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REGIONAL VARIATIONS IN AGRICULTURAL DEVELOPMENT AND PRODUCTIVITY IN U.P.

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Farm-Resource Oriented Studies

Farm Management studies are being conducted in the Agricultural Economics section of the Agricultural College, Kanpur, in different regions of the State. The present study is designed to find out the role of farm management in increasing the level of farm earnings and narrowing down the regional variations in farm productivity.

Hypothesis :—The hypothesis developed for the present study is that the regional variations in agricultural development and productivity are also influenced by the variations in the level of farm management ability of cultivators.

Farm Management ability has been restricted to mean :—

1. Ability to make optimum combination of farm enterprises.
2. Ability to get favourable input-output relationship in crop enterprises.
3. Ability to arrange for credit and make its best use for strengthening the capital resources of the farm business.

Characteristics of the Samples Studied

For the presentation of this paper, the findings of various agro-economic studies made by this Department in different regions of the State were used to explain the role of farm management as an input factor in raising the level of agricultural production. The role of credit, intensive crop enterprises and the influence of irrigation water were studied as some of the aspects of the development of farm management studies in the southern, eastern and western regions respectively. The studies indicated that differences in farm income arising from the regional differences in natural resources endowments could be reduced by proper farm management approach.

SOUTHERN REGION

Jhansi District

Fifty cultivators selected randomly are being studied under the Farm Management and Planning Scheme. Table I gives the results of the study relating to the year 1961-62.

The credit needed is calculated on the basis of the area under wheat of the sample holdings. Credit arranged signifies the amount of money spent on fertilizers by way of demonstration held on the cultivators' fields. In all 43 demonstrations were carried out on wheat crop. The estimated additional income has been worked out on the basis of the results of these demonstrations. It was found that on an average one rupee worth of nitrogenous fertilizer brought as much as Rs. 1.85 as its return, while one rupee worth input of nitrogenous plus phosphatic fertilizers brought Rs. 2.10, the average for both being Rs. 1.97.

TABLE I

Size Groups (Acres)	Income per Acre				Credit Position for Wheat Crop (Rs.)				
	Average size of holding	Net income	Family labour income	Farm business income	Area under wheat	Credit needed for fertilizer	Credit arranged	Additional income over credit used	Estimated Additional income if the credit is fulfilled
Below 6	4.58	8.51	41.52	47.97	0.95	46.39	32.55	31.74	46.20
6—12	8.08	20.48	40.13	43.26	1.46	71.29	22.83	22.26	70.48
12—18	14.09	16.09	34.18	43.35	1.67	81.55	22.83	22.26	80.49
Above 18	24.10	30.02	40.30	42.51	2.67	130.38	23.57	22.98	128.10
Average	15.12	24.77	38.96	42.89	1.90	92.78	27.99	27.29	90.46

Encouraged by the results of the demonstrations, the cultivators showed willingness to borrow money from the service co-operatives for use of fertilizers in the succeeding crops. The study for the subsequent years showed that 35 per cent of the cultivators actually arranged for the credit for productive use on short term basis. But so far as the medium and long-term credit was concerned, none of the cultivators was prepared to borrow money for investment in agriculture, because they feared an element of risk in such types of credit. However, the process of farm management extension technique is continuing in this direction as well.

EASTERN REGION

Gorakhpur District

The study is based on 10 cultivators' holdings selected in the size-group ranging between 3—5 acres in the Bhuthut Extension Block, Gorakphur. The study revealed that the cultivators were following non-intensive crop rotations in spite of the availability of irrigation facilities.

As a preliminary step in farm planning, improved crop rotations were suggested in the direction of intensive cultivation. The following figures show the position of costs and returns for the year 1962-63.

CROP PLAN

Area in Acres	Existing Farm Plan		Alternative Farm Plan	
	Kharif	Rabi	Kharif	Rabi
1.25	Fallow	Wheat	Moong T1	Wheat
1.35	Paddy	Gram	G. M. (sanai)	Wheat
0.75	Paddy	—	Paddy	Gram
0.76	Juar	Fallow	Jowar	Pea
4.11				
	Cropping Intensity 125%			168 %

Estimated Costs and Returns

(in Rs.)

Type of Plan	Total Expenditure	Total Income	Net Income	Family Labour Income	Farm Business Income
Existing Plan	602.0	833.0	231.0	352.0	379.0
Alternative Plan	803.0	1,087.0	284.0	456.0	488.0

ADDITIONAL COSTS AND RETURNS

(in Rs.)

Additional Expenditure	Additional Income	Additional net Income	Additional Family Labour Income	Additional Farm Business Income
201.0	254.0	53.0	104.0	109.0

The above figures indicate the potential production efficiency of farm planning to convince the cultivator through demonstration and education that he can increase his net income per year by Rs. 53 simply by following crop-intensive farming.

WESTERN REGION

Aligarh District

The study gives an estimation of the net income of farm families who made investment on wells for irrigation in contrast to those who still continue dry farming. For the sake of comparison, 10 cultivators having about 4-acre holding each, were selected in the Extension Blocks of Jawan and Sasani. Eight cultivators with irrigation facilities and two without having any source of irrigation were selected on the basis of willingness shown by them to co-operate in the present enquiry (1962-63).

CROP PLAN

Area in Acres	Unirrigated		Area in Acres	Irrigated	
	Kharif	Rabi		Kharif	Rabi
1.5	Bajra+Arhar		0.6	Cotton	Pea
1.6	Fallow	Wheat	1.4	Bajra	Pea
1.2	Fallow	Gram+Barley	0.6	Maize	Wheat
			1.0	Fallow	Wheat
			0.5	Chari	Pea+Barley
4.3	Total		4.1		

COST AND RETURNS (per acre)

(in Rs.)

Type	Output	Input	Net Income	Family Labour Income	Farm Business Income
Unirrigated ..	181.39	109.84	71.55	100.00	102.66
Irrigated ..	391.43	258.62	132.81	200.79	207.65
Additional over Unirrigated ..	221.26	148.78	61.25	100.79	104.99

The data indicate that in the area of relatively high productivity, there were cultivators who were having very low farm income, amounting to Rs. 71.55 per acre. The two low-income cultivators, who were practising dry farming, showed aversion to take credit for sinking well. With favourable attitude towards development, these cultivators could have increased their farm earnings through the investment of the borrowed capital on a well—a promising venture. However, with the development of lending institutions, credit will be used to a relatively greater extent than today by all types of cultivators.

The economic analysis of the data and the result obtained supported the hypothesis that the level of farm management including the capacity and willingness to borrow money for productive use, has been an important factor in accounting for regional differences in the growth of agriculture. Management as an input factor can diminish the regional differences.

PRODUCTIVITY OF PRINCIPAL CEREALS IN DRY AREA OF RAJASTHAN

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A balanced development of all the regions with particular emphasis on bringing the less developed regions to the level of relatively more developed regions becomes an important task of planned development. This is sought not only as a means of rendering economic justice to the people of under-developed regions but to provide suitable conditions for proper utilisation of natural bounties, local skills and capital resources of those regions so that they contribute more effectively to the overall economic progress of the country.

The dry region of Rajasthan which forms part of the great western desert of 'Thar' is the largest division of the State, occupying nearly 57 per cent of the total area in the nine districts of Barmer, Bikaner, Churu, Ganganagar, Jaisalmer, Jalore, Jodhpur, Nagour, and Pali. The area once formed part of the erstwhile Princely State of 'Marwar', locally called '*Marubhumi*' or '*Maroosthalli*' the region of death on account of its barrenness and sterility. It presents a number of peculiar features such as the sand-hills locally called '*Dhora*' or '*Teeba*', shaped generally in long straight ridges resembling the ripple parks on a sea shore upon a magnified scale.[1] Another peculiar feature is that of 'Mirage' which presents its fantastic appearance, pleasing to all but the wearied traveller.[2] As result of its dry and barren soil earlier writers were provoked to proclaim that in this region 'there are more spears than spear grass-heads and blades of steel grow

1. (Col.) James Tod, 'Annals and Antiquities of Rajasthan' (London), Part (i), p. 14.
2. *Imperial Gazetteer*, Vol. XIV, p. 129.