FARMING SYSTEM FOR NUTRITION

SUMMARY of
BASELINE REPORT FOR KORAPUT

PART I

(Demographic, Socio Economic and Nutrition Status Profile of Study Villages)

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M S Swaminathan Research Foundation, Chennai

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Introduction

The research question underlying the Farming System for Nutrition (FSN) study is − What is the scope of agricultural interventions such as 'Farming System for Nutrition' to improve the nutritional status of the undernourished? The study hypothesis is − specially designed agricultural interventions of FSN can enhance agricultural productivity and farm incomes, leading to more diversified and nutritive dietary pattern, contributing to better nutritional outcomes.

The research study is being conducted at two locations in India, viz. Wardha district in the Vidarbha region of Maharashtra and Koraput district in the KBK region of Odisha, which is declared as a special region due to its backward nature.[1] This report highlights the key findings for Korapu district. Wardha district results were summarized earlier in part one of the baseline summary report. The tables are given in Annex I and II.

Seven villages (658 households with population of 2845) from Boipariguda block of Koraput district have been identified as FSN villages for the study (Table 1). The non-FSN villages comprise of four villages in the same block with 263 households and a population of 1113.

Based on the requirements of the study, a series of eleven surveys were decided on. The list of surveys is in the Annex III. These surveys aim to capture information on demographic and socio-economic characteristics, and status of nutritional characteristics of the population in terms of anthropometric indicators, history of morbidity in the past fortnight, prevalence of clinical signs of nutritional deficiencies and food & nutrient intakes, to build a baseline for the project. This is the crucial base against which the impact of the FSN interventions will be judged through a similar round of surveys towards the end of the project. This report is a summary of Part 1 of the Baseline Report for Koraput based on analysis of information from the six surveys completed so far out of the eleven planned.

Key Findings

The majority of the population belongs to either Scheduled Tribe (ST) category or Other Backward Castes in both FSN and non-FSN villages. The sample villages are reported to be Hindu with no other religion being reported in any of the villages. They have road connectivity and electricity. Wells, bore wells and tube wells are the main sources of drinking water. Open defecation is however the predominant practice.

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[1] The KBK region now consists of eight districts, as the original three districts of Koraput, Bolangir and Kalahandi were divided into eight districts since 1992-93.

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Nutritional Status

The prevalence rates of chronic energy deficiency, underweight, stunting and wasting have been calculated based on the new World Health Organization standards. The number of children in the younger age group < 5 years was 333 in 658 FSN villages and 139 in 263 non FSN villages. The sample is too small to go in for much finer classification of the children by months. The prevalence of underweight as well as stunting is expectedly very high among the children in the age group of 1-5 as the KBK region is among the poorest regions in the country. However both in FSN and non FSN villages, the prevalence of underweight was higher than that of stunting, while wasting rates are much lower as expected. The mean and the standard deviation of heights and weights of children for FSN villages are not statistically different from non FSN villages in 0-5 age group. The mean and standard deviation of heights and weights of the children in the age group of 0-24 months and 24-60 months are also not statistically different between FSN and non-FSN villages (except the standard deviation of weights, where deviation in FSN villages is greater in non-FSN villages in the age group 0-24 months). (Annex II tables).

The prevalence of overall underweight (<-2SD) tended to increase with increase in age both in FSN and non-FSN villages. Under weight increased from 45.0% in the age group of 1-3 to 51.2% in the age group of 3-5 in FSN villages and from 38.5% to 43.4% in the non FSN villages over the same age groups. Stunting increased over the same age groups in the FSN villages from 34.7% to 43%. However, stunting slightly declined with age in the non FSN villages from 35.9% to 34%. Overall wasting increased with age in both FSN and non FSN villages from about 24% to about 28% (Table 3).

The overall prevalence of underweight was similar for boys and girls in the age group of 1-5 at around 48% in the FSN Villages but more boys (47.2%) were underweight than girls(37.5%) in the non FSN villages. Stunting in the age group of 1-5 was found to be higher among girls (41.85) than boys (35.3%) in FSN but in the non FSN villages boys had slightly higher stunting levels at 36.1% compared to girls at 33.9% (Table 4).

The overall prevalence of chronic energy deficiency (CED; BMI <18.5) was higher among women than men in both FSN (42.7% vs. 46.9%) and non-FSN (51.6 % vs. 33.2%) villages (Table 2). The overall prevalence of underweight ($\leq$ -2SD) in children in the age group of 0-60 months in FSN villages was 47.4% and non-FSN villages was 37.4%. Prevalence of stunting for the same age group in the FSN villages was 36.7% and in non FSN villages was 30.8%. The overall wasting reported for FSN and non-FSN villages were 27.4% and 24.3% respectively (Table 4A).

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The prevalence of chronic energy deficiency (BMI <18.5) was found to be varying among the adolescents. In the age group of 10-14 in the FSN villages a large percentage of boys (41.9%) were found to have CED compared to girls (28.3%). In the non FSN villages in the age group of 10-14, higher percentage of girls had CED at 18.9% compared to boys at 12. 5%. In the next age group 15-17 both FSN and NFSN villages had higher percentage of boys had CED compared to girls (Table 5). On the whole for both the age group non-FSN village had fewer adolescents with chronic energy deficiency compared to FSN villages. On the whole the anthropometry was slightly better in non intervention villages compared intervention villages.

Occupation of the head of the household and sources of family Income

The population of the sample villages in Koraput district is predominantly dependent on agriculture. The occupational structure indicates cultivation and agricultural labour are the occupation of majority of households both as primary and secondary occupation in the villages chosen for farming systems for nutrition intervention (FSN) and non-FSN villages. About 73% of the FSN village households and 60% of the non-FSN village households reported either cultivation or agricultural labour as the occupation of the head of the household. About 68% of the FSN village households and 69% of the non FSN village households reported either cultivation or agricultural labour as their secondary occupation. Thus both the FSN and Non FSN village households depend upon agriculture. Non agricultural wage labour appears to be the next important occupation engaging about 20% of the population both at primary and secondary levels (Table 6).

The mean income of the households in FSN villages was Rs. 920 and that of non FSN villages was Rs. 998/- . The mean incomes are not statistically different from each other indicating the villages are at similar levels of per capita incomes. The income classes of the FSN villages compared with the same classes for non-FSN villages show that the mean incomes and the standard deviation across these classes are more or less the same except a slight difference in the top income classes where the non FSN villages was higher than the FSN villages in the penultimate class and the standard deviation of income was greater in the FSN villages than non FSN villages in the highest income group (Table 7). The household per capita income inequality measured by Gini ratios are close to each other for FSN and non-FSN villages at 0.34 and 0.32 respectively

The occupational distribution of the households in the lowest two per capita income classes of less than Rs 460 /- and Rs. 460/- to 720/- consisting of about 45% to 50% of the total households in non FSN and FSN villages shows that most of the households belong to the agricultural household

category. The implication of the occupational distribution and income distribution to the 'Farming System for Nutrition' intervention is that since most of them are engaged in agriculture, the proposed interventions in crop, livestock and homestead land are relevant to the majority of them.

The land distribution shows that about 16% of the households in FSN and non FSN villages are land less, without any access to agricultural land. Those who operate less than 2.5 acres are about 63% in the FSN villages and 54% in the non-FSN villages. Most of the holdings are in the category of 1acre to 2.5 acres. The average size of the land holding in FSN villages is 1.95 acres and in non FSN villages is 2.37 acres. The land operational inequality represented by gini ratio is 0.41 in the FSN cluster and 0.32 in the non FSN cluster. (Table 8)

Cropping Pattern

Food crops dominate the cropping pattern in Koraput district. Paddy is the main crops that account for a major area in the "*Kharif*" season (the monsoon season from June to October). Crops are grown also in "*Rabi*" season, (the winter season from November to March). Out of the total area cropped 81.56% in FSN villages and 96.4% in non-FSN villages is cultivated in the Kharif season. Only 18.44% of the gross cropped area (GCA) in FSN villages and 4.6% of the GCA in non FSN villages is cultivated in Rabi season. There was very little irrigation. Percentage of irrigated area as a percentage of GCA was only 17.5% and 3.5% in the FSN villages and non FSN villages respectively. Most of the irrigation in the FSN villages was provided for the vegetable cultivation and ground nut cultivation in the rabi season.

The crop pattern of the district is highly skewed paddy in the *kharif* season. About 73% of the area in the FSN villages and 65% of the area in the non FSN villages is under paddy in the Kharif season. Ragi was the next important cereal crop grown occupying 7% of the GCA in FSN villages and 15% of the GCA in non-FSN villages. Small millets were cultivated in about 14% of the area in non-FSN villages. The overall diversification Index across the crops was 1.8 in FSN villages and 2.1 in non-FSN villages mostly due to the diversification of cereals away from paddy. The FSN villages cultivated a variety of vegetables but the area allocated was only 6.7%. The crop pattern of the FSN and the non-FSN villages was highly tilted towards cereals and almost similar across the land classes. (Tables 9)

Consumption out of home grown foods

Since the district is a predominantly food crop producing area about half the output of paddy, 63% to 78% of ragi was retained for self consumption. Some pulses such as horse gram were produced

in small quantities only for self consumption. When the production quantities are high most of the vegetables are sold in the market. Quantities ranging from 10 to 30% are retained for self consumption.

The land less household and small land owners of less than one acre of land constitute about 37% of the households in the FSN villages and about 24% in non FSN villages. The average monthly per capita income of the lowest-quartile is about Rs. 320/- per capita per month indicating low standard of living of the people. Public distribution system is the major source of cereal consumption for about 55% of the households in FSN villages and 47% of the non FSN villages. Millets are consumed daily and most of the millets are purchased in the open market. There seems to be a thriving local production and local consumption and local market for millets in the region. It appears that those who produce in large quantities retain for home consumption. But those who has small piece of land and limited production or no production purchase consumption items from the market.

Livestock Holding

Possession of livestock or poultry appears to be common as 463 FSN village households and 192 non FSN village households constituting about 70% in FSN and 73% in non-FSN village households. Draft animals are also owned by 271 households in FSN and 66 house hold in non FSN villages. Of the households possessing either livestock or poultry, about 45.5% of the households in the FSN villages and about 73% of the household in non FSN villages possess milch animals such as Cows and Buffaloes. Many households in Koraput also own small ruminates such as goats and sheep. About 39% of the FSN village households and 37% of the non FSN village households own small ruminates. About 40% of the livestock owning households in FSN villages and 44% in non FSN villages also own poultry.

The possession of livestock according to the land classes shows that the largest number of milch cattle and draught animals are with medium sized land holding size of 1 to 2.5 acres both in FSN and in non-FSN villages. This group also owns most of the small ruminates and poultry in the FSN villages, though the landless are the next important owners of small ruminates and poultry in the FSN villages. (Table 11). In both FSN and non-FSN villages, average possession of livestock is higher among the top land-classes (i.e. 5 to 10 acres and above 10 acres).

Possession of assets: Proposed FSN Interventions

Possession of assets holding is similar in both FSN and non FSN villages. A majority of households amounting to about 83% in FSN and non-FSN villages have access to agricultural land. About 70% in FSN and about 73% in non FSN households owned livestock. About 54% in FSN village households and about 49% of the non FSN village households have access to homestead land. The three types of interventions that constitute farming systems for nutrition have crop, livestock and home garden components. Barring about 11% of households in the FSN villages and about 8% of the households in the non-FSN villages, all the other households are amenable to interventions proposed in the feasibility study of the Farming Systems for Nutrition. Some of these excluded households are in non-agricultural occupations and hence not the target group.

It is clear that the FSN and non FSN villages have similar asset structure and it is possible to compare similar non FSN group with the FSN group after the intervention. About 46% of the FSN village households and about 39% of the non FSN village households possess agricultural land, livestock and homestead land. About 25% of FSN villages and 28% of non FSN villages possess agricultural land and livestock. About 10% of the households possess only agricultural land; about 6 to 7 % only possess livestock and about 1-2 % possess only homestead land. Further the intervention is expected to have spill over effects for all households (Table 12).

Further Plans

The data set collected under the baseline survey of FSN and non-FSN villages comprises information on household's social and economic profile, anthropometry indicators for all members of the household and details on agricultural activities. The data collected has to be further studied more carefully and probed and examined from several angles.

The data collected will be used:

(1) To analyse the food items consumed from market and from own production; to examine alternative avenues the households have to improve dietary diversity in the present scenario either from home consumption or market.

(2) Examine the association between enterprise diversification, dietary diversification and nutritional outcomes especially among women and children.

(3) Examine the association of enabling factors such as water, sanitation and hygiene (WASH) and nutrition outcomes.

Based on this analysis, it is proposed to prepare a paper for publication in a peer reviewed journal by the year-end.

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Annex I

Table 1 Population of FSN and non-FSN Study Villages

Demographic Profile of FSN Villages

Block(s)	Panchayat	Village(s)	No. of Households	Total Population	Population		% of Population	
					Male	**Female**	**Male**	**Female**
Boipariguda	Chandrapada	1.Banuaguda	128	513	246	267	48.0	52.0
		2.Bhejaguda	94	422	194	228	46.0	54.0
		3.Atalguda	77	360	171	189	47.5	52.5
		4.Rauliguda	28	116	54	62	46.6	53.4
		5.Chikima	59	251	120	131	47.8	52.2
		6.Kurkuti	180	774	362	412	46.8	53.2
	Bodaput	7.Maliguda	92	409	195	214	47.7	52.3
		Total	**658**	**2845**	**1342**	**1503**	**47.2**	**52.8**

Demographic Profile of non-FSN Villages

Block(s)	Panchayat	Village(s)	No. of Households	Total Population	Population		% of Population	
					Male	**Female**	**Male**	**Female**
Boipariguda	Doraguda	1.Bergaon	119	520	242	278	46.5	53.5
		2.Kusumguda	26	118	59	59	50.0	50.0
		3.Doraguda	83	310	153	157	49.4	50.6
		4.Majhiguda	35	165	78	87	47.3	52.7
		Total	**263**	**1113**	**532**	**581**	**47.8**	**52.2**

Table 2: DISTRIBUTION (%) OF ADULT MEN & WOMEN ACCORDING TO BODY MASS INDEX (BMI)*

BMI	Nutritional Status	FSN		NON-FSN	
		MEN (n: 734)	**WOMEN (n:809)**	**MEN (n:299)**	**WOMEN (n:320)**
< 16.0	CED III	4.4	8.7	6.7	11.9
16.0 - 17.0	CED II	9.4	13.7	5.4	12.5
17.0 - 18.5	CED I	28.9	24.5	21.1	27.2
< 18.5	Overall CED	**42.7**	**46.9**	**33.2**	**51.6**
18.5 - 23.0	Normal	51.6	45.7	59.2	44.1
23.0 - 27.5	Overweight	4.6	7.0	6.0	3.1
≥ 27.5	Obesity	1.1	0.4	1.7	1.2

CED: Chronic Energy Deficiency

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Table – 3 PREVALENCE (%) OF UNDERNUTRITION AMONG 1 – 5 YEAR CHILDREN ACCORDING TO SD CLASSIFICATION USING WHO STANDARDS: By Age Group

NUTRITIONAL STATUS	SD Cut-off	FSN VILLAGES						NON-FSN VILLAGES					
		1 – 3 Yrs		3 – 5 Yrs		1 – 5 Yrs Pooled		1 – 3 Yrs		3 – 5 Yrs		1 – 5 Yrs Pooled	
		n	%	n	%	n	%	n	%	n	%	n	%
UNDERWEIGHT (Weight-for Age)													
Severe	< - 3 SD	16	13.6	19	15.7	35	14.6	5	12.8	9	17.0	14	15.2
Moderate	- 3 SD to - 2 SD	37	31.4	43	35.5	80	33.5	10	25.6	14	26.4	24	26.1
Overall	< - 2 SD	53	45.0	62	51.2	115	48.1	15	38.5	23	43.4	38	41.3
Normal	≥ - 2 SD	65	55.0	59	48.8	124	51.9	24	61.5	30	56.6	54	58.7
STUNTING (Height for Age)													
Severe	< - 3 SD	13	11.0	21	17.4	34	14.2	6	15.4	7	13.2	13	14.1
Moderate	- 3 SD to - 2 SD	28	23.7	31	25.6	59	24.7	8	20.5	11	20.8	19	20.7
Overall	< - 2 SD	41	34.7	52	43.0	93	38.9	14	35.9	18	34.0	32	34.8
Normal	≥ - 2 SD	77	65.3	69	57.0	146	61.1	25	64.1	35	66.0	60	65.2

	WASTING (Weight for Height)											
Severe	< - 3 SD	9	7.6	6	5.0	15	6.3	2	5.1	3	5.7	5	5.4
Moderate	- 3 SD to - 2 SD	20	16.9	29	24.0	49	20.5	7	17.9	12	22.6	19	20.7
Overall	< - 2 SD	29	24.5	35	29.0	64	26.8	9	23.0	15	28.3	24	26.1
Normal	≥ - 2 SD	89	75.5	86	71.0	175	73.2	30	77.0	38	71.7	68	73.9

Table – 4 PREVALENCE (%) OF UNDERNUTRITION AMONG 1 – 5 YEAR CHILDREN ACCORDING TO SD CLASSIFICATION USING WHO STANDARDS: By Gender

		FSN VILLAGES						NON-FSN VILLAGES					
		Girls		Boys		Pooled		Girls		Boys		Pooled	
NUTRITIONAL STATUS	SD Cut-off	n	%	n	%	n	%	n	%	n	%	n	%
		UNDERWEIGHT (Weight-for Age)											
Severe	< - 3 SD	24	17.9	11	10.5	35	**14.6**	5	8.9	9	25.0	14	**15.2**
Moderate	3 SD to 2 SD	41	30.6	39	37.1	80	**33.5**	16	28.6	8	22.2	24	**26.1**
Overall	< - 2 SD	65	48.5	50	47.6	115	**48.1**	21	37.5	17	47.2	38	**41.3**
Normal	≥ - 2 SD	69	51.5	55	52.4	124	**51.9**	35	62.5	19	52.8	54	**58.7**

		STUNTING (Height for Age)										
Severe	< - 3 SD	21	15.7	13	12.4	34	**14.2**	7	12.5	6	16.7	13	**14.1**
Moderate	3 SD to 2 SD	35	26.1	24	22.9	59	**24.7**	12	21.4	7	19.4	19	**20.7**
Overall	< - 2 SD	56	41.8	37	35.3	93	**38.9**	19	33.9	13	36.1	32	**34.8**
Normal	≥ - 2 SD	78	58.2	68	64.7	146	**61.1**	37	66.1	23	63.9	60	**65.2**
		WASTING (Weight for Height)										
Severe	< - 3 SD	11	8.2	4	3.8	15	**6.3**	2	3.6	3	8.3	5	**5.4**
Moderate	3 SD to 2 SD	24	17.9	25	23.8	49	**20.5**	8	14.3	11	30.6	19	**20.7**
Overall	< - 2 SD	35	26.1	29	27.6	64	**26.8**	10	17.9	14	38.9	24	**26.1**
Normal	≥ - 2 SD	99	73.9	76	72.4	175	**73.2**	46	82.1	22	61.1	68	**73.9**

Table 4A: PREVALENCE (%) OF UNDERNUTRITION AMONG 0 – 5 YEAR CHILDREN ACCORDING TO SD CLASSIFICATION USING WHO STANDARDS: BOYS + GIRLS

Age Group (Months)	Total n	INDICATOR												
		UNDERWEIGHT (Weight for Age < Median – 2 SD)				STUNTING (Height for Age < Median – 2 SD)					WASTING (Weight for Height < Median – 2 SD)			
		n	% Prevalence	95 % CI		n	% Prevalence	95 % CI		n	% Prevalence	95 % CI		
				LL	UL			LL	UL				LL	UL
FSN VILLAGES														
0 - 24	149	39	26.2	19.1	33.2	27	18.1	11.9	24.3	26	17.4	11.4	23.5
24 - 60	121	89	73.6	65.7	81.4	72	59.5	50.8	68.3	48	39.7	31.0	48.4
0 - 60	270	128	47.4	41.5	53.4	99	36.7	30.9	42.4	74	27.4	22.1	32.7
NON-FSN VILLAGES														
0 - 24	54	13	24.1	12.7	35.5	10	18.5	8.2	28.9	9	16.7	6.7	26.6
24 - 60	53	27	50.9	37.5	64.4	23	43.4	30.1	56.7	17	32.1	19.5	44.6
0 - 60	107	40	37.4	28.2	46.6	33	30.8	22.1	39.6	26	24.3	16.2	32.4

L L : Lower Level   U L: Upper Level

Table 5: DISTRIBUTION (%) OF SCHOOL AGE & ADOLESCENT CHILDREN ACCORDING TO AGE/SEX SPECIFIC BMI VALUES BY SD CLASSIFICATION

Particulars	n	Undernutrition Severe	Undernutrition Mod-erate	Normal	Over-nutrition Over-weight	Over-nutrition Obese	Overall Undernutrition <Med. − 2SD	95% C I L L	95% C I UL
		<Med. − 3SD	− 3SD to − 2SD	− 2SD to + 1SD	+ 1SD to + 2SD	≥ + 2SD			
5-9 Years :					**BOYS**				
FSN VILLAGES	149	14.1	38.9	46.3	0.0	0.7	**53.0**	45.0	61.0
NON-FSN VILLAGES	74	10.8	11.1	88.9	1.4	0.0	**36.5**	25.5	47.5
					GIRLS				
FSN VILLAGES	186	8.1	30.1	61.3	0.5	0.0	**38.2**	31.2	45.2
NON-FSN VILLAGES	63	4.8	22.2	93.3	0.0	0.0	**27.0**	16.0	37.9
					BOYS + GIRLS				
FSN VILLAGES	335	10.7	34.0	54.6	0.3	0.3	**44.8**	39.5	50.1
NON-FSN VILLAGES	137	8.0	24.1	67.1	0.7	0.0	**32.1**	24.3	39.3
10-14 Years :					**BOYS**				
FSN VILLAGES	136	16.2	25.7	56.6	1.5	0.0	**41.9**	33.6	50.2
NON-FSN VILLAGES	56	1.8	10.7	87.5	0.0	0.0	**12.5**	3.8	21.2
					GIRLS				
FSN VILLAGES	159	6.3	22.0	71.7	0.0	0.0	**28.3**	21.3	35.3
NON-FSN VILLAGES	53	1.9	17.0	79.2	1.9	0.0	**18.9**	8.3	29.4
					BOYS + GIRLS				
FSN VILLAGES	295	10.8	23.7	64.7	0.7	0.0	**34.6**	29.1	40.0
NON-FSN VILLAGES	109	1.8	13.8	83.5	0.9	0.0	**15.6**	8.8	22.4

15-17 Years:				BOYS					
FSN VILLAGES	86	9.3	18.6	72.1	0.0	0.0	**27.9**	18.4	37.4
NON-FSN VILLAGES	18	0.0	11.1	88.9	0.0	0.0	**11.1**	0.0	25.6
				GIRLS					
FSN VILLAGES	72	2.8	8.3	88.9	0.0	0.0	**11.1**	3.9	18.4
NON-FSN VILLAGES	30	0.0	6.7	93.3	0.0	0.0	**6.7**	0.0	15.6
				BOYS + GIRLS					
FSN VILLAGES	158	6.3	13.9	79.7	0.0	0.0	**20.2**	14.0	26.5
NON-FSN VILLAGES	48	0.0	8.3	91.7	0.0	0.0	**8.3**	0.5	16.2

* WHO Reference Values

Table 6: Distribution of Households by Primary and Secondary Occupation of Head of the Household

	FSN		Non-FSN	
Occupation	**Primary**	**Secondary**	**Primary**	**Secondary**
Cultivation	417(63.4)	73(11.1)	103(39.2)	48(18.3)
Agricultural wage labour	68(10.3)	374(56.8)	54(20.5)	134(51.0)
Non agricultural wage labour	105(16.0)	96(14.6)	68(25.9)	51(19.4)
Artisan/independent work	8(1.2)	2(0.3)	5(1.9)	6(2.3)
Others	60(9.1)	40(6.1)	33(12.6)	7(2.7)
No Secondary occupation	-	73(11.1)	-	17(6.5)

(% figures in parentheses)

Table 7 Distribution of Households based on Income

	FSN			NON-FSN		
MPCI	Percent	Avg. PCI	% of Tot inc	Percent	Avg. PCI	% of Tot inc
below 460	25.2	316.0	316.0	15.6	336.9	336.9
460 to 720	24.6	580.0	580.0	28.5	566.3	566.3
720 to 1120	25.2	913.8	913.8	29.7	882.2	882.2
above 1120	24.9	1875.0	1875.0	26.2	1991.2	1991.2
Total	100	920.35	920.4	100	998.08	998.1

GINI: non-FSN = 0.32 FSN = 0.34 **Avg. PCI** = Average per capita income
MPCI = Monthly per capita income class **% of tot. In** = Percentage to total income

Table 8: Distribution of Households across Land Classes

Land Class	FSN Villages			Non-FSN Villages		
	Avg. Land (acr)	HH (%)	Total Land (%)	Avg. Land (acr)	HH (%)	Total Land (%)
<1 Acres	0.5	20.8	6.4	0.5	8.0	2.1
1 to <2.5 Acres	1.4	42.0	36.9	1.6	45.6	35.9
2.5 to <5 Acres	3.2	14.4	28.6	3.3	20.5	33.8
5 to 10Acres	6.1	5.5	20.5	5.5	8.0	22.4
>=10Acres Above	16.4	0.8	7.6	10.0	1.1	5.8
Total	1.95	83.5	100	2.37	83.2	100

Table 9: Cropping pattern

Distribution of Gross Cropped Area

Crop group	FSN	Non. FSN
Cereals	81.11	95.51
Pulses	4.35	1.29
Oilseeds	5.53	0.74
Sugarcane	0.54	0.00
Cashew	1.71	1.95
Veg & fruits	6.76	0.51
Total	100.00	100

Table 10: Percent Households according to major source of the commodity commonly consumed under different food groups – FSN Villages

FOOD GROUPS	PERCENT HOUSEHOLDS ACCORDING TO MAJOR SOURCE OF COMMODITY (n=658)			
	Home Grown	Purchased from PDS	Purchased from Open Market	Other Sources
Cereals & Millets	32.9	52.4	14.4	0.3
Cereals	31.1	55.7	12.9	0.3
Millets	21.4	0.0	77.6	0.9
Pulses & Legumes	3.5	0.0	96.3	0.2
Green Leafy Vegetables	9.0	0.0	84.0	6.9
Roots & Tubers	3.5	0.0	86.9	9.6
Other Vegetables	18.3	0.0	79.6	2.1
Nuts & Oil Seeds	10.3	0.0	83.1	6.6
Condiments & spices	7.0	0.0	67.6	25.4
Milk & Milk Products	11.9	0.0	76.2	11.9
Fruits	11.2	0.0	84.0	4.8
Fish & Other Sea Foods	0.2	0.0	52.3	47.5
Meat & Flesh Foods	1.3	0.0	97.3	1.4
Fats & Oils	0.0	0.0	100.0	0.0
Sugar & Jaggery	0.0	0.0	99.5	0.5

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**Table 10: Percent Households according to major source of the commodity commonly –
Non-FSN Villages**

FOOD GROUPS	PERCENT HOUSEHOLDS ACCORDING TO MAJOR SOURCE OF COMMODITY (n=263)			
	Home Grown	Purchased from PDS	Purchased from Open Market	Other Sources
Cereals & Millets	38.2	43.9	17.6	0.4
Cereals	37.3	47.8	14.5	0.4
Millets	34.9	0.0	64.4	0.8
Pulses & Legumes	1.1	0.0	98.9	0.0
Green Leafy Vegetables	4.6	0.0	93.9	1.5
Roots & Tubers	0.4	0.0	90.4	9.2
Other Vegetables	14.4	0.0	84.4	1.1
Nuts & Oil Seeds	0.8	0.0	91.5	7.7
Condiments & spices	3.0	0.0	70.0	27.0
Milk & Milk Products	29.4	0.0	52.9	17.6
Fruits	1.9	0.0	94.9	3.1
Fish & Other Sea Foods	0.0	0.0	42.2	57.8
Meat & Flesh Foods	1.5	0.0	98.1	0.4
Fats & Oils	0.0	0.0	99.6	0.4
Sugar & Jaggery	0.0	0.0	100.0	0.0

Table No. 11 Percentage and average possession of livestock across land-classes

FSN	Percentage of Livestock across Land-classes				Average livestock per household across Land-classes			
Land-class	Milch	Small Ruminants	Poultry	Draught	Milch	Small Ruminants	Poultry	Draught
landless	3.3	6.0	5.7	2.0	0.2	0.4	0.4	0.1
< 1	18.0	14.8	20.0	15.5	0.7	0.8	1.1	0.7
1 to 2.5	48.8	41.3	39.0	47.6	0.9	1.1	1.0	1.0
2.5 to 5	19.1	19.7	21.2	23.2	1.1	1.6	1.6	1.5
5 to 10	8.8	14.9	13.3	9.7	1.3	3.1	2.7	1.6
>10	2.1	3.3	0.8	2.0	2.2	5	1.2	2.4
Total	100	100	100	100				
NON-FSN	Percentage of Livestock across Land-classes				Average livestock per household across Land-classes			
Land-class	Milch	Small Ruminants	Poultry	Draught	Milch	Small Ruminants	Poultry	Draught
landless	5.1	9.2	6.0	1.9	0.4	0.5	0.4	0.1
<1	5.9	3.1	7.3	4.5	1.0	0.4	1.1	0.3
1 to 2.5	44.7	44.6	54.7	36.1	1.4	1.0	1.4	0.5
2.5 to 5	28.3	28.1	19.0	31.0	2.0	1.4	1.1	0.9
5 to 10	12.8	11.9	10.4	21.9	2.3	1.5	1.6	1.6
>=10	3.2	3.1	2.5	4.5	4.0	2.7	2.7	2.3
Total	100	100	100	100				

Table No. 12 Planned FSN Interventions

Interventions	FSN	Non-FSN
	% of Households	
Crop+Livestock+Homegarden	46.0	39.2
Crop+Livestock	24.5	28.5
Livestock+Homegarden	2.0	2.7
Crop+Homegarden	6.2	5.3
Crop	6.7	10.3
Livestock	7.6	6.8
Homegarden	0.5	1.9
Total Intervention Households	**93.5**	**94.7**
Agricultural Labourers	10.3	20.5
Non Agricultural Households	16.0	25.9

Annex II

Height of Children in FSN and Non-FSN villages

Ageclass		control	intervention	Stat. Dif
0-24	Mean	72.96	73.94	No Diff
	SD	6.40	7.48	No Diff
24-60	Mean	91.72	92.20	No Diff
	SD	8.98	8.26	No Diff
0-60	Mean	85.76	85.77	No Diff
	SD	12.02	11.83	No Diff

Weight of Children in FSN and Non-FSN villages

Ageclass		control	intervention	Stat. Dif
0-24	Mean	8.06	8.07	No Diff
	SD	1.46	1.80	FSN>NonFSN
24-60	Mean	11.72	11.82	No Diff
	SD	2.36	2.09	No Diff
0-60	Mean	10.56	10.50	No Diff
	SD	2.72	2.68	No Diff

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Annex III

List of Baseline Household Surveys

Sl.	Particulars	Purpose	Administered on
1	Detailed baseline household survey on demography, agriculture and socio-economic aspects	To document the baseline demographic, occupation and socio-economic profile of households	All households in FSN and non-FSN villages
2	Baseline food & nutrient consumption survey (three seasons)	To understand seasonal variations in consumption at household level	All households in FSN and non-FSN villages
3	Baseline employment survey (including seasonal migration survey – three rounds)	Profiling the current occupation and migration pattern	All households in FSN and non-FSN villages
4	Baseline status of agriculture, animal husbandry and home garden	To plan FSN interventions	All households in FSN and non-FSN villages
5	Baseline income and expenditure survey	To capture different sources of income and production and consumption expenditure	All households in FSN and non-FSN villages
6	Baseline health & nutrition survey (anthropometric and history of morbidity)	To collect information on height, weight and morbidity (preceding fortnight) of all members	All individuals from each of the households in FSN and non-FSN villages
7	Baseline Time Use survey	To capture time spent by both men and women on farm, non-farm and household activities	Sub sample across all categories of households in FSN and non-FSN villages
8	Baseline survey on access to resources and decision making	To collect information on gender roles and responsibilities	Sub sample across all categories of households in FSN and non-FSN villages
9	Baseline intra-household dietary survey (24 hour recall)	To document existing dietary pattern within the household	Sub sample across all categories of landed households in FSN and non-FSN villages
10	Biochemical indicators through collection of blood sample	To assess level of iron and vitamin-A deficiency	All children 1-5 yrs, adolescent girls 12-17 yrs and women 18-45 yrs in FSN and non-FSN villages
11	Baseline cost of cultivation survey	To collect information on cost of cultivation of major crops	Sub sample across all categories of households in FSN and non-FSN villages

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