



## FOOD SECURITY OF RURAL HOUSEHOLDS UNDER MAJOR FARMING SYSTEMS IN HYDERABAD-KARNATAKA REGION- AN ECONOMIC ANALYSIS

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### ABSTRACT

The study was undertaken in Hyderabad-Karnataka region. Four major farming systems viz, Crop+Dairy (C+D) system, Crop+ Horticulture (C+H) system, Horticulture +Dairy (H+D) system and Crop +Dairy+Horticulture (C+D+H) system were identified based on preliminary survey and previous studies in the area. The study based on the primary data obtained 40 from each farming system of 160 farmers covering equal samples under major cropping systems elicited through survey 2016-17. Average household monthly consumption of cereals, pulses and vegetables was highest in Crop+ Dairy+ Horticulture (71.53, 8.10 and 33.79 kg) farming system and consumption of cereals was lowest in Crop+Horticulture farming system. The consumption of pulses and vegetables was lowest in Horticulture+ Dairy farming system. The household monthly consumption of milk (6.16 lit) and non-vegetarian foods like meat (0.97 kg) and egg (5) was very low in Horticulture +Dairy farming system compared to other farming systems.

**KEY WORDS:** farming system, cereals, pulses, vegetables.

### INTRODUCTION

Livelihood is defined as adequate stock and flow of food and cash with an individual or a family to meet its basic needs. Livelihood security means secured ownership of, or access to, resources and income earning activities, including reserves and assets to offset risks, ease shocks and meet contingencies.

The outcomes of livelihood security include economic security, food security, educational security, health security, habitat security and social network security. With rising population, declining land-man ratio and increasing mechanization in farm operations, agriculture alone is not able to provide adequate income and employment to households in India. Integration of farm enterprises provides better livelihood in terms of increased food production, higher net income, improved productivity, and reduced income imbalance between agricultural laborer and urban factory worker. Introduction of appropriate farming systems has been proposed as one of the approaches to achieve better growth in agriculture and livelihood.

### METHODOLOGY

The study was undertaken in Hyderabad-Karnataka region. The study has been conducted based on the primary data. The primary data has been collected from farm households in Hyderabad-Karnataka region. Tabular analyses along

with econometric analyses have been adopted to fulfill the specific objectives of the study.

### RESULTS & DISCUSSION

#### Quantity of food consumption

In order to assess the relationship between pattern of consumption and farming system, quantities of different food items consumed by the sample households were compared per family (Table I and II) as well as per capita basis. Basically, in all the farming systems the dietary pattern of households was mainly cereal based. Rice and jowar were the main food grains consumed by the sample households.

Average household monthly consumption of cereals (consists of rice, jowar, ragi and wheat) was highest in Crop+Dairy+Horticulture (80.85 kg) farming system and lowest in Crop+Horticulture (55.64 kg) farming system. Next to rice, jowar was widely consumed in this region.

Average monthly household consumption of pulses was highest in Crop+ Dairy+ Horticulture (8.10kg) farming system and lowest in Crop+ Dairy (4.36kg) farming system. Consumption of vegetables was very low in case of Horticulture + Dairy (16.81 kg) farming system compared to Crop+ Dairy+ Horticulture (33.79 kg). In case of Crop+ Dairy (21.84 kg) and Crop+Horticulture (22.81 kg) it was almost same. Average household monthly consumption of fruits was highest in Crop+ Dairy+ Horticulture (48.45 kg) and lowest in Horticulture +Dairy farming system.

**TABLE I.** Food consumption pattern of households under major farming systems

Particulars	Farming System (kg/month/family)				
	C+D	C+H	H+D	C+D+H	Average
Average family size	5	5	4	6	5
Rice	36.26	25.27	29.67	32.44	50.38
Jowar	25.00	28.17	25.46	35.92	29.15
Ragi	1.70	1.05	1.48	1.31	1.38
Wheat	0.85	1.15	0.44	1.86	1.32
Cereals and millets	63.81	55.64	57.05	71.53	80.85
Field bean	0.46	1.95	1.46	2.48	1.98
Red gram	0.36	1.11	0.22	1.46	0.87
Other pulses	3.54	3.32	3.83	4.16	2.71
Total Pulses	4.36	6.38	5.51	8.10	5.56
Tomato	3.10	6.20	4.07	8.59	5.49
Potato	4.07	2.97	2.21	4.25	3.37
Brinjal	2.26	1.99	1.99	2.66	2.22
Beans	2.44	1.77	-	2.92	1.78
Roots & tubers	3.32	3.19	3.63	4.61	3.68
Leafy vegetables	1.33	1.11	1.77	2.21	1.60
Cabbage & cauliflower	0.27	0.49	0.66	2.48	0.97
Onion	5.05	5.09	2.48	6.07	4.67
Vegetables	21.84	22.81	16.81	33.79	23.78
Mango	28.92	34.10	20.37	44.73	32.03
Banana	1.02	1.24	1.50	2.26	1.13
Papaya	0.58	0.27	1.00	1.46	0.57
Fruits	30.52	35.61	22.87	48.45	33.73
Edible oil (lit)	3.76	4.21	1.59	4.83	3.59
Milk (lit)	13.99	11.96	6.16	18.73	12.71
Sugar	4.92	4.69	2.21	5.98	4.45
Meat	2.92	2.48	0.97	2.52	2.22
Egg (No.)	13	9	5	18	11

Note: C+D: Crop+Dairy,  
C+H: Crop+Horticulture,  
H+D: Horticulture+Dairy and  
C+D+H: Crop+Dairy+Horticulture

#### Indian Council of Medical Research (ICMR) Recommendation:

Cereals=13.99 Kg/month/person

Pulses=1.21 Kg/month/person

But during fruit season since each household is having horticulture crop orchard the consumption of which stood more.

The household monthly consumption of milk was highest in Crop+ Dairy +Horticulture (18.73 lit) farming system and lowest in Horticulture+dairy system and also non-vegetarian foods like meat (0.97 kg) and egg (5) was very low in Horticulture+ Dairy farming system compared to other farming systems. Average household monthly consumption of other food items like sugar and edible oil was maximum in Crop+ Dairy+ Horticulture farming system to the extent of 5.98 kg and 4.83 lit. Respectively.

The per capita consumption on monthly basis of Crop+ Dairy+ Horticulture was high in all food items except in case of meat (Table II). Farm households of all farming systems are on par with ICMR norms in cereal consumption. In case of pulses the consumption level of all farm households is above the ICMR norms except Crop+Dairy farm households.

#### Expenditure pattern on food

The per household monthly expenditure pattern on food items under major farming systems are presented in Table III. The total per household expenditure on food items was highest (Rs. 2,631.46) in Horticulture +Dairy farming system and lowest (Rs. 1,359.88) in Crop +Dairy farming system. Cereals formed major portion of total expenditure on food items. Expenditure on cereals as a portion of total expenditure was more in Crop +Dairy+Horticulture farm households who expended 59.60 per cent of their total expenditure on cereals. The households under Horticulture+ Dairy farming system that had the highest income spent 41.94 per cent of the total expenditure on cereals.

The expenditure on pulses and fruits was considerably low in all farming systems and expenditure on milk was nil except Crop+Horticulture (5.25 %) farming system. It was interesting to note that the expenditure on tobacco products as a proportion of total expenditure was highest (15.12 %) in Crop+Horticulture followed by Crop+Dairy (15.06 %) farming system.

**TABLE II.** Per capita consumption of food under major farming systems

Particulars	Farming System				Average
	C+D	C+H	H+D	C+D+H	
Average family size	5	5	4	6	5
Rice	7.25	5.05	7.42	5.41	7.20
Jowar	5.00	5.63	6.37	5.99	4.16
Ragi	0.34	0.21	0.37	0.22	0.20
Wheat	0.17	0.23	0.11	0.31	0.19
Cereals and millets	12.76	11.13	14.26	11.92	11.75
Field bean	0.09	0.39	0.37	0.41	0.28
Red gram	0.07	0.22	0.06	0.24	0.12
Other pulses	0.71	0.66	0.96	0.69	0.39
Total Pulses	0.87	1.28	1.38	1.35	0.79
Tomato	0.62	1.24	1.02	1.43	0.78
Potato	0.81	0.59	0.55	0.71	0.48
Brinjal	0.45	0.40	0.50	0.44	0.32
Beans	0.49	0.35	-	0.49	0.25
Roots & tubers	0.66	0.64	0.91	0.77	0.53
Leafy vegetables	0.27	0.22	0.44	0.37	0.23
Cabbage & cauliflower	0.05	0.10	0.17	0.41	0.14
Onion	1.01	1.02	0.62	1.01	0.67
Vegetables	4.37	4.56	4.20	5.63	3.40
Mango	5.78	6.82	5.09	7.46	4.58
Banana	0.20	0.25	0.37	0.38	0.16
Papaya	0.12	0.05	0.25	0.24	0.08
Fruits	6.10	7.12	5.71	8.08	4.82
Edible oil (lit)	0.75	0.84	0.40	0.81	0.51
Milk (lit)	2.80	2.39	1.54	3.12	1.82
Sugar	0.98	0.94	0.55	1.00	0.64
Meat	0.58	0.50	0.24	0.42	0.32
Egg (No.)	3	2	1	3	2

Note: C+D: Crop+Dairy,

C+H: Crop+Horticulture,

H+D: Horticulture+Dairy and C+D+H: Crop+Dairy+Horticulture.

**Indian Council of Medical Research (ICMR) Recommendation:**

Cereals=13.99 Kg/month/person, Pulses=1.21 Kg/month/person

**TABLE III.** Consumption expenditure\* of households under major farming systems

Sl. no.	Commodity	Farming System				Pooled
		C+D	C+H	H+D	C+D+H	
1.	Cereals	12.37 (0.91)	189.39 (11.98)	1103.72 (41.94)	1206.77 (59.60)	629.21 (32.77)
2.	Pulses	42.51 (3.13)	69.94 (4.43)	119.74 (4.55)	41.9 (2.07)	68.52 (3.57)
3.	Vegetables	243.00 (17.87)	252 (15.95)	246 (9.35)	208 (10.27)	237.25 (12.36)
4.	Fruits	38.00 (2.79)	35.00 (1.68)	45.00 (1.71)	56.00 (2.77)	45.50 (2.37)
5.	Edible oil	227.00 (16.69)	254 (16.07)	290 (11.02)	97 (4.79)	217 (11.30)
6.	Milk	-	83.00 (5.25)	-	-	41.00 (2.14)
7.	Sugar	143.00 (10.52)	147.00 (9.30)	182.00 (6.92)	51.00 (2.52)	130.75 (6.81)
8.	Meat	352 (25.88)	301 (19.05)	300 (11.40)	120 (5.93)	268.25 (13.97)
9.	Egg	15.00 (1.10)	10.00 (0.63)	5.00 (0.19)	18.00 (0.89)	9.50 (0.49)
10.	Tobacco products	287.00 (15.06)	239.00 (15.12)	340.00 (12.92)	226.00 (11.16)	273.00 (14.22)
	Total	1,359.88 (100.00)	1,580.33 (100.00)	2,631.46 (100.00)	2,024.67 (100.00)	1,919.98 (100.00)

Note: Figures in parentheses represent percentage to total expenditure

\*Expenditure of households includes expenditure made on food which is purchased exclusively from market.

C+D: Crop+Dairy,

C+H: Crop+Horticulture,

H+D: Horticulture+Dairy

C+D+H: Crop+Dairy+Horticulture

## CONCLUSION

The per capita consumption on monthly basis of Crop+Dairy+Horticulture is high in all food items except in case of meat. Farm households of all farming systems are on par with ICMR norms in cereal consumption. In case of

pulses the consumption level of three farm Households (Crop+Horticulture, Horticulture+Dairy and Crop+Dairy+Horticulture system) are above the ICMR norms except Crop+Dairy farm households. Dietary pattern of households in all the groups was mainly cereal

based and pulses. Rice and jowar are the major food grains consumed by the farm households.

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