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Vol XVIII  
No. 1

ISSN 0019-5014

CONFERENCE  
NUMBER

JANUARY-  
MARCH  
1963

# INDIAN JOURNAL OF AGRICULTURAL ECONOMICS



INDIAN SOCIETY OF  
AGRICULTURAL ECONOMICS,  
BOMBAY

# ECONOMICS OF CROP PATTERN OF IRRIGATED FARMS IN NORTH BIHAR

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In this paper, an attempt is made to study the economics of cropping pattern in the district of Champaran in North Bihar. The area is irrigated by an inundation canal. This study is based on an investigation conducted for evaluation of benefits of irrigation of Tribeni Canal. A large variety of crops are grown in this area. The important crops are paddy, wheat and sugarcane; and pulses and oilseeds are grown as supplementary crops. The area surveyed is an alluvial tract of great natural fertility. The fertility of the land is increased due to mud and silt brought by the Gandak river. In certain parts of the area the soil is clayish which is particularly good for paddy crops. In certain other parts the soil is reddish loamy which is good for growing maize, barley, etc. In certain parts of the area light loose sandy soil is found where inferior crops of maize and millets only can be grown. The soil characteristics of this area favour a diversified crop pattern.

Table I presents the cropping pattern for selected farm households in the district.

TABLE I—CROP PATTERN IN SAMPLE HOUSEHOLDS

Crop							Per cent of Total Area
Paddy	..	..	..	..	..	..	67.04
Pulses	..	..	..	..	..	..	16.34
Sugarcane	..	..	..	..	..	..	7.79
Wheat	..	..	..	..	..	..	6.69
Other Food Crops	..	..	..	..	..	..	2.08
Other Cash Crops	..	..	..	..	..	..	0.06
Total	..	..	..	..	..	..	100.00

It will be seen that paddy is the most predominant crop of this area followed by pulses. Because of the availability of irrigation, two paddy crops are taken during summer and winter. The reason for the cultivation of pulse crops in preference to other crops is that several pulse crops are grown as supplementary crops at a much less cost than wheat or other *rabi* crops. In the non-irrigated areas farmers grow relatively more of wheat and sugarcane than rice or pulses. 'Other food crops' consist of a variety of food crops but their share is small. Cash crop in this area means largely sugarcane.

Table II gives figures of inputs for various farm operations in the cultivation of paddy, sugarcane and wheat. It will be seen that sugarcane cultivation requires relatively much larger inputs than the cultivation of paddy or wheat. Between paddy and wheat, wheat requires lesser input.

TABLE II—DISTRIBUTION OF FARM INPUTS OVER DIFFERENT FARM OPERATIONS IN CROP CULTIVATION

Items	Gross Input per Acre in Rupees		
	Paddy	Sugarcane	Wheat
Hired Human Labour .. .. .	51.00	59.00	20.00
Owned Human Labour .. .. .	7.00	7.56	5.00
Total Human Labour .. .. .	58.00	66.00	25.00
Bullock Labour .. .. .	22.00	52.00	15.00
Seeds .. .. .	15.00	78.00	13.00
Manure .. .. .	4.00	12.00	1.00
Up-keep of Implements .. .. .	3.00	5.00	5.00
Taxes .. .. .	6.00	8.00	4.00
Rent .. .. .	3.00	6.00	3.49
Miscellaneous .. .. .	1.00	25.00	0.51
Average .. .. .	112.00	251.00	67.00

Among various input factors, seed is the most expensive item of input in sugarcane cultivation, accounting for Rs. 78 per acre, whereas in the case of paddy and wheat, seed cost is only Rs. 15 and Rs. 13 per acre respectively. Human labour costs Rs. 66 per acre in sugarcane, Rs. 58 in paddy and Rs. 25 in wheat. The cost of manuring in sugarcane is Rs. 12, in paddy Rs. 4 and in wheat Re. 1 only. Miscellaneous expenses in the cultivation of paddy and wheat are negligible compared to Rs. 25 per acre in sugarcane cultivation. It is thus obvious that a farmer's resources position will be an important factor in choosing the crop pattern. A study of input only will not give us a correct picture unless we also know the output of the farms. Table III shows gross input, gross output and net income from different crops.

TABLE III—INPUT-OUTPUT AND NET INCOME OF CROPS

(in Rupees)

Crops	Input per Acre	Output per Acre	Net Gain
Paddy .. .. .	112.00	563.00	451.00
Sugarcane .. .. .	252.00	1,028.00	776.00
Wheat .. .. .	67.00	276.00	209.00
Miscellaneous Crops .. .. .	90.00	546.00	456.00
Paddy and Miscellaneous Crops .. .. .	202.00	1,109.00	907.00

It may be noted that net income per acre is highest in the case of sugarcane, being Rs. 776. It is Rs. 451 for paddy, Rs. 209 for wheat and Rs. 456 for miscellaneous crops. It would appear that from the point of view of farm enterprise sugarcane is the most profitable crop. Sugarcane occupies the land for full one year whereas farmers grow paddy and some other crop in the same field during the year. From the point of view of farm enterprise the best choice for the farmer is to combine paddy and some miscellaneous crop such as some pulse crop. This is what is actually done by most farmers in this area.