

FOOD PRODUCTION SYSTEM AND EFFICIENCY IN MADHUBANI DISTRICT

Gaurav Kumar
Research Scholar
Deptt. of Geography
B.R.A. Bihar University,
Muzaffarpur

Conceptual Statement :

Agriculture in madhubani district is basically subsistence oriented having heavy population pressure on land with deteriorating land-man ratio. Starting with a poor industrial base, the pace of urbanization and industrialization has not been sufficient to absorb the annual addition in population, thereby leading to greater concentration of population in the rural areas. The backward status of agriculture also failed to feed and employ in ever increasing agriculturally dependent population as the growth of food grain production failed to match the rate of increase in population. As a result, per capita production and availability of food continued to fall with serious impact on nutritional status. The basic contributing factors to low production efficiency in the region (Madhubani district) are the lower application of modern technology in the form of various improved production inputs.

An emphasis is, thus, required on explaining the cropping system, state of availability of food and production efficiency and further to step into pave the way for greater availability of food in terms of quantity and quality, remove the imperfections in the production .

The Cropping Pattern:

Pattern of cropping in the district is cereal-oriented as the cropped area under cereals occupies 77.04% of the gross cropped area (GGA). Despite other socio-economic conditions of cultivation system, agro-physical conditions provide suitable ground for rice cultivation in kharif season and wheat cultivation in the rabi season, However, area under rice ranks first (37.8%) and wheat second (23.96%) in the total cropping . Though, pulses are the better source of human energy, their cropping is not given much priority due to climate and land-man mechanism and it accounts for only 11.86% , of the GGA. Arhar, gram and pea are the major pulses. Area under arhar and gram registered 8.33% and other pulses like mung, masoor, moth, urd and pea, altogether, are cropped on only 3.53% of the GCA. 6.67% and 0.75% area are devoted to sugarcane and vegetable cultivation, respectively.

On account of a number of social, cultural and economic constraints in general and large disparity in the distribution of landholding and deteriorating land-man ratio (0.49 acre of GGA per person) in particular, commercial cropping has not been paid much attention the cropped area under commercial crops has been recorded only 3.68% in the total arable land. There has been

marked variation over space in different food groups. Such regional variations will provide an appropriate understanding of cropping pattern.

Spatial Variation in Cropping:

Percentage of area under cereals ranges between 50.93 per cent in Madhwapur block and 91.95 per cent in Bisfi block. There are 10 development blocks in the district those recorded more than 80 per cent area under cereal crops. From amongst these blocks, Jhanjharpur, benipatti, Ghoghardiha, Andhrathorhi and Khajauli blocks recorded distinctly increased status of cereal cropping . Low coverage of area under cereals has been found in other blocks. Poor level of improved agricultural practices, poor land-man ratio, low agricultural intensity and high percentage of agricultural labourers are the general characteristics of these blocks.

Cropped area under pulses. too, indicates high spatial variation. In terms of area, the blocks of Basopatti, Harlakhi, andhrathorhi, Ladania, Phulparas, Rajnagar and Laukaha deserve to be designated as core of pulse growing areas which cover more than 15 per cent area in the total cropped land use. The highest percentage under pulses has been recorded in Harlakhi block (19.61%) and the lowest in Benipatti block (7.02%) . There are 7 development blocks in the district where less than 10 per cent area has been put under pulses.

Vegetables being one of the major food articles in the district, only 6.67% of GCA has been devoted to vegetables cultivation having marginal spatial variation. However, the concentration of vegetables cropped area has been found n the block is of Babubarhi (9.99%), Kaluahi (8.72%) Lakhanaur (4.39%) , Pandaul (8.49%), Rajnagar (8.20%), Laukahi (8.04%) and Benipatti (8.29%) . Bisfi and Benipatti blocks are the poorest ones where only 2.54% and 4.06% area, respectively has been put to vegetables cultivation.

Table No. 1

Cropping Pattern and Availability of Food energy (2016-17)

S;No.	Crops	Cropped Area (%)	Food Availability
1	Cereals		
	Rice	37.38	27.91
	Wheat	23.96	26.80
	Barley	3.52	2.26
	Maize	9.14	8.81
	Small Maillets	3.04	1.12
	Total	77.04	65.90
2	Pulses		
	Arhar	4.49	2.65

	Gram	3.84	2.15
	Others	3.53	1.89
	Total	11.86	6.69
3	sugarcane (total)	0.81	8.92
4.	Vegetables (total)	6.87	17.24
5	commercial Crops (total)	3.68	-
	Grand Total	100.00	100.00

Source: computed from District Statistical Record, Madhubani.

Vegetables cropped area in the district is quite insignificant which is 0.85% per cent of the total cropped land. It is worth mentioning that the spatial variation in vegetable cropped area, too, is quite from 0.32% in Jhanjharpur block to 1.38% in Jainagar block. It is obvious that the vegetable cultivation is not given priority as compared to cereals and pulses.

Now, it is worth mentioning on the basis of above explanation that the areal share of cereals is predominately high. Hence, it can be emphasized that food cropping in the district is basically cereal oriented.

Food Production/Consumption:

Since the area under study belongs to one of the most backward pockets of India and where cereal production and consumption is the common food-culture, quality preferences are of low priority in dietary habits. Due to other limitations like non-availability of required nature of data pertaining to other food items like milk, oil, eggs and meat which, of course, stand for rich ingredients of diet, have not been taken into account.

Major food supply to 4.4 million populations in the district has been made by cereals sharing 67.14 per cent of total supply of food energy (Table 1) during 2016-17. In this respect rice, wheat and sugar/gur rank are first, second and third in the total availability of food energy respectively and make a combination of dish. Farmers of Eastern U.P. and Bihar are no exception in this connection. Vegetables and pulses are rare items of food which supply only 8.93 per cent food, respectively.

At the present state of rural economy of the district the capital formation has little scope for its nourishment resulting into insignificant purchasing power. The poorer section of the population, which constitutes the vast majority does not get adequate food, which at the same time this is provision for the costlier articles of food such as fruits, vegetables, pulses, nuts, and milk and other animal foods, which are the chief sources of vitamins, minerals and proteins which are so essential for nutritional efficiency.

The poor man tries to buy not less food but cheaper food because he has to fill his belly to the extent he can, and with such food and in such manner as will not make him feel hungry

before the timing of the next meal. The cheapest among the food resources are the cereals (Ramachandran, 1977:39).

Food Production Efficiency, Availability and Requirement:

According to the calories scale of the F.A.D. and the Nutrition Advisory Committee (N.A.C.) of India, the average calorie requirement per person per day has been worked out as 2100 calories. But in India, we consume less than 2000 calories (about 1970) per person per day of which 77 per cent of the calories derived from cereals, starchy roots and sugar. The food consumed in rich countries provided about 3050 calories (Mukherjee, 1967: 47)

As it has been mentioned earlier, only four groups of food, i.e., cereals., pulses, sugar and vegetables have been taken into consideration in the present study, therefore, our views are formulated on the basis of these groups only.

Table 1 reveals well established understanding of comparison of food availability in the study area, in India and other underdeveloped countries, developed countries and the world . Position of cereal availability in the district (331 gram per head daily) is too worse as compared to that in India, under-developed countries and the world. Developed countries, are the exception in this regard wherein it is 328 gm per caput/daily. In developed countries, or course, the food consumed is much more qualitative than quantitative and also other than cereal-oriented. Pulses pose the same impression as cereals. Food availability from sugarcane in terms of sugar is slightly in a better position as it has almost approached the availability level in India and the world, and is highly dominating the figure of underdeveloped countries but highly dominated by developed countries. The average food availability from vegetables in the district shows little competing to that of Indian average but as compared to other countries and the world, the same experiences are depicted. As regards energy derived from the said four food groups, India (1716 calories) stands the top and instead of being within India, the district stands at the bottom (1588 calories).

Table. 2

Availability of Food (in gm per person per day at retail level)* (2016-17)

Items	Study Area (District Madhubani)	India	Under developed countries 1	Developed Countries 2	World
Cereals	331 (1169)	375 (1324)	393 (1388)	328 (1158)	370 (1306)
Pulses	33 (103)	65 (204)	50 (157)	16 (50)	42 (132)
Sugar	44	45	26	88	47

	197)	(158)	(92)	(310)	(165)
Vegetables	85 (299)	80 (30)	191 (73)	362 (137)	227 (86)
Calories	1588	1716	1710	1655	1689

1. Include Far East, Near East, Africa and Latin America excluding River-Plate countries.
 2. Include Europe, North America, Oceania and the River-Plate countries.
- * Retail level means the foods available for consumption, and excludes that part of production which is not available for consumption due to seed, feed and Wastage.

Note: Figures in parentheses show the respective calories.

Hence, it is worth mentioning that India is a victim of mal-nutrition whereas the district under nutrition. To this, Rao (1982:20) adds that we as a nation are short of food. This is so in absolute terms and even more so in comparative terms. Shortfall in calories is treated as under-nutrition. This is only a respectable way of describing digress of hunger. The phrase 'under-nutrition' sounds better than hunger, while mal-nutrition means a nutritionally unsound composition of the foods from which the calories are derived.

Marked regional variation in food available for consumption in the district reveals that there are 5 development blocks namely Madhepur, Harlakhi, Bisfi, Rajnagar and Khajauli which sustain and survive with marginally higher calories than minimum required (1977 calories/caput/day). However, variation ranges between 1105 calories /caput/day in Basopatti block and 2308 calories/caput/day in harlakhi block. Very poor efficiency of food availability has been recorded in the blocks of madhubani, phulparas, Laukaha, Basopatti, Kaluahi and Andhrathorhi which register even less than that of regional availability (1588 calories/caput/day).

Table 3 reveals that not only cereals but pulses and vegetables also attain poor status of food availability as compared to the targets. Sugar, of course, has completed both minimum and medium targets with high margin which apparently show the high level of marketable surplus.

According to classification of efficiency scores, high efficiency level includes 7 development blocks, moderately high 12 development blocks, moderately low 4 development blocks and low development blocks which have sources of food efficiency varied in kind and nature (Table 4; Fig. 2). Food energy/caput/day available from cereals very high compared to other foods and varies from 998 calories in low efficiency blocks to 1572 in high efficiency blocks. Sugar is the second source of food efficiency varying between 262 calories/caput/day in low efficiency blocks and 349 calories/Caput/day in high efficiency blocks. Energy derived from pulses is the next which provides 103 calories/caput/day in the district. It varies from 104 calories in moderately low and

moderately high efficiency blocks to 140 calories in high efficiency blocks. Vegetables contribute insignificant share of energy in the food which is only 17 calories/caput/day in the district and varies very marginally from 16 calories in moderately low efficiency to 26 calories in high efficiency blocks.

Table 3
Per Caput Quantities in gm per day (2016-17)

Major Food Groups	Available	needed	
		Minimum target	Medium target
Cereals	331	403	375
Pulses	33	104	95
Sugar	85	50	56
Vegetables	44	137	158

Table 4
Sources of Food Efficiency (1916-17)

S;No.	Efficiency Level/Score	Calories per caput/day available form				
		Cereals	Pulses	Sugar	Vegetables	Total
1.	High above 1.10	1572	140	349	26	2086
2	Mod. High 1.00-1.10	1341	104	350	23	1818
3	Mod. Low 0.90-1.00	1190	104	369	16	1676
4.	Low below 0.90	998	116	262	22	1398
	Regional	1169	103	299	17	1588

Food availability/efficiency is governed directly or indirectly by a number of social, cultural and economic factors. Few of them have here been taken into account to analyze their contribution to food efficiency (Table 4). Figures visualize that food efficiency level establishes high positive relationship with ploughs, agricultural labourers and cropping intensity. Others having insignificant positive relationship are tractors, irrigated area and fertilizer consumption. Man-land ratio is the only which relates it high negatively with food efficiency levels. It is worth – mentioning; therefore, very precisely that man-land ratio is the only factor which relates it high negatively with food efficiency levels. It is worth-mentioning; therefore, very precisely that man-land ratio is the root cause in worsening the food efficiency and leading to lower application of tractors, minor irrigation devices and fertilizer consumption. There is very little scope for strengthening cultivated land in the district. Intensifying the cropping and raising crop yields are the only alternatives which again receive higher support of traditional methods of agriculture.

CONCLUSION:

Summing up, the nature of food production in the district is basically cereal-oriented. The grim realities which are perceived are that higher level of food efficiency has strong support of traditional agricultural practices than modern ones. It has been found that at the places where food efficiency is high, the employment of manual and bullock labour is in preponderance and vice-versa. The modern agricultural practices have not been in common introduction so far to the extent that these can replace the traditional ones. This is so because of a number of constraints pertaining to economic reasons in particular and socio-cultural and physical in general. It may be further added that it is not only the traditional practices but it is the traditional-modern mixed technology which is responsible for increasing food efficiency in Madhubani district in particular and eastern U.P. in general.

References:

- 1) Freemann, T.W., a Hundred Years of Geography, London, 1961, p. 332.
- 2) Kurian George, Application of the Concept of Optimum Population to India, NGS, Varanasi, 1968, 00, 94-95.
- 3) Population Policy in Communist China, Government Policy Report, 1971.
- 4) Coale, A.J. & Hoover, E.M., : Population Growth and Economic Development in Low Income Countries, Oxford University Press, 1959, p. 10.
- 5) Shrivastava, O.P. Demography of India, Concept Publication, 1994.
- 6) National Family Health Survey (1998-99) Final Report, All India.
- 7) Shrivastava, O.P., Demography of India, Concept Publisher, New Delhi, Chapter, 1994
- 8) Ibid.
- 9) Singh, R.L., India, A. Regional Geography, Varanasi, 1968, p. 208.
- 10) Krishanaji, N. (2000) Trends in Sex Ratio, Economic & Political Weekly, April, 1-7, 2005.
- 11) British Census Commission's Report, 1971, Vol. I, pp. 118-19
- 12) Census of India, 2001, Series I, India Provisional Population totals, p. 7.
- 13) P.D. Ojha. A Configuration of Indian Poverty –Inequality and Levels of Living, Challenge of Poverty in India, p. 40.