Establishing SHG/FPO enterprises to address malnutrition and provide rural livelihoods in Yadgir District, Karnataka
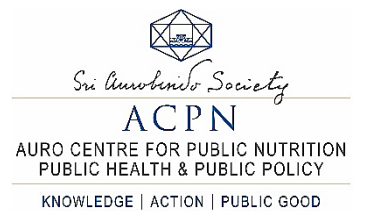
BASELINE AND SOCIAL SURVEY

Supported by Department of Science and Technology Government of India

FOREWORD

Yadgir District is an Aspirational District and is ranked as the most backward district of Karnataka. This baseline survey is part of the project "Establishing SHG/FPO enterprises to address malnutrition and provide rural livelihoods in Yadgir District, Karnataka", which is funded by the Department of Science and Technology, Govt. of India. The project is being implemented in partnership with Karnataka State Council of Science and Technology (KSCST) and Centre of Sustainable Technology, (CST) Indian Institute of Science. Bharatiya Agro Industries Foundation (BAIF) is our field partner.

The data presented in this baseline survey is indeed very worrisome. The indicators for wasting and underweight among children, and for low BMI (Body Mass Index) of adolescent girls and boys are considerably higher than the Yadgir District indicators. The main reason for this is that this baseline survey is specific to the sub group constituting the lowest wealth quintile households.

All data that emerged from this survey has been verified and re-verified – particularly, some very disturbing data reported by around 20% of mothers of children below 3 years (all migrant labourers) that their infants did not consume any complementary food until they were 23 months. We requested BAIF field personnel to recheck the data with the families, and it was confirmed that the children did not receive any complementary feeding until they were almost two years, and were fed only breast milk. The reason given by the mothers was that whenever the infants were given something from the family food, mostly roti, rice, dal, idli or ganji, the infants were not able to accept or digest it and became ill. All the mothers were migrant workers and did not access any benefits from ICDS. We plan to study this finding further, and make it an important theme for behaviour change, as the IEC campaign rolls out.

A new feature in this survey is that adolescent boys have also been covered both for anthropometric data and involvement in the IEC interventions.

How to trigger the much needed process of behaviour change is proving a much greater challenge than expected. Evidence based communication strategies which have proven successful in other places do not seen to work here. Intelligent innovation, understanding the community psychology, and consultation with community leaders becomes extremely important to understand the best strategy for behaviour change.

We are at take-off point and are optimistic that our interventions for bringing about behaviour change, mobilization of women SHGs, setting up the production units for horticulture/millet-base nutritious energy food for children adolescents, adults and family would start the process of change in the lives of the people in Yadgir District.

I am grateful to the Department of Science and Technology, Government of India, for supporting this project, to KSCST, CST and BAIF for their valuable partnership, and to the District administration for their constant support.

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VEENA S RAO
Director,
Auro Society for Public Nutrition,
Public Health and Public Policy, Bangalore

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RESEARCH TEAM

Auro Centre for Public Nutrition, Public Health and Public Policy

Ms. Veena S Rao, IAS (Retd)   **Ms. Harshita M Chinnaswamy**

Experts

Mr. Bharadawaj, S.K.V.K   **Mr. Ramanand Sengupta**

BAIF

Mr. Pandit Patil   Mr. Irana Hugar   Mr. Vallabhat Joshi

Mr. Hanamantha   Mr. Ramesh Nayak   Mr. Sharabaiah

Contents

"Establishing SHG/FPO enterprises to address malnutrition and provide rural livelihood in Yadgir District, Karnataka"

This inter-sectoral project is being implemented in the Aspirational Yadgir District in Karnataka. The project is supported by Department of Science and Technology, Government of India and is being implemented through a partnership of Karnataka State Council for Science and Technology (KSCST), Auro Centre for Public Nutrition, Public Health and Public Policy (ACPN) and Centre for Sustainable Technology (CST). The project aims to establish inter-linkages between agriculture and nutrition by mobilizing SHGs/FPOs, providing them livelihood opportunities through innovative farm-based enterprises, creating value chains and market linkages. Bharatiya Agro Industries Foundation (BAIF) has been selected as the field partner for ACPN. Through these initiatives it is anticipated that there will be reduction in wastage of agricultural/horticultural produces and improvement in the nutritional status of the population and higher economic opportunities for rural women associated with SHGs/FPOs. A Baseline Survey to capture the anthropometric data of children below 5 years, adolescent girls and boys of 11-18 years, SHG women and their spouses, and some basic socio-economic information was completed in August 2022. Some key findings are placed below.

Key Findings

Breastfeeding and Complementary Feeding

- Mean duration of breastfeeding among 6-35 months male children was 15.6 months and 17.4 months among female children.
- 20% of children did not receive any complementary feeding until 23 months
- Of the remaining 80%, only 34% children aged 6-35 months old children received complementary feeding before 8 months. 56% children received complementary feeding at 8-11 months and 10% received complementary feeding after one year.
- Around 50% mothers do not cook the supplementary food they receive from ICDS due to lack of time as they have to go to work.

Anthropometric measurements of 6–35-month children:

- Stunting: With substantial taluka-wise and age-wise variations, 18.1% and 27.5% children were severely and moderately stunted respectively. Severe/moderate stunting levels were highest (59%) in Shorapur Taluk and lowest (37%) in Shahapur Taluk, and highest (54%) among 24-35 months children and lowest (20%) among 6–11-month-old-children.

- The data indicates that as the age of the child increases the extent of moderate and severe stunting among children also rises. While only 14% of the children under 1 year are moderately stunted, the proportion of the same among children aged 1 year and 2 years increases rapidly. The pattern is the same for proportion of children who are severely stunted – while 6.4% of children less than a year are severely stunted, a proportion of 20.1% among children aged 1 to 2 years and 22% among children aged 2 to 3 years are severely stunted

- Wasting: With minimal taluka-wise and age-wise variations, around 14% children were severely wasted and 14% were moderately wasted. Severe/moderate wasting levels were highest (42%) in Shahapur Taluk and lowest (12%) in Gurumitkal Taluk.

- Proportion of children below one year with moderate wasting is 9% and with severe wasting is 12%. Among the children aged 1-2 years, 13% children suffer from moderate wasting, and 20% from severe wasting. Among children aged 2-3 years, 16% children are moderately wasted and 8% are severely wasted. Proportion of children with moderate and severe wasting is higher among children aged 1 to 2 years (33%) compared to those aged 2 to 3 years (24%) and under one year (21%).

- Underweight: With substantial taluka-wise variations and age-wise increase, 20.6% and 26.6% children were severely and moderately underweight respectively. Severe/moderate underweight levels were highest (67%) in Shahapur Taluk and lowest (23%) in Gurumitkal Taluk. Underweight was highest among children aged 24-35 months (56%), lower (44%) among children aged 12-23 months and lowest (33%) among 6–11 months old children.

- Percentage of children who are not underweight decreases as the age of the child increases, from 66.67% for children below 1 year to 56.29% among aged 1 to 2 years and 43.20% among children aged 2 to 3 years

- 60% female and 70% male children were either stunted or wasted or underweight.

- The number of children who are not stunted, not wasted and not underweight is 55.13% below 1 years, 34.2 % among 1 to 2years, 27.65% among 2 to 3 years
- The average MUAC is 13.7 cm. 82.87% children have normal MUAC; 15% children have MUAC between -3SD to -2SD; and 2% children have MUAC < -3SD.
- This measurement is highest in Yadgir (30%) and lowest in Gurumitkal (8%) taluka and MUAC decrease with increase in age of child.

Anthropometric measurements of 3-5 years children:

- Stunting: With minimal taluka-wise and age-wise variations, 26.5% and 23.5% children were severely and moderately stunted respectively. Severe/moderate stunting levels were highest (59%) in Shorapur and lowest (43%) in Gurumitkal taluka, and with increase in age there was decrease in percent stunted children.
- Among the children aged 3 years, 34% are moderately stunted and 22% are severely stunted. Among the 3-4 year old children, 29% are moderately and 20% are severely stunted. Among the 4-5 year old children, 25% are moderately stunted and 22% are severely stunted.
- The proportion of moderate and severe stunting is higher among 3 year olds (56%) when compared to four year old children (48%) and 5 year old children (47%).
- Wasting: With substantial taluka-wise and minimal age-wise variations, around 12% children were severely and 28% were moderately wasted. Severe/moderate wasting levels were highest (54%) in Shahapur and lowest (26%) in Hunasigi taluka.
- The proportion of severely wasted children is 24% among children aged 5 years, 10.20% among children aged 4 years and 11.39% among children aged 3 years
- Moderate wasting rises from 3 to 4 year children, then drops for 4 to 5 year children, Severe wasting doubles from 3 to 5 years
- Underweight: With substantial taluka-wise variations and minimal age-wise changes, 26.5% and 29.4% children were severely and moderately underweight respectively. Severe/moderate underweight levels were highest (73%) in Shahapur and lowest (55%) in Yadgir taluka.
- Severe underweight is highest at 5 years and moderate underweight is highest at 3 to 4 years
- 97.2 % children have normal MUAC and 2.7% children have MUAC between -3SD to -2SD

- Not wasted, not stunted and not underweight marginally improves, and decreases from 74.68 at 3 years to 70.75 at 4 years.
- Based on combined analysis, 74% female and 72% male children were either stunted or wasted or underweight among 3-5 year old children

Findings on Adolescent Girls and Boys (11-18 years)

- 83% girls and 93% boys are attending school, with 75% attending government schools.
- 86% boys and 91% girls received mid-day meal.
- 58% girls received and consumed IFA tablets.
- With negligible gender-wise and age-wise variations, 12-13% and 23-24% adolescents were severely and moderately stunted respectively.
- Severe/moderate stunting levels among girls were highest (42%) in Shahapur Taluk and lowest (22%) in Gurumitkal Taluk
- Severe/moderate stunting levels among boys were highest (50%) in Hunasigi and lowest (21%) in Yadgir taluka.
- Underweight as per BMI-cut-offs was slightly higher in boys (83%) as compared to girls (75%).
- Among both girls and boys, underweight was highest among 11-14 age group as compared to 15-18 age group.
- With huge taluka-wise variations, underweight among girls was highest (89%) in Gurumitkal Taluk and lowest (64%) in Hunasigi Taluk. Underweight among buys was highest (96%) in Yadgir Taluk and lowest (78%) in Shahapur Talukas.
- Overall, about 12.8% adolescent girls and 12.2% adolescent boys are severely underweight, and 23.7% girls and 23.08% boys are moderately underweight.
- 14.1% of adolescent girls between 15-18 years are severely stunted, as against 11.9% girls in the age group 11-14 years. 16.1% adolescent boys between 15-18 years are severely stunted as against 9.4% boys in the 11-14 years age group.
- Overall, about 47.39% adolescent girls and 52.49% adolescent boys are severely underweight, and 27.96% girls and 30.77% boys are moderately underweight.
- 28.24% adolescent girls between 15-18 years are severely underweight, as against 60.32% severely underweight girls in the age group 11-14 years. 26.88% adolescent

boys between 15-18 years are severely underweight as against 71.09% severely underweight boys in the 11-14 years age group

Findings on SHG women and spouses:

- All SHG women and their spouses were from BPL families, with mean age of SHG women being 40 years, and their spouses being 46 years.

- 60% SHG women and 91% of their spouses are unskilled workers, with mean annual income of SHG members being Rs 17000 and their spouses being Rs 18000.

- All the respondents live in their own houses, 56% of their houses are pucca. 57% of these households have two-wheeler. Average family size of these households is 6.4

- Mean weight of SHG women was 54.5 Kg and mean height was 151.2 Cm. For spouses, respective figures were 60.0 Kg and 162.0 Cm.

- Using BMI-cut-offs, 12% SHG women and 12% of their spouses are categorized as underweight.

- Around 28% women below 30 years are underweight and this percentage decreases with age. 12.25% of spouses are underweight, the percentage increasing from 0% underweight below 30 years of age to 21.79% for the age group 50 years and above

- 63.5% mothers of children aged 3-5 years are illiterate and 57% mothers of children below 3 years are illiterate

Part I- Baseline Survey
1 - INTRODUCTION

1.1   BACKGROUND

India loses 20-30% of its fruits & vegetable produce due to spoilage and post-harvest losses, owing to non-availability/accessibility of primary processing facilities, fuel-efficient post-harvest technology and hygienic storage facilities, particularly in rural areas. On the other hand, India also faces the problem of undernutrition, particularly, among children, adolescents and women. In this context, Karnataka State Council for Science and Technology (KSCST), Auro Centre for Public Nutrition, Public Health and Public Policy (ACPN) and Centre for Sustainable Technology (CST) are implementing a project to establish inter-linkages between agriculture and nutrition by mobilizing SHGs/FPOs, providing them livelihood opportunities through innovative farm-based enterprises, creating value chains and market linkages in Yadgir District. The project "Establishing SHG/FPO enterprises to address malnutrition and provide rural livelihood in Yadgir District, Karnataka", an Aspirational District in Karnataka, is supported by Department of Science and Technology, Government of India. Bharatiya Agro Industries Foundation (BAIF) has been selected as the field partner for ACPN. Through these initiatives it is anticipated that there will be reduction in wastage of agricultural/horticultural produces and improvement in the nutritional status of the population and higher economic opportunities for rural women associated with SHGs/FPOs.

Program Objectives

1. Prevent wastage of fruits and vegetables, reduce losses during glut season, arrest distress sales and reduce market risks, through building capacity of FPOs/SHGs.
2. Address malnutrition in the community and provide nutrition security and improve nutritional status of the rural poor, especially in the lean season.
3. Provide livelihoods to SHGs/FPOs through innovative farm based enterprises,
4. Improve quality of life of women through value added income generation and marketing of nutritive horticultural products.

Project Interventions

The project began with a market survey of the horticulture produce which is available in the District, the location of primary processing facilities, if any; cold chains or food parks if any; the current marketing operations; wastage of horticulture produces. This Base Line Survey which is a random sample survey of the nutritional status of individuals of all aged groups of both sexes, was also used as an opportunity to mobilize Women Self Help Groups, and provide them first exposure to some basic IEC pertaining to the inter-generational cycle of malnutrition, anaemia, care of the adolescent girl, pregnancy weight gain, the importance of sanitation and safe drinking water. The horticulture produce to be used for production of affordable energy food for the community was selected and the finished product was finalized by a committee of experts. FSSAI certification will be obtained as per mandatory procedures. Appropriate fuel-efficient technology has been selected and is being installed by KSCST. A realistic and practical marketing strategy is under preparation, and a unique IEC strategy is under implementation. Training for procurement of raw material, production, safety and hygiene, and marketing of new fruit/vegetable/fortified energy food products would start after installation of the production unit.

1.2 NEED FOR THE STUDY

Theory of change

From the objectives and the interventions proposed, the program aims to bring about economic improvement and behavioural change in the lives of women associated with SHG/FPO and improvement of the nutritional status of the general population, particularly children and adolescents. The changes anticipated by this program best fit the '**socio-ecological framework',** as this framework believes that a person's behaviour is influenced by many inter-related factors at individual, inter-personal, community and the larger systemic levels (figure 1). Given the complex nature through which economic and nutritional problems of Yadgir district will be addressed through SHG/FPO enterprises – **a mixed method** *(qualitative & quantitative),* **multiphase** *(baseline, annual-mid-line and end-line),* **iterative participatory research** *(need based rapid studies like: mapping of SHG/FPOs, horticulture produce available, primary processing facilities, demand for fortified food, etc.,)* approach supported by the *'theory of change pathway'* – study design will be used.

Figure 1 Socio-ecological framework of SHG/FPO enterprise program
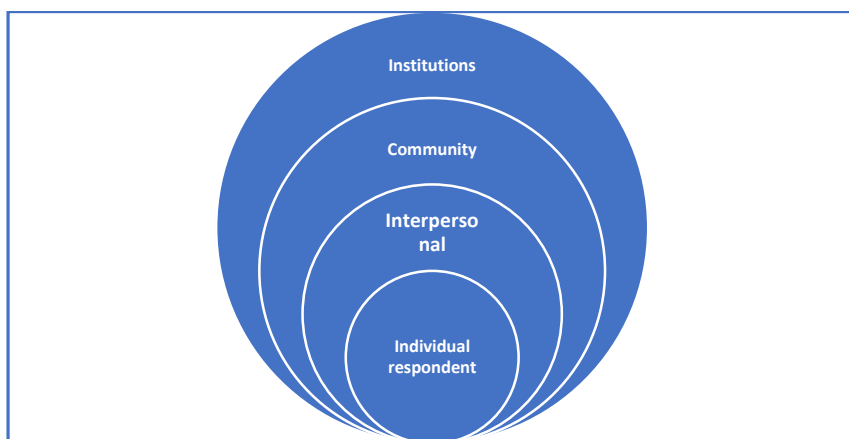
The baseline study will generate the measurable quantitative data on certain program indicators. The same study will be conducted in the future at certain intervals which will help assess the program implementation and also help the project to take course corrective steps if necessary.

The present study is the baseline, conducted prior to implementation of the program.

1.3   STUDY DESIGN AND OBJECTIVES

As part of quantitative evaluation of the program, a '**Quasi-Experimental, Longitudinal/ Cohort Design'** is being used, which will enable comparison of key outcome / output indicators of the program at three stages of program viz., i) before the introduction of the interventions/activities, ii) at the middle of the intervention and iii) at the end of the intervention - at district level. It implies the respondents who are going to be randomly selected at the time of baseline survey will be followed again at mid-line and at end-line surveys. The Respondents will be – Children aged 0-5 years, Adolescent Girls and Boys 11-18 years, SHG women and husbands.

Apart from the baseline study, mapping of the district was conducted to understand horticulture produce available, location of primary processing facilities, cold chains/food parks (if any), marketing operations, wastage of horticulture produces, etc. SHGs/FPOs mapping was also done.

Key program indicators

1. Percentage change in household annual income of SHG/FPO members
2. Percentage change in the anthropometric measurements of the target groups
3. Percentage change in correct diet practices for children
4. Percentage change in correct diet practices of adolescents and adults
5. Growth of FPOs/SHGs annually (during the project) and in their activities
6. Percentage reduction of wastage of horticulture produce
7. Changes in general awareness of SHG women and their spouses on diversified diet

1.4 SAMPLE SIZE

The sample size per cohort of each group was arrived at with the following assumptions:

- The probability of type I error (significance level) is the probability of rejecting the true null hypothesis: 0.05
- The probability of type II error (1 - power of the test) is the probability of failing to reject the false null hypothesis: 0.1
- P1: The proportion who got exposure to all the interventions: 0.62
- r: The ratio of unexposed to exposed: 1.24
- Required sample size for cohort: 323-338 (rounded off to 340)
- C: % loss to follow-up over three years=20%
- N= Final sample size for cohort: 400

Table 1
Target group and sample size covered

Target group	Sample size	
	Proposed	Achieved
Mothers of children aged 6 to 36 months	400	400
Mothers of children aged 3-5 years	400	400
Adolescents (aged between 11-18 years) boys and girls	400	432
Adult women who are members/leaders of SHG and their husbands	400	408

Study location

The baseline study has been conducted in all the 6 Taluks of Yadgir district of Karnataka State. The Taluks covered with number of interviews are:

Block	Mothers of children aged 6 to 36 months		Mothers of children aged 3-5 years		Adolescents (aged between 11-18 years) boys and girls				Adult women who are members/leaders of SHG and their husbands			
	N	%	N	%	N	%	N	%	N	%	N	%
Yadgir	54	13.50	60	15.00	28	12.67	29	13.74	18	8.82	11	5.39
Shahapur	65	16.25	71	17.75	45	20.36	38	18.01	34	16.67	37	18.14
Shorapur	71	17.75	68	17.00	41	18.55	35	16.59	54	26.47	40	19.61
Gurumitkal	26	6.50	56	14.00	12	5.43	9	4.27	5	2.45	0	0.00
Wadgera	116	29.00	77	19.25	63	28.51	64	30.33	65	31.86	93	45.59
Hunasigi	68	17.00	68	17.00	32	14.48	36	17.06	28	13.73	23	11.27
Total	**400**	**100.00**	**400**	**100.00**	**221**	**100.00**	**211**	**100.00**	**204**	**100.00**	**204**	**100.00**

1.5   RESEARCH INSTRUMENTS

Target group specific questionnaires were developed by ACPN and BAIF. All the instruments were translated into Kannada for interviews.

1.6   BASELINE DATA COLLECTION

Field teams and training

The data collection was done by 3 field teams consisting of 3 field operators and 12 enumerators. A team of one field operator and 4 enumerators were assigned two Blocks for conducting the baseline survey. In all 1600 interviews were conducted.

A training of trainers was conducted by ACPN at Bengaluru in May 2022. This was followed by 3 training sessions to field teams each in Kurakunda, Hattikunu and Devapur, Yadgir District.

Each field team had a trained person to measure and record height, weight and upper arm circumferences of the children, adolescents and adults.

Data collection

The field work was conducted during June to August 2022. The interviews were conducted using dual language printed questionnaire. The questions included both pre-coded and open-ended questions. All the open-ended questions were appropriately coded after the data collection.

Analysis

An analysis plan was developed and finalized in consultation with program officials and necessary cross tabulations were carried out.

2 – CHILDREN UNDER 3 YEARS

2.1 PROFILE OF RESPONDENTS

The mothers of children aged between one to three years were interviewed as part of the baseline study. In order to understand the socio-economic background of the respondents, relevant questions were asked. The analysis pertaining to age, education and occupation of both mother (respondent) and father is presented in Table 3.

Overall, the average age of the respondents is about 26 years. About four fifth of the mothers (of children under 3 years) are aged between 20-39 years (79%). About three fifth of the mothers (of children under 3 years) were illiterate (57%). While about one fourth of the mothers (of under 3 years) are housewives (23%), about three fourth were unskilled workers (73%). Overall, the average number of working hours was about 7.3 hours, as per the data.

Table 3 Percentage distribution of mothers (of under 3 years) by age, education and occupation

Profile	Percentage
Age	
< 20 years	2.50
20-29	40.25
30-39	38.25
40 and above	19.00
Mean	**25.95**
SD	**4.56**
Education	
Illiterate	56.75
Up to 9th class	19.25
10th and above	24.00
Occupation	
Unskilled worker	73.00
Self employed	2.00
Government job	1.75
Housewife	23.25
Mean number of working hours	**7.34**
Standard deviation	**1.05**
Occupation of father	
Unskilled worker	60.75
Agricultural worker	21.25
Skilled worker	10.75
Self employed	3.00
Business	2.00
Political worker	1.00
Private / government job	1.25
Total N	**400**

2.2 HOUSEHOLD PROFILE

The analysis of the data on the household profile is presented in Table 4. About three fifths of the households are from other backward caste (57%), about one fourth are from scheduled caste and slightly more than one tenth from scheduled tribe (14%).

The average family size of mothers of under 3 years is about 6.9 members. The average annual income of the household is around Rs 16,000/- and almost all households fall under BPL category.

Table 4 Percentage distribution of mothers (of under 3 years) by household profile

Household profile	Percentage (%)
Social status	
General	5.75
OBC	56.75
SC	23.50
ST	14.00
Average family size	**6.91**
Household annual income	
Rs 10000 - 15000	49.25
Rs 15000 - 20000	13.00
Rs 20000 - 25000	10.50
More than Rs 25000	27.25
Average (in INR)	**16,000**
BPL	**98.75**
Total N	**400**

Ownership of assets

All the mothers (of under 3 years children) were asked about ownership of the house and other vehicles and the analysis of the same is presented in Table 5. Almost all reported that they owned their house – either kuccha (48.5%) pucca (51.3%). About two third respondents reported they had two-wheelers and about 37 percent reported that they do not own any vehicle (37.3%)

Table 5 Percentage distribution of mothers (of under 3 years) by ownership of assets

Ownership of assets	Percentage(%)
House	
Yes	99.25
No	.75
Type of house	
Kuccha	48.50
Pucca	51.25
Vehicle ownership	
Bicycle	3.5
Two-wheeler	64.75
Tractor	11.25
Four-wheeler	8.75
Do not own any vehicle	37.25
Total N	**400**

2.3 DIETARY PRACTICES

All the mothers of children under 3 years were asked about the number of times the child is fed in a day, complementary feeding and breast-feeding practices. The analysis of the same is presented in Table 6.

About one fifth of the mothers (20%) reported that their children did not start complementary feeding until 23 months. The mothers said that whenever the infants were given something from the family food, mostly roti, rice, dal, idli or ganji, they were not able to accept or digest it and became ill. All the mothers were migrant workers.

Of the remaining 80% children, about one third of the mothers of the 6-35 month old children reported that they have started complementary feeding to the child after 8 months (34%). Slightly more than half of the mothers (55%) initiated complementary feeding when the child was between 8 to 11 months of age. With minor deviations, on an average children aged 6-35 months were introduced to complementary feeding when they are about 9 months old.

On an average mothers reported that they have breast fed the child for about 16.58 months. More than three fifth of mothers reported that they still breast feed their child (63%). Proportion of mothers reported to be still feeding their child is more or less the same for male and female children. Average number of months the female child is breast fed is 17.4 months and the same for the male child is 15.6 months.

Table 6 Percentage distribution of mothers (of under 3 years) by dietary practices

Dietary practices	Male child	Female child	All children
Still breast feeding the child			
Yes	63.28	62.78	63.00
No	36.72	37.22	37
Duration of breastfeeding to child			
Up to 11 months	26.55	16.14	20.75
12 months – 17 months	40.68	41.26	41.00
18 months – 23 months	17.51	21.52	19.75
24 months and above	15.25	21.08	18.50
Mean (number of months)	15.57	17.37	16.58
SD	4.28	4.52	4.49
Whether complementary feeding started			
Yes, started	75.71	83.41	80.0
Not yet started	24.29	16.59	20.0
Total N	177	223	400
Age at which complementary feeding started			
Before 8 months	32.09	35.48	34.06
8 months – 11 months	60.45	52.15	55.63
After one year	7.46	12.37	10.31
Mean	9.13	9.40	9.29
SD	3.16	4.15	3.76
Total N	134	186	320

All the mothers were asked about the content of the complementary food that is fed to children. The analysis of the same is presented in the Table below. Rice / roti / ragi ball is the main complementary food given to the children under 3 years. Along with rice/roti/ragi, either milk or curd or sambar is mixed, when the infants are fed. Egg is fed to children above one year, and overall about one third children (35%) were fed eggs

Table 7 Percentage distribution of mothers of under 3 years by diet as part of complementary food

Type of food	<1 year (6-11 months)	1 year (12-23 months)	2 years (24-35 months)	All children
Fruits	1.28	13.82	17.06	12.75
Vegetables	0.00	5.26	13.53	7.75
Rice/roti/ragi	25.64	82.89	98.24	78.25
Pulses / sambar	6.41	28.95	42.94	30.50
Non Veg	0.00	5.26	12.35	7.25
Egg	1.28	36.84	48.24	34.75
Dairy	8.97	39.47	45.88	36.25
Snacks/bread/biscuit	8.97	22.37	27.06	21.75
Sweet	0.00	3.95	5.29	3.75
Nothing	70.51	15.79	.59	20.00
Total N	**78**	**152**	**170**	**400**

Note: As part of complementary food for children under 3 years, take home supplementary nutrition is given under ICDS scheme through Anganwadi. Multigrain mix, nutri mix, ragi malt powder, milk powder and jaggery are the 5 items provided under the scheme. However, most mothers do not feed these to their children as they go to work early in the morning and do not find time to cook, and the children are left with the elderly in the house. Mothers felt that cooking food separately for the children is additional work so they prefer feeding the children whatever is cooked for the entire family.

2.4 ANTHROPOMETRIC MEASUREMENTS

The anthropometric measurements of the child include height, weight and mid upper arm circumference (MUAC). All the mothers were requested for permission for their child to be measured and the details to be recorded. The analysis of the same is presented in this section.

Height, weight and MUAC

Height, weight, mid upper arm circumference was measured for all children under 3 years of age. The average height, weight and MUAC of the children aged less than /under 3 years is presented in Table 8.

Overall, the average weight of the children is about 8.9 kilograms. On an average the height of the children (1-3 years) is 76.81 cms and MUAC is 13.72 cms.

The height, weight and MUAC among boys and girls is almost the same. Boys aged between 1-3 years of age have an average weight of 9 kilograms, while girls of the same age have average weight of 8.9 kilograms. While the average height of the boys is 76.6 cms and MUAC is 13.9 cms, that of girls is 76.9 cms and 13.5cms respectively.

Table 8 Distribution of children under 3 years by age, average weight, height and MUAC

Age of the child	Male	Total N	Female	Total N	All	Total N
Weight (Mean in kgs)						
< 1year (6 - 11M)	7.48	**45**	7.05	**33**	7.29	**78**
1 year (12 - 23M)	8.63	**65**	8.28	**87**	8.43	**152**
2 years (24 - 35M)	10.43	**67**	9.92	**103**	10.12	**170**
All	**9.01**	177	**8.86**	223	**8.92**	400
Height (Mean in centimetres)						
< 1year (6 - 11M)	68.68	**45**	68.14	**33**	68.45	**78**
1 year (12 - 23M)	75.44	**65**	74.64	**87**	74.98	**152**
2 years (24 - 35M)	83.14	**67**	81.77	**103**	82.31	**170**
All	**76.63**	177	**76.95**	223	**76.81**	400
MUAC (in centimetres)						
< 1year (6 - 11M)	13.53	**45**	12.90	**33**	13.26	**78**
1 year (12 - 23M)	13.59	**65**	13.40	**87**	13.48	**152**
2 years (24 - 35M)	14.62	**67**	13.85	**103**	14.16	**170**
All	**13.97**	177	**13.53**	223	**13.72**	400

Anthropometric measurements

In order to understand the extent of stunting, wasting, and malnourishment among the children, the Z score was calculated using the WHO Anthro software and the children were divided into 3 categories viz., normal, moderate and severe. The categorization is done as below :

- Normal: >-2 SD
- Moderate: -3SD to -2SD
- Severe: <-3SD

Stunting

Stunting, or low height-for-age, is a sign of chronic undernutrition that reflects failure to receive adequate nutrition over a long period. The data on height collected as part of the baseline study is analysed as per the WHO guidelines. The analysis of the same is presented in

TABLE 9.

Overall, slightly less than half of the children fall under moderate (27.48%) to severe (18.07%) category of height for age (stunting).

Table 9 Height for age (stunting) among children aged under 3 years by Taluk and age of children

Taluk*	Percentage			Mean	+/- Standard deviation	Total N
	Not stunted (>-2SD)	Moderate (-3SD to -2SD)	Severe (< -3SD)			
Yadgir	52.83	28.30	18.87	-1.78	1.59	**53**
Shahapur	63.08	27.69	9.23	-1.58	1.09	**65**
Shorapur	40.58	24.64	34.78	-2.30	1.68	**69**
Gurumitkal	80.00	12.00	8.00	-1.29	1.11	**25**
Wadgera	53.04	31.30	15.65	-1.81	1.33	**115**
Hunasigi	54.55	28.79	16.67	-1.41	2.03	**66**
Age						
< 1year (6 − 11M)	79.49	14.10	6.41	-.91	+/-1.30	**78**
1 year (12 − 23M)	51.01	28.86	20.13	-1.87	+/-1.55	**149**
2 years (24 − 35M)	45.78	32.53	21.69	-2.05	+/-1.51	**166**
Over All	**54.45**	**27.48**	**18.07**	**-1.75**	**+/-1.54**	**393**

*   *Taluk wise data needs to be interpreted with caution due to small base*

Graphical representation of height for age by age of the children is given in Figure 2. The data indicates that as the age of the child increases the extent of moderate and severe stunting among children also rises. While only 14% of the children under 1 year are moderately stunted, the proportion of the stunting among children aged 1 year and 2 years increases rapidly. The pattern is the same for proportion of children who are severely stunted. While 6.4% of children less than year are severely stunted, a proportion of 20.1% among children aged 1 to 2 years and 22% among children aged 2 to 3 years are severely stunted

Figure 2 Height for age (stunting) among children aged under 3 years by age of children (%)
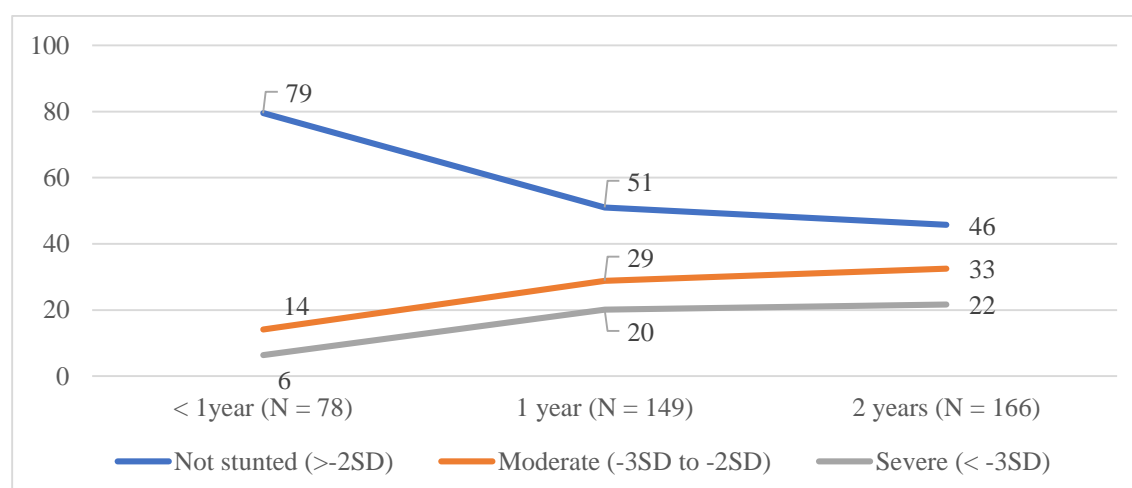
Wasting

Wasting, or low weight-for-height, is a measure of acute undernutrition and represents the failure to receive adequate nutrition leading to rapid weight loss or failure to gain weight normally. Children are defined as wasted if their weight-for-height is more than two standard deviations below (< -2SD) the WHO Child Growth Standards median (WHO, 2009).

Table 10 presents the analysis of extent of wasting among children aged 1 to 3 years.

Around 13.59% children fall under moderate wasting and another 13.59% fall under the severe wasting category.

Table 10 Weight for height (wasting) among children aged under 3 years by Taluk and age

| Taluk* | Percentage | | | Mean | +/- Standard deviation | Total N |
	Not wasted (>-2SD)	Moderate (-3SD to -2SD)	Severe (< -3SD)			
Yadgir	67.92	22.64	9.43	-1.36	1.39	**53**
Shahapur	58.46	13.85	27.69	-1.95	1.50	**65**
Shorapur	78.26	7.25	14.49	-.99	1.88	**69**
Gurumitkal	88.00	12.00	0.00	-.80	1.04	**25**
Wadgera	71.05	14.91	14.04	-1.46	1.35	**114**
Hunasigi	82.81	10.94	6.25	-.95	1.29	**64**
Age						
< 1year (6 – 11M)	79.49	8.97	11.54	-1.05	+/-1.50	**78**
1 year (12 – 23M)	66.67	12.93	20.41	-1.53	+/-1.53	**147**
2 years (24 – 35M)	75.15	16.36	8.48	-1.27	+/-1.43	**165**
All	**72.82**	**13.59**	**13.59**	**-1.32**	**+/-1.49**	**390**

*   *Taluk wise data needs to be interpreted with caution due to small base*

Graphical representation of weight for height by age of the children is given in

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Figure 3.   Among the children less than a year, the proportion of children with moderate wasting is 9% and with severe wasting is 12%. Among the children aged one year, 13% children suffer from moderate wasting, and 20% from severe wasting. Among children of 2 years of age, 16% children are moderately wasted and 8% are severely wasted.   Proportion of children with

moderate and severe wasting is higher among children aged 1 to 2 years (33%) compared to those aged 2 to 3 years (24%) and under one year (21%).

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Figure 3 Weight for height among children aged under 3 years by age (%)
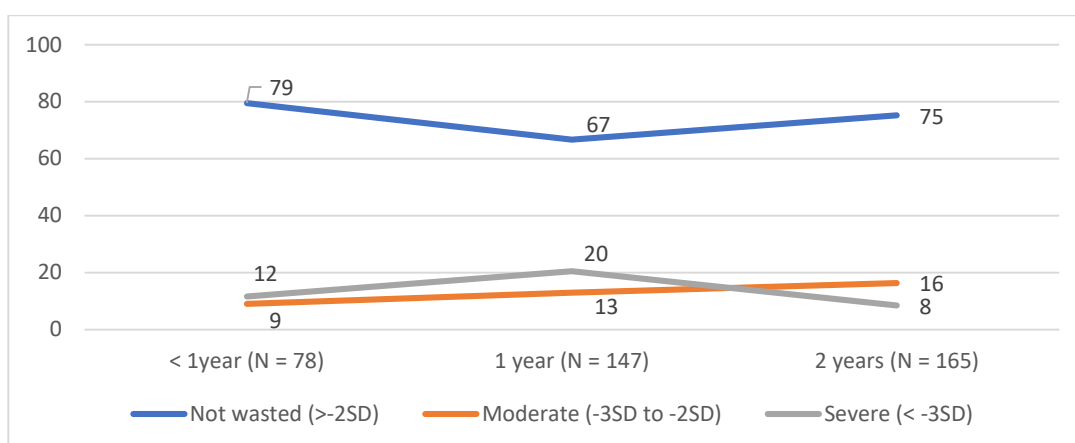
Underweight

Underweight, or low weight-for age, is a composite index that takes into account both acute and chronic undernutrition. Children are defined as underweight if their weight-for-age is more than two standard deviations below (< -2SD) the WHO Child Growth Standards median (WHO, 2009). Table 11 presents the analysis of the same.

Overall, about half the children aged 1-3 years are underweight (moderate and severe combined). Slightly more than one fourth of the children are moderately underweight (26.63%) while about one fifth are severely underweight (20.60%).

Table 11 Weight for age (underweight) among children aged under 3 years by Taluk and age

Taluk*	Percentage			Mean	+/- Standard deviation	Total N
	Not underweight(>-2SD)	Moderate (-3SD to -2SD)	Severe (< -3SD)			
Yadgir	48.15	33.33	18.52	-1.99	1.47	**54**
Shahapur	43.08	26.15	30.77	-2.29	1.37	**65**
Shorapur	50.70	22.54	26.76	-2.07	1.62	**71**

Gurumitkal	76.92	19.23	3.85	-1.23	1.07	**26**
Wadgera	48.70	28.70	22.61	-2.05	1.25	**115**
Hunasigi	65.67	25.37	8.96	-1.35	1.29	**67**
Age						
< 1year (6 – 11M)	66.67	21.79	11.54	-1.38	1.39	**78**
1 year (12 – 23M)	56.29	19.21	24.50	-2.02	1.47	**151**
2 years (24 – 35M)	43.20	35.50	21.30	-2.06	1.30	**169**
All	**52.76**	**26.63**	**20.60**	**-1.91**	**1.40**	**398**

*   *Taluk wise data is culled out of main sample which is statistically robust*

Graphical representation of the underweight data among children aged 1-3 years is presented in figure 4 As the graph indicates, proportion of children who are with normal weight for their age decreases as the age of the child increases, from 66.67% for children below 1 year to 56.29% among aged 1 to 2 years and 43.20% among children aged 2 to 3 years.

Figure 4 Weight for age among children aged under 3 years by age (%)
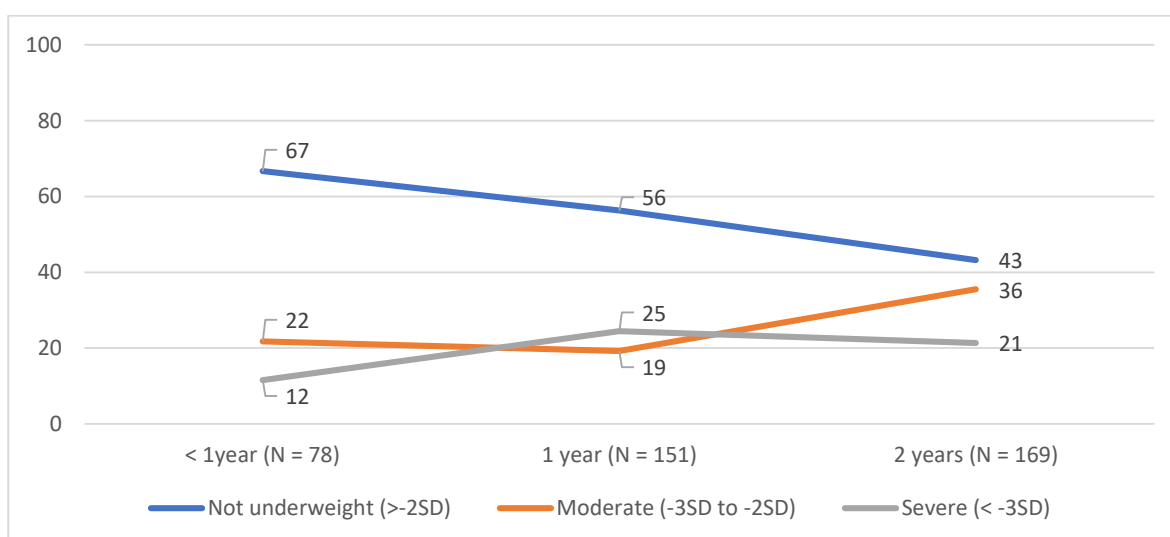
Mid Upper Arm Circumference (MUAC)

Mid Upper Arm Circumference (MUAC) is a measure of muscle and fat mass on the normally non-dominant arm. It is commonly used to screen children for acute malnutrition. UNICEF and WHO recommended MUAC < 11.5 cm as one of the diagnostic criteria for severe acute malnutrition in children aged 6–60 months (WHO, 2009).

The analysis of data on MUAC is presented in Table 12. The average MUAC is 13.7 cm. 82.87% children have normal MUAC; 15% children have MUAC between -3SD to -2SD; and 2% children have MUAC < -3SD.

Table 12 MUAC among children aged under 3 years by Taluk and Age

	Percentage			

Taluk*	% children (>-2SD)	% children (-3SD to -2SD)	% children (< -3SD)	Mean	+/- Standard deviation	Total N
Yadgir	70.37	25.93	3.70	13.30	.98	**54**
Shahapur	84.13	14.29	1.59	13.51	.95	**63**
Shorapur	84.51	15.49	0.00	14.46	6.54	**71**
Gurumitkal	92.31	7.69	0.00	13.86	1.14	**26**
Wadgera	82.61	13.04	4.35	13.50	1.00	**115**
Hunasigi	86.76	11.76	1.47	13.81	1.09	**68**
Age						
< 1year (6 – 11M)	69.23	26.92	3.85	13.26	+/-1.01	**78**
1 year (12 – 23M)	79.47	16.56	3.97	13.48	+/-1.15	**151**
2 years (24 – 35M)	92.26	7.74	0.00	14.16	+/-4.27	**168**
All	**82.87**	**14.86**	**2.27**	**13.72**	**+/-2.92**	**397**

*   *Taluk wise data is culled out of main sample which is statistically robust*

Children under 3 years, not stunted, not wasted, not underweight

Table 13 Proportion of children aged under 3 years not stunted, not wasted, not underweight

Parameter	Male	Female	All
Not stunted, not wasted and not underweight			
< 1year (6 - 11M)	51.11	60.61	55.13
1 year (12 - 23M)	24.62	41.38	34.21
2 years (24 - 35M)	20.90	32.04	27.65
All	29.94	39.91	35.50
Either stunted, or wasted or underweight			
< 1year (6 - 11M)	48.89	39.39	44.87
1 year (12 - 23M)	75.38	58.62	65.79
2 years (24 - 35M)	79.10	67.96	72.35
All	70.06	60.09	64.50
Total N	**177**	**223**	**400**

A combined analysis of the data on stunting, wasting, underweight was carried out to understand the proportion of the children under 3 years of age, who are not stunted, not wasted, and not underweight. The same is presented in the Table 13. Overall, about two third (64.5%) are either stunted, or wasted or underweight. The proportion of children (both boys and girls) under 3 years who are not stunted, not wasted and not underweight decreases as the age increases, implying that their nutritional status/health deteriorates as they grow older.

3 – CHILDREN 3-5 YEARS

3.1   PROFILE OF RESPONDENTS

The mothers of children aged between three to five years were interviewed as part of the baseline study.   The analysis pertaining to age, education and occupation of both mother (respondent) and father is presented in Table 14.

The average age of the respondents is about 28 years. About two third of the mothers are aged between 20-39 years (66%). 28.25% have studied up to class 9 and 8.25% have studied up to class 10 and above. 63.5% mothers are illiterate. All the mothers were employed, with majority being unskilled workers (96%) with 7.3 hours mean working hours per day. 63% mothers reported that their spouse is an unskilled worker.

Table 14 Percentage distribution of mothers (3-5yrs) by age, education and occupation

Profile	Percentage (%)
Age	
< 20 years	1.25
20-29	19.50
30-39	46.75
40 and above	32.50
Mean	**28.44**
SD	**5.14**
Education	
Up to 9th class	28.25
10th and above	8.25
Illiterate	63.5
Occupation	
Unskilled Worker	96.25
Self employed	2.50
Govt job	1.25
Mean number of working hours	7.27
Standard deviation	1.08
Occupation of father	
Unskilled Worker	63.00
Agricultural worker	19.75
Skilled Worker	9.25
Self employed	2.25
Business	2.00
Others	3.75
Total N	**400**

3.2   HOUSEHOLD PROFILE

Table 15 below presents the analysis of household profile data.   More than half the households are from other backward caste (55.5%), while about one fourth belong to scheduled caste (26.7%) and one tenth are from scheduled tribe (12%).

The average family size as reported by the mothers of children aged 3-5 years is 6.96 members and the average total number of earning members is reported to be 2.37.

The average annual income is Rs.15,000/- and almost all the households are under BPL category.

Table 15 Percentage distribution of mothers (of 3-5 yrs) by household profile

Household profile	Percentage (%)
Social status	
General	5.75
OBC	55.50
SC	26.75
ST	12.00
Average family size	**6.96**
Average total number of earning members in family	**2.37**
Household annual income	
Rs 10000 - 15000	50.50
Rs 15000 - 20000	11.25
Rs 20000 - 25000	9.50
More than Rs 25000	28.75
Mean (in INR)	**15000**
APL	.25
BPL	97.75
Total N	**400**

Ownership of assets

Almost all the mothers reported to own a house, which is either kuccha (53%) or pucca (47%). More than half the mothers reported they owned a two-wheeler and more than two fifth of the mothers (45%) reported they do not own any vehicle.

Table 16 Percentage distribution of mothers (of 3-5 yrs) by ownership of assets

Ownership of assets	Percentage (%)
House	
Yes	99.50
No	.50
Type of house	
Kuccha	53.00
Pucca	47.25
Vehicle ownership	
Bicycle	5.5
Two-wheeler	56.25
Tractor	6.5
Four wheeler	5
Do not own any vehicle	45.0
Total N	**400**

3.3   DIETARY PRACTICES

All the mothers (of children 3-5 yrs) were asked about the number of times the child is fed and about attendance in the Anganwadi. The analysis is presented in Table 17 below.

On an average, both male and female children are fed about 2.9 times a day.

All the mothers reported that the child attends the Anganwadi and receives supplementary nutrition. 99% children were reported to consume the supplementary nutrition. All the children between 3-6 years who attend the Anganwadi are given cooked food.

Table 17 Percentage distribution of mothers (of 3-5 yrs) by dietary practices

Dietary practices Number of times child is fed in a day	Male child	Female child	All children
1	.52	0.00	.25
2	7.85	14.83	11.50
3	91.10	83.73	87.25
4	.52	1.44	1.00
Mean	2.92	2.87	2.89
SD	.313	.381	.351
Anganwadi			
Child attends Anganwadi	100	100	100
Child received supplementary nutrition*	100	100	100
Child consumes supplementary nutrition	98.43	99.52	99.00
Total N	191	209	400

All the mothers were asked about the food items that are given to the children as supplementary nutrition at home. Almost all children irrespective of the age, are given rice/roti/ragi and sambar prepared with pulses. Around 48% children consumed eggs, 45% consumed dairy products, 13% consumed fruits, 20% consumed vegetables and 6% consumed sweets.

Table 18 Percentage distribution of mothers (of 3-5 yrs) by type of supplementary nutrition received at home

Type of food	3 yrs (36-47 M)	4 yrs (48-59 M)	5 yrs (60-71 M)	All children
Fruits	12.03	11.56	16.84	13.00
Vegetables	18.99	18.37	25.26	20.25
Rice/roti/ragi	99.37	97.96	97.89	98.50
Pulses / sambar	75.95	73.47	72.63	74.25
Non Veg	10.76	8.84	4.21	8.50
Egg	46.84	49.66	48.42	48.25
Dairy	44.94	42.86	49.47	45.25
Snacks/bread/biscuit	15.82	9.52	7.37	11.50
Sweets	6.33	6.12	6.32	6.25
Data not available	0.00	.68	0.00	.25
Total N	**158**	**147**	**95**	**400**

Total responses exceed 100 due to multiple response

3.4   ANTHROPOMETRIC MEASUREMENTS

The anthropometric measurements of the child include height, weight and mid upper arm circumference (MUAC). All the mothers were requested for permission for their child to be measured, and the details were recorded. The analysis of the same is presented in this section.

Height, Weight and MUAC

The average weight of children between 3-5 years is 12.35 kgs, which increases slightly with the age of the child, irrespective of gender.

The average height of the child between 3-5 years is 95 cms - 95.2 cms among boys and 94.8 cms among girls. The average MUAC is 14.3 cms, which is more or less the same among boys and girls.

Table 19 Distribution of children (3-5 years) by age, average weight, height and MUAC

Age of the child	Male	Total N	Female	Total N	All	Total N
Weight (Mean in kgs)						
3 years (36 - 47M)	11.47	84	11.23	74	11.36	**158**
4 years (48-59M)	12.99	64	12.43	83	12.68	**147**
5 years (60 - 71M)	13.61	43	13.43	52	13.51	**95**
All	**12.46**	**191**	**12.26**	**209**	**12.35**	**400**
Height (Mean in centimetres)						
3 years (36 - 47M)	90.62	84	89.67	74	90.17	**158**
4 years (48-59M)	97.10	64	95.98	83	96.47	**147**
5 years (60 - 71M)	101.18	43	100.38	52	100.74	**95**
All	**95.17**	**191**	**94.84**	**209**	**95.00**	**400**
MUAC (in centimetres)						
3 years (36 - 47M)	14.05	84	14.32	74	14.17	**158**
4 years (48-59M)	14.40	64	14.27	83	14.33	**147**
5 years (60 - 71M)	14.58	43	14.45	52	14.51	**95**
All	**14.29**	**191**	**14.33**	**209**	**14.31**	**400**

Anthropometric measurements

Stunting

The analysis of the data on stunting is presented in Table 20. 29.8% of the children are moderately stunted and 21.3% are severely stunted. Overall, more than half, that is around 51% of the children are moderately and severely stunted.

Table 20 Height for age (stunting) among children aged 3-5 years by Taluk and age of children

Taluk*	Percentage			Mean	+/- Standard deviation	Total N
	Not stunted (>-2SD)	Moderate (-3SD to -2SD)	Severe (< -3SD)			
Yadgir	55.00	35.00	10.00	-1.82	1.16	**60**
Shahapur	40.85	30.99	28.17	-2.44	1.14	**71**
Shorapur	45.59	26.47	27.94	-2.07	1.36	**68**
Gurumitkal	57.14	33.93	8.93	-1.86	1.04	**56**
Wadgera	48.05	29.87	22.08	-2.14	1.05	**77**
Hunasigi	50.00	23.53	26.47	-2.40	1.22	**68**
Age						
3 years (36 - 47M)	44.30	33.54	22.15	-2.17	+/-1.28	**158**
4 years (48-59M)	51.70	28.57	19.73	-2.09	+/-1.15	**147**
5 years (60 - 71M)	52.63	25.26	22.11	-2.15	+/-1.07	**95**
All	**49.0**	**29.8**	**21.3**	**-2.14**	**+/-1.18**	**400**

*   *Taluk wise data is culled out of main sample which is statistically robust*

Graphical representation of height for age by age of the children is given in Figure 5. Among the children aged 3 years, 34% are moderately stunted and 22% are severely stunted. Among the 4 year old children, 29% are moderately and 20% are severely stunted. Among the 5 years old children, 25% are moderately stunted and 22% are severely stunted.

The proportion of moderate and severe stunting is higher among 3 year olds (56%) when compared to four year old children (48%) and 5 year old children (47%).

Figure 5 Height for age (stunting) among children aged 3-5 years by age of children (%)
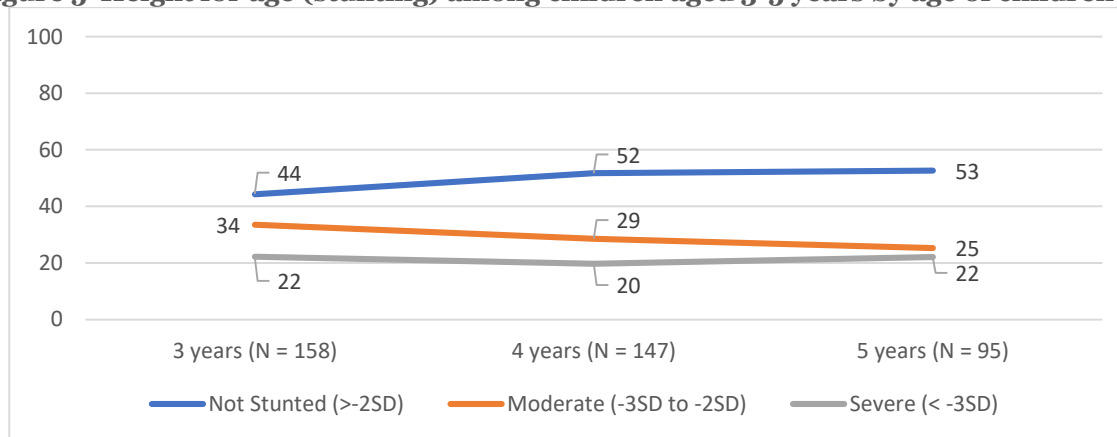
Wasting

Wasting, or low weight-for-height, is a measure of acute undernutrition and represents the failure to receive adequate nutrition leading to rapid weight loss or failure to gain weight normally. Children are defined as wasted if their weight-for-height is more than two standard deviations below (< -2SD) the WHO Child Growth Standards median (WHO, 2009).

Table 21 presents the analysis of wasting among children aged 3-5 years.

Overall, around 28.2% of children suffer from moderate wasting, and 11.7% children from severe wasting.

Table 21 Weight for height (wasting) among children aged 3-5 years by Taluk and age

Taluk*	Percentage			Mean	+/- Standard deviation	Total N
	Not wasted (>-2SD)	Moderate (-3SD to -2SD)	Severe (< -3SD)			
Yadgir	63.83	25.53	10.64	-1.54	1.07	**47**
Shahapur	46.43	41.07	12.50	-1.78	1.07	**56**
Shorapur	63.16	15.79	21.05	-1.56	1.47	**57**
Gurumitkal	68.89	24.44	6.67	-1.53	.99	**45**
Wadgera	48.44	34.38	17.19	-1.83	1.27	**64**
Hunasigi	73.68	26.32	0.00	-1.14	1.19	**57**
Age						
3 years (36 - 47M)	60.76	27.85	11.39	-1.54	+/-1.19	**158**
4 years (48-59M)	58.50	31.29	10.20	-1.57	+/-1.24	**147**
5 years (60 - 71M) *	66.67	9.52	23.81	-1.81	+/-1.26	**21**
All	**60.1**	**28.2**	**11.7**	**-1.57**	**+/-1.21**	**326**

*   *Data needs to be interpreted with caution due to small base*

Graphical representation of the weight for height data among children aged 3-5 years is presented in FIGURE 6. The proportion of severely wasted children is 24% among children aged 5 years, 10.20% among children aged 4 years and 11.39% among children aged 3 years.

Figure 6 Weight for height among children aged 3-5 years by age (%)
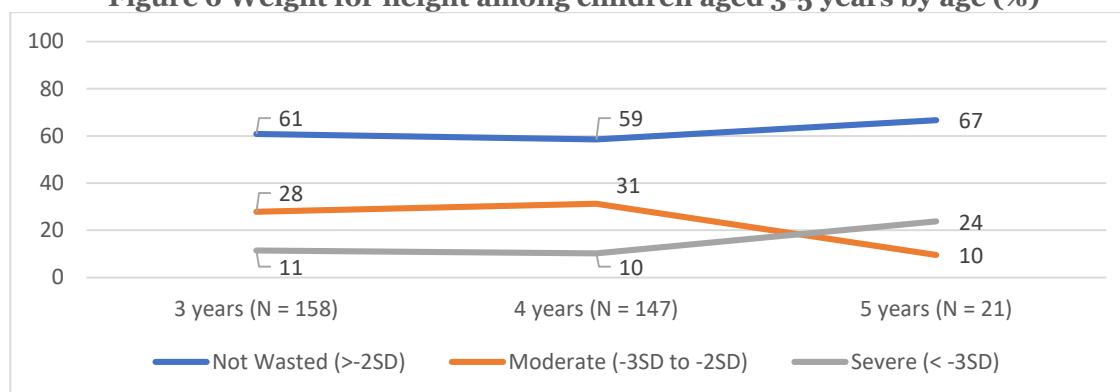
Underweight

The analysis of data pertaining to weight for age (underweight) is presented in Table 22. Overall, about 67% children aged 3-5 years are underweight, with 32.7% being moderately underweight, and 30.5% children being severely underweight.
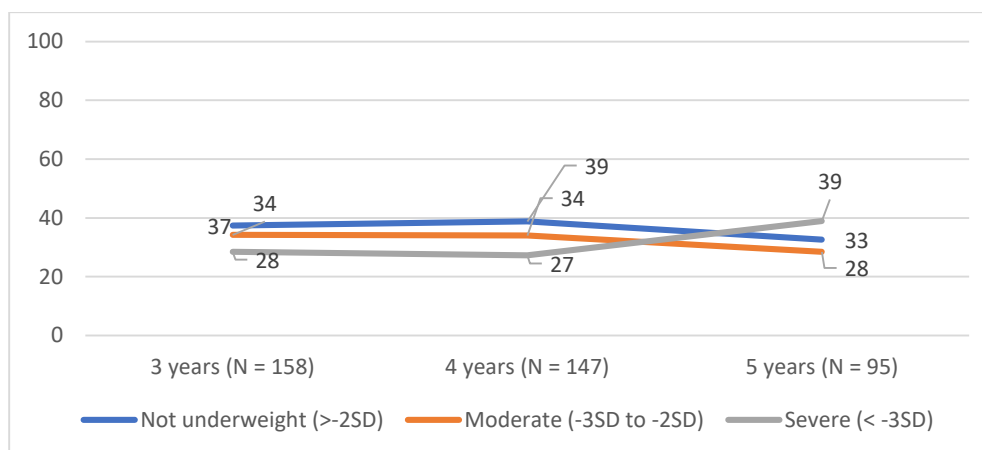
Table 22 Weight for age (underweight) among children aged 3-5 years by Taluk and age

Taluk*	Percentage			Mean	+/- Standard deviation	Total N
	Not underweight (>-2SD)	Moderate (-3SD to -2SD)	Severe (< -3SD)			
Yadgir	45.00	30.00	25.00	-2.21	1.11	**60**
Shahapur	26.76	33.80	39.44	-2.67	.99	**71**
Shorapur	33.82	25.00	41.18	-2.50	1.19	**68**
Gurumitkal	42.86	42.86	14.29	-2.09	.97	**56**
Wadgera	31.17	36.36	32.47	-2.48	1.07	**77**
Hunasigi	44.12	29.41	26.47	-2.34	1.12	**68**
Age						
3 years (36 - 47M)	37.34	34.18	28.48	-2.32	+/-1.11	**158**
4 years (48-59M)	38.78	34.01	27.21	-2.34	+/-1.04	**147**
5 years (60 - 71M)	32.63	28.42	38.95	-2.62	+/-1.12	**95**
All	**36.7**	**32.7**	**30.5**	**-2.40**	**+/-1.09**	**400**

*   *Taluk wise data is culled out of main sample which is statistically robust*

Graphical representation of the underweight data among children aged 3-5 years is presented in FIGURE 7. As the graph indicates, proportion of children severely underweight is higher among 5 year olds (39%) compared to those who are 4 years old (27%) and 3 years old (28%).

Figure 7 Weight for age among children aged 3-5 years by age (%)

Mid Upper Arm Circumference (MUAC)

The analysis of the data on MUAC among the children aged 3-5 years is presented in Table 24. The average MUAC is 14.3 cms which increases with the age of the child. 97.2 % children have normal MUAC and 2.7% children have MUAC between -3SD to -2SD.

Table 23   MUAC among children aged 3-5 years by Taluk and Age

Taluk*	Percentage		Mean	+/- Standard deviation	Total N
	Normal MUAC (>-2SD)	MUAC (-3SD to -2SD)			
Yadgir	98.33	1.67	14.15	.89	60
Shahapur	97.18	2.82	14.17	.92	71
Shorapur	98.53	1.47	14.27	.81	68
Gurumitkal	96.43	3.57	14.25	.96	56
Wadgera	97.40	2.60	14.42	.90	77
Hunasigi	95.59	4.41	14.56	1.09	68
Age					
3 years (36 - 47M)	95.57	4.43	14.17	.99	158
4 years (48-59M)	97.96	2.04	14.33	.88	147
5 years (60 - 71M)	98.95	1.05	14.51	.91	95
All	**97.2**	**2.7**	**14.31**	**.94**	**400**

*   *Taluk wise data is culled out of main sample which is statistically robust*

Graphical representation of the MUAC data of children aged 3-5 years is presented in the the AGE of the child increases.

Figure 8. Proportion of children with normal MUAC increases as the age of the child increases.

Figure 8: MUAC data by age among children 3-5 years (%)
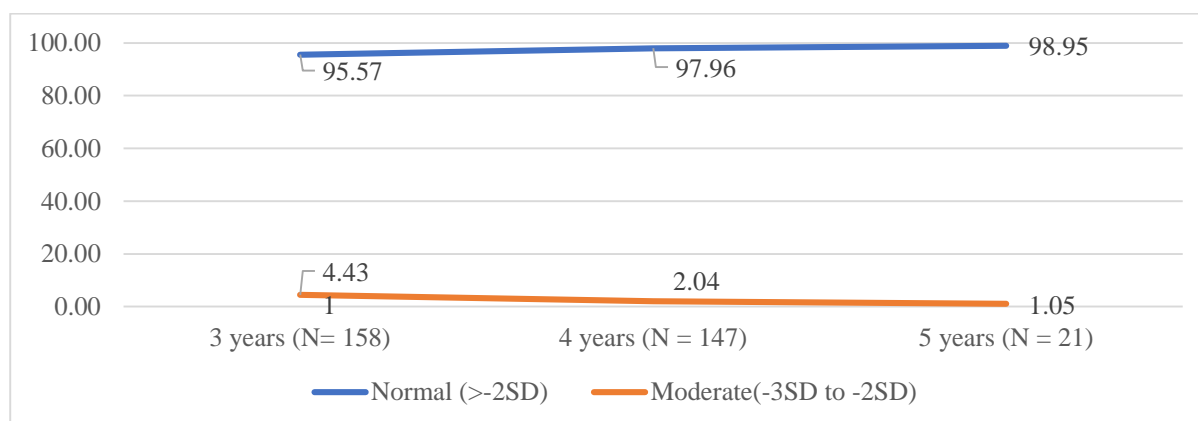
Children 3-5 years not Stunted, not Wasted and not Underweight (%)

Table 25 presents the combined analysis of the data on children aged 3-5 years for calculating percentage of children not stunted, not wasted and not underweight. Overall, about 72.79% children are either stunted, wasted or underweight. The proportion of children (both boys and girls) who are not stunted, not wasted and not underweight decreases as age increases, implying that the nutritional status/ health of the children is deteriorating as they grow older.

Table 24 Proportion of children aged 3-5 years by health status

Parameter	Male	Female	All
Not stunted, not wasted and not underweight			
3 years (36 - 47M)	23.81	27.03	25.32
4 years (48-59M)	34.38	25.30	29.25
All	28.38	26.11	27.21
Either stunted, or wasted or underweight			
3 years (36 - 47M)	76.19	72.97	74.68
4 years (48-59M)	65.63	74.70	70.75
All	71.62	73.89	72.79
Total N	**177**	**223**	**400**

4 – ADOLESCENT GIRLS AND BOYS

The baseline findings of the adolescent group of girls and boys are presented in this chapter.

4.1   PROFILE OF RESPONDENTS

In all, 211 girls and 221 boys were interviewed as part of the study.

The details pertaining to age and education status are presented in Table 25. Average age of the girls and boys is about 14 years. Majority of the boys (92.7%) and slightly more than four fifth of the girls (83.4%) are going to school and about three fourth of them are going to government schools.

About 17.5% of the girls and 7.2% of the boys are illiterate. None of the girls have studied up to class 10, and about 20% of boys are in Class 10.

Table 25 Percentage distribution of adolescent boys and girls by age and education

Profile	Adolescent girls	Adolescent boys
Age		
11 – 14	59.72	57.92
15 – 18	40.28	42.08
Mean (in yrs)	**14.33**	**14.38**
SD	**1.87**	**1.98**
Whether school going		
Attend school	83.41	92.76
Type of school		
Government	75.36	75.57
Private	8.06	17.19
Education status		
Illiterate	17.54	7.24
Up to 5th class	55.92	8.60
6th - 9th class	26.54	63.80
10th and above	0.00	20.36
Total N	**211**	**221**

Mid-day meals and IFA tablets

All the girls and boys going to government schools were asked whether they receive mid- day meals and girls were specifically asked about receipt and consumption of IFA tablets. Of the 167 boys attending government schools, 86.2% reported to have received mid-day meal and of 159 girls attending government school, 91.2% reported the same. Of the 211 adolescent girls, 57.8% reported that they had received IFA tablets and consumed them.

4.2   HOUSEHOLD PROFILE

Occupation of parents

All the boys and girls were asked about the occupation of their mother and father. The analysis of the same is presented in Table 26. Irrespective of gender of the respondent, almost all reported that their mother is an unskilled worker. About 60.7% of the girls and 57% of the boys reported that their father is an unskilled worker. 23.8% of girls and 23% of boys reported that their father is an agricultural worker.

Table 26 Percentage distribution of adolescent boys and girls by occupation of parents

Parents' occupation	Adolescent girls	Adolescent boys
Mother		
Unskilled worker	95.26	97.29
Skilled worker	.47	.45
Self employed	0.00	.45
Others	**3.79**	1.36
Not applicable	.47	.45
Father		
Unskilled worker	60.66	57.01
Agriculture worker	22.75	23.08
Skilled worker	5.21	6.79
Self employed	.47	.90
Private job	.47	.45
Govt job	1.90	.90
Professional	0.00	.90
Business	.95	1.36
Political worker	0.00	.45
Not applicable	7.58	8.14
Total N	**211**	**221**

Household profile

Both girls and boys were asked a set of questions pertaining to their social status, number of members in the family, their household annual income and the number of earning members in the family.   The analysis of the same is presented in Table 27.

60.7% of adolescent girls and 55.2% of adolescent boys are from other backward castes while about 28.1% boys and 24.2% girls from scheduled caste.

The average annual household income is reported to be about Rs.15,000/- for both girls and boys. Hence, all the households are BPL families. While the average family size is about 6 members, the average earning members in the family is reported to be 2.0 by girls and 2.3 by boys.

Table 27 Percentage distribution of adolescent girls and boys by household profile

Household profile	Adolescent girls	Adolescent boys
Social status		
General	3.79	5.43
OBC	60.66	55.20
SC	24.17	28.05
ST	11.37	11.31
Household annual income		
Rs 10000 – 15000	25.00	26.16
Rs 15000 – 20000	5.56	5.79
Rs 20000 – 25000	3.47	3.24
More than Rs 25000	14.81	15.97
Mean (in INR)	**15,000**	**15,000**
SD	**27580.16**	**27087.08**
Income level		
APL	.95	0.05
BPL	99.05	99.55
Average…		
Family size	5.97	5.91
Earning members	1.99	2.26
Total N	**211**	**221**

Ownership of assets

Almost all the girls' and boys' families own a house. About 46.9% girls and 51.1% boys reported their house to be kuccha house.

About 57% girls and 46% boys do not own any vehicles. Fuel driven two-wheeler is owned by 45% of girls and 46% of boys. 9% of girls and 22.6% of boys owned a bicycle.

Table 28 Percentage distribution of boys and girls by ownership of assets

Ownership of assets	Adolescent girls	Adolescent boys
House		
Yes	99.53	98.64
No	.47	1.36
Type of house		
Kuccha	46.92	51.13
Pucca	53.08	48.87
Vehicle ownership		
Bi-cycle	9.0	22.6
Two-wheeler	45.0	46.2
Tractor	6.2	3.6
Four-wheeler	1.9	5.0
Do not own any vehicle	51.7	46.1
Total N	**211**	**221**

4.3   DIETARY PRACTICES

All the adolescent girls and boys were asked regarding the number of meals they have during the day. Majority reported that they had three meals in a day (94.3% among girls and 91.9% among boys). The analysis of the same is presented in Table 29.

Table 29 Percentage distribution of adolescent boys and girls by number of meals in a day

Age	No. of meals in a day	Adolescent girls	Adolescent boys
11-14	2	2.38	1.56
	3	96.03	92.19
	4	1.59	6.25
Total N		**126**	**128**
15-18	2	4.71	3.23
	3	91.76	91.40
	4	3.53	5.38
Total N		**85**	**93**
All ages	2	3.32	2.26
	3	94.31	91.86
	4	2.37	5.88
Total N		**211**	**221**

All the adolescent boys and girls were asked about the food that they take as part of breakfast, lunch, evening snacks and dinner. The analysis of the same is presented in the Table 30.

Rice/roti/ragi ball is the staple food for breakfast, lunch and dinner as reported by almost all the adolescent girls and boys. Eating rice along with sambar and curry for lunch was the norm. Having occasional non vegetarian food such as chicken, mutton, fish for dinner is reported by at least half of the adolescent girls (53%) and boys (62%).

Consumption of egg for lunch is reported by about one tenth each of the adolescent girls (8%) and boys (10%) respectively. Consumption of the same is higher as part of their dinner as reported by 33% of girls and 26% of boys.

Almost 47% of the adolescent girls and 56% of adolescent boys reported that they do not have anything for evening snacks. Consumption of fruit, dairy products, vegetables is minimal in their diets as compared with cereals and pulses.

Table 30 Percentage distribution of adolescent girls and boys by type of food eaten

Type of food	Morning/breakfast	Afternoon/lunch	Evening / snacks	Night/Dinner
Girls				
Fruit	.47	1.42	3.79	6.16
Vegetables / curry	9.00	36.97	3.32	39.34
Roti/rice/idly/ragi/roti	92.42	99.53	3.32	99.53
Pulses / dal / sambar	36.49	74.41	.47	66.82
Non veg	.47	3.79	0.00	53.08
Egg	1.42	7.58	.47	33.18
Dairy (milk / curd)	9.48	7.11	45.97	11.85
Sweet	3.79	0.00	24.64	0.00
Snacks/ bread /biscuit	2.37	.47	0.00	0.00
Nothing	1.90	.47	46.45	0.00
Total N	211			
Boys				

Fruit	.45	.90	3.17	1.81
Vegetables / curry	9.05	33.94	2.71	29.86
Roti/rice/idly/ragi/roti	96.38	99.10	5.43	97.29
Pulses / dal / sambar	47.96	75.11	1.81	49.32
Non veg	0.00	4.07	0.00	61.99
Egg	2.26	10.41	1.81	26.24
Dairy (milk / curd)	7.69	4.52	33.03	6.33
Sweet	2.26	0.00	18.10	0.00
Snacks/ bread /biscuit	.45	0.00	19.46	.45
Nothing	.45	.90	56.11	0.00
Total N	**221**			

4.4 Anthropometric measurements

Height and weight

The average weight of the girls is 36.2 kilograms and their average height is 146.2 cms. The average weight of the boys is 37.2 kilograms, while the average height is 150.4 cms. The age wise average weight and height is presented in the Table 31.

Table 31 Distribution of adolescent boys and girls by average weight and height

Gender	Weight		Height		Total N
	Mean (kgs)	SD	Mean (cms)	SD	
Girls					
11 – 14	33.56	6.95	143.94	8.17	126
15 – 18	40.20	7.00	149.63	6.68	85
All	36.24	7.68	146.23	8.08	211
Boys					
11 – 14	32.00	7.48	144.41	9.02	**128**
15 – 18	44.38	7.41	158.65	8.52	**93**
All	37.21	9.63	150.40	11.27	**221**

Stunting

The analysis of the data on the proportion of adolescent boys and girls with height for age (stunting) is calculated as per the WHO anthro Plus software and the same presented in table 32. Overall, about 12.8% adolescent girls and 12.2% adolescent boys are severely stunted, and 23.7% girls and 23.08% boys are moderately stunted.

14.1% of adolescent girls between 15-18 years are severely stunted, as against 11.9% girls in the age group 11-14 years. 16.1% adolescent boys between 15-18 years are severely stunted as against 9.4% boys in the 11-14 years age group.

Table 32 Height for age (stunting) among adolescent girls and boys by taluk and age

Taluk*	Percentage			Mean	+/- Standard deviation	Total N
	Not stunted (>-2SD)	Moderate (-3SD to -2SD)	Severe (< -3SD)			
GIRLS						
Yadgir	72.41	20.69	6.90	-1.62	.79	**29**
Shahapur	57.89	34.21	7.89	-1.80	.88	**38**
Shorapur	62.86	25.71	11.43	-1.75	1.15	**35**

Gurumitkal	77.78	11.11	11.11	-1.85	.85	**9**
Wadgera	62.50	25.00	12.50	-1.81	.98	**64**
Hunasigi	61.11	13.89	25.00	-1.74	1.39	**36**
Age						
11 - 14	65.87	22.22	11.90	-1.68	1.06	**126**
15 - 18	60.00	25.88	14.12	-1.89	.99	**85**
All	**63.51**	**23.70**	**12.80**	**-1.76**	**1.04**	**211**
			BOYS			
Yadgir	78.57	21.43	0.00	-1.38	1.07	**28**
Shahapur	55.56	31.11	13.33	-1.87	1.06	**45**
Shorapur	75.61	12.20	12.20	-1.63	.92	**41**
Gurumitkal	75.00	25.00	0.00	-1.11	1.09	**12**
Wadgera	63.49	26.98	9.52	-1.62	1.04	**63**
Hunasigi	50.00	18.75	31.25	-1.97	1.48	**32**
Age						
11 – 14	67.19	23.44	9.38	-1.49	1.12	**128**
15 – 18	61.29	22.58	16.13	-1.90	1.06	**93**
All	**64.71**	**23.08**	**12.22**	**-1.66**	**1.11**	**221**

*   *Taluk wise data is culled out of main sample which is statistically robust*

Underweight

The analysis of data is done as per the BMI Cut Offs method whereby irrespective of age, by taking into account only BMI value, girls and boys with BMI of >=18.0 to 24.5 were classified as of normal weight; girls with BMI value of >=16.0 to 17.9 as moderately underweight and girls with BMI value of <16.0 were classified as severely underweight.

Overall, about 47.39% adolescent girls and 52.49% adolescent boys are severely underweight, and 27.96% girls and 30.77% boys are moderately underweight.

28.24% adolescent girls between 15-18 years are severely underweight, as against 60.32% severely underweight girls in the age group 11-14 years. 26.88% adolescent boys between 15-18 years are severely underweight as against 71.09% severely underweight boys in the 11-14 years age group.

Table 35 Body Mass Index among adolescent boys and girls by taluk and age

	Percentage					
Taluk*	**Severe Underweight <16.0**	**Moderate Underweight >=16.0 to 17.9**	**Normal >=18.0 to 24.5**	**Mean**	**+/- Standard deviation**	**Total N**
			BOYS			
Yadgir	64.29	32.14	3.57	15.36	2.01	**28**
Shahapur	44.44	33.33	22.22	16.53	2.55	**45**
Shorapur	56.10	26.83	17.07	15.93	2.4	**41**
Gurumitkal	91.67	0.00	8.33	14.64	1.88	**12**
Wadgera	39.68	41.27	19.05	16.84	3.05	**63**

Hunasigi	59.38	21.88	18.75	16.18	2.95	**32**
Age						
11 – 14	71.09	23.44	5.47	15.2	2.47	**128**
15 – 18	26.88	40.86	32.26	17.59	2.36	**93**
All	**52.49**	**30.77**	**16.74**	**16.21**	**2.69**	**221**
GIRLS						
Yadgir	55.17	24.14	20.69	16.21	2.4	**29**
Shahapur	44.74	28.95	26.32	16.93	2.67	**39**
Shorapur	37.14	31.43	31.43	17.58	3.34	**35**
Gurumitkal	55.56	33.33	11.11	15.94	2.21	**9**
Wadgera	56.25	26.56	17.19	16.4	2.99	**64**
Hunasigi	36.11	27.78	36.11	17.61	2.75	**36**
Age						
11 – 14	60.32	22.22	17.46	16.11	2.59	**126**
15 – 18	28.24	36.47	35.29	17.96	2.94	**85**
All	**47.39**	**27.96**	**24.64**	**16.85**	**2.88**	**211**

5: SHG WOMEN AND SPOUSE

Data relating to SHG women and their husbands is analysed in this Section.

5.1   PROFILE

Age and occupation

In all, 204 SHG women and their spouses participated in the study. Details pertaining to age and occupation of the respondents is presented. The mean age of the SHG women is 39.6 years while that of their spouse is 46 years.   59.8% of SHG women were unskilled workers and 90.69% of their spouses reported the same

Table 33 Percentage distribution of SHG women and spouse by age and occupation

Profile	SHG Women	Spouse
Age		
< 30 years	21.08	4.41
30-39	34.31	33.33
40-49	22.55	24.02
50 and above	22.06	38.24
Mean	**39.66**	**46.02**
SD	**11.09**	**12.29**
Occupation		
Unskilled Worker	59.80	90.69
Skilled Worker	7.35	4.41
Self employed	3.92	.98
Govt job	2.45	1.96
Business	.98	.98
Agricultural worker	24.51	.98
Political worker	.98	0.00
Total N	**204**	**204**

Household profile

All the SHG women and their spouses were asked about their annual household income and family details. The analysis of the same is presented in Table 34. Slightly more than half of the SHG women and their spouses were from other backward castes, (52.94% and 51.47%), while about 20.10% and 11.27% were from scheduled caste and scheduled tribe respectively.

As per the SHG women, the average household annual income is Rs. 17,000/- and the spouse of SHG women reported the average household annual income as Rs.18,000/-. All reported to be BPL families. The SHG women and spouses both reported the average family size as 6.4 and earning members to be 2.3.

All the SHG women reported that they were part of an SHG and are earning something from the SHG group, through micro financing.

Table 34 Percentage distribution of SHG women and spouse by household profile

Household profile	SHG Women	Spouse
Social status		
General	15.69	16.18
OBC	52.94	51.47
SC	20.10	21.08
ST	11.27	11.27
Household annual income		
Rs 10000 – 15000	22.55	21.08
Rs 15000 – 20000	6.86	7.60
Rs 20000 – 25000	5.88	6.37
More than Rs 25000	14.71	14.95
Mean (in INR)	**17,000**	**18,000**
Income level		
BPL	100.0	100.0
Average…		
Family size	6.43	6.38
Earning members	2.29	2.27
Part of SHG and earning something	100.0	100.0
Total N	**204**	**204**

Ownership of assets

Almost all the SHG women and spouses reported to own a house, and around 56.4% reported to live in pucca houses (56.4%). Two-wheeler is owned by about 57% of the SHG families and around 44% of respondents reported they do not own any vehicle.

Table 35 Percentage distribution of SHG women and spouse by ownership of assets

Ownership of assets	SHG Women	Spouse
House		
Yes	99.51	99.51
No	.49	.49
Type of house		
Kuccha	**NR**	43.63
Pucca	56.37	56.37
Vehicle ownership		
Bi-cycle	3.9	5.9
Two-wheeler	56.9	56.9
Tractor	9.8	7.4
Four-wheeler	2.0	1.5
Do not own any vehicle	44.1	43.14
Total N	**204**	**204**

Number of meals in a day and type of food consumed
Almost all the respondents – both SHG women and spouses reported that they had three meals a day.

Table 36 Percentage distribution of SHG women and spouse by number of meals a day

Number of meals a day	SHG Women	Spouse
2	2.94	1.96
3	97.06	96.57
4	0	1.47
Total N	204	204

All the SHG women and spouses were asked about the food that they consume as part of breakfast, lunch, evening snack and dinner. The quantified data is presented in Table 37.

Almost all the SHG women and spouses reported to have rice/roti for breakfast and lunch. Consumption of vegetables in the morning for breakfast is around 10% in case of SHG women and 3% in case of spouse. Consumption of pulses / sambar which is usually eaten with rice/roti/ragi ball is higher at lunch followed by dinner. Tea prepared with milk as evening drink is reported by about two third of SHG women and spouses. Along with staple food i.e. rice/roti/ragi ball, egg and non-vegetarian food is occasionally consumed for the evening meal. Consumption of fruits, vegetables, dairy products constitute a very small part of the daily diet.

Table 37 Percentage distribution of SHG women and spouse by type of food consumed

Type of food	Morning/breakfast	Afternoon/lunch	Evening / snacks	Night / dinner
SHG Women				
Fruit	0.00	.98	2.45	3.92
Vegetables / curry	9.80	48.04	9.80	28.92
Roti/rice/idly/ragi/roti	97.55	97.06	4.41	93.14
Pulses / dal / sambar	45.59	68.63	.98	48.04
Non veg	.49	6.37	0.00	57.84
Egg	2.94	4.90	.98	23.53
Dairy (milk / curd)	7.84	8.33	68.63	3.43
Sweet	0.00	0.00	14.22	0.00
Snacks/ bread /biscuit	3.92	1.47	0.00	0.00
Nothing	.98	.98	26.47	0.00
Total N	204			
Spouse of SHG Women				
Fruit	0.00	1.47	6.86	5.39
Vegetables / curry	2.45	5.88	11.76	.98
Roti/rice/idly/ragi/roti	99.02	98.04	6.86	99.02
Pulses / dal / sambar	36.76	63.24	2.94	50.49
Non veg	.49	7.35	.49	56.37
Egg	2.45	4.90	1.47	22.06
Dairy (milk / curd)	9.80	14.71	66.67	8.82
Sweet	0.00	.98	25.00	.49
Snacks/ bread /biscuit	5.39	1.47	0.00	.49
Nothing	0.00	.98	24.51	0.00
Total N	204			

5.2 Weight and height measurements

Table 38 provides the average weight and height of SHG women and spouses by different age groups. On an average the SHG women weigh 54.5 kgs and measure 151.2 cms in height.

The average weight of spouse of SHG women is 60 kgs and average height is 162 cms.

Table 38 Average weight and height of SHG women and spouse

Age	SHG Women				
	Weight (in kgs)		Height (in cms)		Total N
	Mean	SD	Mean	SD	
< 30 years	49.76	9.88	151.25	5.89	**43**
30-39	54.43	13.32	150.63	5.30	**70**
40-49	57.01	12.60	152.52	7.11	**46**
50 years and above	56.50	10.30	150.72	6.06	**45**
All	**54.48**	**12.07**	**151.21**	**6.04**	**204**
Age	Spouse of SHG Women				
	Weight (in kgs)		Height (in cms)		Total N
	Mean	SD	Mean	SD	
< 30 years	59.98	10.18	159.89	9.62	**9**
30-39	62.41	11.32	162.26	5.75	**68**
40-49	62.27	11.02	162.29	6.17	**49**
50 years and above	56.57	10.33	161.92	6.66	**78**
All	**60.04**	**11.10**	**162.03**	**6.37**	**204**

Body mass index

Body mass index is arrived at based on the weight and height data measured for both SHG women and their spouses. The analysis of the same is presented in the table below. Overall, around 12% of the women are underweight. Around 28% women below 30 years are underweight and this percentage decreases with age. 12.25% of the spouses are underweight, the percentage increasing from 0% underweight below 30 years of age to 21.79% for the age group 50 years and above.

Table 42 Body mass index for SHG women and spouse by age

Age	SHG Women						Spouse					
	Severe Underweight <16.0	Moderate Underweight >=16.0 to 17.9	Normal >=18.0 to 24.5	Mean	SD +/-	Total N	Severe Underweight <16.0	Moderate Underweight >=16.0 to 17.9	Normal	Mean	SD +/-	Total N
< 30 years	4.7	23.3	72.1	21.84	4.8	43	0.0	0.0	100.0	23.61	4.7	9
30-39	2.9	10.0	87.1	24	5.9	70	1.5	7.4	91.2	23.72	4.2	68
40-49	0.0	4.3	95.7	24.63	6.2	46	0.0	4.1	95.9	23.57	3.7	49
50 and above	0.0	2.2	97.8	24.89	4.6	45	6.4	15.4	78.2	21.61	4	78
All	**2.0**	**9.8**	**88.2**	**23.88**	**5.5**	**204**	**2.9**	**9.3**	**87.7**	**22.87**	**4.1**	**204**

COMPARISON OF SELECT INDICATORS OF BASELINE WITH NFHS 5

Sl.no	Particulars	BL data Yadgir	NFHS 5-Yadgir	NFHS 5-Karnataka
1	**Percentage children under five years#**	% (N)	%(N)	%(N)
	Stunted*	47.9 (698)	57.6(215)	35.4 (6785)
	Wasted*	32.5 (695)	17.7 (209)	19.5 (6563)
	Underweight*	53.5 (703)	45.2 (219)	32.9 (6991)
2	**Adolescent BMI (% BMI < 18.5 – total thin)$**	*(11-18 Years)*		*(15-19 years)*
	Boys	83.3 (221)	-	47.1 (576)
	Girls	75.4 (211)	-	42.4 (3993)
# - NFHS 5 Karnataka state report Table 72 $ - NFHS 5 Karnataka state report Table 78				

Statistically Significant differences at 95% CI and p < 0.05

From the table it is evident that there is significant difference in all the three childhood anthropometric measures and in the Adolescent BMI indicators, between this baseline survey findings of Yadgir District (2022) and the NFHS-5 data for Yadgir District (2017-19).

Percent children who are stunted as per Yadgir District NFHS-5 data is significantly higher compared to percent stunted children in the baseline data. However, the two other anthropometric measures of wasting and underweight in baseline survey are significantly higher as compared to NFHS-5. The difference in timing of the current baseline survey (mid 2022) and the NFHS-5 (2017-19) Yadgir District and the variations in the study designs of these two studies (NFHS-5 was a cross-sectional survey from across all the socio-economic section households of the district by covering only 209-219 children, while the current baseline survey was conducted from among 695-703 only below poverty line households from across the District) – could be probable reasons for significant variations between the two sets of findings.

Additionally, the findings of NFHS-5 and CNNS studies from across India indicate that all the three anthropometric measures are highest among the lowest wealth quintile households and are lowest in the highest wealth quintile. This could be the reason why wasting and underweight were significantly higher in Yadgir-baseline (covering only BPL households) as compared to NFHS-5 Yadgir Factsheet data which covered all five economic sections of the households, and why low Adolescent BMI is almost double in this Base Line Survey as compared with NFHS-5 survey (2017-19) Yadgir District

Part II: SOCIAL SURVEY OF YADGIR DISTRICT

Yadgir is one of the two notified Aspirational Districts in Karnataka. The baseline survey Part 1, the fieldwork for which was conducted between June-August 2022, has documented the anthropometric data, some demographic attributes and dietary practices of the region. This would be the foundation document against which the impact of the project interventions to bring about behavioural changes and improved nutritional indicators in the district would be measured.

Yadgir --with an area of 5,234 sq. km, 519 villages spread over six blocks, six taluka panchayats and 123-gram panchayats -- was earlier a part of north Karnataka's Gulbarga district, which borders Andhra Pradesh. It was declared the 30th new district of Karnataka State as per a Gazette notification on 26.12.2009 and it came into existence with effect from 30.12.2009.

In January 2018, in order to improve India's ranking under the UN Human Development Index (HDI), Yadgir was listed as one of the 112 'Aspirational' districts in India which would receive extra focus for development. These districts were identified by NITI Aayog as having the lowest composite indicators in terms of Health and Nutrition, Education, Agriculture & Water Resources, Financial Inclusion & Skill development and Basic Infrastructure. The only other Aspirational District in Karnataka is neighbouring Raichur.

Before independence, several Districts of the present State of Karnataka were part of Bombay Presidency, Madras Presidency, princely State of Mysore, princely State of Hyderabad. The areas administered by the Madras and Bombay Presidencies and Mysore State had a higher tradition of development as those in Hyderabad Karnataka, namely Gulbarga District of which Yadgir was once a part. Even today North Karnataka continues to have lower development indicators than the rest of Karnataka.

The social survey was conducted in all the six blocks of Yadgir district --Yadgir, Gurmitkal, Shahapur, Wadagera, Shorapur and Hunasagi, from 07—11-2022 to 24-11-2022.

The objective was to understand:

- What socio-economic changes, if any, have occurred over the past three generations in the district and how they affected the families
- The aspirations (in terms of education, future employment, health/ livelihood/ food/ growth/ future) of the adolescents, adults and senior citizens of this district.
- What are they willing to do to fulfil these aspirations?
- What are their expectations from the state and central governments?
- What has been the impact of the various welfare schemes on families, on women, youth, students, employment seekers, incomes, in the District?

The villages/villagers were selected to make them as representative as possible, the criteria being used included high and low rainfall areas, near and far from urban areas, small land holders, landless labourers, migrant labourers and Lambani Tandas, or habitations of nomadic 'Banjara' tribal's who perhaps are part of the universal Roma/ Gypsy family. There were six respondents from each village, divided into three categories:

- Adolescents, boys and girls (11 to 18 years),
- Adults, male and female (19 to 50 years)
- Senior Citizens, male and female (above 60 years). and the questions were specifically customised for each segment.

6. THE QUESTIONS

6.1 For Adolescents Girls and Boys: (11-18 years)

- Are you going to school/college?
- How would you like to earn a livelihood? (Farmer/govt. job/any other job, entrepreneur (small business)
- What are the opportunities open to you in terms of education and future employment in your district or outside work?
- Do the women/girls in the family eat after the menfolk, or together as a family?
- Is there a) electricity and b) a toilet with running water in your house?
- Do you have access to a cellular/smartphone?
- For what purposes do you mostly use it?

6.2 For Adults/Parents: (19-50 years)

- Do you want your children to help you at home/farm, or seek employment elsewhere in the district or in a city?
- Would you encourage your daughter to seek higher education and be employed, or get married early?
- Who in the family uses the two-wheeler or cycle the most, and for what?
- What is the main source of news and entertainment in the family (Television/radio/family get-togethers or festivals)?
- Were your children born at home, or at a hospital?
- What was your parents' employment and earnings?
- What is your earning and employment?

6.3 For Senior Citizens (60 + years)

- Do your children and grandchildren have access to better food, better education, higher earnings, better health, and a better quality of life and other facilities than you did? If yes, what are they. If no, what are the reasons
- Do you think women should be educated before they are married? Are your daughters, daughters in law, grand-daughters educated?
- How often do you seek/need medical assistance, and from whom? (Govt doctor, private doctor, local healer, medical professional)
- What are the government welfare schemes that you avail of (Do you have Aadhar/Pan cards or other government documents needed to claim these benefits?)
- Does your family have loans which are difficult to repay?
- What according to you are the main social and economic changes that have taken place in your village in the last 20 years?

The 144 respondents included 24 boys, 24 girls, 24 fathers, 24 mothers, and 24 women and 24 men above 60. During these interviews, the field workers took the opportunity to distribute IEC materials and distribute literature and explaining the benefits of a healthy diet and sanitation, and the importance of educating girls.

6.4 Villages Covered

Sl. No	Taluk	Village name	Date of data collection	Remark	Distance from taluk head quarters (km)	Number of participants (Include all the 3 categories)
1	Yadgir	Mustur	9-11-2022	Near to urban	9km	6
		Idloor	7-11-2022	Far from urban	50km	6
		Samanapur	10-11-2022	Small and landless farmers	30km	6
		Soudagar tanda	14-11-2022	Tanda	20 km	6
TOTAL						24
2	Gurmitkal	kotagera	16-11-2022	Far from urban	30 km	6
		Kaakalwar	17-11-2022	Rain fed area	16km	6
		Dharmapur	18-11-2022	Near to urban	12 km	6
		Borband tanda	19-11-2022	Tanda	8km	6
TOTAL						24
3	Shahapur	Rajapur	07-11-2022	Dry land	23 km	6
		Kakkasagera tanda	09-11-2022	Tanda	35 km	6
		Hosakera	10-11-2022	Far from urban	32km	6
		Bevinhalli	12-11-2022	Near to urban	10 km	6
					TOTAL	24
4	Wadagera	Konahalli	18-11-2022	Near to urban	3 km	6
		Gundloor	17-11-2022	Far from urban	35 km	6
		Kyatnal	15-11-2022	Rain fed area	12 km	6
		Kanthi Thanda	14-11-2022	Tanda	7 km	6
TOTAL						24
5	Shorapur	Yaktapur	07-11-2022	Far from urban	50 km	6
		Lakshmipur	09-11-2022	Near to urban	10 km	6

		Chigirihal	11-11-2022	Dry land	25 km	6
		Kirdalli tanda	14-11-2022	Tanda	30 km	6
TOTAL						24
6	Hunasagi	Kolihal	15-11-2022	Rain fed	15 km	6
		Thirta	16-11-2022	Far from urban	25 km	6
		Banahatti	18-11-2022	Near to urban	15 km	6
		Chennur tanda	8-11-2022	Tanda	10 km	6
	TOTAL					24

6.5 SOME KEY FINDINGS

The results indicate that while the socio-economic and development indices have shown some improvement when compared to the last generation (as per the senior citizens), they are still extremely poor, even when compared to neighbouring districts like Raichur and Kalaburagi, which also formed part of the Hyderabad-Karnataka area

- ➢ Career aspirations among the adolescents seemed to be limited mostly to undefined government jobs, teachers, policemen/women, doctors or agricultural labourers like their parents.
- ➢ Even though most of the parents claimed they wanted their daughters to be educated, the adolescent daughters admitted privately that they were withdrawn from school despite wanting to continue.
- ➢ Most parents and senior citizens (including women) admitted that girls were needed to tend to household work and also help during the harvesting season.
- ➢ The region's top cultivated crops include jowar, paddy, red gram, sunflower and groundnut.
- ➢ There are several government-run primary and secondary schools in the district, but they are mostly understaffed and ill-equipped. The few private schools are for the privileged few that can afford them.
- ➢ While most houses now have toilets, they usually don't have a water connection, and many of these toilets are used as storerooms. Most senior citizens and adults. still prefer using the fields.
- ➢ Although the connections exist, power (and therefore water) supply is intermittent at best.

- The lack of institutes of higher education nearby was often cited as an excuse to prevent girls from continuing with higher education.
- Almost all the villagers have the basic paperwork (Aadhar card, bank accounts, voter ID cards) needed to avail government benefits, but many appear unaware of the benefits they are entitled to.
- According to the state government, there are 12 Allopathic Hospitals, 221 Private Hospitals and Nursing Homes, 51 Government Hospitals, 6 Community Health Centres and 51 Primary Health Centres in the district.[1] Yet the survey indicates that a significant number of childbirths still take place at home, assisted by village midwifes, although the percentage when compared to the earlier generation appears to have decreased.
- Most households have televisions and access to mobile phones, but they are mostly used for entertainment purposes.
- Not a solitary household mentioned radio as a source of either information or entertainment.

6.6 EDUCATION

There is a clear, stark difference in terms of the attitude of parents/grandparents when it comes to educating young girls

Only three (two men, one woman) among the 48 parents and 48 senior citizens interviewed for the socio-economic survey said they wanted their daughters to stay at home rather than study and earn.

However, most adolescent girls (18 of 24), when specifically asked, confided that their parents/ grandparents were against them pursuing higher education and wanted them to help with the household work and agricultural labour.

- Of the 24 adolescent girls interviewed, only two were in class 10, and one was in PUC. Four of the girls polled had discontinued their education before class 9.
- Among the similar number of boys polled, three were in 10, and 5 were in PUCs.
- Only **one student, a boy,** went to a private school.

- [1] https://investkarnataka.co.in/locations/yadgir/

6.7 Aspirations (adolescents)

GIRLS (24)	
Undefined government jobs	7
Teachers	9
Police	4
Doctors	3
Angawadi worker	1
BOYS (24)	
Undefined government jobs	8
Teachers	4
Police	5
Doctors	1
Own Business	3
Other	3

However, 32 of the 48 adolescents quizzed were **unaware or only partially aware** of the specific education and other **qualifications** required for the jobs they aspired for.

6.8 Other indices (adolescents)

Toilets: All 48 adolescents polled said their house had power supply and a bathroom with running water, **but 36 of them said they had no toilets.** Three of the 12 who said they had toilets said they were rarely used.

Mobile phones: 15 of the 48 adolescents polled said they did not have access to mobile phones, even if their family members owned one.

The remaining 33 who did have access to phones said they mostly used them for entertainment, social media and educational videos. Five of them when grilled about the precise nature of the educational videos were unable to answer.

Family meals: Mostly citing school and college timings, 36 adolescents said the only meal they together as a family was dinner. Nine of them said the women and men ate separately in their households. Three said they never had a meal together as a family.

6.9 Parents/Adults (19-50)

- Among men, 22 out of 24 polled said they wanted their daughters to be married **after they were educated**
- Most women (23 out of 24) said that they wanted their daughters to marry only **after they got jobs.** (These figures include four parents who said there were no daughters in their families)

- 17 adults said they did not own any vehicles, while the remaining 31, including some that had several, said they used them mostly for work.
- 13 parents said their children were **born at home.**
- 3 said **some** of their kids were **born at home,** and **others in a hospital**

7.0   LIVELIHOODS:

- 34 of the 48 adults polled worked as agricultural labour, including two that also ran small retail shops, and one that also worked as a part time driver. They earned between Rs.**11, 000 to Rs. 30,000 per annum**
- One man worked in the forest department, and **earned Rs. 38,000**
- One man worked in construction, earned Rs. **75,000**
- One man was a **priest, earned Rs. 50,000**
- One man and one woman ran retail shops, earning Rs. 28,000 and Rs.24,000 respectively per year.
- Two of the women worked as cooks in schools and hostels, **earning Rs.18,000 and Rs.20,000 respectively per year.**
- Two women worked in angawadis earning Rs.**38,000 and Rs. 20,000 respectively**
- One was an ASHA worked, **earning Rs. 22,000**
- One was a tailor, **earning Rs. 18,000**

7.1 SENIOR CITIZENS

While most adults said their parents had no income, almost all the **senior citizens** (48 men and women) polled said they had income ranging from Rs. 12,000 to Rs.25,000, mostly by working as agricultural labourers.

Six of them said they had small loans which they found difficult to repay.

One of them, a gram panchayat leader, said that he **earned Rs. 88,000, (**the **highest income** among all the respondents in the survey)

All senior citizens said their children and grandchildren had better opportunities and access to facilities like education and healthcare than they did, but many (25) said the **quality of the food available had deteriorated and corresponding health** since their time.

The main areas of change cited include

- Pucca houses, clean drinking water and drainage systems
- Better roads, transport, street lights (however, interior villages had very limited government transport available, forcing residents to use more expensive private transport)
- Economic support (govt loans and subsidies)
- Fair market price for their produce
- Opportunities to launch own businesses.
- Smartphones which allow instant access to information
- Self-help groups (for women) and cooperatives

All of them said they wanted their grandchildren (both boys and girls) to be educated.

Many of the women (28) noted that their children today had far more access to junk food and sweets, which impacted their health adversely.

Every senior citizen polled had at least three basic government documents (some had as many as 8) which include Aadhar, Ration cards, health insurance cards (state and national), Pension documents, Voter ID, E-Shram (unorganised worker) registration, and more. Not one of them had a passport.

8. CONCLUSIONS/RECOMMENDATIONS

According to the Economic Survey of Karnataka, (2020-21), while Bangalore Urban stands first with a Human Development Index (HDI) value of 0.729, Yadgir, Kalaburagi and Haveri are the districts in the last 3 positions with HDI value 0.495, 0.534 & 0.539 respectively. [2]

Yadgir is also among the least urbanised districts in Karnataka, and is listed among the Dsitricts with the greatest number of school dropouts.

The district has a total of 55 medical centres of all types totalling a mere 788 beds.

In this Social Survey conducted under the project, several residents of the district, particularly senior citizens, noted a **decline in the quality of food** available. Many noted that that youngsters increasingly preferred mass marketed 'junk' food like chips and sweets to home cooked food.

Cotton is one of the main crops grown in the region. But barring a few small cotton ginning outlets, there are no major cotton industries or garment manufacturing units in the district. Many local women are already stitching garments on a small scale, and such outfits could provide more opportunities to them.

The Economic Survey of Karnataka, (2020-21)[3] refers to exclusive pharma SEZ in Yadgir. However, this has not yet taken off. Apart from the fact that not a single individual polled interviewed in this survey was aware of this, the aspirations of the youngsters are limited mostly to teaching, police and doctors. Not a single adolescent polled said he wanted to be an engineer or a pilot, leave alone work in pharma facility.

Even though the district is mainly agriculture driven, most farmers still use extremely outdated agriculture practices and are unaware or unwilling to adopt new methods. Also, there is a rotation of same crop (like cotton and paddy) which leads to soil infertility and decrease in production.

Although the district is said to be rich in uranium, attempts to set up mines have been stalled due to environmental concerns.

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[2] Page 26
[3] Page 341

Tourism is another sector which could be explored in order to ramp up development and employment opportunities in the district.

While the residents have access to many government facilities and benefits, they seem unaware of how to leverage them to improve their quality of life. There is also a distinct lack of education and awareness about importance of proper nutrition and health, education and hygiene.

Community behavioural change is a priority requirement to start the transformation process. It needs to be triggered and sustained over the long term, despite the inevitable challenges and socio-economic conditions that may be faced on the ground.

This survey will provide the basic data and insights needed to prepare a clear road map for the future, and help predict and overcome some of the potential challenges that might surface.