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PROBLEMS OF MIXED FARMING—STUDY OF A CHAROTAR FARM

Introduction

An attempt is made in this paper to discuss the economics of mixed farming in the Charotar region[1] of the district of Kaira, on the basis of the data gathered from one Patidar cultivating family as a case study from the village Ajarpura in Anand taluka of the district. The data refer to the period May 15, 1955 to June 15, 1956.

Agricultural Resources of the Family

The family under study cultivated 8A.-03G. of land of which 4A.-19G. was owned and 3A.-24G. was rented, half on cash rent and half on crop share basis. The estimated value of the owned land was Rs. 5,370 at the rate of Rs. 1,200 per acre.

The number of members in the family and those working in farming are given in Table I.

TABLE I—WORKING FORCE IN THE FARM FAMILY

	Total Number			Working in farming			Family labour units available in a year[2]		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Adult ..	3	2	5	3	1	4	1095	292	1387
Young ..	5	—	5	1	—	1	182.50	—	182.50
Total ..	8	2	10	4	1	5	1277.50	292	1569.50

Data in Table I show that out of 10 members in the family, only 5 were working in farming and the total labour units available for work were 1569.50 during the year.

The family had two buffaloes, with the estimated value of Rs. 600. It maintained a bullock and worked on exchange basis with others. The estimated value

1. The Charotar region of middle Gujarat comprises of the area bounded by the river Mahi in the South and Sedhi in the North and it includes whole of Borsad, Anand and Petlad talukas and parts of Nadiad and Cambay talukas of the district of Kaira. The region has fertile, well drained *goradu* soil, well suited for irrigation which is provided by pumping plants on the wells. Due to the combination of fertile soils and good irrigation facilities double cropping and sometimes three crops are taken in a year. The major cash crops in the region, are tobacco, fruits, vegetables, spices and condiments. Amongst the non-cash crops are cereals, pulses and fodder crops, which provide foodgrains for human consumption and fodder for cattle. Dairying is the important subsidiary enterprise in the region, the chief milch animal being buffalo. Thus, the pattern of farming in the region is mixed farming which implies dovetailing of crop production and animal husbandry to the best advantage of the farmer. This pattern of farming enables full utilisation of by-products of crops, fodder and chaff, and their conversion into animal products, and gives additional work to the farmer and his family, particulary females, who generally need some light indoor work which they can do along with household work. Again, the livestock yields manure required for crops and provides milk and milk products to the family members and brings in ready cash so essential in farming.

2. Conversion ratio for labour units:—An adult man, woman, and a boy were considered equivalent to 1.0, 0.8, and 0.5 labour unit respectively.

of the bullock was Rs. 400. The value of a plough, a seed drill, harrows and other agricultural implements, owned by the family, was estimated at Rs. 103.

The irrigation water was purchased by the family at Rs. 4 per hour.

Cropping Pattern

Though the family cultivated only 8A.03G., the gross cropped area amounted to 12A. 30G. Of the total cropped area, 8A.03G., about two-third were under monsoon crops, paddy, pearl millet and pulses mixed, cotton and sesamum and tobacco and the remaining 4A.27G. were distributed almost equally between winter (cumin and onion) and monsoon (Sorghum) crops. The cash crops included tobacco, cumin, cotton and onion and covered 7A.31G., *i.e.*, 60.11 per cent of the gross cropped area. The value of the cash crop produce came to Rs. 2,301.44 which formed 66.16 per cent of the total value of the crop produced, *viz.*, Rs. 3,480.44. The remaining 4A.39G. were under food crops comprising of cereals and pulses. Tobacco formed the most important single crop, since its receipt formed 73.65 per cent of receipts from cash crops and 48.70 per cent of receipts from all crops.

Farming Results

Mixed farming is the combination of crop production and dairying to the mutual advantage of both. It is, therefore, necessary to examine how far each contributed to productiveness of the other and helped in making fuller use of available resources of the farmer. Table II gives the costs of both owned and purchased resources—of human and bullock labour, seeds, manure, feed, fodder, irrigation, insecticides, etc., in crop production.

TABLE II—COST OF INPUTS IN CROP PRODUCTION

Items	Owned Resources		Purchased Resources		Total	
	Rupees	Per cent	Rupees	Per cent	Rupees	Per cent
1. Human Labour ..	811.82*	67.05	147.36	15.68	959.18	44.58
2. Manure	90.00	7.45	109.11	11.63	199.31	9.23
3. Seeds	20.00	1.65	72.50	7.72	92.50	4.31
4. Feeds	28.92	2.38	29.06	3.09	57.98	2.70
5. Fodder	260.18	21.47	155.50	16.56	415.78	19.33
6. Irrigation	—	—	412.37	43.89	412.37	19.18
7. Others	—	—	13.44	1.43	13.44	0.67
Total	1,211.02	100.00	939.54	100.00	2,150.56	100.00

* Includes an amount of Rs. 119.83 as cost of bullock labour used.

Of the total cost, 56.31 per cent was of owned resources. Among the owned resources, the important were human labour and fodder, which formed 67.05 and 21.47 per cent respectively of the total. Of the total human labour used

in crop production 84.64 per cent was family labour and the rest was hired. Nearly half of the feeds and 62.60 per cent of the fodder fed to the bullocks used in crop production came from farmer's own holding. Of the total manure, 45.16 was home produced, which represented farmyard manure from the farmer's own livestock. The purchased manure included ammonium sulphate and groundnut cake. The farmer purchased irrigation water, its cost amounted to 43.89 per cent of the purchased resources. Thus the farmer could raise crops worth Rs. 3,480.44 by incurring cash expenditure of Rs. 939.54 for purchased resources, while rest of the resources worth Rs. 1,211.02 came from his family and holding.

Table III gives the costs of human labour, feeds and fodder used in milk production.

TABLE III—COST OF INPUTS IN MILK PRODUCTION

Items	Owned Resources		Purchased Resources		Total	
	Rupees	Per cent	Rupees	Per cent	Rupees	Per cent
Human labour	207.47	35.08	—	—	207.47	23.15
Feeds	84.26	14.24	290.07	95.10	374.33	41.79
Fodder	299.30	50.68	14.92	4.90	314.22	35.06
Total	591.03	100.00	304.99	100.00	896.02	100.00

It may be noted that 65.98 per cent of the total costs incurred for the maintenance of two buffaloes represented owned resources, while the rest were purchased. Entire human labour involved in milk production was family labour. Almost all supply of fodder came from crop production, as by-products of cereals and pulses. Further the buffaloes are responsible for fuller utilisation of fodder since they consume even the rejection by bullocks. The important among the purchased resources were feeds; 77.49 per cent of the feeds were purchased. This shows that the farmer could produce 4,030.25 lbs. of milk worth Rs. 946.50 with a cash expenditure of Rs. 304.99, since the resources worth Rs. 591.03 in the form of labour, feeds and fodder came from farmer's family and holding.

Considering crop production and dairying together, the costs of labour, manure, seeds, feeds, fodder, irrigation, etc., both owned and purchased are given in Table IV.

TABLE IV—TOTAL COSTS OF INPUTS IN CROP AND MILK PRODUCTION

Items	Owned Resources		Purchased Resources		Total	
	Rupees	Per cent	Rupees	Per cent	Rupees	Per cent
Human labour	1,019.29	56.57	147.36	11.83	1,166.65	38.32
Manure	90.00	4.99	109.31	8.78	199.31	6.54
Seeds	20.00	1.10	72.50	5.83	92.50	3.04
Feeds	113.18	6.29	319.13	25.64	432.31	14.16
Fodder	559.58	31.05	170.42	13.69	730.00	23.96
Irrigation	—	—	412.37	33.14	412.37	13.54
Others	—	—	13.44	1.09	13.44	0.44
Total	1,802.05	100.00	1,244.53	100.00	3,046.58	100.00

The value of the crops and milk produced together amounted to Rs. 4,426.94, while the total cost of human and bullock labour, seeds, manure, feeds, fodder, etc., in crop production and dairying came to Rs. 3,046.58. Of this, the value of the owned resources formed 59.16 per cent of the total. This shows that the farmer to get the produce worth Rs. 4,426.94, had to incur cash expenditure of Rs. 1,244.53 only. The important among the owned resources were human labour and fodder, which formed 56.57 and 31.05 per cent of the total owned resources. Of the total human labour used, 87.37 per cent was family labour and only 12.63 per cent was hired, mostly for tobacco and pearl millet. The important among the purchased resources are irrigation and feeds which formed 33.14 and 25.64 per cent respectively of the total purchased resources.

Besides the items of expenses considered above, such as human and bullock labour, seed, manure, etc., there were certain items of expenses common to whole farming business and therefore of overhead nature. They are as follows :—

1.	Land Revenue	Rs. 28.00
2.	Rent of the land 1A.32G.	Rs. 250.00
3.	Consumable articles	Rs. 40.00
4.	Repairs of implements	Rs. 34.00
		Rs. 352.00

The items of expenses such as interest and depreciation on livestock and dead-stock, interest on land investment were not considered because they were not paying out costs.

Farm Family Earnings

The farm family earnings measure the income from farming in a realistic way. It is a combined return to the family labour, land and capital inputs owned by the farm family. Separating returns to these resources is difficult and largely artificial. On this income the family depends for its living and it tries to maximise the income. The farm family earnings of the family under study are estimated below :

Rs.	4,426.94			value of crops and milk produced.
(−) Rs.	1,596.53	Rs.	1,244.53	the cost of human labour, seeds, manure, feeds, fodder, irrigation, etc., the resources purchased by the farm family.
		Rs.	352.00	Land revenue, rent and repairs.
		Rs.	1,596.53	
Rs.	2,830.41			Farm family earnings.

The amount of Rs. 2,830.41 was a combined return to land, labour, livestock and deadstock and other capital inputs owned by the farm family of which the amount of Rs. 1,019.29 was the remuneration to the family labour which formed 36 per cent of the total. This was the amount available to the farm family for its living and in addition the family got fuel and housing.

Conclusion

The study shows that the farm family under study blended crops and livestock production to the mutual benefit. The crop production supplied 76.65 per cent of fodder and 26.18 per cent of feeds needed by livestock. The livestock in its turn aided full utilisation of feeds and fodder and its care and management created additional employment for family labour, particularly for the female labour. The livestock also supplied farmyard manure for crops. Because of these complementary and supplementary relationships between crops and livestock the farm family could produce crops and milk worth Rs. 4,426.94 with the cash expenditure of Rs. 1,596.53 only.

Of 1,569.50 family labour units available with the farm family only 675.84 units — 473.75 units in crop production and 202.09 units in care and management of livestock—constituting 43.12 per cent of the total were utilised.

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CREDIT PROBLEMS OF FARMERS IN NEWLY IRRIGATED CANAL AREAS†

The two chief problems in the field of irrigation on the eve of the Third Five-Year Plan are (*i*) non-utilisation of available irrigation facility in the new canal areas and (*ii*) conversion of submarginal farms into economic farms through provision of irrigation. Credit perhaps is the principal bottleneck in solving both the problems. The farmer in the newly irrigated area requires medium-term as well as short-term credit on a larger scale. His need for medium-term loans is basic in the sense that he cannot become an irrigated farmer without the availability of credit for (*a*) levelling and bunding the land, (*b*) constructing the irrigation channel and (*c*) purchasing iron plough and other implements necessary for irrigated farming. Once these basic credit needs are met and the land is prepared for irrigation, the farmer would require crop finance on a higher scale especially if and when he shifts to crops like sugarcane. The question, therefore, is to what extent credit has been an obstacle in the full utilisation of the available irrigation facilities. An attempt has been made below to indicate the position in this respect as is revealed from the available information.

Extent of Non-utilisation of Irrigation

In the First Plan, irrigation facilities were available for 80 lakh acres from the major canal projects. Only 40 lakh acres were actually irrigated. Shri V. T. Krishnamachari attributed the failure to fully utilise the available irrigation facility to the failure of villagers to dig the field channels. In some cases, according to

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† Views expressed in the note are the personal views of the author.