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ABSTRACTS OF M. Sc. THESES

Shah, Deepak, 1987. Economics of Crossbred Cows in Rural and Urban Areas of Bareilly District of U. P. Indian Veterinary Research Institute, Izatnagar. *Major Advisor* : Parmatma Singh.

The study was conducted in Bareilly district of Uttar Pradesh. Baheri block of Bareilly district was selected purposively as rural area on the basis of maximum concentration of crossbred cows, while Bareilly city was selected as urban area for the present study. A comparative economic study of milk production through crossbred cows in rural and urban setting revealed that the expenditure on feeds and fodder, purchase of animals and labour charges was relatively higher in urban area as compared to rural area. This resulted in higher total cost per lactation in urban area (Rs. 576⁰) than in rural area (Rs. 5403). Consequently, the total return as well as the net profit in milk production were also higher in urban area showing the superiority of urban dairy herds being run on commercial lines as compared to the crossbred cows maintained in the subsistence economy of rural setting. The results of the regression analysis revealed that the expenditure on green fodder, concentrate and dry fodder had significant and positive impact on returns from milk in all the three seasons, namely, rainy, winter and summer in rural area. However, in urban area, these feed inputs had positive and significant influence only in winter season. The marginal value product of green fodder in winter and summer seasons and concentrate and dry fodder in winter season indicated that the use of these resources should be increased further in rural area so as to make rational resource adjustments. In urban area, in some cases, the use of green fodder and concentrate should also be enhanced for higher milk production and profits. The results of the study suggested the need for an efficient system to deliver needed technical inputs at the door steps of milk producers at proper time and at reasonable price. To provide efficient marketing outlet for milk at remunerative prices the formation of co-operatives was also suggested.

Kumar, Ashok, 1989. Impact of Rajasthan Co-operative Dairy Federation on Rural Economy. Kurukshetra University, Kurukshetra. *Major Advisor* : Kulwant Singh.

The present study was undertaken in Sawai Madhopur and Tonk districts of Rajasthan during 1988-89 in order to know the impact of milk cooperatives on rural economy. Commensurate with the objectives of the study multistage stratified random

sampling technique was adopted. Two milk cooperatives each from two districts having minimum three years standing with good performance were randomly selected. To ascertain the impact of Rajasthan Cooperative Dairy Federation, two control villages not covered by the milk cooperatives were also selected. A sample of 60 and 30 households comprising landless, small, semi—medium, medium and large farmers were taken from cooperative and control villages, respectively. Tabular analysis was carried out to achieve the objectives of the study. The study showed that the average size of holding in cooperative villages was slightly lower than the control villages, however, the percentage area under irrigation was quite high. Regarding the herd size per household, it was observed that the farmers in the cooperative villages were maintaining relatively higher number of milch animals. The average herd size in Standard Animal Units (S.A.U's) in case of cooperative villages was 2.69 as compared to 2.58 in control villages. On an average the age at first calving for cows and buffaloes in the cooperative villages was 1358 and 1370 days, respectively, whereas in control villages, it was 1461 and 1441 days, respectively. The average milk production per day for cows in milk and for total herd in the cooperative villages and control villages were 3.51, 2.46 and 3.31, 2.30 litres, respectively. Similar trend was observed in case of buffaloes for the villages under study. The marketed surplus of milk in cooperative and control villages were estimated to be 52 percent and 35 percent, respectively. But per capita per day consumption of milk was higher in control villages (592 gm) as compared to cooperative villages (533 gm). The study further revealed that the labour utilised at the dairy farms was almost the same in both type of villages but the contribution of female and children towards dairy enterprise was quite high in cooperative villages. The returns from the enterprise was nearly 41% higher in case of members of cooperatives than those of the respondents of control villages. The monthly gross income per milch animal was observed to be Rs. 365 and Rs. 304 in the cooperative and the control villages, respectively. The proportion of respondents adopting the improved breeding, feeding and management practices was much higher in case of cooperative villages as compared to the control villages

Singh, Harbir. 1990. An Economic Study of Fair Price Shops (the Public Distribution System) in Baheri Block of Bareilly District (U.P.). G.B. Pant University of Agriculture and Technology, Pantnagar. *Major Advisor* : A.K. Singhal.

The fair prices shops (FPS's) have been playing an important role, particularly after World War II, in the distribution of foodgrains in India. But these days, FPS's are alleged to be a cess-pool of corruption. Diversion of commodities from FPS to the 'black' market, adulteration, underweighing, irregular supplies and registration of 'ghost' ration cards are the major shortcomings generally faced by the public regarding FPS's.

The present study was undertaken to examine the existing functioning and economic viability of the FPS's in Baheri block of Bareilly district. Two stage stratified random sampling technique was used for the study. The data pertaining to the study were collected for the year 1989-90 from both consumers and FPS's dealers. In all, 22 FPS's and 44 consumers were selected for the investigation. Tabular analysis was carried out to achieve the objectives of the study.

The results of the study indicated various flaws on the part of the FPS's dealers and the concerned supply officials as well. About 83 percent card holders reported irregular supplies and nearly 61 percent complained of the bad quality of the FPS's items.

The study further revealed that in the existing conditions none of the FPS's was economically viable despite their being in operation for a long period. Lower margin for FPS's dealers and large differences between the FPS and open market prices mainly attributed to the non-viability of FPS's. The findings of the study are of immense use for the policy makers who are concerned about efficient working of FPS's at the micro-level.

Jain, Sudhir Kumar, 1991. An Economic Analysis of Major Edible Oilseeds Production in Gurgaon District of Haryana State. Indian Agricultural Research Institute, New Delhi. *Major Advisor* : Ikbal Singh.

In this study, an attempt was made to explore the scope for enhancing edible oilseeds production, particularly rapeseed and mustard, in Gurgaon district of Haryana. The study examines the trend in area, yield and production of the major edible oilseed crops in the State, the existing pattern of resource endowment and its utilization on different farm size categories, the costs and returns of major oilseed crops on the sample farms, and optimizes oilseeds production through allocation of farm resources on different size of farms.

The study was carried out in four villages of Gurgaon and Sohna block of Gurgaon district of Haryana in the year 1990-91. Both primary and secondary data were used. Besides simple statistical tools, linear programming technique was employed to determine the optimum production of oilseeds.

The study revealed that Haryana witnessed a significant positive growth rate in production between 1966-67 and 1985-86 for which the major factor was yield. Among districts, Mahendragarh witnessed the highest growth rates in production, yield and area, while Gurgaon district witnessed a dismal growth rate in production.

The total investment per hectare was maximum on medium size of farms. In case of small farms, maximum investment was on draught animals, while on medium and large size farms, maximum investment was on farm machinery and implements followed by farm buildings and draught animals. The use of family labour (man-days per hectare of net cultivated area and per hectare of cropped area) declined as the size of farm increased. Bullock labour utilization per unit of net cultivated area and per unit of cropped area were found to be decreasing with the increase in the size of holding.

Costs and returns of crops showed that during kharif season, *jowar*, *bajra*, *guar*, *tinda* gave negative returns while wheat, barley, *methi*, rapeseed and mustard and gram gave positive returns.

Optimization results revealed that the area under rapeseed and mustard crop increased on all sizes of farms over existing plan and the largest area was under rapeseed and mustard on the medium and large size of farms. On small size farms, while the area under rapeseed and mustard increased the maximum area remained under wheat. As a result of increase in the cropping intensity and the change in the cropping pattern in the optimal plan, returns to fixed factors also increased on all the size of farms.

Oilseeds production can be enhanced by growing oilseeds crops on fertile and irrigated land, by providing regular supply of electricity and fuel at proper time and a proper output price, by developing varieties resistant to pests, diseases and drought, by strengthening institutional arrangements and infrastructural facilities to provide quality seeds and other inputs to the farmers.

Ranjitha, P. 1991. Performance and Prospects of Regional Rural Banks in Andhra Pradesh. Indian Agricultural Research Institute, New Delhi. *Major Advisor* : R. P. Singh.

The institution of Regional Rural Banks (RRBs) was introduced mainly to meet the credit demands of the poor sections of the rural community, particularly small and marginal farmers, agricultural labourers and rural artisans. The present study examines the performance of RRBs in Andhra Pradesh with respect to branch expansion, credit disbursement, deposit mobilisation and recovery during the period 1976-89. Inter-regional disparities in performance and financial viability are also analysed.

Analysis of the performance of RRBs in the State revealed an impressive growth in branch expansion, despite temporal variations, reflected in the increased intensity of coverage. Despite tremendous growth in credit delivery, a substantial

portion of the rural population still remained deprived of the credit services of RRBs. The agricultural sector absorbed a major portion of the loans. Significant progress in deposit mobilisation was witnessed. However, the banks appeared to have depended more on refinance, rather than on deposits to finance their advances. Overdues and the number of defaulters seemed to be on the rise, with loans given for consumption purposes exhibiting better recovery.

Performance of RRBs in the three zones of the State, namely, Coastal Andhra, Rayalaseema and Telangana, revealed spatial and temporal variations. However, it was observed that the most backward region of the State, Rayalaseema, received the highest attention and exhibited significantly better performance in all respects.

Financial viability of RRBs appeared to have been deteriorating over the years. On an average, of all the RRBs, only those in the Rayalaseema region seemed to be earning profits. A smaller branch network, high volume of business, high productivity per employee and lower overdues were found to be positively associated with profits.

On the whole, it was concluded that though the performance of RRBs in the State was impressive their deteriorating financial viability is a cause for concern.

Tharachand, M. 1991. Optimum Cropping Plan Under Depleting Ground Water Aquifer in Kurukshetra District of Haryana. Indian Agricultural Research Institute, New Delhi. *Major Advisor* : Ikbal Singh.

Kurukshetra is one of the districts in Haryana State where the water table has been decreasing for the last two decades. With this in view an attempt has been made to examine the surface and ground water availability and to develop the optimal cropping plans for the district. The study utilized the data of the ICAR, A. P. Cess Fund Scheme from 60 farmers of two irrigation locations of Kurukshetra district and pertains to the year 1985-86.

The collected data for the present study included surface water utilized, ground water availability, fertilizer, physical input - output of crops, prices of inputs and output, inventory of farm assets owned and agricultural labour, etc. The optimization of water resource was done with the help of linear programming technique. The total number of constraints used in the model were 109 and the number of crop processes used were 59. The results of optimization were compared with the existing plan to derive some useful conclusions.

In the existing plan, the total water (surface and ground) available was to the extent of 202754.16 hectare metres. The water utilization in the kharif months was

high as compared to the rabi months. In the existing cropping pattern, wheat occupied the highest area followed by paddy, kharif fodder crops, berseem fodder and sugarcane. Wheat and paddy together occupied about 80 per cent of total cropped area. The total cropped area of the Kurukshetra district was 547759 ha. and the cropping intensity was 163.83 per cent. Wheat and paddy contributed to total net returns in the district to the extent of about 78 per cent. The net returns per hectare cropped area were Rs. 4828 in the district. The total human labour employment in the existing plan was 48.04 million labour days. The per hectare fertilizer consumption of nitrogen and phosphorus was 1.07 quintals and 0.22 quintals, respectively.

On optimization 166423.67 ha. m. (82.08 per cent) of the existing supply of total water, (surface and ground water) was utilized in the optimal plan I showing a net saving of 18 per cent of the total existing water. This plan suggested a lower paddy area while the intensity of cropping increased over the existing level. The total net returns also increased by 34.87 per cent in the district. Optimal plan II, with reduced ground water availability by 20 per cent, utilized total water to the level of 147081.74 ha. m and suggested another cropping pattern. Optimal plan III, with reduced ground water by 10 per cent, suggested an alternative flexible optimal plan which could be utilized for further change in water resource.

Human labour employment decreased in optimal plan I by 72.48 per cent, in optimal plan II by 65.61 per cent and in optimal plan III by 68.87 per cent. Optimisation suggested higher use of fertilizer in the district.

The suggestions which emerged out of the findings are, reduction in area under paddy crop, construction of artificial recharge structures like percolation tanks, check dams and subsurface dams for increasing recharge, increased surface water supply through SYL link canal and strengthening extension agencies to implement the optimal plans in the Kurukshetra district.

Chand, Khem, 1991. An Economic Analysis of Production and Marketing of Indigenous Dairy Products with Special Reference to *khoa* and *chhana* Based Sweets in Ganga Nagar District of Rajasthan. National Dairy Research Institute, Karnal. *Major Advisor* : V. K. Arora.

The present study was undertaken in Ganga Nagar district (Rajasthan). Using multistage stratified random sampling technique, a sample of 60 sweet manufacturing units (*Halwais*) based upon probability proportional to size of manufacturing units were selected during 1991 from 3 *tehsils* of Ganga Nagar district and they were further categorised as small and large units on the basis of quantum of milk hand-

led. The data for investment structure, procurement of milk, utilisation pattern, sales, expenditure on inputs and other factors were collected. Tabular analysis was carried out to work out the profit margin and break-even level of output of various sweets. It was observed that the overall initial investment per kg. of milk was Rs. 99/- and Rs. 68/- for small and large units, respectively. The pricing of milk was on the basis of the out-turn of *khoa*. The overall ratio between *khoa* and *chhana* based sweets was 42:6 and 38:18 for small and large units, respectively. It was observed that large units diverted relatively more milk for *chhana* based sweets as compared to small units, as these were more profitable and also the large units had refrigeration facilities required for preserving the *chhana* based sweets. The margin of profit over the total cost among 13 *khoa* based sweets was the highest in case of *gajjarpak* in all the cities. The overall profit for small and large categories was estimated to be 92 per cent to 101 per cent, respectively, which was mainly due to the use of seasonal carrots as raw material purchased at a cheap rate. As regards the profitability of *chhana* based sweets, it was observed that *chumchum*, sandwich and *rajbhog* were the most profitable products. The break-even analysis revealed that the sweet making units operated at a level beyond the break-even point and earned a sizeable profit. The profit margin on the units revealed that the large units showed a higher profitability in terms of milk products manufactured. The overall profit per Rs. 100/- of investment was Rs. 23.63 and Rs. 55.62 on small and large units, respectively.

Kumar, Shalander. 1991. Resource Productivity and Returns to Scale in Milk Production in Mathura District (U.P.). National Dairy Research Institute, Karnal.
Major Advisor : S.B. Agarwal.

The present study was undertaken in Mathura district (U.P.), using multi stage stratified random sampling technique. The sample of 120 households based upon probability proportion to size, was selected from six villages of two selected blocks during 1990-91. The sample households comprised 21 landless, 49 small (upto 2.0 ha.) 28 medium (2.01 to 4.0 ha.) and 22 large farmers (4.01 ha. and above). Data on input-output and other factors were collected both for cows and buffalo separately. Multiple linear regression analysis was carried out and marginal value products (MVP's) of various resources were also worked out to examine resource use efficiency. Returns to scale were estimated as sum of elasticities of various factors of milk production function. The average daily milk yield per lactating cow was estimated at 3.72 ± 0.25 kg, and that of a buffalo at 7.11 ± 0.17 kg. An increasing trend was observed in the daily average yield and consumption of feed and fodders for cows and buffaloes with increase in farm size. The production function analysis revealed

the positive and significant contribution of green fodder and concentrates to milk yields, both for cows and buffaloes, while a negative and significant impact of order of lactation was observed in case of buffaloes. The production elasticities of feeds and fodder were positive for all categories of households indicating the scope of increasing the productivity of bovines. In case of cows, the MVPs of concentrates were positive and significantly greater than unity on all categories of households while MVPs of green fodder and dry fodder were positive but less than unity showing excessive use. A similar trend was noticed for buffaloes also. The positive and significant impact of herd size on productivity of bovines was observed in the study area. Returns to scale were constant.