encouraged to shoulder the responsibility of motivation and education.

In case of children below one year the number of feedings may not give us sufficient information unless we examine the adequacy part of it.

Table No.4.34 presents the picture of breast-feeding practices and its adequacy among the 74 children below one year.

Table No.4.34
Number and Adequacy of Breast Feeding among
Children below One Year

Adequate	Number of Feedings Allowed					
	1	2	3	4	5	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Yes	0	3	0	24	32	59
No	0	5	5	5	0	15
Total	0	8	5	29	32	74

It is found that out of 74 children, for 56 (76%) getting breast-feeding 4 to 5 times a day where the feeding is adequate. When the feedings are only two or three, the feedings are not so adequate. When feeding is not adequate, there is need for semi solid supplementation which does not usually happen in rural areas as semi -solid support is expensive and beyond the capacity of the poor families in the KBK region. It is, therefore, suggested that the Anganwadi Workers or Health Workers should take notice of such cases and advise cheaper variety of semisolid food supplements for the children below one year. Such food items may also be made available through fair price shops under the PDS although in a smaller scale. More specifically, home made semi-solid preparation should be given importance in launching motivation and education programmes.

4.3 CHILDREN BELOW FOURTEEN:

As explained in previous sections, there were in all 711 children below 14 years in the 480 sample households of whom 389 were boys and 322 were girls. Data on various aspects of their health and nutritional status was collected and examined with a view to deriving pertinent inference if any in the following sections.

4.3.1 Birth History:

On enquiry from the mothers, it was revealed that 700 children out of 711 had normal birth. The remaining 11 had certain deficiencies or deformities like physical handicaps, low birth weight, premature births, under developed, mentally retarded etc. Such of the problems can be partially attributed to serious nutritional deficiencies of the mother. Such of the events could have been reasonably checked by adequate and quality food supplementation during the carrying stage of the pregnant mothers.

4.3.2 Mile Stones of Development:

During the period from birth to completion of one year of age, a baby achieves certain mile stones of development such as responding, movement and creeping at the age of two months, laughing at 6 months, standing and teething at 9 months etc. With a view to examining as to what extent these mile stones have been achieved by the children during their infancy, the sample size need be some what large. But among the 711 children, there were only 75 within one year of whom only one had crossed the age of 11 months for which it was felt necessary to examine the past history of children from the higher age groups also. At the same time, too old a child may invite recall errors for which it was decided to limit the examination to the children below 3 years only. In the instant case, the number of observed children was only 211, the details of achievement of their development mile stones within first year of age as had been collected is presented vide Annexure No.4.5.

A glance through Annexure No.4.5 reveals that the achievement of mile stones like responding, movement, creeping, laughing, standing and teething in time and breast feeding upto six months which are of biological and physiological nature coupled with environmental conduciveness were mostly upto the mark. However, achievements on the introduction of semi-solid supplement during the period 6-12 months followed by solid supplement at the age one year which are mostly of environmental in nature was quite unsatisfactory although critically important from the point of nutritional requirement of the children. It implies that there had been serious neglect on the part of the parents for introduction of semi-solid during 6-12 months

followed by solid supplementation at one year. Apart from lack of awareness, there may be hardship among the rural poor in the KBK region to afford buying food for semi-solid supplement. Semi-solid supplementation being quite important from the point of nutritional requirement of the children below one year, it is essential for motivating and educating the parents through well baby clinics if there be any. Alternatively the women SHGs should be taken into confidence and given the responsibility of IEC which can possibly achieve better results as Women SHGs can reach the target group households through their members.

4.3.3 Immunisation:

In all there were 711 children below the age of fourteen of whom 389 were boys and 322 were girls. The status of immunisation among them is presented below vide Table No.4.35.

Table No.4.35
Immunisation among Children below Fourteen

Sl.	Vaccine	Immunised		Total (%)
		Boys	Girls	
(1)	(2)	(3)	(4)	(5)
1	DPT	387	317	704 (99)
2	Polio	387	317	704 (99)
3	BCG	380	307	687 (97)
4	MMR	122	92	214 (30)
5	Measles	211	151	362 (51)
6	Hepatitis-B	1	0	1(0)
7	None of the Above	2	5	7 (1)
	Total	389	322	711

Note: Figures in parentheses represents percentage to total.

*Figures are not additive because of Multiple Options

Immunisation of children from dreaded diseases like Diphtheria, Polio, TB, MMR, Measles etc. are considered extremely important for which national programmes with great publicity and IEC activities have been launched in the country. All hospitals, medical centres, Anganwadis have been geared up with a view to achieving cent per cent immunisation among the children. The above table reveals that while 99 per cent of the children have received DPT

and Polio vaccines, it is slightly less (97 per cent) in case of BCG, 51 per cent in case of Measles, 30 per cent in case of MMR. It is surprising to note that around one per cent of the children have remained outside the purview of the programme immunisation.

When the objective of the Government is to cover one and all the children under all categories of immunisation, it was observed in course of the survey that there was lack of adequate awareness and keen among the rural households on different types of immunisation facilities available and their schedule. It is, therefore, felt necessary that apart from ensuring cent per cent immunisation, creation of awareness and keenness among the rural poor families in the KBK region on the objectives of immunisation with greater vigour should receive first priority. The consequences of not getting the children immunised with demonstration should also be taught to them through participatory mode. In this regard, the women SHGs should also be taken into confidence and given the task of motivating and educating the parents. The women SHGs will spontaneously perform the role of a facilitator.

4.3.4 Present Health Condition:

The present health condition of the 711 children below the age of fourteen as perceived by them or their parents was collected and the result is tabulated vide Table No.4.36 given below.

Table No.4.36

Present Health Condition of Children

Sl (1)	Health Condition (2)	Boys (3)	Girls (4)	Total (5)
1	Excellent	0	2	2 (0.3)
2	Very good	0	3	3 (0.4)
3	Good	362	299	661 (93.0)
4	Bad	17	11	28 (3.9)
5	Very bad	10	7	17 (2.4)
	Total	389	322	711 (100)

Note: Figures in parentheses represents percentages.

Of the 711 children surveyed, only two expressed to be in excellent health condition. However, 93.4 per cent expressed to have been enjoying either good or very good health condition and the rest 6.3 per cent expressed

to have been enjoying either bad or very bad health condition. Although, this was the overall feeling expressed in respect of 711 children, there were 51 (7%) of the children who were having some ailment or other as on the date of survey. The nature of sickness and the duration of their sickness in days is presented below vide Table No.4.37.

Table No.4.37
Nature and Duration of Sickness of Children

Sl	Sickness	No of sick women					Total
		0-1	1-7	7-15	15-30	30+	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Fever	0	30	1	1	0	32
2	Jaundice	0	0	0	1	1	2
3	Skin Disease	0	0	0	0	1	1
4	Eye Problem	0	0	0	0	1	1
5	Ear Problem	0	1	0	0	1	2
6	Body pain	0	1	0	0	0	1
7	General weakness	0	2	0	1	4	7
8	Anaemia	0	1			4	5
	Total	0	35	1	3	12	51

One pertinent aspect relating to their health is their perception on their health condition as compared to the last year as also as compared to other children of their age. Since a comparison with respect to last year in respect of children below one year is not possible, only the 636 (711-75) children above the age of one year has been taken into consideration for that purpose. The response obtained is tabulated vide Table No.4.38 given below.

Table No.4.38
Comparative Perception of Children on their Present Health

As Compared to Last Year		As Compared to Others	
Perception	Children (%)	Perception	Children (%)
(1)	(2)	(3)	(4)
Much Better	2 (0.3)	Much Better	2 (0.3)
Better	287 (45.1)	Better	3 (0.4)
Same	278 (43.7)	Same	661 (93.0)
Little Worse	59 (9.3)	Little Worse	28 (3.9)
Worse	10 (1.6)	Worse	17 (2.4)
Total	636 (100)	Total	711 (100)

Note: Figures in parentheses represents percentages.

The table reveals that majority of the children have expressed to have been satisfied with their health condition as compared to their condition during last year as also as compared to other children of their age. This being a relative satisfaction we can not say that they are really enjoying a better health condition as on date. However, it implies that they are contented with their present health condition. One interesting thing is observed that psychologically the parent have hardly replied that their children are better as compared to other children of their age although they do not feel their children to be in worse health condition as compared to other children of their age.

4.3.5 Health Care through Anganwadis:

The Integrated Child Development Service (ICDS) Scheme aims at improving the nutritional and health status of all children below six years and reducing among young children the incidence of mortality, morbidity and malnutrition. Apart from immunisation, the other services for the children under ICDS through the Anganwadi Centres (AWCs) are pre-school education and supplementary nutrition (SNP). Among 711 children below the age of fourteen, there were as many as 154 children within the age group 3-5 and such of the children are supposed to avail health care facilities through AWCs. However the factual position prevailing in the field is presented vide Table No.4.39 giving district wise break-ups.

Table No.4.39

Children (3-5 years) Receiving Health Care Facility in AWCs

Sl	District	Children (3-5 years)			Those Receiving Facility		
		Boys	Girls	Total	Boys	Girls	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Balangir	10	8	18	9	6	15
2	Kalahandi	15	5	20	8	2	10
3	Koraput	13	13	26	4	3	7
4	Malkangiri	8	9	17	2	2	4
5	Nawarangpur	9	13	22	4	9	13
6	Nuapada	10	8	18	6	2	8
7	Rayagada	7	5	12	3	3	6
8	Sonepur	11	10	21	8	7	15
	Total	83	71	154	44	34	78

Out of a total of 154 children in the age group of 3-5 years, as many as 78 (51 per cent) were availing health care facilities through Anganwadi Centres. Although there is not much of difference among the boys and girls, the percentage of children receiving the service in Koraput, Malkangiri and Nuapada districts fall below 50 per cent. Some of the reasons for low percentage of dependency on AWCs may be that children from APL families might not be going to AWCs as well as some children from BPL families might be going away with their mothers to their place of work. In any case, the percentage of such children attending AWCs should not be low as health care facilities are considered as the key intervention as far as physical, psychological and nutritional aspects of the children are concerned.

All the districts of KBK region and more specifically the Koraput, Malkangiri and Nuapada are very backward with predominance of tribals. They are usually not accustomed to any formal practice of sending their children to fixed places regularly to receive health care facilities unless it becomes urgent. It is, therefore, necessary to sufficiently educate and motivate them to send their children to AWCs along with other children to receive health care facilities regularly. It may be little bit difficult to break the age old established practice. However continuous persuasion will necessarily yield some tangible result.

4.3.6 Mid-Day-Meal in Schools:

All children attaining the age of 6 are supposed attend school and receive the benefit of mid-day-meal (MDM) for five years in course of receiving primary education. Within the sample households of 480, among 711 children, there were as many as 177 children in the age group of 6-10 who were supposed to go to school and receive the benefit of MDM. Table No.4.40 presented below gives the age wise total children in the age group of 6-10 along with those in schools and those out of schools.

Table No.4.40
6-10 year Children in Schools and Out of Schools

Age	Total Children			Children in Schools			Out of School Children		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
6	18	18	36	16	14	30	2	4	6
7	25	21	46	18	15	33	7	6	13
8	18	23	41	17	21	38	1	2	3
9	7	14	21	7	12	19	0	2	2
10	18	15	33	16	14	30	2	1	3
Total	86	91	177	74	76	150	12	15	27

The table above reveals that there were in all 177 children in the age group 6-10 of whom 150 (85 per cent) were attending school who must be receiving the benefit of MDM and the remaining 27 (15 per cent) were not attending school who were therefore deprived of getting the benefit of MDM. However, the detailed study of the households revealed that out of 346 children of school going age as many as 200 children (58 per cent) comprising of 114 boys and 86 girls were receiving the benefit of MDM. There may be some errors in reporting at the level of household enquiry. However, these two sets of figures are not comparable as the denominators in both the cases are different as well as in certain upgraded primary schools MDM was also extended to the students reading in Classes VI and VII. In any case, some children remaining out of the school during their school going age could be brought to the school so that they could have availed the benefit of MDM besides receiving education on health, hygiene and nutrition. To ensure cent per cent enrolment of children in schools, it is recommended that there should be door to door motivation and persuasion by the Parent Teachers Association (PTA) sufficiently prior to reopening of schools.

4.4 NUTRITIONAL ASSESSMENT:

Every living organ of the body strives most for obtaining its food requirement. In case, an organ does not get its food requirement it is most likely to malfunction. In case, any organ malfunctions, the body will not function properly. For sound and healthier existence of the body, it is

necessary that the food requirement of all organs of the body is appropriately met with. In case of plants, it can manufacture its food from soil, water and air. But a higher organism, like the man does not possess the capability to manufacture its food for which it has to depend on plants and other animals for getting its food. The food so availed gets assimilated in the body and used for physical development and mental growth as well as for maintenance of the body. It is, therefore, as simple as that human life can not exist without food.

There are varieties of food stuff before a man and it varies from region to region. Food stuffs are of varying nature in terms of their nutritive value. The health of one man differs from other depending on the nature and the quantity of food he eats to satisfy his hunger. Dietary habits and food requirement of a man, apart from various categories of persons, depends mostly on the local availability of food stuff.

Malnutrition and ill-health is the result of inadequate food intake as compared to the accepted standard. The deficiency in the food intake may be both quantitative and qualitative. Among the poor sections, the minimum calorie requirement is not usually met with. While their protein intake is marginal, the intake of vitamins and minerals fall short of the required level. Lower levels of dietary intake both in terms of quantity and quality results nutritional deficiency diseases in the body and particularly the pregnant women, nursing mothers as also the infants are the worst victims. Malnutrition, therefore, plays a major role in the ill-health of our population.

4.4.1 Signs and Symptoms:

There are various ways of measuring the levels of malnutrition in the body. In case, there is any kind of malnutrition, it may show some signs and symptoms in different parts of the body. As for example, if there is protein energy malnutrition, the facial appearance may look like a “moon face”, the abdomen may look like a “pot’s belly”. If there is anaemia, the face colour may be “yellowish” or “pale” and there may be swelling on the feet. In case, there be Vitamin-A deficiency, there may be night blindness, the face may look pale, the cornea may look muddy, white or spotted and the many like wise. Though not exhaustive, as many as 17 organs of the body were identified as

listed vide Annexure No.4.6 on which the signs and symptoms of malnutrition can be prominently reflected. In the said annexure, various signs and symptoms seen as a result of various diseases on account of varied nutritional deficiencies and the natural sources from which the relevant nutrition can be made available has also been listed.

Though not very accurate, various signs and symptoms seen on different parts of the body will give reasonable idea on the nature and the extent of malnutrition in the body. In course of field study, each of the 465 women in the reproductive age and all the 711 children below fourteen totalling 1176 persons were subjected to an assessment through administration of the Assessment Schedule specifically designed for the purpose. On physical observation of each and every individual subject, the signs and symptoms seen on the 17 organs of the body i.e. the hair, facial appearance, face colour, eye, cornea, lip, tongue, gum, teeth, neck, chest, abdomen, hand's nail, foot, skin, bone and muscles were recorded. The number of boys, girls and the women exhibiting any kind of signs and symptoms on the listed organs has been presented vide Table No.4.41. Further, the signs and symptoms exhibited by the children and the women according to different age groups have been presented separately vide Tables No.4.42 and No.4.43.

Table No.4.41
Persons in Target Group with Some Kind of Signs and Symptoms

Sl	Target Group Signs & Symptoms	Boys		Girls		Children		Women		Total	
		No.	P	No.	P	No.	P	No.	P	No.	P
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Hair	160	0.41	145	0.45	305	0.43	223	0.48	528	0.45
2	Facial Appreance	189	0.49	160	0.50	349	0.49	233	0.50	582	0.49
3	Face colour	43	0.11	25	0.08	68	0.10	180	0.39	248	0.21
4	Eye	90	0.23	56	0.17	146	0.21	237	0.51	383	0.33
5	Cornea	70	0.18	57	0.17	127	0.18	214	0.46	341	0.29
6	Lip	78	0.20	57	0.17	135	0.19	312	0.67	447	0.38
7	Tongue	1	0.01	0	-	1	0.01	4	0.01	5	0.01
8	Gum	25	0.06	16	0.05	41	0.06	23	0.04	64	0.05
9	Teeth	156	0.40	126	0.39	282	0.40	253	0.54	535	0.45
10	Neck	2	0.01	0	-	2	0.01	0	-	2	0.01

Sl	Target Group Signs & Symptoms	Boys		Girls		Children		Women		Total	
		No.	P	No.	P	No.	P	No.	P	No.	P
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
11	Chest	163	0.42	133	0.41	296	0.42	216	0.46	512	0.44
12	Abdomen	14	0.34	10	0.03	24	0.03	124	0.27	148	0.13
13	Hand's nail	21	0.54	13	0.04	34	0.05	27	0.06	61	0.05
14	Foot	38	0.10	26	0.08	64	0.09	399	0.86	463	0.39
15	Skin	167	0.43	125	0.39	292	0.41	267	0.57	559	0.47
16	Bone	0	-	3	0.01	3	0.01	2	0.01	5	0.01
17	Muscles	1	0.01	1	0.01	2	0.01	2	0.01	4	0.01
	All Signs*	0	-	0	-	0	-	0	-	0	-
	No sign*	0	-	0	-	0	-	0	-	0	-
	Multiple Signs*	1218	3.13	953	2.95	2171	3.05	2716	5.84	4887	4.15
	Total Persons	389	-	322	-	711	-	465	-	1176	-

P : Proportion of persons affected / Signs and Symptoms per person.

* : Denominator = Total Persons

Table No.4.42

Children with Some Kind of Signs and Symptoms according to Age

Sl	Age Group Signs & Symptoms	0-1		1-3		3-5		5-7		7-14		Total	
		No.	P	No.	P	No.	No.	No.	P	No.	P	No.	P
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	Hair	23	0.31	57	0.42	67	0.43	52	0.43	106	0.47	305	0.43
2	Facial Appearance	35	0.47	66	0.48	76	0.49	60	0.50	112	0.50	349	0.49
3	Face colour	0	-	6	0.04	14	0.09	10	0.08	38	0.17	68	0.10
4	Eye	1	0.01	8	0.06	23	0.15	25	0.21	89	0.39	146	0.21
5	Cornea	0	-	9	0.07	20	0.13	26	0.22	72	0.32	127	0.18
6	Lip	2	0.02	5	0.04	14	0.09	28	0.23	86	0.38	135	0.19
7	Tongue	0	-	0	-	0	-	0	-	1	0.01	1	0.01
8	Gum	0	-	4	0.03	13	0.08	9	0.07	15	0.07	41	0.06
9	Teeth	3	0.04	29	0.21	70	0.45	60	0.50	120	0.53	282	0.40
10	Neck	0	-	0	-	0	-	0	-	2	0.01	2	0.01
11	Chest	19	0.25	56	0.41	69	0.45	52	0.43	100	0.44	296	0.42
12	Abdomen	2	0.02	9	0.07	8	0.05	2	0.02	3	0.01	24	0.03
13	Hand's nail	1	0.01	3	0.02	4	0.03	9	0.07	17	0.08	34	0.05
14	Foot	0	-	0	-	3	0.02	6	0.05	55	0.24	64	0.09
15	Skin	6	0.08	32	0.23	66	0.43	65	0.54	123	0.54	292	0.41

Table No.4.41 reveals that the number of women and children exhibiting the signs and symptoms relating to abnormally smooth tongue, thyroid swelling, bending bone, muscle wasting and motor weakness are very less and even less than one per cent even. But the number of women and children exhibiting malnutrition related signs and symptoms on other parts of the body ranges between 5 per cent to as high as 45 per cent. Such a large percentage of women and children with some sign and symptoms of malnourishment is quite serious. In case of the organs like the hair, facial appearance, eye, cornea, lip, teeth, chest, foot and skin, the women and the children exhibiting some signs and symptoms of malnutrition are 45, 49, 33, 29, 38, 45, 44, 39, and 47 percentages respectively.

The said table No.4.41 further reveals that there is not a single woman or a child who does not have any signs and symptoms of malnutrition. The per head number of signs and symptoms of malnutrition was observed to be 3-4 among the boys, 2-3 among the girls and 5-6 among the women. Even though the per head number of signs and symptoms of malnutrition among the girls is less than that of the boys, as the girls grow and enter into their marital life and motherhood, they exhaust serious negligence on their health and nutrition on account of the prevailing social customs, social obligations, economic compulsions and the many.

Table No.4.42 reveals that the number of signs and symptoms of malnourishment among the children increases according to their age. On an average 1-2 signs and symptoms are seen among the children in the age group 0-1, 2-3 in the age group 1-3, 2-3 in the age group 3-5, 3-4 in the age group 5-7 and 4-5 in the age group 7-14, the overall average being 3-4 per child. Similarly, table No.4.43 reveals that the number of signs and symptoms of malnourishment among the women also increases according to their age. While it is as many as 5 in the younger age groups it goes to as many as 6 per woman at older age. However, the 3 women in the early motherhood age exhibit on an average as many as 7 signs and symptoms of malnourishment. This is quite high a number perhaps due to their early age at marriage and early entry into motherhood coupled with restricted life style in the early age

during which they would have been enjoying all freedom and liberty of life like other girls of their age.

The nutritional deficiencies as observed above are mostly related to the food stuff rich in Vitamins A, C, D, E, B Complex, Amino Acid, Calcium and the food stuff that provides protein energy. The relevant food values can be made available through intake of fish, meat, milk, egg, yellow fruits, dry fruits, green vegetables, tomato, germinated wheat, sun flower and cotton seed oil, root vegetables, ragi, all plants, rice pram, wheat, millet, sea food, ground nut, germinated gram etc. It is not necessary that one and all will have to consume all kinds of food both vegetables and non-vegetables irrespective of the cost of food items. Non-vegetables and vegetables not locally produced are usually costly for which only well to do families may be able to afford. As has been made clear in earlier sections, most of the households in the KBK region are very poor and thereby not able to afford for providing two square meals a day comfortably to all members of the family due to lack of adequate purchasing powers in their hands. On the face of this, it is as simple as that they can not afford to buy and consume all kinds of food listed above, in absence of which, there is every likelihood of their suffering from some kind of malnutrition or other on various occasions.

Balanced dietary schedule is an essential requirement of life for maintaining good health and nutritional status. But adherence to the recommended dietary schedule by one and all is practically not possible for obvious reasons. The elite class and well to do families even do not have adequate awareness on the dietary requirements and the schedule of balanced diet. They take food with a view to meeting their hunger by way of selecting food stuff within their purchasing power and at the same time they ensure that the selected food is of their liking that suits their taste and breaks their monotony, which confirms to their social status and the many as a matter of practice. Only when any of their family members suffer from malnutrition, selective nutritional supplement is given similar to taking medicines on the advice of a Doctor. However, limited few of them are conscious of their health, hygiene and nutritional aspects. This being the state of affairs among the elite

mass and the well to do families in our society, we can not expect the families residing in the KBK region to adhere to the recommended dietary schedules and keep up their health and nutritional status as they are not only economically backward but also underdeveloped in various fronts including health and education which are essential aspects of quality of life.

To up keep the health and nutritional status of women and children in rural areas, a lot many interventions have been initiated long since by the State, National and International agencies and commendable efforts have been made by civil societies. The programmes directed towards providing health and nutritional benefits to the women and children are the ICDS, SNP, MDM and many maternity and child health (MCH) programmes including the Janani Surakshya Yojana launched in the recent past. The Anganwadi Workers and the ANMs in the Sub-Centres are the key persons to establish appropriate linkage between the programmes and the beneficiaries. It can not be said that the efforts taken in this regard have yielded no result. The mechanism and the net-work are very good so also the objectives, strategy and the inputs. Despite appreciable achievements, there still remains a long way to go. It is not merely a question of providing every thing always but more important a question of enhancing the ability of the potential beneficiaries so that they spontaneously come forward to avail the opportunities and get the benefits. It is, therefore, essential now to evolve a strategy through which the potential beneficiaries will be made to realise the consequences of malnutrition and spontaneously come forward not only to avail the benefits under the existing programmes but also adopt the same in practice as a part of their life style in the event these programmes do not continue further more.

4.4.2 Obesity:

Growth of a man is associated with various anthropometric measurements like the height, weight, arm circumference etc. The height increases according to age. But the height reaches its maximum as soon as the man crosses the teens excepting in very rare occasions for 2-3 years beyond that. Similarly the weight increases according to age as well as the height. As such, there is always a relationship between the age, height and

weight of a person. But the relationship differs among the children and adults, among males and females.

A lay man looks at a person and immediately infers as to if he has any problem of health through visual assessment only based on the body volume, the height and the age of that person. Although, he does this by virtue of his experience and intuition without any kind of objective assessment, in most of the cases his inference comes true. The objective assessment part of arriving at definite inferences is to calculate the Body Mass Index (BMI) of a person that has a specific distribution and then to compare the derived index with the specific values of the distribution. The Body Mass Index of a person is the ratio of his weight in kilograms to the square of his height in metres which is expressed by the following formula.

$$\text{Body Mass Index (BMI)} = (\text{Weight in Kg}) / (\text{Height in Mts})^2$$

Body mass index is a reliable indicator of an individual's health and nutritional status. The calculated value of BMI is compared with the tabulated values of BMI derived through research studies. The BMI of a person tells us how fat or thin a person is, with the exception that this may overestimate the body fat among athletes and those with muscular build as also may underestimate the body fat among older persons and those with loss of muscles. Persons with overweight may begin to experience health consequences during their youth as well as putting them at risk for weight related problems in later part of life. Similarly, underweight persons may have serious problem of malnutrition in them. Although the BMI is calculated in the same way as for children and adults, the method of interpretation of the same is different for children and for adults. In case of children the amount of body fat differs between boys and girls and also the amount of body fat changes with age.

On the basis of BMI value a person can be categorised into six categories as severely underweight, underweight, acceptable weight, obese, severely obese and morbidly obese depending on the value of BMI of the person as compared to the tabulated value.

4.4.3 Obesity among Women:

As explained earlier the BMI value for men and women are different on the basis of which the degree of their obesity can be examined. Within the same category of obesity the BMI range for men is slightly higher than the same for women. The National Health and Nutrition Examination Survey (NHANES) in 1971-74 recommended two sets of significant ranges of the values of BMI, one for men and the other women separately. The significant ranges of the value BMI for women are <17 for severely underweight, <19 for underweight, <27.3 for acceptable weight, >27.3 for obese, 32.2 for severely obese and >44 for morbidly obese. The weight and height of the 465 women in the reproductive age was collected in course of the field survey and their BMI values were calculated. The calculated BMI values of each of the 465 women was compared with the significant range of values of BMI to know the obesity among them and the result thereof is presented in the following Table No.4.44.

Table No.4.44

Obesity among the 465 Women in the Reproductive Age

Sl	Obesity	BMI Range	Women	% of Women
(1)	(2)	(3)	(4)	(5)
1	Severely Under-wt	<17	70	15.05
2	Underweight	17 - 19	124	26.67
3	Acceptable Weight	19 - 27.3	235	50.54
4	Obese	27.3 – 32.2	27	5.81
5	Severely Obese	32.2 - 44	9	1.93
6	Morbidly Obese	44 & above	0	0.00
	Total		465	100.00

The table above reveals that only about 50 per cent of the women are in the range of acceptable weight. As many as 27 (5.81%) of them are obese and 9 (1.93%) are seriously obese. These 36 (7.84%) of the women in the overweight category need some kind of attention to bring them to the normal weight range. But the serious concern is that as many as 124 (26.67%) of the women are in the underweight category and 70 (15.05%) are in the category of severely underweight. Added together, the cases of 194 (41.72%) of the

women are serious and therefore they need special intervention to bring them to the normal weight category which is of urgent and immediate nature.

The underweight women in the KBK region will be more in number. It would be most appropriate to identify one and all through a special drive and provide for an appropriate package for them with a view to bringing them to the category of normal weight group within a reasonable time frame. But this may not be a sustainable solution as the situation is most likely to reappear as soon as the package programme comes to an end. It is, therefore, necessary to evolve an appropriate strategy through which the community awareness will be created in a way that will encourage the community to come forward to tackle the problem of their own even if there is no specific programme for them in this regard.

4.4.4 Obesity among Children:

Unlike the adults the BMI for children is age and sex specific which is often referred to as BMI-for-age. Since the BMI for children is age and sex specific, the calculated BMI is plotted on the BMI-for-age growth charts to obtain the percentile ranking. Percentiles are the most commonly used indicator to assess the size and growth pattern of individual child. The percentiles indicate the relative position of the child's BMI number among the children of the same sex and age. The growth charts show the weight status used with children and teens like underweight, healthy weight, at risk of overweight and overweight. The BMI-for-age weight status categories and corresponding percentiles are shown in the following statement.

Statement of BMI-for-age Weight Status Categories

Sl	Weight Status Category	Percentile Range
(1)	(2)	(3)
1	Underweight	Less than 5 th percentile
2	Healthy Weight	5 th to less than 85 th percentile
3	At risk of Overweight	85 th to less than 95 th percentile
4	Overweight	95 th percentile or above

Two growth charts one for the BMI-for-age percentiles for boys from 2 to 20 years and the other for the BMI-for-age percentiles for girls from 2 to 20 years as have been developed by the National Centre for Health Statistics in collaboration with the National Centre for Chronic Disease Prevention and Health Promotion as have been presented vide Chart No.1 and Chart No.2 for reference. There were in all 711 children below 14 years of whom 126 were below the age of two years. Of the remaining 585 children in the age group 2-14 years, 321 were boys and 264 were girls. The weight and height of each of the children 585 children between 2-14 years of age was collected in course of the field survey and their BMI values were calculated. The calculated BMI values of the 585 children was plotted on the BMI-for-age chart for boys and for girls respectively and the distribution of the 585 children according to their weight status category for age as well as sex has been presented vide Annexure-4.7.

A glance through Annexure-4.7 reveals that both boys and girls have underweight problems as well as overweight problems. On the whole, 66.84 per cent of children in the age group 2-14 are in the range of healthy weight range, which is slightly lower in case of girls as compared to the boys. On an average 18 per cent of the children are in the weight category of “Overweight at Risk” and “Overweight” and the problem is slightly higher among the boys as compared to the girls. Coming to underweight category it is 14.53 per cent among the children. The percentage of underweight girls is 17.80 as compared to 11.84 per cent among the boys which indicates the problem of malnutrition is acute among the girls as compared to the boys. If we compare among the women and children, the problem of malnutrition among women is quite high as compared to children. This indicates that the women give little bit of preference to their children to fulfil their food requirement as compared to themselves.

Although this is the situation among the set of 585 children exposed to this study, the underweight children in the KBK region will be more in number. It would be most appropriate to identify one and all through a special drive and provide for an appropriate package for them with a view to bringing them

to the category of healthy weight zone within a reasonable time frame as suggested earlier in case of women. But this may not be a sustainable solution as the situation is most likely to slip back as soon as the drive comes to an end. It would, therefore, be appropriate to evolve an appropriate strategy through which community awareness will be created in a way that will encourage the community to come forward to tackle the problem of their own even if there is no specific programme for them in this regard.

4.4.5 Emerging Points:

The above methods of observing the signs and symptoms on different parts of the body and calculating the body mass index of a person form the basis to assess the state of malnutrition. However, these are not diagnostic methods of assessment. To know the exact cause and the degree of malnutrition, further clinical investigation will be necessary. However, appearance of various malnutrition related signs and symptoms on various parts of the body or else considerable low value of body mass index necessarily tell us the prevalence of malnutrition and its gravity on the basis of which we one can go in for detailed pathological and clinical investigations and thereby taking appropriate preventive and curative measures. Of course, curative measures are essential and urgent in the event malnutrition has already taken place. But prevention is always better than cure even if the possibility of the occurrence of malnutrition can not be completely avoided for obvious reasons.

Prevention is better than cure is a hard truth and more so it is too hard to apply it in the real life. There are several underlying questions like; what to prevent, why to prevent, how to prevent, who to prevent, the scope and the opportunity to prevent and the many. In fact, varieties of nutritional requirements of the body are fulfilled through a variety of food sources. For such reasons we can not establish one to one relationship between a particular type of food stuff and a particular type of nutrition. Different food stuffs have different kinds of nutritional values with varying degree. A particular nutrition in requisite quantity is, therefore, derived from different kinds of food stuff. Good health is, therefore, the result of a whole sum process of food intake in requisite quantity, at appropriate time and in

appropriate manner which in other words as per the appropriate dietary schedule. The dietary schedule differs from person to person, among the children and the adults, among the males and females as also for different age groups. In course of field survey, it was observed that most aspects of the dietary schedule are not clearly known to the rural mass and more specifically to the women in the households who happen to hold the complete charge of food management among the members in the family. As revealed in previous sections, no food precaution is usually taken in respects of pregnant and lactating mothers. On the other hand, certain food restrictions are usually imposed on the pregnant and lactating mothers on account of prevailing blind belief and food faddism that not only adversely affects the mothers but also it invites multifarious risk for the child.

If at all it is felt necessary to reduce the prevalence of malnutrition in the community and more specifically among the women in the reproductive age and the children, it is essential that special programmes aiming at reducing the malnutrition among them should be launched. Presently, various programmes like the ICDS, SNP, Janani Surakshya Yojana, MCH, and the MDM are in operation that takes care of the health and nutrition problems among them. Various IEC programmes have also been launched to enhance their level of knowledge on health and nutrition. Apart from distributing leaflets and pamphlets as also hanging posters, awareness campaigns are also organised through various media. In villages, the Anganwadis with an Anganwadi Worker and the Sub-Centre with an ANM perform the role of facilitators between various programmes and the beneficiaries. The existing net-work and the system appear to be quite satisfactory.

Despite elaborate arrangements and substantial investments through various schemes over a considerable period, the percentage of malnourished women and the children is still high. This does not mean that nothing has been done through all these interventions in the past. On the other hand, it implies that there is still a long way to go. All most all the existing schemes are of the nature of creating adequate awareness and providing social service. In other words all these are supplement programmes. Unless the community realise and come forward to solve their problem, nothing can

happen. It is, therefore, expedient to think of some paradigm shift in the strategy of these schemes keeping their objectives in tact. The strategies should include building up the capability among the people in the community so that they can realise and appreciate their problem and take appropriate precautionary measures even in absence of any specific programmes. This can only be possible through continuous and participatory motivation and education through entry points.

In regard to entry point activity as suggested above, each pregnant woman shall be taken as an entry point. The entry points should be identified in the earliest opportunity and intensive motivation and education in respect of each entry point should be continued and results monitored at regular intervals during the critical period which should be termed as the critical period of intervention (CPI). Each entry point will include the expectant mother and the expectant child and the critical period of intervention shall commence from the date of identification of the entry point and continue till end of lactation of the mother or till completion of three years of the expectant child whichever is later. The Anganwadi Workers and the ANMs of the local area shall work as facilitators between various programmes and the entry points and conduct regular monitoring of the outcome.

The intensive motivation and education programme to be more acceptable, people's participation in the process will have to be essential. In organising the intensive programme of IEC, the local Women Self Help Groups (WSHGs) shall have to be taken into confidence which can not only penetrate to each and every individual entry point but also further intensify the programme by virtue of building confidence among the entry points. To ensure regular association of the WSHGs in the programme some amount of incentives should be given to the SHG as encouragement and to encourage the entry points to achieve good results, some provision of awards and rewards should be their. Besides, certain occasions should be observed at intervals where the entry points should assemble and explain their experience and feel free to express their opinion on the success and failure of the programme. They may come up with some good practices to be followed by others.

The material for the intensive IEC programme for the entry points is critically important. Although full proof, the scientific terms and terminology and the technological concepts on health and nutrition used in the laboratory hardly matters to the people living in rural areas like the KBK region. Local food stuff, local language, local teacher and above all a thumb rule suiting to their culture and local socio-economic standard will be most acceptable to them. It is, therefore, essential to prepare a “Handout on Health and Nutrition for Women and Children” in local language which should include two health cards one for recording events and monitoring progress relating to the expectant mother and the other for the expectant child during the critical period of intervention. One Handout has to be handed over to each expectant mother on the date of her identification. An illustrative list of contents of the suggested Handout is given at Annexure-4.8.

The intensive IEC activity suggested above can not yield the desired result as no single activity can work satisfactorily unless the environment is conducive to carry on the activity in the right direction. There are several environmental deficiencies which need to be taken care of simultaneously if at all the suggested intensive IEC is intended to work efficiently. Some of the health and nutrition related environmental issues which need to be attended to urgently are;

- i. Fundamental education for the illiterate women,
- ii. Socio-economic measures for the economically and deprived women,
- iii. Control of food price,
- iv. Distribution of food supplements for pregnant and lactating mothers,
- v. Promotion of breast feeding,
- vi. Development of low cost weaning food,
- vii. Continuing community education on health and nutrition,
- viii. Expansion of immunisation programme,

- ix. Continuing community education on food and personal hygiene,
- x. Continuing community education on birth spacing,
- xi. De-worming of children,
- xii. Food fortification,
- xiii. Organising periodic surveillance of population at risk,
- xiv. Rehabilitation of severe nutritional deficient cases,
- xv. Improving the environment conducive to health and nutrition including health promotion, health protection, treatment and rehabilitation.

CHAPTER -V

SUMMARY CONCLUSIONS AND RECOMMENDATIONS

Based on the results obtained through field observation and interaction with the district level officers as well as the knowledgeable persons in the locality some conclusions have been derived and appropriate recommendations have been emerged. The emerging summary conclusions and the recommendations as have been presented in the following paragraphs will be useful in taking policy initiatives for alleviating the problems of malnutrition in the State of Orissa and more particularly in the KBK region.

5.1 Summary Conclusions:

- 5.1.1 About 72 per cent of the study households depend on wage labour and that too from non-agriculture sources. Being very poor and having hardly any productive assets, dependence on non-agricultural wage employment has been resorted to by majority of the households.
- 5.1.2 The total literacy among the members of the sample household was 47 per cent and the female literacy was abysmally low i.e. 36 per cent.
- 5.1.3 About 35 per cent children in the school going age were out of schools and only 65 per cent attending schools. Most of the out of school children were engaged in other activities like taking care of the youngest siblings and attending to some small economic activities like collection of fire wood, rearing domestic animals etc as an economic support to the family.
- 5.1.4 While 95 per cent households are taking two square meals a day, 5 per cent households take only one square meal a day. Majority of the households (89 per cent) take other dietary intake only once a day, 6 per cent take twice a day and 5 per cent do not take other dietary intakes during a day at all. A large number of households taking one square meal a day belong to Malkangiri district. More so in the said

district of Malkangiri, 35 per cent of the households do not take any other dietary intakes at all other than the principal square meals.

- 5.1.5 Only 3 per cent of the households have household latrine facility and none of the households in Malkangiri, Nuapada, Rayagada and Sonepur districts have latrine facilities in their homes.
- 5.1.6 It was good to observe 97 per cent of the sample households have their access to safe source of drinking water if not cent per cent.
- 5.1.7 In 36 per cent of the households, adults are consuming alcohol majority of whom belong to Malkangiri district. Unfortunately, however, 8 per cent of the children in Malkangiri district also consume alcohol.
- 5.1.8 There were as high as 71 per cent sample households whose annual household per capita income was less than Rs.2500/-. More so, there were only 3 per cent sample households whose annual per capita household income was more than Rs.6000/-.
- 5.1.9 Households, whose per capita food consumption was less than 3.5 kg a week or alternatively less than 500 gms a day, was 34 per cent. There were hardly 1 (one) per cent of the households who were consuming more than 7 kg a week per capita or alternatively more than one kg a day. This implies that irrespective of the type of food, the total food consumption among the households in the KBK region is almost half of the recommended dietary allowances.
- 5.1.10 Apart from low income group of households, some higher income group of households were also consuming lower quantity of food, may be due to other expenditures on undesirable items like alcohol apart from attaching higher priority to meeting other obligations at the cost of food consumption etc.
- 5.1.11 Irrespective of quantity, only 57 per cent households consume animal protein, 18 per cent milk and milk products, 10 per cent roots and tubers and 10 per cent fruits. Consumption of milk and milk products is lowest in Malkangiri districts followed by Rayagada that provides essential nutritional requirements for the body.

- 5.1.12 Consumption of protein is usually among higher income groups. Protein consumption ranges from 330 gms to 1380 gms with an average of 410 gms per capita per week. Around 75% of the households are consuming between 0-500 gms of protein per capita per week. Consumption of protein is considerably less among the households in KBK region as compared to the recommended dietary allowances.
- 5.1.13 In only 6 per cent sample households there was awareness, attitude and the practice of consuming various kinds of fortified food was present. This is certainly a very low figure. The knowledge, attitude and practice of consuming various kinds of fortified food is higher among the higher income groups.
- 5.1.14 Very negligible percentage of the households have received the benefit under the schemes of TSC and Swajaldhara which have adequate bearing on the health, hygiene and sanitation of the people.
- 5.1.15 While the percentage of households accessing the ICDS and AWC is quite satisfactory, the same in case of MDM and PDS is appreciably low.
- 5.1.16 Access of households to PDS is only 41 per cent. There being adequate number of fair price shops the possible reasons for not using PDS commodities by large majority of the households may be due to lack of purchasing power in the hands of poor people in the region.
- 5.1.17 Among the eligible couples, in 52 per cent cases both the male and female were illiterate and in 73 per cent cases either of them was illiterate which is a serious deterrent in gathering knowledge about various poverty alleviation and rural development programmes meant for them and to enjoy the benefits of such programmes.
- 5.1.18 The study reveals that as high as 66 per cent of the men are getting married before the age of 25 and similarly, as high as 43 per cent of the women are getting married before the age of 18. There were 69

per cent of the couples where either the husband or the wife had entered into marital life before the prescribed age.

- 5.1.19 As regards the present health condition of the women, they have expressed that they have been experiencing not so very serious health problems even though the study does not reveal any picturesque position. This indicates that they have been contented with their present health condition.
- 5.1.20 The study reveals that mothers with lower educational profile have gone in for higher number of issues and the rate of survival of children goes on decreasing with the number of issues.
- 5.1.21 Among the eligible couples who were supposed to adopt some kind of family planning measures, as low as 21 per cent had only adopted such measures and the women are the sole contributory to that. Of course, education of the couples has some bearing on that.
- 5.1.22 There were 27 pregnant women in the sample households. Ante-natal check ups, immunisation and iron supplementation was observed to have been done in case of 74 per cent of pregnant women and food precaution taken in case of 44 per cent of pregnant women.
- 5.1.23 Only 27 per cent of the mothers were allowing breast feeding to their children beyond one year. Breast feeding is not also adequate in many cases.
- 5.1.24 It was observed that there had been serious neglect on the part of the parents for introduction of semi-solid during 6-12 months followed by solid supplementation at one year which is mostly due to lack of their awareness.
- 5.1.25 Immunisation of children through BCG, DPT and Polio vaccines is some what satisfactory. But in respect of other vaccines, it is not so very encouraging.
- 5.1.26 The study reveals that majority of the children have expressed to have been satisfied with their present health condition as compared

to their condition during last year as also as compared to other children of their age. However, it is observed that psychologically the parents have hardly replied that their children are better as compared to other children although they do not feel their children to be in worse health condition.

- 5.1.27 Out of the children in the age group of 3-5 years, as high as 51 per cent were availing health care facilities through Anganwadi Centres.
- 5.1.28 From the detailed field study it is revealed that 58 per cent (as against the ideal of 100 per cent) of the school going children were receiving the benefit of MDM. A sizeable proportion of them (i.e., 42 per cent) were not able to receive the benefit of MDM as a result of not attending schools.
- 5.1.29 On physical observation it reveals that the number of women and children exhibiting the signs and symptoms relating to abnormally smooth tongue, thyroid swelling, bending bone, muscle wasting and motor weakness are very less and on the organs like the hair, facial appearance, eye, cornea, lip, teeth, chest, foot and skin, the percentage is very high in the range 33-47 per cent.
- 5.1.30 The study reveals that the number of signs and symptoms of malnourishment among the children and women increases according to their age. However, the number of signs and symptoms among women are more as compared to the children.
- 5.1.31 The nutritional deficiencies as observed through signs and symptoms on different parts of the body are mostly related to the food stuff rich in Vitamins A, C, D, E, B Complex, Amino Acid, Calcium and the food stuff that provides protein energy and the. The relevant food values are can be made available in fish, meat, milk, egg, yellow fruits, dry fruits, green vegetables, tomato, germinated wheat, sun flower and cotton seed oil, root vegetables, ragi, all plants, rice pram, wheat, millet, sea food, ground nut, germinated gram etc.

- 5.1.32 The study has also taken care to measure the problem of malnutrition through assessment of body weight as compared to the height of a person by using the study instrument “body mass index (BMI)” which is the ratio of the body weight in Kg to the square of the height in Mts.
- 5.1.33 It is revealed that about 50 per cent of the women are in the range of acceptable weight, 5.81% of them are obese and 1.93% are seriously obese. The 7.84% of the women in the overweight category need some kind of attention to bring them to the normal weight range. But the serious concern is that as high as 26.67% of the women are in the underweight category and 15.05% in the category of severely underweight. Added together, the cases of 41.72% of the women are serious and therefore they need special intervention to bring them to the normal weight category which is of urgent and immediate concern.
- 5.1.34 The study reveals that both boys and girls have problems of underweight as well as problems of overweight. On the whole, 66.84 per cent of children in the age group 2-14 were in the range of healthy weight, which is slightly lower in case of girls as compared to the boys. On an average 18 per cent of the children are in the category of “Overweight at Risk” or “Overweight” and the problem is slightly higher among the boys as compared to the girls.
- 5.1.35 As high as 14.53 per cent among the children were in the underweight category. The percentage of underweight girls is 17.80 as compared to 11.84 among the boys which indicates the problem of malnutrition is acute among the girls as compared to boys.
- 5.1.36 The problem of malnutrition among women is quite high as compared to the children. This indicates that the women give little bit of preference to their children to fulfil their food requirement as compared to themselves.
- 5.1.37 In course of field survey, it was observed that most aspects of the dietary schedule as well as the problems of health and nutrition are

not clearly known to the rural mass and more specifically to the women in the households who happen to hold the complete charge of food management among the members in the family. No food precautions are usually taken in respects of pregnant and lactating mothers. On the other hand, certain food restrictions are usually imposed on the pregnant and lactating mothers on account of prevailing blind belief and food faddism that not only adversely affects the mothers but also it invites multifarious risk for the child.

5.2 Summary Recommendations:

- 5.2.1 All out of school children should be brought to schools so that, not only they shall receive general education but also receive the benefit of MDM and some education on health and hygiene including nutrition.
- 5.2.2 It is expedient to create an atmosphere among the households in the KBK region to avail opportunities under the Total Sanitation Campaign and Swajaldhara. Availing toilet facility through establishment of Community Sanitary Complex under the TSC will also solve the purpose to a great extent. This will have positive bearing on the health, hygiene and sanitation.
- 5.2.3 Efforts should be made to eradicate alcoholism among the adults as well as children in KBK districts through motivation. It will enable the poor households to spend little more on health, hygiene, food and education out of the savings generated that will have positive bearing on their nutrition.
- 5.2.4 The drive to eradicate alcoholism, to be fruitful, should come from within the community and the community based Women Self Help Groups shall be the best option who should be given adequate encouragements and incentives to carry on the drive to its logical end as it can penetrate to household levels through its members.
- 5.2.5 To enhance purchasing powers in the hands of the poor households in the KBK region, the people in the area shall have to be educated enough to take advantage of the recently launched employment

guarantee scheme with a view to providing a minimum 100 days of employment during a year to the BPL households.

- 5.2.6 Since protein intake among the rural areas is very less an appropriate strategy need to be evolved like including sale dry fish and Soyabin which are rich with protein through the fair price shops.
- 5.2.7 With a view to ensuring consumption locally produced nutritious food and more specifically at household levels, various ventures under SGSY need to be tiny ones like rearing of one or two goats, keeping two to three indigenous variety of hens etc. should be thought of. This will provide milk as well as animal protein at the household levels apart from getting some income through sale of off-springs.
- 5.2.8 The present motivation and education campaign of the Health and Family Welfare wing on limiting the number of issues and increasing the rate of child survival should focus on the illiterate couples.
- 5.2.9 IEC activities in motivating and educating couples on Family Planning measures, the women SHGs existing in the area could be taken into confidence and encouraged to shoulder the responsibility who can go to the household levels and achieve desired results. The focus should be on illiterate couples.
- 5.2.10 It is necessary to launch adequate motivation and training programme on the need of qualitative food supplement of requisite quantity for the pregnant women for ensuring physical and mental growth of the child and safety of the mother through well baby clinics if there be any run by NGOs. This campaign can be more effective if the local women SHGs could be taken into confidence and encouraged to shoulder the responsibility of motivation and education.
- 5.2.11 It is necessary to launch adequate motivation and training programmes on the need for withdrawal of breast feeding and solid supplementation for children beyond one year through 'well baby clinics' if there be any run by NGOs. This campaign can also be more effective if the local women SHGs are encouraged to spread

this message. Besides, cheap variety of weaning food should also be made available.

- 5.2.12 Semi-solid supplementation being quite important from the point of nutritional requirement of the children below one year, it is essential to motivate and educate the parents through well baby clinics or through women SHGs for popularisation of semi-solid supplementation after the age of six months.
- 5.2.13 It is necessary that apart from ensuring cent per cent immunisation, creation of awareness and keenness among the rural poor families in the KBK region on the benefit of immunisation should receive first priority. The consequences of not getting the children immunised with examples should also be taught to them through participatory mode.
- 5.2.14 There is an urgent need for adequate motivation of the parents to send their children to AWCs along with other children to receive health care facilities regularly. It may be little bit difficult to break the age old eventually yield some tangible result.
- 5.2.15 To ensure cent per cent enrolment of children in schools, it is recommended that there should be door to door motivation campaign and persuasion by the Parent-Teachers Association (PTA) sufficiently prior to the reopening of schools.
- 5.2.16 To up-keep the health and nutritional status of women and children in rural areas, a lot many interventions like the ICDS, SNP, MDM and Maternity and Child Health (MCH) programmes including the Janani Surakshya Yojana have been initiated long since for providing health and nutritional benefits to the women. Even now there has not been universal acceptance of these programmes particularly by rural / tribal poor households. It is, therefore, recommended that greater thrust should be given to these programmes through IEC programme for hundred per cent acceptance.
- 5.2.17 Each pregnant woman shall be taken as an 'entry point'. The entry points should be identified in the earliest opportunity and intensive

motivation and education in respect of each entry point should be continuous and results monitored at regular intervals during the critical intervention period (CIP). Each entry point will include the expectant mother and the unborn child. The critical intervention period shall commence from the date of identification of the entry point and continue till end of lactation of the mother or till completion of three years of the baby.

- 5.2.18 No one would deny the necessity to reduce the prevalence of malnutrition in the community and more specifically among the women in the reproductive age and the children. It is, therefore, essential that special programmes aiming at reducing the malnutrition among them should be launched. The objectives of all the existing techniques remaining in tact, it is expedient to think of some paradigm shift in the strategy of these schemes. The strategies should include building up the capability among the people in the community so that they can realise and appreciate their problems and take appropriate precautionary measures even in absence of any programmes for them. This can only be possible through continuous and participatory motivation and education through entry points.
- 5.2.19 To ensure regular association of the Women SHGs in the programme some incentives should be given to the SHG to encourage them to achieve good results. Some provision for awards and rewards should also be there. Besides, certain events should be organised at intervals where the “entry points” should assemble and share their experiences and feel free to express their problems. They may also come up with some good practices for adoption.
- 5.2.20 The materials for the intensive IEC programme for the entry points shall be in the form of Handout in local language to be distributed to each pregnant woman. An illustrative content for the Handout has been suggested, vide Annexure-4.8.

5.2.21 The suggested intensive IEC activity to yield desired results, also should include some of the health and nutrition related environmental issues of the following nature;

- i. Removal of illiteracy among the women,
- ii. Socio-economic measures for uplifting the status of the economically backward and deprived women,
- iii. Control of food price through efficient public distribution system,
- iv. Distribution of food supplements for pregnant and lactating mothers through PDS,
- v. Promotion of breast feeding,
- vi. Development of low cost weaning food,
- vii. Continuing community education on health and nutrition as also birth spacing,
- viii. Expansion of immunisation programme,
- ix. Continuing community education on food and personal hygiene,
- x. De-worming of children,
- xi. Food fortification,
- xii. Organising periodic surveillance of population at risk,
- xiii. Rehabilitation of severe nutritional deficient cases,
- xiv. Improving the environment conducive to health and nutrition including health promotion, health protection, treatment and rehabilitation.

Socio-economic Profile of Balangir District

Sl	Item of Information	Information
(1)	(2)	(3)
1	Location	
	(a) Longitude (in Degree)	- 82 ⁰ 41' to 83 ⁰ 42' E
	(b) Latitude (in Degree)	- 20 ⁰ 9' to 21 ⁰ 05' N
2	Geographical area (sq. km.)	- 6575.0
3	No. of Sub-Divisions	- 3
4	No of Tahsils	- 3
5	No of CD Blocks	- 14
6	Municipalities	- 1
7	NACs	- 8
8	Police Stations	- 13
9	Gram Panchayats	- 285
10	Total Villages	- 1792
	(a) Inhabited Villages	- 1761
	(b) Un-inhabited Villages	- 31
11	Normal annual rainfall (in mm.)	- 1443.5
12	Total Households (2001)	- 303,385
13	No of Rural Households (2001)	- 272,975
14	Total population (2001)	- 1,337,194
	(a) Males	- 673,985
	(b) Females	- 663,209
15	Children, 0 – 6 yrs (2001)	- 188,674
	(a) Males	- 97,431
	(b) Females	- 94,243
16	% of SCs to total population (2001)	- 16.92
17	% of STs to total population (2001)	- 20.63
18	Overall literacy rate (%)	- 54.93
	(a) Males	- 70.36
	(b) Females	- 39.27

19	Total workers	-	559,750
	(a) Males	-	371,425
	(b) Females	-	188,325
20	Total main workers	-	351,689
	(a) Males	-	299,209
	(b) Females	-	52,480
21	Land Use Pattern (2000- 01: in ha)		
	(i) Forest area	-	43,761
	(ii) Miscellaneous tree crops and groves	-	796
	(iii) Permanent pasture	-	37,544
	(iv) Culturable waste	-	18,868
	(v) Land put to non-agricultural use	-	46,479
	(vi) Barren and uncultivable waste	-	13,349
	(vii) Current fallow	-	78,255
	(viii) Other fallow	-	17,868
	(ix) Net area sown	-	280,527
22	Operational Holdings	-	30,590
	(a) Small Holdings	-	7,325
	(b) Marginal Holdings	-	19,620
23	Area under Paddy (in ha): 2000-01	-	130,527
	(a) Total productions of paddy (qtls)	-	808,779
	(b) Yield rate of Paddy (qtls / ha)	-	6.20
	(i) Highest (Titlagarh Block)	-	10.31
	(ii) Lowest (Belpada Block)	-	2.19
24	Health Infrastructure:		
	(a) District Headquarter Hospital	-	1
	(b) Sub-Divisional Hospital	-	2
	(c) Other Hospitals	-	8
	(d) Community Health Centre	-	5
	(e) Primary Health Centre (Old)	-	10
	(f) Primary Health Centre (New)	-	38
	(g) Mobile Health Unit (MHU)	-	15
	(h) Homeopathic Dispensaries	-	16
	(i) Ayurvedic Dispensaries	-	29
25	Percentage of families below poverty line – BPL Census: 2002	-	61.06
26	No of Anganwadi Centres	-	1261

Socio-economic Profile of Kalahandi District

Sl	Item of Information	Information
(1)	(2)	(3)
1	Location	
	(a) Longitude (in Degree)	- 82 ⁰ 32' to 83 ⁰ 47' E
	(b) Latitude (in Degree)	- 19 ⁰ 8' to 20 ⁰ 25' N
2	Geographical area (sq. km.)	- 7920.0
3	No. of Sub-Divisions	- 2
4	No of Tahsils	- 7
5	No of CD Blocks	- 13
6	Municipalities	- 1
7	NACs	- 2
8	Police Stations	- 12
9	Gram Panchayats	- 273
10	Total Villages	- 2205
	(a) Inhabited Villages	- 2068
	(b) Un-inhabited Villages	- 137
11	Normal annual rainfall (in mm.)	- 1378.2
12	Total Households (2001)	- 320,624
13	No of Rural Households (2001)	- 299,942
14	Total population (2001)	- 1,335,494
	(a) Males	- 667,526
	(b) Females	- 667,968
15	Children, 0 – 6 yrs (2001)	- 217,889
	(a) Males	- 109,807
	(b) Females	- 108,082
16	% of SCs to total population (2001)	- 17.67
17	% of STs to total population (2001)	- 28.65
18	Overall literacy rate (%)	- 46.20
	(a) Males	- 62.88
	(b) Females	- 29.56

19	Total workers	-	620,590
	(a) Males	-	381,444
	(b) Females	-	239,506
20	Total main workers	-	382,050
	(a) Males	-	313,670
	(b) Females	-	68,380
21	Land Use Pattern (2000- 01: in ha)		
	(i) Forest area	-	64,271
	(ii) Miscellaneous tree crops and groves	-	2,667
	(iii) Permanent pasture	-	20,418
	(iv) Culturable waste	-	21,434
	(v) Land put to non-agricultural use	-	43,351
	(vi) Barren and uncultivable waste	-	33,151
	(vii) Current fallow	-	60,575
	(viii) Other fallow	-	16,593
	(ix) Net area sown	-	290,901
22	Operational Holdings	-	27,214
	(a) Small Holdings	-	7,697
	(b) Marginal Holdings	-	15,394
23	Area under Paddy (in ha): 2000-01	-	265,642
	(a) Total productions of paddy (qtls)	-	5,181,757
	(b) Yield rate of Paddy (qtls / ha)	-	19.50
	(i) Highest (Jaipatna Block)	-	32.17
	(ii) Lowest (Golamunda Block)	-	5.97
24	Health Infrastructure:		
	(a) District Headquarter Hospital	-	1
	(b) Sub-Divisional Hospital	-	1
	(c) Other Hospitals	-	5
	(d) Community Health Centre	-	6
	(e) Primary Health Centre (Old)	-	8
	(f) Primary Health Centre (New)	-	39
	(g) Mobile Health Unit (MHU)	-	14
	(h) Homeopathic Dispensaries	-	14
	(i) Ayurvedic Dispensaries	-	18
25	Percentage of families below poverty line – BPL Census: 2002	-	62.71
26	No of Anganwadi Centres	-	1214

Socio-economic Profile of Koraput District

Sl	Item of Information	Information
(1)	(2)	(3)
1	Location	
	(a) Longitude (in Degree)	- 82 ⁰ 5' to 83 ⁰ 23' E
	(b) Latitude (in Degree)	- 18 ⁰ 13' to 19 ⁰ 10' N
2	Geographical area (sq. km.)	- 8807.0
3	No. of Sub-Divisions	- 2
4	No of Tahsils	- 7
5	No of CD Blocks	- 14
6	Municipalities	- 1
7	NACs	- 3
8	Police Stations	- 21
9	Gram Panchayats	- 226
10	Total Villages	- 1997
	(a) Inhabited Villages	- 1915
	(b) Un-inhabited Villages	- 82
11	Normal annual rainfall (in mm.)	- 1521.8
12	Total Households (2001)	- 284,876
13	No of Rural Households (2001)	- 240,294
14	Total population (2001)	- 1,180,637
	(a) Males	- 590,743
	(b) Females	- 589,894
15	Children, 0 – 6 yrs (2001)	- 200,689
	(a) Males	- 101,181
	(b) Females	- 99,508
16	% of SCs to total population (2001)	- 13.04
17	% of STs to total population (2001)	- 49.61
18	Overall literacy rate (%)	- 36.20
	(a) Males	- 47.58
	(b) Females	- 24.81

19	Total workers	-	570,435
	(a) Males	-	332,014
	(b) Females	-	238,421
20	Total main workers	-	353,367
	(a) Males	-	263,223
	(b) Females	-	90,144
21	Land Use Pattern (2000- 01: in ha)		
	(i) Forest area	-	52,279
	(ii) Miscellaneous tree crops and groves	-	20,900
	(iii) Permanent pasture	-	16,149
	(iv) Culturable waste	-	12,078
	(v) Land put to non-agricultural use	-	32,211
	(vi) Barren and uncultivable waste	-	114,932
	(vii) Current fallow	-	74,114
	(viii) Other fallow	-	18,382
	(ix) Net area sown	-	240,897
22	Operational Holdings	-	138,315
	(a) Small Holdings	-	40,795
	(b) Marginal Holdings	-	63,730
23	Area under Paddy (in ha): 2000-01	-	152,442
	(a) Total productions of paddy (qtls)	-	3,450,385
	(b) Yield rate of Paddy (qtls / ha)	-	22.63
	(i) Highest (Kotpad Block)	-	29.91
	(ii) Lowest (Bandhugaon Block)	-	7.78
24	Health Infrastructure:		
	(a) District Headquarter Hospital	-	1
	(b) Sub-Divisional Hospital	-	1
	(c) Other Hospitals	-	6
	(d) Community Health Centre	-	4
	(e) Primary Health Centre (Old)	-	10
	(f) Primary Health Centre (New)	-	48
	(g) Mobile Health Unit (MHU)	-	14
	(h) Homeopathic Dispensaries	-	15
	(i) Ayurvedic Dispensaries	-	11
25	Percentage of families below poverty line – BPL Census: 2002	-	83.81
26	No of Anganwadi Centres	-	1342

Socio-economic Profile of Malkangiri District

Sl	Item of Information	Information
(1)	(2)	(3)
1	Location	
	(a) Longitude (in Degree)	- 81 ⁰ 22' to 82 ⁰ 25' E
	(b) Latitude (in Degree)	- 17 ⁰ 40' to 18 ⁰ 43' N
2	Geographical area (sq. km.)	- 5791.0
3	No. of Sub-Divisions	- 1
4	No of Tahsils	- 3
5	No of CD Blocks	- 7
6	Municipalities	- 0
7	NACs	- 2
8	Police Stations	- 10
9	Gram Panchayats	- 108
10	Total Villages	- 928
	(a) Inhabited Villages	- 878
	(b) Un-inhabited Villages	- 50
11	Normal annual rainfall (in mm.)	- 1521.8
12	Total Households (2001)	- 109,483
13	No of Rural Households (2001)	- 102,076
14	Total population (2001)	- 504,198
	(a) Males	- 252,507
	(b) Females	- 251,691
15	Children, 0 – 6 yrs (2001)	- 89,813
	(a) Males	- 45,315
	(b) Females	- 44,498
16	% of SCs to total population (2001)	- 21.35
17	% of STs to total population (2001)	- 57.42
18	Overall literacy rate (%)	- 31.26
	(a) Males	- 41.21
	(b) Females	- 21.28

19	Total workers	-	247,624
	(a) Males	-	141,190
	(b) Females	-	106,434
20	Total main workers	-	154,179
	(a) Males	-	114,742
	(b) Females	-	39,437
21	Land Use Pattern (2000- 01: in ha)		
	(i) Forest area	-	143,002
	(ii) Miscellaneous tree crops and groves	-	486
	(iii) Permanent pasture	-	20,679
	(iv) Culturable waste	-	15,293
	(v) Land put to non-agricultural use	-	25,314
	(vi) Barren and uncultivable waste	-	44,439
	(vii) Current fallow	-	3,998
	(viii) Other fallow	-	18,283
	(ix) Net area sown	-	115,886
22	Operational Holdings	-	66,124
	(a) Small Holdings	-	24,129
	(b) Marginal Holdings	-	20,730
23	Area under Paddy (in ha): 2000-01	-	91,871
	(a) Total productions of paddy (qtls)	-	953,932
	(b) Yield rate of Paddy (qtls / ha)	-	10.38
	(i) Highest (Khairiput Block)	-	15.01
	(ii) Lowest (Podia Block)	-	7.96
24	Health Infrastructure:		
	(a) District Headquarter Hospital	-	1
	(b) Sub-Divisional Hospital	-	0
	(c) Other Hospitals	-	5
	(d) Community Health Centre	-	3
	(e) Primary Health Centre (Old)	-	4
	(f) Primary Health Centre (New)	-	16
	(g) Mobile Health Unit (MHU)	-	10
	(h) Homeopathic Dispensaries	-	2
	(i) Ayurvedic Dispensaries	-	2
25	Percentage of families below poverty line – BPL Census: 2002	-	81.88
26	No of Anganwadi Centres	-	580

Socio-economic Profile of Nawarangpur District

Sl	Item of Information	Information
(1)	(2)	(3)
1	Location	
	(a) Longitude (in Degree)	- 81 ⁰ 52' to 82 ⁰ 53' E
	(b) Latitude (in Degree)	- 19 ⁰ 9' to 20 ⁰ 5' N
2	Geographical area (sq. km.)	- 5291.0
3	No. of Sub-Divisions	- 1
4	No of Tahsils	- 4
5	No of CD Blocks	- 10
6	Municipalities	- 1
7	NACs	- 1
8	Police Stations	- 10
9	Gram Panchayats	- 169
10	Total Villages	- 897
	(a) Inhabited Villages	- 880
	(b) Un-inhabited Villages	- 17
11	Normal annual rainfall (in mm.)	- 1521.8
12	Total Households (2001)	- 227,026
13	No of Rural Households (2001)	- 214,538
14	Total population (2001)	- 1,025,766
	(a) Males	- 515,162
	(b) Females	- 510,604
15	Children, 0 – 6 yrs (2001)	- 187,048
	(a) Males	- 93,588
	(b) Females	- 93,460
16	% of SCs to total population (2001)	- 14.10
17	% of STs to total population (2001)	- 55.03
18	Overall literacy rate (%)	- 34.26
	(a) Males	- 47.36
	(b) Females	- 21.02

19	Total workers	-	507,395
	(a) Males	-	290,723
	(b) Females	-	216,672
20	Total main workers	-	264,800
	(a) Males	-	215,836
	(b) Females	-	48,964
21	Land Use Pattern (2000- 01: in ha)		
	(i) Forest area	-	93,468
	(ii) Miscellaneous tree crops and groves	-	16,820
	(iii) Permanent pasture	-	6,297
	(iv) Culturable waste	-	10,454
	(v) Land put to non-agricultural use	-	17,385
	(vi) Barren and uncultivable waste	-	6,704
	(vii) Current fallow	-	32,023
	(viii) Other fallow	-	6,509
	(ix) Net area sown	-	207,806
22	Operational Holdings	-	128,074
	(a) Small Holdings	-	35,449
	(b) Marginal Holdings	-	68,602
23	Area under Paddy (in ha): 2000-01	-	153,577
	(a) Total productions of paddy (qtls)	-	2,631,368
	(b) Yield rate of Paddy (qtls / ha)	-	17.13
	(i) Highest (Umerkote Block)	-	24.90
	(ii) Lowest (Papadahandi Block)	-	13.17
24	Health Infrastructure:		
	(a) District Headquarter Hospital	-	1
	(b) Sub-Divisional Hospital	-	0
	(c) Other Hospitals	-	3
	(d) Community Health Centre	-	5
	(e) Primary Health Centre (Old)	-	5
	(f) Primary Health Centre (New)	-	37
	(g) Mobile Health Unit (MHU)	-	11
	(h) Homeopathic Dispensaries	-	13
	(i) Ayurvedic Dispensaries	-	16
25	Percentage of families below poverty line – BPL Census: 2002	-	73.66
26	No of Anganwadi Centres	-	994

Socio-economic Profile of Nuapada District

Sl	Item of Information	Information
(1)	(2)	(3)
1	Location	
	(a) Longitude (in Degree)	- 82 ⁰ 20' to 82 ⁰ 53' E
	(b) Latitude (in Degree)	- 20 ⁰ 0' to 21 ⁰ 5' N
2	Geographical area (sq. km.)	- 3852.0
3	No. of Sub-Divisions	- 1
4	No of Tahsils	- 2
5	No of CD Blocks	- 5
6	Municipalities	- 0
7	NACs	- 2
8	Police Stations	- 6
9	Gram Panchayats	- 109
10	Total Villages	- 659
	(a) Inhabited Villages	- 643
	(b) Un-inhabited Villages	- 16
11	Normal annual rainfall (in mm.)	- 1378.2
12	Total Households (2001)	- 122,601
13	No of Rural Households (2001)	- 116,329
14	Total population (2001)	- 530,690
	(a) Males	- 264,396
	(b) Females	- 266,294
15	Children, 0 – 6 yrs (2001)	- 84,521
	(a) Males	- 42,927
	(b) Females	- 41,594
16	% of SCs to total population (2001)	- 13.62
17	% of STs to total population (2001)	- 34.71
18	Overall literacy rate (%)	- 42.29
	(a) Males	- 58.78
	(b) Females	- 26.01

19	Total workers	-	244,360
	(a) Males	-	146,378
	(b) Females	-	97,982
20	Total main workers	-	131,561
	(a) Males	-	108,561
	(b) Females	-	22,654
21	Land Use Pattern (2000- 01: in ha)		
	(i) Forest area	-	29,521
	(ii) Miscellaneous tree crops and groves	-	1,607
	(iii) Permanent pasture	-	12,587
	(iv) Culturable waste	-	9,156
	(v) Land put to non-agricultural use	-	18,713
	(vi) Barren and uncultivable waste	-	8,653
	(vii) Current fallow	-	26,264
	(viii) Other fallow	-	7,156
	(ix) Net area sown	-	130,653
22	Operational Holdings	-	27,675
	(a) Small Holdings	-	10,520
	(b) Marginal Holdings	-	8,450
23	Area under Paddy (in ha): 2000-01	-	105,743
	(a) Total productions of paddy (qtls)	-	482,495
	(b) Yield rate of Paddy (qtls / ha)	-	4.56
	(i) Highest (Nuapada Block)	-	5.53
	(ii) Lowest (Khariar Block)	-	2.94
24	Health Infrastructure:		
	(a) District Headquarter Hospital	-	1
	(b) Sub-Divisional Hospital	-	0
	(c) Other Hospitals	-	3
	(d) Community Health Centre	-	4
	(e) Primary Health Centre (Old)	-	2
	(f) Primary Health Centre (New)	-	12
	(g) Mobile Health Unit (MHU)	-	6
	(h) Homeopathic Dispensaries	-	5
	(i) Ayurvedic Dispensaries	-	9
25	Percentage of families below poverty line – BPL Census: 2002	-	72.03
26	No of Anganwadi Centres	-	585

Socio-economic Profile of Rayagada District

Sl	Item of Information	Information
(1)	(2)	(3)
1	Location	
	(a) Longitude (in Degree)	- 82 ⁰ 54' to 84 ⁰ 2' E
	(b) Latitude (in Degree)	- 19 ⁰ 0' to 19 ⁰ 58' N
2	Geographical area (sq. km.)	- 7073.0
3	No. of Sub-Divisions	- 2
4	No of Tahsils	- 4
5	No of CD Blocks	- 11
6	Municipalities	- 1
7	NACs	- 2
8	Police Stations	- 12
9	Gram Panchayats	- 171
10	Total Villages	- 2667
	(a) Inhabited Villages	- 2445
	(b) Un-inhabited Villages	- 222
11	Normal annual rainfall (in mm.)	- 1521
12	Total Households (2001)	- 190,381
13	No of Rural Households (2001)	- 165,257
14	Total population (2001)	- 831,109
	(a) Males	- 409,792
	(b) Females	- 421,371
15	Children, 0 – 6 yrs (2001)	- 145,493
	(a) Males	- 73,451
	(b) Females	- 72,042
16	% of SCs to total population (2001)	- 13.91
17	% of STs to total population (2001)	- 55.75
18	Overall literacy rate (%)	- 35.16
	(a) Males	- 47.35
	(b) Females	- 24.31

19	Total workers	-	399,184
	(a) Males	-	225,367
	(b) Females	-	173,817
20	Total main workers	-	249,909
	(a) Males	-	179,932
	(b) Females	-	69,977
21	Land Use Pattern (2000- 01: in ha)		
	(i) Forest area	-	100,767
	(ii) Miscellaneous tree crops and groves	-	5,457
	(iii) Permanent pasture	-	8,309
	(iv) Culturable waste	-	8,466
	(v) Land put to non-agricultural use	-	24,192
	(vi) Barren and uncultivable waste	-	160,232
	(vii) Current fallow	-	40,320
	(viii) Other fallow	-	16,704
	(ix) Net area sown	-	138,951
22	Operational Holdings	-	100,396
	(a) Small Holdings	-	27,413
	(b) Marginal Holdings	-	52,155
23	Area under Paddy (in ha): 2000-01	-	69,443
	(a) Total productions of paddy (qtls)	-	1,106,918
	(b) Yield rate of Paddy (qtls / ha)	-	15.94
	(i) Highest (Padampur Block)	-	26.05
	(ii) Lowest (Muniguda Block)	-	11.42
24	Health Infrastructure:		
	(a) District Headquarter Hospital	-	1
	(b) Sub-Divisional Hospital	-	1
	(c) Other Hospitals	-	3
	(d) Community Health Centre	-	11
	(e) Primary Health Centre (Old)	-	11
	(f) Primary Health Centre (New)	-	58
	(g) Mobile Health Unit (MHU)	-	12
	(h) Homeopathic Dispensaries	-	9
	(i) Ayurvedic Dispensaries	-	16
25	Percentage of families below poverty line – BPL Census: 2002	-	72.03
26	No of Anganwadi Centres	-	1001

Socio-economic Profile of Sonepur District

Sl	Item of Information	Information
(1)	(2)	(3)
1	Location	
	(a) Longitude (in Degree)	- 83 ⁰ 27' to 84 ⁰ 15' E
	(b) Latitude (in Degree)	- 20 ⁰ 30' to 20 ⁰ 10' N
2	Geographical area (sq. km.)	- 2337.0
3	No. of Sub-Divisions	- 2
4	No of Tahsils	- 4
5	No of CD Blocks	- 6
6	Municipalities	- 1
7	NACs	- 2
8	Police Stations	- 7
9	Gram Panchayats	- 96
10	Total Villages	- 959
	(a) Inhabited Villages	- 808
	(b) Un-inhabited Villages	- 151
11	Normal annual rainfall (in mm.)	- 1443.5
12	Total Households (2001)	- 115,533
13	No of Rural Households (2001)	- 107,292
14	Total population (2001)	- 541,835
	(a) Males	- 275,601
	(b) Females	- 266,234
15	Children, 0 – 6 yrs (2001)	- 77,259
	(a) Males	- 39,275
	(b) Females	- 37,984
16	% of SCs to total population (2001)	- 23.62
17	% of STs to total population (2001)	- 9.78
18	Overall literacy rate (%)	- 64.07
	(a) Males	- 80.30
	(b) Females	- 47.28

19	Total workers	-	236,980
	(a) Males	-	149,776
	(b) Females	-	87,204
20	Total main workers	-	148,695
	(a) Males	-	121,737
	(b) Females	-	26,958
21	Land Use Pattern (2000- 01: in ha)		
	(i) Forest area	-	18,153
	(ii) Miscellaneous tree crops and groves	-	5,242
	(iii) Permanent pasture	-	9,769
	(iv) Culturable waste	-	10,654
	(v) Land put to non-agricultural use	-	19,046
	(vi) Barren and uncultivable waste	-	3,130
	(vii) Current fallow	-	15,639
	(viii) Other fallow	-	12,358
	(ix) Net area sown	-	90,616
22	Operational Holdings	-	72,566
	(a) Small Holdings	-	18,653
	(b) Marginal Holdings	-	39,794
23	Area under Paddy (in ha): 2000-01	-	103,409
	(a) Total productions of paddy (qtls)	-	2,038,197
	(b) Yield rate of Paddy (qtls / ha)	-	19.71
	(i) Highest (Binika Block)	-	35.04
	(ii) Lowest (Birmaharajpur Block)	-	6.72
24	Health Infrastructure:		
	(a) District Headquarter Hospital	-	1
	(b) Sub-Divisional Hospital	-	0
	(c) Other Hospitals	-	3
	(d) Community Health Centre	-	4
	(e) Primary Health Centre (Old)	-	2
	(f) Primary Health Centre (New)	-	17
	(g) Mobile Health Unit (MHU)	-	7
	(h) Homeopathic Dispensaries	-	4
	(i) Ayurvedic Dispensaries	-	12
25	Percentage of families below poverty line – BPL Census: 2002	-	73.02
26	No of Anganwadi Centres	-	416

Annexure – 3.1**District-wise Abstract of Samples Executed under the Study**

Sl.	Item of Information	Balangir	Kalahandi	Koraput	Malkanagiri	Nawarangpur	Nuapada	Rayagada	Sonepur	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Total Blocks	14	13	14	7	10	5	11	6	80
	Sample Blocks	2	2	2	2	2	2	2	2	16
	Sample Villages	6	6	6	6	6	6	6	6	48
2	Total House Holds	654	611	539	508	679	547	786	617	4941
	Sample House Holds	60	60	60	60	60	60	60	60	480
3	Sample Population	222	217	214	200	207	242	202	226	1730
	Males	112	114	103	107	110	119	113	114	892
	Females	110	103	111	93	97	123	89	112	838
4	Sample Target Group Population	157	157	143	138	145	170	123	143	1176
	TG Boys	53	55	40	46	51	54	45	45	389
	TG Girls	49	43	45	32	36	57	21	39	322
	TG Women	55	59	58	60	58	59	57	59	465

Annexure – 3.2

District-wise Broad Details of Samples Executed under the Study

SI	District	Block	Sample Village	Total HH	Sample HH	Sample Popn	Males	Females	T G Boys	T G Girls	T G Women	T G Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
01	Balangir	Bongamunda	Balda	107	10	45	23	22	13	11	8	32
			Jarpada	95	10	36	17	19	7	9	10	26
			Kapilbhat	115	10	31	17	14	8	5	7	20
		Tureikela	Kandhei	140	10	37	21	16	11	6	10	27
		Mahakanda	105	10	41	19	22	9	11	10	30	
		Nandoll	92	10	32	15	17	5	7	10	22	
02	Kalahandi	Jaypatna	Baner	130	10	38	22	16	12	6	10	28
			Kadapadar	78	10	34	17	17	7	7	10	24
			Polkamunda	98	10	34	19	15	9	5	10	24
		Kalampur	Badakutra	150	10	36	21	15	11	5	10	26
		Dumurmunda	72	10	39	21	18	11	8	10	29	
		Panigaon	83	10	36	14	22	5	12	9	26	
03	Koraput	Jeypore	Chhatadiput	112	10	37	15	22	5	11	10	26
			Gadpadar	92	10	36	18	18	8	7	9	24
			Kandaput	104	10	31	16	15	6	5	10	21
		Similiguda	Beheraguda	62	10	36	17	19	5	7	10	22
		Lunguri	91	10	41	20	21	10	9	10	29	
		Tentuliguda	78	10	33	17	16	6	6	9	21	
04	Malkangiri	Khairput	Bandhaguda	86	10	34	17	17	7	7	10	24
			Kadamguda	68	10	37	18	19	8	9	10	27
			Khyamaguru	91	10	33	19	14	8	3	10	21
		Mathili	Baliguda	102	10	31	17	14	7	4	10	21
		Julmibal	88	10	31	17	14	7	4	10	21	
		Talmaiguda	73	10	34	19	15	9	5	10	24	

Sl	District	Block	Sample Village	Total HH	Sample HH	Sample Popn	Males	Females	T G Boys	T G Girls	T G Women	T G Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
05	Nawarangpur	Nandahandi	Dangerveja	162	10	34	20	14	9	5	10	24
			Mentri	118	10	40	21	19	11	8	10	29
			Pathalasa	96	10	36	20	16	11	5	10	26
		Tentulikhunti	Anchalguma	125	10	31	19	12	9	2	10	21
			Patraput	102	10	38	16	22	6	11	9	26
			Santimanpur	76	10	28	14	14	5	5	9	19
06	Nuapada	Boden	Budhapada	85	10	41	22	19	11	8	10	29
			Dabri	110	10	43	20	23	10	12	10	32
			Palsada	70	10	36	18	18	7	8	10	25
		Khariar	Chalanpada	68	10	38	18	20	8	10	10	28
			Chindaguda	126	10	38	20	18	10	8	10	28
			Gadramunda	88	10	46	21	25	8	11	9	28
07	Rayagada	Bisam Cuttack	Chancharaguda	115	10	36	20	16	8	5	8	21
			Goradi	96	10	36	20	16	8	4	10	22
			Sansarpalli	100	10	34	18	16	6	4	10	20
		Muniguda	Bhairabguda	115	10	31	19	12	9	1	10	20
			Munikhola	210	10	33	21	12	9	2	10	21
			Patraguda	150	10	32	15	17	5	5	9	19
08	Sonepur	Sonepur	Badajhinki	140	10	35	20	15	10	5	10	25
			Sanajhinki	82	10	39	18	21	7	9	9	25
			Sinhari	100	10	37	19	18	8	5	10	23
		Ullunda	Bisipada	125	10	42	22	20	9	5	10	24
			Hikudi	95	10	34	15	19	4	8	10	22
			Naikpada	75	10	39	20	19	7	7	10	24
	Total	16	48	4941	480	1730	892	838	389	322	465	1176

Balanced Diets for Adult Man

Sl.	Food Items	SEDENTARY WORK		MODERATE WORK		HEAVY WORK	
		Vegetarian	Non-Vegetarian	Vegetarian	Non-Vegetarian	Vegetarian	Non-Vegetarian
		(gm.)	(gm.)	(gm.)	(gm.)	(gm.)	(gm.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Cereals	400	400	475	475	650	650
2	Pulses	70	55	80	65	80	65
3	Green leafy vegetables	100	100	125	125	125	125
4	Other vegetables	75	75	75	75	100	100
5	Roots and tubers	75	75	100	100	100	100
6	Fruits	30	30	30	30	30	30
7	Milk	200	100	200	100	200	100
8	Fats and oils	35	40	40	40	50	50
9	Meat and fish	..	30	..	30	..	30
10	Eggs	..	30	..	30	..	30
11	Sugar and jaggery	30	30	40	40	55	55
12	Groundnuts	..	..	..	..	50	50*

*An additional 30 gm. of fats and oils can be included in the diet in the place of groundnuts.

Balanced Diets for Adult Woman

Sl.	Food Items	SEDENTARY WORK		MODERATE WORK		HEAVY WORK		ADDITIONAL ALLOWANCES DURING	
		Vegetarian (gm.)	Non- Vegetarian (gm.)	Vegetarian (gm.)	Non- Vegetarian (gm.)	Vegetarian (gm.)	Non- Vegetarian (gm.)	Pregnancy (gm.)	Lactation (gm.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	Cereals	300	300	350	350	475	475	50	100
2	Pulses	60	45	70	55	70	55	..	10
3	Green leafy vegetables	125	125	125	125	125	125	25	25
4	Other vegetables	75	75	75	75	100	100	..	..
5	Roots and tubers	50	50	75	75	100	100	..	..
6	Fruits	30	30	30	30	30	30	..	..
7	Milk	200	100	200	100	200	100	125	125
8	Fats and oils	30	35	35	40	40	45	..	15
9	Sugar and jaggery	30	30	30	30	40	40	10	20
10	Meat and fish	..	30	..	30	..	30	..	..
11	Eggs	..	30	..	30	..	30	..	..
12	Groundnuts	..	..	..	..	40*	40*	..	..

*An additional 25 gm. of fats and oils can be included in place of groundnuts.

Balanced Diets for Children

Sl.	Food Items	PRE - SCHOOL CHILDREN				SCHOOL CHILDREN			
		1-3 Years		4-6 Years		7-9 Years		10-12 Years	
		Vegetarian (gm.)	Non- Vegetarian (gm.)	Vegetarian (gm.)	Non- Vegetarian (gm.)	Vegetarian (gm.)	Non- Vegetarian (gm.)	Vegetarian (gm.)	Non- Vegetarian (gm.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	Cereals	150	150	200	200	250	250	320	320
2	Pulses	50	40	60	50	70	60	70	60
3	Green leafy vegetables	50	50	75	75	75	75	100	100
4	Other vegetables	30	30	50	50	50	50	75	75
5	Roots and tubers								
6	Fruits	50	50	50	50	50	50	50	50
7	Milk	300	200	250	200	250	200	250	200
8	Fats and oils	20	20	25	25	30	30	35	35
9	Meat and fish	..	30	..	30	..	30	..	30
10	Eggs								
11	Sugar and jaggery	30	30	40	40	50	50	50	50

Balanced Diets for Adolescent Boys and Girls

Sl.	Food Items	Boys				Girls	
		13-15 Years		16-18 Years		13-18 Years	
		Vegetarian (gm.)	Non- Vegetarian (gm.)	Vegetarian (gm.)	Non- Vegetarian (gm.)	Vegetarian (gm.)	Non- Vegetarian (gm.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Cereals	430	430	450	450	350	350
2	Pulses	70	50	70	50	70	50
3	Green leafy vegetables	100	100	100	100	150	150
4	Other vegetables	75	75	75	75	75	75
5	Roots and tubers	75	75	100	100	75	75
6	Fruits	30	30	30	30	30	30
7	Milk	250	150	250	150	250	150
8	Fats and oils	35	40	45	50	35	40
9	Meat and fish	..	30	..	30	..	30
10	Eggs	..	30	..	30	..	30
11	Sugar and jaggery	30	30	40	40	30	30
12	Groundnuts	..	..	50*	50*	..	..

*An additional 30 gm. of fats and oils can be included in the diet in place of groundnuts

Annexure-4.5**Mile Stones Achieved within one Year of Age by Children below 3 Years**

Sl	Mile Stones achieved within	Children of different months								
		0 m	1 m	2 m	3 m	4 m	5 m	6 m	7 m	8 m
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Responded (within 2 months)	---	---	8	5	7	5	9	5	8
2	Movement (within 2 months)	---	---	7	5	7	5	9	5	8
3	Creeping (within 2 months)	---	---	5	4	7	5	9	5	8
4	Laughing (within 6 months)	---	---	---	---	---	---	7	4	8
5	Breast Feeding (upto 6 months)	---	---	---	---	---	---	5	4	6
6	Semi-solid supple (after 6 months)	---	---	---	---	---	---	---	---	---
7	Standing (at 9 months)	---	---	---	---	---	---	---	---	---
8	Teething (at 9 months)	---	---	---	---	---	---	---	---	---
9	Solid Supplement (at 12 months)	---	---	---	---	---	---	---	---	---
	Total Children	0	11	9	6	7	5	9	5	8

M: Month

Children Eligible: Those who are supposed to achieve the mile stones.

Annexure-4.5 (Contd.....)

Sl	Mile Stones achieved within	Children of different months			1 year	2 years	Children Achieved	Children Eligible	% Achieved	Remarks
		9 m	10 m	11 m						
(1)	(2)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
1	Responded (within 2 months)	7	7	1	50	85	197	200	98	
2	Movement (within 2 months)	7	7	1	50	85	196	200	98	
3	Creeping (within 2 months)	7	7	1	50	84	192	200	96	
4	Laughing (within 6 months)	7	7	1	50	83	167	173	94	
5	Breast Feeding (upto 6 months)	5	7	1	49	83	160	173	92	
6	Semi-solid supple (after 6 months)	---	---	---	4	2	6	173	3	
7	Standing (at 9 months)	5	5	1	49	83	143	151	95	
8	Teething (at 9 months)	5	7	1	49	82	144	151	95	
9	Solid Supplement (at 12 months)	---	---	---	1	19	32	136	24	
	Total Children	7	7	1	51	85		211		

M: Month

Children Eligible: Those who are supposed to achieve the mile stones.

Signs and Symptoms on different Organs and their Implications

Sl	Organ	Signs & Symptoms	Possible Disease	Possible Causes (Nutritional Deficiency)	Natural Sources
(1)	(2)	(3)	(4)	(5)	(6)
1	Hair	No Luster	Allopacia	Vitamin-A, E, Amino Acid	Fish, fish lever oil (cod, shark, salmon etc), butter, egg, milk, cheese, meat, fruits, vegetables, carrot, beat, banana, tomato.
		Pluckability	Allopacia	Vitamin-A, E, Amino Acid	Fish, fish lever oil (cod, shark, salmon etc), butter, egg, milk, cheese, meat, fruits, vegetables, carrot, beat, banana, tomato.
		Thinner	Allopacia	Vitamin-B Complex (B ₁ , B ₂ and B ₆)	All plants, rice pram, wheat, millets, carbohydrates, meat, sea food, fish, liver, ground nut, dry fruits.
2	Facial Appearance	Spotted / Melanin Pigment	Melanosis	Vitamin-E and some essential Amino Acids.	Germinated gram and wheat, egg, sea food etc.
		Moon face	Cushing Syndrome	Vitamin-A and Protein Energy Malnutrition (PEM).	Milk, egg, animal protein, vegetable protein.
		Elongated face	Acromegali	Excess of Calcium and due some congenital reasons during fetal development	Limiting Calcium related food intake (milk, drum stick, bone cell etc.)

Sl	Age Group Signs & Symptoms	0-1		1-3		3-5		5-7		7-14		Total	
		No.	P	No.	P	No.	No.	No.	P	No.	P	No.	P
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
16	Bone	0	-	0	-	0	-	1	0.01	2	0.01	3	0.01
17	Muscles	0	-	0	-	0	-	1	0.01	1	0.01	2	0.01
	Multiple Signs*	92	1.22	284	2.08	447	2.90	406	3.38	942	4.16	2171	3.05
Total Children		75		136		154		120		226		711	

P : Proportion of children affected / Signs and Symptoms per child.

* : Denominator = Total Children

Table No.4.43

Women with Some Kind of Signs and Symptoms according to Age

Sl	Age Group Signs & Symptoms	<18		18-25		25-30		30 and Above		Total	
		No.	P	No.	P	No.	P	No.	P	No.	P
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Hair	1	0.33	83	0.47	74	0.49	65	0.49	223	0.48
2	Facial Appearance	2	0.67	89	0.50	76	0.50	66	0.50	233	0.50
3	Face colour	2	0.67	59	0.33	61	0.40	58	0.44	180	0.39
4	Eye	2	0.67	82	0.47	82	0.54	71	0.53	237	0.51
5	Cornea	1	0.33	76	0.43	76	0.50	61	0.46	214	0.46
6	Lip	3	1.00	109	0.62	104	0.68	96	0.72	312	0.67
7	Tongue	0	-	1	0.01	2	0.01	1	0.01	4	0.01
8	Gum	0	-	9	0.05	7	0.05	7	0.05	23	0.04
9	Teeth	2	0.67	97	0.55	82	0.54	72	0.54	253	0.54
10	Neck	0	-	0	-	0	-	0	-	0	-
11	Chest	1	0.33	82	0.46	71	0.47	62	0.47	216	0.46
12	Abdomen	1	0.33	45	0.25	42	0.28	36	0.27	124	0.27
13	Hand's nail	1	0.33	8	0.05	9	0.06	9	0.07	27	0.06
14	Foot	3	1.00	148	0.83	131	0.86	117	0.88	399	0.86
15	Skin	2	0.67	103	0.58	85	0.56	77	0.58	267	0.57
16	Bone	0	-	1	0.01	1	0.01	0	-	2	0.01
17	Muscles	0	-	2	0.01	0	-	0	-	2	0.01
	Multiple Signs*	21	7.00	994	5.61	903	5.94	798	6.00	2716	5.84
Total Women		3		177		152		133		465	

P : Proportion of women affected / Signs and Symptoms per woman.

* : Denominator = Total Women

Sl	Organ	Signs & Symptoms	Possible Disease	Possible Causes (Nutritional Deficiency)	Natural Sources
(1)	(2)	(3)	(4)	(5)	(6)
3	Face colour	Yellowish	Anaemia	Iron, Folic Acid, Zinc and Vitamin - B ₁₂	All kinds of green leafy vegetables, all fruits, root vegetables, milk, egg, animal & vegetable protein
		Pale	Anaemia	Iron, Folic Acid, Zinc and Vitamin - B ₁₂	All kinds of green leafy vegetables, all fruits, root vegetables, milk, egg, animal & vegetable protein.
4	Eye	Bitot spot	Bitot Spot	Vitamin – A	Fish, fish lever oil (cod, shark, salmon etc), butter, egg, milk, cheese, meat, fruits, vegetables, carrot, beat, banana, tomato.
		Pale white	Xerophthalmia	Vitamin – A	Fish, fish lever oil (cod, shark, salmon etc), butter, egg, milk, cheese, meat, fruits, vegetables, carrot, beat, banana, tomato.
		Night blindness	Night blindness	Vitamin – A	Fish, fish lever oil (cod, shark, salmon etc), butter, egg, milk, cheese, meat, fruits, vegetables, carrot, beat, banana, tomato.
5	Cornea	Muddy	Xerosis	Vitamin – A	Fish, fish lever oil (cod, shark, salmon etc), butter, egg, milk, cheese, meat, fruits, vegetables, carrot, beat, banana, tomato.

Sl	Organ	Signs & Symptoms	Possible Disease	Possible Causes (Nutritional Deficiency)	Natural Sources
(1)	(2)	(3)	(4)	(5)	(6)
		White	Xerosis	Vitamin – A	Fish, fish lever oil (cod, shark, salmon etc), butter, egg, milk, cheese, meat, fruits, vegetables, carrot, beat, banana, tomato.
		Spotted	Keratosis	Vitamin – A	Fish, fish lever oil (cod, shark, salmon etc), butter, egg, milk, cheese, meat, fruits, vegetables, carrot, beat, banana, tomato.
6	Lip	Angular Stomatitis	Angular Stomatitis	Vitamin – B Complex (B ₁ , B ₂ and B ₆)	All plants, rice pram, wheat, millets, carbohydrates, animal products, sea food, rice, fish, liver, ground nut, dry fruit, milk etc.
		Cheliosis	Cheliosis	Vitamin – B Complex (B ₁ , B ₂ and B ₆)	All plants, rice pram, wheat, millets, carbohydrates, animal products, sea food, rice, fish, liver, ground nut, dry fruit, milk etc.
7	Tongue	Abnormally smooth	Anaemia with malfunctioning of liver	Vitamin – B ₆ and Protein	Wheat, liver, milk, vegetables, fruits, pulses etc.
8	Gum	Spongy & bleeding	Gingivitis / Scurvy	Vitamin – C (Also A, D, E & K)	Tomato, meat, egg, milk, fish, yellow fruit, dry fruit, green vegetables, butter, liver, oil, germinated wheat, sun flower and cotton seed oil, palag, cabbage etc.

Sl	Organ	Signs & Symptoms	Possible Disease	Possible Causes (Nutritional Deficiency)	Natural Sources
(1)	(2)	(3)	(4)	(5)	(6)
9	Teeth	Mottled	Mokted teeth	Calcium	Tomato, meat, egg, milk, fish, yellow fruit, dry fruit, green vegetables, butter, liver, oil, germinated wheat, sun flower and cotton seed oil, palag, cabbage etc.
		Carries & Cavity	Carries Cavity	Vitamin–B Complex (B ₁ , B ₂ and B ₆) and also Vitamin - C & D) and Protein.	All plants, rice pram, wheat, millets, carbohydrates, animal product, sea food, rice, fish, liver, ground nut, dry fruit, tomato, meat, egg, milks, butter, liver, oil and all citrus fruit.
		Erosion	Dental Scaling	Vitamins – C & E	Tomato, meat, egg, milks, germinated wheat, sun flower and cotton seed oil, vegetables, oil, all citrus fruit.
		Fluoride	Flurosis	Mineral (Fluoride)	Root vegetables, egg, vegetables etc.
10	Neck	Thyroid Swelling	Thyroidsis / Goiter	Mineral (Iodine)	Sea food, sea salt, iodised salt, leafy vegetables like Bramhi, Bathua and Muniga.
11	Chest	Pigeon chest	Keratomalacia	Vitamin – A & D	Fish, fish lever oil, (cod, halibut, shark etc), egg, butter, cheese, sun light.
		Flat chest	Ricket / Ostiomacia	Vitamin – A & D	Fish, fish lever oil, (cod, halibut, shark etc), egg, butter, cheese, sun light.

Sl	Organ	Signs & Symptoms	Possible Disease	Possible Causes (Nutritional Deficiency)	Natural Sources
(1)	(2)	(3)	(4)	(5)	(6)
		Curved chest	Skyphosis	Vitamin – A & D	Fish, fish lever oil, (cod, halibut, shark etc), egg, butter, cheese, sun light.
12	Abdomen	Pot's belly	Anemia with PEM	Iron, Folic Acid, Zinc and Vitamin - B ₁₂	All kinds of green leafy vegetables, all fruits, root vegetables, milk, egg, animal & vegetable protein.
		Stripped belly	Avitaminosis	Vitamin-B Complex (B ₁ , B ₂ and B ₆) and Vitamin - E	All plants, rice pram, wheat, millets, carbohydrates, animal product, sea food, rice, fish, liver, ground nut, dry fruit, milk, germinated wheat, sun flower and cotton seed oil, egg, vegetable, oil, milk etc.
13	Hand's nail	Depressed Nail	Anemia	Multi Vitamin, Iron, Folic Acid and Zinc	All kinds of green leafy vegetables, all fruits, root vegetables, milk, egg, animal & vegetable protein.
14	Foot	Varicose Vein	Varicose Vein	Vitamin – B Complex (B ₁ , B ₂ and B ₆) and Vitamin – E.	All plants, rice pram, wheat, millets, carbohydrates, animal product, sea food, rice, fish, liver, ground nut, dry fruit, milk, germinated wheat, sun flower and cotton seed oil, egg, vegetable, oil, milk etc.
		Pitting Edema	Pitting Edema	Protein and Iron	Vegetable and animal protein, all kinds of green leafy vegetables, all fruits, root vegetables, egg etc.

Sl	Organ	Signs & Symptoms	Possible Disease	Possible Causes (Nutritional Deficiency)	Natural Sources
(1)	(2)	(3)	(4)	(5)	(6)
		Swelling	Anemia	Iron, Folic Acid, Zinc and Vitamin - B ₁₂	All kinds of green leafy vegetables, all fruits, root vegetables, milk, egg, animal & vegetable protein.
		Crack foot	Pedal Dermatitis	Vitamin – B Complex (B ₁ , B ₂ and B ₆) and Vitamin – E.	All plants, rice pram, wheat, millets, carbohydrates, animal product, sea food, rice, fish, liver, ground nut, dry fruit, milk, germinated wheat, sun flower and cotton seed oil, egg, vegetable, oil, milk etc.
15	Skin	Pellagra	Pellagra	Amino Acid	All kinds of fruit, root vegetables and ragi.
		No luster	Emaciation of skin	Vitamin – E	Germinated wheat, sun flower and cotton seed oil, egg, vegetables, oil, and milk.
16	Bone	Bending bone	Skyphosis / Ostiopathosis	Vitamin – D, Calcium, Mineral	Tomato, fish, meat, egg, milk, fish, yellow fruit, dry fruit, green vegetables, butter, liver, oil, germinated wheat, sun flower and cotton seed oil, palag, cabbage, sun light.

Sl	Organ	Signs & Symptoms	Possible Disease	Possible Causes (Nutritional Deficiency)	Natural Sources
(1)	(2)	(3)	(4)	(5)	(6)
17	Muscles	Muscle wasting	Myelostrophy	Vitamin – E, D, B ₆ , B ₁₂ , Amino Acid, Protein	Germinated wheat, sun flower and cotton seed oil, egg, vegetables, oil, milk, fish, butter, liver, sun light.
		Motor weakness	Motor Weakness	Vitamin – B ₁ , B ₆ , B ₁₂ , Calcium	All plants, rice pram, wheat, millets, carbohydrates, animals, sea food, liver, milk etc.

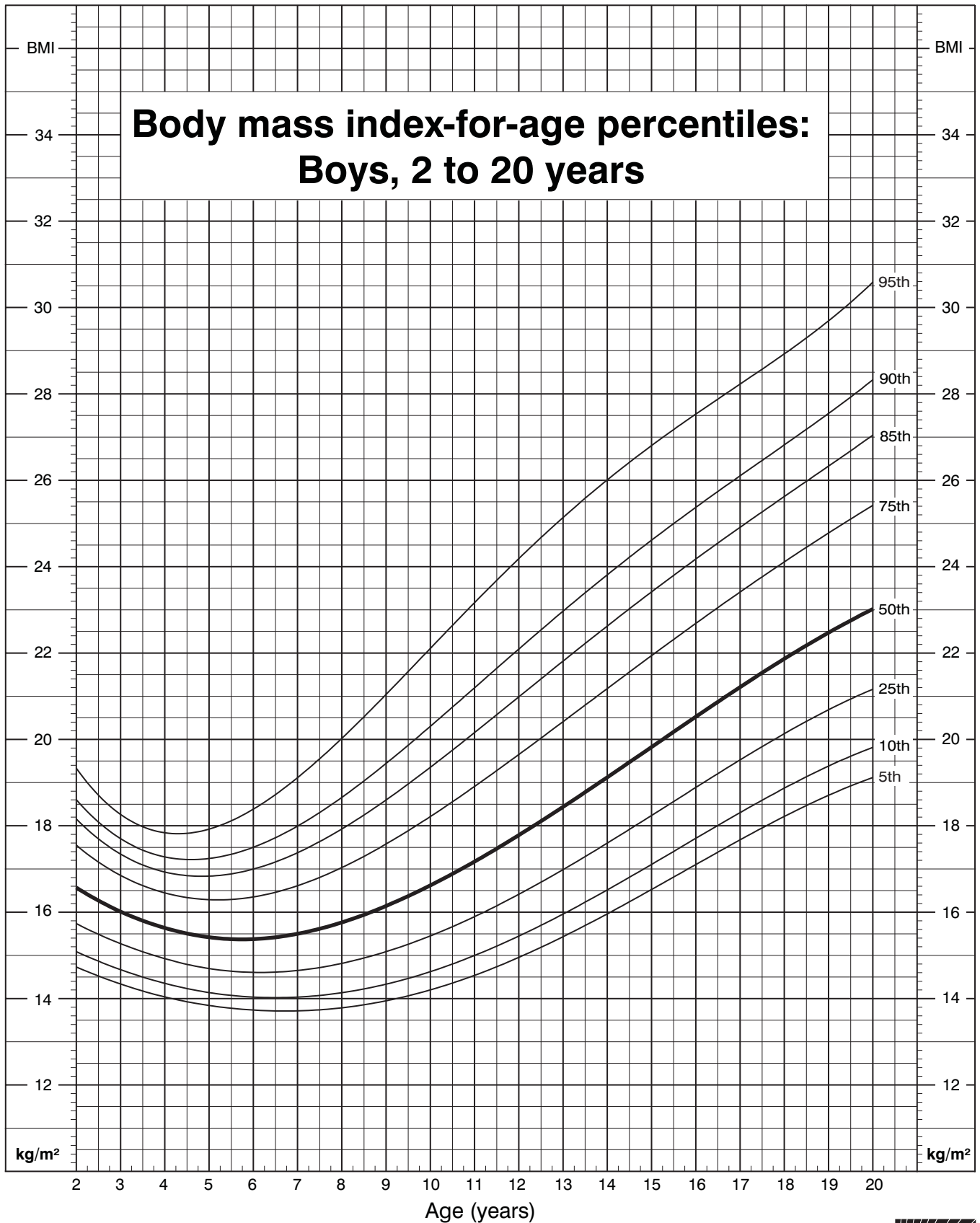
Age Specific Distribution of 585 (2-14) year Children according to Weight Category

Sl	Weight Category	Age of Children from 2-14 Years														Total	% to Total
		2	3	4	5	6	7	8	9	10	11	12	13	14			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
Boys																	
1	Underweight	4	5	3	5	2	2	3	1	6	2	3	1	1	38	11.84	
2	Healthy Weight	28	42	23	38	13	19	7	2	10	10	20	3	7	222	69.16	
3	At risk of Over-Wt	-	1	1	8	1	1	6	3	-	-	3	2	1	27	8.41	
4	Overweight	3	5	3	6	2	3	2	1	2	2	3	1	1	34	10.59	
Total (Boys)		35	53	30	57	18	25	18	7	18	14	29	7	10	321	100.00	
Girls																	
1	Underweight	8	6	5	4	3	3	3	5	5	1	3	1	-	47	17.80	
2	Healthy Weight	37	29	23	19	12	13	11	6	6	1	8	3	1	169	64.02	
3	At risk of Over-Wt	-	-	1	1	1	3	7	-	1	-	-	2	-	16	6.06	
4	Overweight	5	4	3	3	2	2	2	3	3	1	2	1	1	32	12.12	
Total (Girls)		50	39	32	27	18	21	23	14	15	3	13	7	2	264	100.00	
Boys and Girls																	
1	Underweight	12	11	8	9	5	5	6	6	11	3	6	2	1	85	14.53	
2	Healthy Weight	65	71	46	57	25	32	18	8	16	11	28	6	8	391	66.84	
3	At risk of Over-Wt	-	1	2	9	2	4	13	3	1	-	3	4	1	43	7.35	
4	Overweight	8	9	6	9	4	5	4	4	5	3	5	2	2	66	11.28	
Grand Total		85	92	62	84	36	46	41	21	33	17	42	14	12	585	100.00	

Illustrative Contents of the Handout for Expectant Mothers

1. Antenatal check ups for pregnant mothers
2. Nutritional requirements of pregnant and lactating mothers
3. Breast feeding, its advantages, feeding practice, frequency, duration, food weaning.
4. Child care and Immunisation schedule including growth indicators.
5. Diet for the young and infants, Recommended Dietary Allowances and Dietary Schedule for various categories of persons.
6. Use of fortified food
7. Causes and consequences of malnutrition among the children and the adults
8. Signs and Symptoms of malnutrition.
9. Age, Height and Weight Charts
10. Problems of under weight and obesity
11. Nutritional value in local food stuff, food storage, food preparation, cooking loss
12. Blind belief / food faddism / unfounded beliefs (food prohibition / wrong method of use) / Unhealthy taboos.
13. Common childhood and motherhood ailments and the ways to counteract the same at household level
14. Infection and malnutrition / health and hygiene practices
15. Sanitary habits and environmental issues relating to health
16. Dehydration and use of Oral Rehydration Solutions
17. Various preventive measures on health and nutrition.
18. Consequences of pica (eating soil / chalk / slate etc) habits
19. Awareness on various MCH and Nutrition programmes in operation benefiting the women and the children.
20. Hazards and consequences of early marriage
21. Health cards for the expectant mother and the expectant child.

CDC Growth Charts: United States



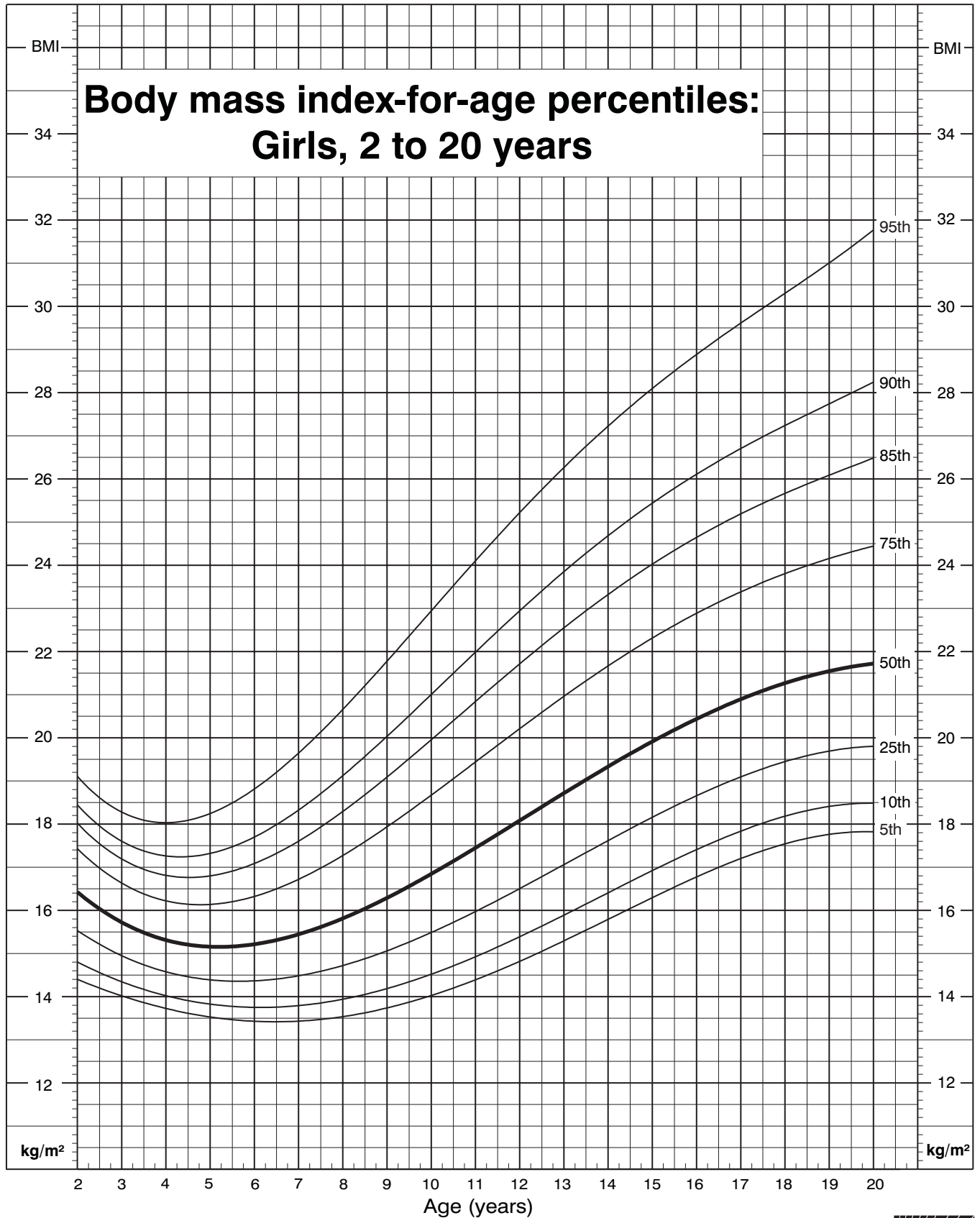
Published May 30, 2000.

SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).



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Gulanthi Em.Feeding Centre (Anganwadi) in.Ramanguda Block (Dist – Rayagada)



Dasamantpur M.H.U, Block – Dasamantpur, Dist – Koraput



Dabugaon M.H.U at work, Block – Dabugaon (Nawarangpur)



Investigators at work in a village in Kalahandi District



Baby of Tukunu Hikudi of Sonapur Block



A baby with malnutrition of Ulunda Block (Sonapur)