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NOTES

BRANCH EXPANSION PROGRAMME OF THE STATE BANK OF INDIA*

Need for Rural Banking

In India where about 80 per cent of the population lives in rural areas and about 50 per cent of the total national income is accounted for by agriculture, these areas and this sector should be well-served by the country's banks. But it is precisely rural areas and agriculture that have been suffering from inadequacy of banking facilities. Although agriculture constitutes the base of the country's economy, shortage and high cost of finance have been an important impediment in our agricultural progress. Commercial banks in this country are largely concentrated in bigger towns and cities and have been mainly financing industry and commerce. The bulk of the financial requirements of agriculture and rural areas is provided by private credit agencies, at very high cost and under onerous conditions. There is therefore an urgent need for the extension of banking facilities in the rural areas and for increasing the provision of institutional (cheap) finance to agriculture. With this object in view, Government has placed emphasis on co-operation as the agency for rural development and large targets have been fixed for co-operation both under the Second and the Third Five-Year Plan. Commercial banks have of course their own difficulties in operating in the rural areas and in financing agriculture. Incomes in rural areas are relatively low; agriculture is generally carried on on a small scale; most farmers do not ordinarily have security acceptable to banks; the risk involved in financing agriculture is large and branches at most rural and semi-urban centres are likely to take a long time before they become remunerative. In spite of these basic difficulties and in spite of the programmes for the development of co-operatives, there appears to be scope for commercial banks to open branches in rural and semi-urban areas where incomes are rising and planned efforts are being made to increase agricultural production and to improve agricultural methods.

Some Recent Developments

During the last three decades Government has made some efforts to increase banking facilities in the rural areas. Special committees such as the Indian Banking Enquiry Committee and the Rural Banking Enquiry Committee made recommendations in this behalf and suggested the granting of some concessions to commercial banks so as to encourage them to open branches in the rural and semi-urban areas of the country. The Reserve Bank of India has been granting remittance and other facilities to commercial banks. In spite of these efforts, the total number of offices of commercial banks did not show any marked increase until recently. Actually, between 1950 and 1954, the total number of bank offices declined by 278 to 4,032. The number of bank offices in towns with a population of less than 50,000 declined relatively to a greater extent, by 188 to 2,115. This was perhaps due to the enforcement of the Banking Companies Act passed in 1949. Even at the end of 1957, the number of bank offices in towns with a population of less than 50,000 was just 2,354. It was only in 1958 that the number increased to 2,487 and in 1959 to 2,654, mainly due to the large number of branches opened by the State Bank of India in these towns.

* This Note is contributed by the author in his personal capacity.

There have also been wide regional variations in the distribution of bank offices. Of the total number of 4,687 bank offices at the end of 1959, Bombay State accounted for 876, Madras for 764, Kerala for 624 and Uttar Pradesh for 449. These four States then accounted for about 56 per cent of the total number of bank offices in the country.

Role of the Imperial Bank of India

When the three Presidency Banks of Bombay, Bengal and Madras were amalgamated into the Imperial Bank of India in 1921, it was felt that the amalgamated institution would increase banking facilities in the country by opening branches. The Imperial Bank undertook to open 100 new branches in return for some privileges given to it by Government. During 1921 to 1928 the Imperial Bank of India followed a vigorous policy of branch expansion and opened 132 new branches, especially at places which had no banking offices before. Between 1929 and 1933, the Bank was preoccupied with the consolidation and strengthening of its existing branches. It started opening more branches once again after 1934. At the end of 1950 the total number of the Imperial Bank of India offices in the Indian Union stood at 382.

The Rural Banking Enquiry Committee recommended that the Imperial Bank of India should be enabled to establish 274 branches or treasury pay offices in the course of five years at places where cash work was being done by Government treasuries. In return, the Bank was granted certain privileges by Government. However, the programme accepted by the Imperial Bank of India envisaged the establishment of only 114 new branches in five years commencing from July, 1951. Between July 1, 1951 and June 30, 1955 (when the State Bank of India was established) the Imperial Bank of India had opened only 63 branches. The main difficulty experienced by the Imperial Bank of India in carrying out the expansion programme was the unremunerative character of the new branches situated in rural and semi-urban areas. It was therefore felt that Government itself had to assume responsibility for a more rapid expansion of banking facilities in the rural and semi-urban areas of the country.

Branch Expansion of the State Bank of India

Following the recommendations of the All-India Rural Credit Survey Committee, 1954, the State Bank of India was constituted on July 1, 1955 for the extension of banking facilities on a large scale, more particularly in the rural and semi-urban areas and for diverse other public purposes. Section 16(5) of the State Bank of India Act 1955 required the Bank to open not less than four hundred branches within a period of five years from July 1, 1955 or such extended period as the Central Government might specify. Perhaps to no part of the State Bank of India Act does public opinion attach greater importance than to this extension of banking facilities. It is a matter of gratification for the Bank that, with the opening of the 400th new branch at Kairana in U. P. on June 1, 1960, the Bank fulfilled this obligation before the expiry of five years. Indeed, the opening of 400 new branches in a period of less than five years is not only an achievement for the State Bank of India but is also a development which has no parallel in the history of Indian banking and perhaps of world banking.

For opening branches, 466 centres were selected including the 52 centres taken over from the Imperial Bank of India; 13 of these centres were subsequently transferred to the Subsidiary Banks. Great care had to be taken in selecting the centres for the opening of new branches. Some of the considerations which influenced the selection of centres were—existence of Government treasury or sub-treasury, turnover of the treasury, extent of existing banking facilities, availability of warehousing accommodation (present as well as prospective) and whether or not the centre was included in a Community Development Project. The final approval to the selection of these centres was given by the Central Government in consultation with the Reserve Bank of India.

Initial Difficulties

In the earlier stages, there were several difficulties which kept down the pace of branch expansion. The questions of accommodation, personnel, equipment and co-ordination of efforts of the various agencies concerned were serious problems indeed. Arrangements had to be made for type designs for buildings, timely supply and transport of construction materials, provision of portable strong rooms, standardisation of counters and equipment and recruitment and training of staff at different levels. With the help and co-operation received from the Central Government, the State Governments and the Reserve Bank of India, the Bank was able to get over many of these difficulties during 1957, whereafter the rate of branch expansion gathered momentum. In 1957, 91 new branches were opened as against 46 in 1956 and 20 in the latter half of 1955. Though the problem of accommodation continued to be serious even after 1957, other difficulties eased by the end of that year and the number of branches opened was 105 in 1958, 97 in 1959 and 41 till June 1, 1960. Even after completing the target of 400 branches, the Bank has continued to open more branches and the total number of its branches now comes to 663 as against 243 at the time of its establishment in 1955.

The Bank has at present (on September 30, 1960) a total of 899 branches and offices and these offices together with the 373 branches and offices of the eight State-associated banks which have now become the subsidiaries of the State Bank of India, form a network of an integrated banking structure of 1,272 offices spread over the entire country. The total deposits of this composite structure amounted on July 29, 1960 to Rs. 703.3 crores out of Rs. 1,962.3 crores of deposits of all scheduled banks on that date. This structure may be regarded as capable of providing banking and remittance facilities within easy reach from all places of importance and also being sufficiently responsive to Government policies adopted for a rapid development of the country's economy.

Rural Character

It is significant that most of these new branches of the Bank have been opened at relatively small places where banking facilities were either inadequate or non-existent. Of the 400 centres at which new branches were opened by the Bank, all except 24 have a population not exceeding 50,000, 90 places a population between 25,000 and 50,000, 209 places a population between 10,000 and 25,000 and 77 places a population below 10,000. At 64 centres there were no banking facilities whatsoever, when the Bank opened its branches. As at the end of April, 1960, 40 of the Bank's branches were situated at places where no other banking

facility was available within a distance of 20 miles. The Bank has thus achieved the object of extending 'banking facilities on a large scale more particularly in the rural and semi-urban areas' of the country.

Growth of Facilities

At the end of 1955, the deposits and advances of the Bank's (20) new branches amounted to Rs. 60.2 lakhs and Rs. 15.9 lakhs respectively. With the progressive increase in the number of new branches opened in the succeeding years, the deposits and advances of new branches steadily went up and amounted in April, 1960 to Rs. 28.73 lakhs and Rs. 22.16 lakhs respectively. These figures are indicative of the contribution which the new branches of the Bank have been making to the mobilisation of resources and to the provision of cheap credit facilities in the rural and semi-urban areas of the country.

The State Bank has also been stimulating banking development in rural and semi-urban areas by providing cheap remittance facilities for co-operative and other banks in these areas. The remittances issued by the new branches at par and at premium to scheduled banks amounted to Rs. 91.5 crores and Rs. 16.3 crores respectively during the year ended March 31, 1960. During the same period, the remittances issued to co-operative banks at par and at premium amounted to Rs. 22.2 crores and Rs. 13.4 crores respectively. In addition, co-operative banks are also given facilities for free remittances once a week in the 'reverse direction' from the headquarters of the Apex and Central Banks to their up-country branches.

Like other branches of the Bank, the new branches are also handling large business on Government account.

A Groundwork for Development

The working of these 422 new branches spread over the entire country has had a salutary effect on the economic progress of the area of their operation. The existence of a bank office facilitates the exploitation of the mineral, forest, agricultural and other resources of the surrounding area. In fact, no plan for economic development can ordinarily be successful without adequate banking facilities in the area planned for development.

Financial Implications

Opening of branches in rural areas is not ordinarily a paying proposition. This is the main reason why banking has not developed sufficiently in the rural and semi-urban areas of the country and Government looked to the Imperial Bank and the State Bank to undertake this work. The Imperial Bank of India had to face this problem in executing its expansion programme and from time to time some arrangements to reimburse it for losses had to be made. Similar is the experience of the State Bank of India in this respect. Of the 384 new branches opened till the end of April, 1960, only 47 branches were making a profit and 337 branches were run at a loss. Anticipating this difficulty and following the recommendation of the Rural Credit Survey Committee, the State Bank of India Act provided for the creation of an 'Integration and Development Fund'. In the Fund are credited dividends on shares held by the Reserve Bank to the extent

of 55 per cent of the issued capital. Losses on account of new branches in excess of an agreed share borne by the Bank are met from this Fund. So far Rs. 68.2 lakhs have been received by the Bank on this account, the remaining amount of Rs. 62.0 lakhs having been borne by the Bank itself.

Conclusions

The opening of 400 branches by the State Bank of India in a period of less than five years is undoubtedly one of the most significant developments in the history of Indian banking. As recommended by the All India Rural Credit Survey Committee, the Bank has taken over at these centres cash work from non-banking treasuries and sub-treasuries, has been providing vastly extended remittance facilities to co-operative and other banks and has generally been following a policy which while not deviating from the canons of sound business, is in effective consonance with national policies as expressed through the Central Government and the Reserve Bank of India. Having achieved the target, it is necessary for the Bank to examine the impact of the branch expansion programme in such respects as financial results, operational efficiency and service to customers with a view to consolidating its position.

G. B. KULKARNI*

FARM PLANNING APPROACH TO AGRICULTURAL PRODUCTION†

Farm planning has as an objective the reallocation of resources for maximizing production. Farm planning is the best medium to guide the farmers in making the best use of their resources, given adequate data and information. It is a means of determining income possibilities in relation to resources available. The situation, as it stands today, is that the farmers lack knowledge regarding the correct allocative decisions and suffer from low efficiency in resource use. The following are the main causes of the under-development of resources, human and economic:

- (1) Lack of balance in allocating resources for increasing efficiency of production.
- (2) Lack of emphasis on improved production practices through systematic farm planning.
- (3) Lack of knowledge regarding resource productivity in alternative uses.

The farmers make the best decisions from their viewpoint, but they cannot be expected to make correct allocative decisions without knowledge of consequences of their decisions. Farm management research investigations made in India so far including the one conducted by Dr. G. D. Agrawal, Agricultural Economist, Government Agricultural College, Kanpur on "Evaluation and demonstration

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† The author expresses his thanks to Dr. W. D. Buddemeier, Agricultural Economics Adviser, Agricultural College, Kanpur-cum-Group Leader, T.C.M. for going through the article and offering his suggestion for the general improvement of the subject matter.

of overall benefit of technical and technological improvements on farmers' holdings" clearly demonstrate that there is a vast scope for developing alternative farm plans to move the farmers from where they are to an improved position in relation to agricultural production.

Dr. Daniel, Production Economist, Government of India under T. C. M., made case studies of representative farms during 1956-58 in the various States of the country to test the possible utility and potential of the farm planning approach to expanding agricultural production. The results of his investigations are given below.

SIZE OF THE FARM, TOTAL INVESTMENT AND NET CASH INCOME†

State	Area owned per holding	Total investment per holding		Net income		Remarks
		P	A	P	A	
West Bengal	2.98	5,310	5,526	368	983	P—Present Plan
Madras	6.23	5,545	5,644	204	639	
Uttar Pradesh	7.94	8,878	9,151	591	1,287	
Bombay	10.67	10,622	10,485	156	889	
Punjab	11.96	15,414	15,375	537	1,399	A—Alternative Plan
Average	7.96	9,162	9,236	371	1,039	

† Daniel, E. F.: Farm Planning & Management, Directorate of Economics & Statistics, Ministry of Food & Agriculture, New Delhi, 1959. Extracted from Tables 1 & 3, pp. 268 and 270.

The above figures suggest that by the right selection of enterprises and correct determination of their most profitable combinations, farmers can considerably increase their income with the resources available to them. They can develop their plans provided adequate information and guidance are given by the farm management technicians in the proper allocation of resources.

FARM PLANNING — A CASE STUDY

A study of similar nature in farm planning and budgeting was made in 1957-58 by the Agricultural Economics Section, Agricultural College, Kanpur in village Shahpur, Kanpur.

Characteristics of the Study: The village is situated at a distance of 8.4 miles from the College and most of its area is low-lying. The soil is heavy in nature except in a few fields on the western boundary where the soil is light in character. The whole cultivated area of the village is irrigated by a minor canal called Kalyanpur distributory. The main crops of the village are paddy, wheat, maize, jowar, pea, *bhindi* and *torai*.

Purpose of the Study: The study was undertaken (1) to find out how far farm income could be pushed up through farm planning approach and budgeting technique and (2) to explore a basis for long range farm planning.

Method of Study: Eight farms were purposively selected to represent as large a number of farms in the village as possible. Four farmers who were ready and willing to co-operate with the College extension worker in the execution of the farm plan were chosen for introducing alternative farm plans. The other four, who were following their traditional practices, were also studied for comparison and termed as 'control'. Criteria for the control were the basic similarities as far as possible in size of the farm, homogeneity of soil and availability of labour and capital. The study was made under cost accounting methods.

Hypothesis Developed: The hypothesis developed was that, in spite of rich experience of the farmers, low efficiency of resource use is a limiting factor to raise farm income. To test the hypothesis, farm management was considered in relation to two factors, namely (1) ability of the farmers to get favourable input-output results and (2) ability of the farmers to select optimum co-ordination of enterprises provided that technical guidance was made available to them.

Appraisal of the Effectiveness of the Plan

Crop Rotations—Traditional pattern

Paddy (local or T9)—wheat
Early maize (cobs)—paddy—wheat
Early maize (cobs)—paddy—*torai* or
bhindi
Fallow—wheat
Paddy—fallow

Under the Alternative plan adopted

Paddy T9—wheat N. P. 710
Maize T41—wheat N. P. 710

Early maize (cobs)—paddy T9—wheat
Early maize (cobs)—paddy—*torai* or
bhindi

Agronomic Practices: Since the economy of the village is influenced by the proximity of the city and by the availability of canal water supply, attention for chalking out the alternative plans was mainly directed to intensifying the cropping system, fuller utilisation of the family labour through its uniform distribution over the year, more allocation of capital resources in the form of fertilizer use and better cultural practices as recommended by the Department of Agriculture, U. P.

Costs, Returns and Investment: The following tables give in a summary form the results of investigation under the traditional and alternative plans.

TABLE I

TRADITIONAL PLAN

Holdingwise Costs, Returns and Investment

Sl. No.	Area in acres	Fixed capital Rs.	Working capital Rs.	Total investment Rs.	Total cost of cultivation Rs.	Gross income Rs.	Net income Rs.	Family labour income Rs.	Farm business income Rs.
1.	7.42	865.70	215.49	1,081.19	1,060.20	2,449.95	1,389.75	1,894.16	1,931.78
2.	5.50	1,110.20	287.83	1,398.03	1,023.44	3,246.46	2,223.02	2,441.07	2,483.83
3.	6.54	569.42	227.18	796.60	1,077.44	2,339.62	1,262.18	1,611.11	1,636.56
4.	2.00	882.70	127.88	1,010.58	452.22	1,619.11	1,166.89	1,243.75	1,277.82
Total	21.46	3,428.02	858.38	4,286.40	3,613.30	9,655.14	6,041.84	7,190.09	7,329.09
Average acre		159.74	40.00	199.73	168.37	449.91	281.53	335.04	341.56
Average holding		857.01	214.60	1,071.60	903.32	2,413.78	1,510.46	1,797.52	1,832.49

ALTERNATIVE PLAN

Holdingwise Costs, Returns and Investment

Sl. No.	Area in acres	Fixed capital	Working capital	Total investment	Total cost of cultivation	Gross income	Net income	Family labour income	Farm business income
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1.	3.81	1,072.75	127.87	1,200.62	774.68	2,277.14	1,502.46	177.68	1,818.26
2.	3.56	918.97	163.17	1,082.14	852.76	1,674.61	821.85	1,002.78	1,030.16
3.	3.01	3,368.00	189.73	3,557.73	1,086.14	2,545.36	1,459.22	1,715.92	1,823.99
4.	7.85	shifted to city.							
Total	10.38	5,359.72	480.77	5,840.49	2,713.58	6,497.11	3,783.53	4,551.38	4,672.40
Average acre		516.35	46.31	562.66	261.42	625.92	364.50	438.47	450.13
Average holding		1,786.57	160.26	1,613.49	904.52	2,165.70	1,261.17	1,517.13	1,557.47

The above tables show that the total investments per acre are Rs. 199.73 and Rs. 562.66 under the traditional and improved plans respectively. The large difference in the capital outlay is due to more pucca farm buildings owned by a cultivator included in the improved plan. The operating cost is 15.77 per cent more in the improved plan than in the traditional one, but the rise in the gross and net income is 39 per cent and 29.4 per cent respectively over the corresponding incomes in the traditional plan. This is due to higher total output and the greater opportunity provided by the alternative plan in the utilization of family labour.

The above findings fully support the hypothesis that low efficiency of resource use is a contributory factor to low income of our farmers particularly in relatively more backward agricultural tracts. The additional cost incurred in developing a plan is more than counterbalanced by the additional increase in output per acre. The hazards involved in the investment of additional cost are reduced to minimum under technical guidance. If the benefits of new technology in farm practices and the credit facilities made available to the small farmers under the Integrated Scheme of Rural Credit are to be fully availed of, then farm planning should receive the top priority in the execution of the national reconstruction programme.

S. P. DHONDYAL*

MARGINAL COST CALCULATIONS IN AGRICULTURE

SOME EMPIRICAL PROBLEMS

In the wake of farm management studies, interest has been aroused in the study of production functions and cost functions. If one looks around one finds in the contemporary literature regarding agriculture in India, quite a few studies relating to these two aspects. All these studies are based on empirical data and almost invariably the source of the data is cross-sectional field investigations.

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Empirical data present some important problems regarding estimation of marginal costs. The main motivating force of estimating marginal costs is to find out whether response of agriculture to the price incentive is in full or partial measure. Such exploration may provide a policy clue for production expansion. The empirical problem is regarding finding out the most relevant marginal cost for the purpose. From the point of view of the firm, marginal cost has a meaning and a purpose. For a given period, a part of a firm's cost is of fixed character and a part is variable. Variations in the total cost during the given period arise out of variations in the variable costs for a given change in the output. By varying the variable costs and output the firm finds a suitable level which maximizes its profits. If, therefore, a firm is far below this level it may be helped to raise its production to the desired level with benefit to itself and to the community. This is a bare outline of the theoretical position. Theory thus stated assumes away two important problems: (1) external economies and diseconomies and (2) uncertainties about output and prices. In a cross-sectional study there is however an additional difficulty. There is only one observation available regarding output and costs of a firm. This makes impossible the estimation of marginal costs for a firm. Marginal cost estimates given by a cross-sectional study, in fact, refer to the community as a whole and not a firm. Difficulties of interpretation multiply when we look at the marginal cost function derived from the cross-sectional study as a function for the community. The marginal cost function for the community is a linear aggregation of the marginal cost functions of individual firms, once again ignoring the external economies or diseconomies for firms. But in the case of cross-sectional studies the marginal cost function for the community being derived from single observations for individual firms does not correspond to the linear aggregation of marginal cost functions of individual firms.

Sometimes, an attempt is made to compound the difficulties of aggregation of individual marginal cost functions into a standardized size of holding. The temptation to do this arises from the liberal use of yield-per-acre data in agriculture. What is done is this; a function is set up in which cost per maund of output of a crop is dependent on the output per acre of land, and derivative of this function is estimated. Mathematically the difference between the true marginal cost and the one just mentioned can be stated as under.¹

$$M - M^1 = \frac{dt}{dx} - \frac{xd\bar{t} - \bar{t}dx}{Ldx - x\bar{d}L} \times \frac{L^2}{x^2}$$

$$\text{where } M = \frac{dt}{dx} \text{ true marginal cost}$$

$$M^1 = \frac{d\left(\frac{t}{x}\right)}{d\left(\frac{x}{L}\right)} \text{ an empirical substitute of true marginal cost.}$$

x = output

T = Total cost

L = Land

1. Mr. P. C. Sharma, Ford Foundation Fellow in the Department of Economics has worked out the details of mathematical relationship for which the author is grateful to him.

Whether M would exceed M^1 and by how much will depend on (1) units used for x , T and L ; (2) the relative magnitudes of these three variables; and (3) relative magnitudes of the variations in three variables. However, one can definitely say that the two would rarely be identical, i.e., the value of the term $\frac{dt}{dx} - \frac{xdt}{Ldx} - \frac{Tdx}{dxL} \times \frac{L^2}{x^2}$ will rarely be zero. The solution of relating standardized firm of one acre and the cost per unit of output thus is not satisfactory.

The primary interest in the community marginal cost function (especially in case of agriculture where competition prevails) is regarding the production response to price changes in the short and the long run. For this, the estimation of supply curve directly from the study of prices and quantities on the basis of simultaneous equations would give better results. To make an allowance for dynamics various lagged functions may be devised.

C. H. SHAH*

INPUT—OUTPUT RELATIONS IN INDIAN FARM ECONOMY†

The structural maladjustment in Indian agriculture is one of the major factors preventing maximum utilisation of land. It is therefore useful to focus attention on the primary problem of correcting maladjustments in size of holdings. It would be then possible to introduce successfully rational methods of agricultural development. Indian agriculture is still a way of living, the farm being more of a family home than a business unit.

Source of Data

Basic input-output data were obtained from 401 randomly selected holdings¹ of different sizes in 16 villages of the Upper Ganges Doab² in the districts of Meerut and Muzaffarnagar, Uttar Pradesh in the year 1950-51, average size of the holding being 13 acres. In addition, 19 private farms (13 non-mechanised and 6 partially mechanised being tractor cultivated) were included to give a comparative view of farm management problems on the selected holdings and well organised farms. It was also thought necessary to compare the data on private farms with those on

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† This note is based on the summary of a thesis submitted to the Agra University for a Ph. D. Degree.

The author is grateful to Dr. R. K. Mukherjee, Vice-Chancellor of the Lucknow University, for his mature guidance in conducting the study; to Dr. Baljit Singh, Professor and Head of the Department of Economics and Sociology, Lucknow University, for his valuable suggestions on interpretation of data; to Dr. G. D. Agrawal, Production Economist, Ministry of Food & Agriculture, Government of India, New Delhi, for initiating the study and valuable guidance.

1. Holdings differ from farms, apart from size, in that the operator participates in farm work as well as makes most of the managerial decisions and his function as employer of labour is minor relative to his other functions. In the case of farms the entrepreneur simply works as a manager whose function is to employ labour and to supervise the farm work.

2. The upper region between the Jumna and Ganges Rivers is known as the Upper Ganges Doab.

State owned farms. For this purpose Government Farm, Meerut³ (non-mechanised) and two State Farms, Ganga Khadar and Hastinapur (mechanised) were selected.

In the case of Government Farm, Meerut, the costs and returns for a period of 10 years from 1941-42 to 1950-51 have been analysed. But in the case of private farms, cost-returns data relate to a period of three years from 1948-49 to 1950-51.

Characteristics of the Region

The region of Meerut and Muzaffarnagar districts is one of the best agricultural tracts in Uttar Pradesh. Farmers here are known for their skill and industry and business management. The noteworthy feature of farming in these districts is that there are few tracts elsewhere with so much soil made by human efforts. The fields are well levelled. The soil in these districts is mostly light loam. The rainfall is about 29". About two-thirds of the cultivated area is irrigated, canal irrigation being the major source. Agricultural population forms about 54 per cent of the total.

Farmers here maintain good quality of draught and milch cattle. Bullocks are mostly of Haryana breed. Both buffaloes and cows are kept for milk purposes, the preference being for buffaloes which account for 64 per cent of milch cattle. Cattle population per 100 acres of cultivated area was 71. Bullocks are the main source of motive power in agriculture, although he-buffaloes are also used occasionally. Working bullocks and he-buffaloes together numbered about 26 per 100 acres of cultivated area. The area commanded per pair of bullocks came to 7.58 acres.

The investment on livestock constituted about 48 per cent of the total value of farm assets, the draught cattle alone accounting for about 33 per cent of the total value of all assets. About one-fourth of the farmer's land and labour resources were used up in raising livestock feed.

Nearly one-third of the total farm area is double cropped. The area under sugarcane, although it is a multi-seasoned crop and occupies the field for the whole year, is treated as single cropped; otherwise the percentage intensity of cropping would have appeared much higher. Wheat and sugarcane are the major crops. These accounted for 22.59 and 21.18 per cent of the gross cropped area of the farm and contributed about 40 per cent and 20 per cent to the gross farm receipts respectively. Thus, farms in the region may be described as specialised sugarcane-cum-grain farms. Gram (pulse), corn and rice are the other major crops grown in the area. In addition an appreciable area is under fodder crops (largely sorghum) commanding about 24 and 18 per cent of the cultivated and gross cropped area respectively.

The investment in land, buildings and livestock constituted 26.77, 13.27 and 47.60 per cent respectively to total fixed capital expenditure. The investment on these items increases with the increase in the size of farms. But on the basis of

3. This farm, like most Government farms in India, is used to demonstrate improved farming methods and is expected to operate at a profit.

per acre value it has been observed that an increase in the size of farms has been followed by a decrease in its per acre value. The dead stock formed 11.67 per cent of total fixed capital expenditure. Only on one holding out of 401 studied, power driven machinery, viz., tractor was used, forming only 0.69 per cent to total fixed capital expenditure.

TABLE I—LABOUR UTILISATION

	On bullock-operated farms	On tractor-operated farms
No. of human labour days used per acre ..	54.0	25.0
Percentage of casual to total labour used ..	31.2	38.8
No. of bullock labour days used per acre ..	15.0	5.0

TABLE II—HUMAN LABOUR UTILISATION

				(Per Acre in hour units)				
				Non-mechanised farms			Mechanised farms (tractor cultivated)	
Crop				Govt. Farm Meerut	Private farms	Cultivators' holdings	State Farms Ganga Khadar, Hastinapur	Private farms
Wheat	..	..	..	470	341	364	88	159
Sugarcane <i>Planted</i>	..	..	..	429	456	473	418	280
Sugarcane <i>Ratoon</i>	..	..	..	234	184	212	103	90
Gram (pulse)	..	..	..	154	118	139	27	95
Rice	..	..	..	—	283	328	24	202
Cotton	..	..	..	583	475	428	—	379
Wheat and gram (mixed)	..	..	..	—	207	325	62	85
<i>Kharif</i> fodder	..	..	..	49	98	36	49	57
<i>Rabi</i> fodder	..	..	..	80	106	96	—	62

TABLE III—BULLOCK LABOUR UTILISATION

				(Per Acre in pair hour units)				
				Non-mechanised farms			Mechanised farms (tractor cultivated)	
Crop				Govt. Farm Meerut	Private farms	Cultivators' holdings	State Farms Ganga Khadar, Hastinapur	Private farms
Wheat	..	..	..	258	200	189	42	72
Sugarcane <i>Planted</i>	..	..	..	153	127	129	116	40
Sugarcane <i>Ratoon</i>	..	..	..	50	35	44	1	12
Gram (pulse)	..	..	..	60	45	55	24	19
Rice	..	..	..	—	28	43	11	22
Cotton	..	..	..	62	31	35	—	9
Wheat and Gram	..	..	..	—	120	144	21	22
<i>Kharif</i> fodder	..	..	..	36	22	20	5	—
<i>Rabi</i> fodder	..	..	..	12	20	21	—	3

Tables I, II and III give the human and bullock labour utilisation on the farms. Unutilised human labour constituted 19.81 per cent of the total available labour on cultivators' holdings whereas on bullock-operated private farms it amounted to 34.36 per cent. Table II reveals that the labour utilisation on non-mechanised farms was greater than that on mechanised ones as it should be. Unutilised bullock labour was 36.29 per cent and 53.75 per cent of the total bullock labour available on cultivators' holdings and bullock-operated private farms respectively. On tractor-cultivated farms it was 66.17 per cent. In respect of bullock labour utilisation, both mechanised and non-mechanised farms exhibited the same phenomenon as in the case of human labour utilisation. Tractor-cultivated farms showed lower bullock utilisation than non-mechanised ones. Rest of the findings regarding labour utilisation are summarised as follows:

(1) The smaller the size of the farm, greater was the intensity of human as well as bullock labour use. An increase in the size of the farm was followed by a decrease in the percentage of unused permanent human labour as well as bullock labour.

(2) The utilisation of human labour on non-mechanised farms was more than twice as high as on partially mechanised farms; that of bullock labour more than three times as high. Consequently, percentage of unused human and bullock labour supply was higher on partially mechanised farms than on bullock-operated farm holdings.

(3) Farms irrigated partially by *desi* wells used nearly twice as much of human labour and about thrice as much of bullock labour as that on farms irrigated by canals and tube-wells only. So, percentage of unused labour was more in the case of latter farms.

(4) The wholly irrigated farms used more than twice as much of human and bullock labour as that used on partially irrigated farms. Percentage of unused labour supply, therefore, was more in the case of partially irrigated farms.

As regards casual labour, its percentage to the total employed human labour increased with the size of the farm or holding. Further partially mechanised farms, farms irrigated by canals or tube-wells and partially irrigated farms had a higher percentage of casual labour in the total labour employed than on non-mechanised farms, farms irrigated partly by *desi* wells and wholly irrigated farms respectively.

EXPLANATION

Cultivation Expenses:—The cultivation expenses include land revenue or rent paid, cost of human labour (casual, permanent and family labour, the last one charged at the rate payable to permanent hired labour), cost of bullock labour (calculated on the basis of its maintenance cost), cost of seed and manure, irrigation charges, interest on working capital, repairs to dead stock and interest and depreciation on fixed capital.

In case of Government farms and private farms in addition to the above items the supervision charges wherever actually incurred also have been included in the cultivation expenses.

Cost of production:—In case of sugarcane, cotton and rice where the by-products are of smaller economic value, the method adopted to determine the cost of production is to deduct the value of by-products from the total cost and charge the remainder to the main product.

In case of other crops, *i.e.*, wheat, wheat-gram (mixed) and gram, the cost has been apportioned between the main product and the by-products on the basis of the ratio of value of each product to the total receipt of the commodity.

Income:—It includes the gross income of all crop enterprises, *i.e.*, the value of main product as well as of by-products of all crop enterprises calculated on the basis of farm price.

Net Profit or Loss:—It means the gross income (*i. e.*, value of main product as well as of by-products evaluated at the market price) minus cultivation expenses.

(*N.B.*: In all cases the evaluation has been done on the basis of market price prevailing in the village).

ANALYSIS

Cultivation Expenses per Acre

Table IV presents per acre cultivation expenses of different crops on non-mechanised and mechanised farms with further classification into Government farm, private farms and cultivators' holdings.

				TABLE IV—CULTIVATION EXPENSES			(Per Acre in Rupees ⁴)	
				Non-mechanised farms			Mechanised farms (tractor cultivated)	
Crop				Govt. farm Meerut	Private farms	Cultivators' holdings	State Farms Ganga Khadar, Hastinapur	Private farms
Wheat	..	..	..	376.0	376.0	327.0	135.0	276.0
Sugarcane Planted	..	..	..	486.0	525.0	402.0	401.0	400.1
Sugarcane Ratoon ⁵	..	..	..	255.0	194.0	152.0	36.0	151.0
Gram (pulse)	..	..	..	102.0	92.0	102.0	58.0	66.0
Rice	..	..	..	—	116.0	120.0	76.0	129.0
Cotton	..	..	..	206.0	119.0	115.0	—	114.0
Corn	..	..	..	—	156.0	132.0	—	80.0
Wheat and gram (mixed)	..	..	..	—	225.0	249.0	81.0	76.0
Kharif fodder ⁶	..	..	..	67.0	52.0	42.0	55.0	29.0
Rabi fodder ⁷	..	..	..	61.0	58.0	54.0	—	44.0

4. One rupee = \$ 0.211.

5. *Ratoon* is the sugarcane crop raised from new shoots that spring up from the roots after a first crop is harvested.

6. *Kharif* is the season of the monsoon rains extending from July to October. Sorghum, corn and rice are principal crops of this season.

7. *Rabi* is the low-rainfall winter-crop season extending from November to April. This is the season during which wheat, barley, oats, peas and linseed are grown.

It can be seen that except in the case of rice and cotton which require most of their operations to be done either by human or bullock labour and where the value of cost of cultivation on non-mechanised and mechanised (tractor cultivated) farms was merely the same, the cost values were higher on bullock operated (non-mechanised) farms. In case of bullock operated farms due to small resources available with cultivators, the per acre investment in majority cases was higher on private farms and on Government farm, Meerut than on cultivators' holdings. Due to the unirrigated conditions and the comparative largeness of area of the mechanised State farms, at Ganga Khadar and Hastinapur, they showed lower values of cost per acre than the private farms except for wheat, gram (pulse) and *Kharif* fodder. The cultivation expenses on sugarcane planted were exactly the same on these farms.

Per Acre Yield, Profit or Loss, and Cost of Production per Maund

Tables V, VI and VII give the comparative values of yield, net profit or loss and cost of production per maund of different crops on different categories of farms.

TABLE V—YIELD

(Per Acre in Maunds⁸)

Crop	Non-mechanised farms			Mechanised farms (tractor cultivated)	
	Govt. farm, Meerut	Private farms	Cultivators' holdings	State farms Ganga Khadar, Hastinapur	Private farms
Wheat	34.5	17.1	15.3	9.8	13.8
Sugarcane <i>Planted</i>	506.0	655.0	527.0	338.0	403.0
Sugarcane <i>Ratoon</i>	458.0	338.0	343.0	342.0	326.0
Gram (pulse)	13.4	8.9	10.2	0.7	8.3
Rice	—	13.4	17.7	6.1	12.0
Cotton	6.4	10.7	6.8	—	4.0
Wheat and gram (mixed) ..	—	10.1	15.1	11.0	5.1

8. A maund is a measure of weight equal to 82.28 pounds.

The table clearly brings out the fact that the yield per acre of the various crops were higher on non-mechanised farms than on mechanised ones. The gram crop in State farms, Ganga Khadar and Hastinapur failed almost completely and this is the reason why the yield per acre was too low.

TABLE VI—NET PROFIT OR LOSS

Crop	(Per Acre in Rupees)				
	Non-mechanised farms			Mechanised farms (tractor cultivated)	
	Govt. Farm Meerut	Private farms	Cultivators' holdings	State Farms Ganga Khadar, Hastinapur	Private farms
Wheat	440	58	86	81	67
Sugarcane <i>Planted</i>	526	459	392	192	310
Sugarcane <i>Ratoon</i>	546	368	329	543	381
Gram (pulse)	113	83	85	—50	80
Rice	—	106	142	3	27
Cotton	138	167	75	—	5
Wheat and gram (mixed) ..	—	11	96	105	32
<i>Kharif</i> fodder	138	142	134	86	104
<i>Rabi</i> fodder	32	86	71	—	64

Excepting the cases of sugarcane *ratoon* and wheat and gram, non-mechanised farms gave higher values of profit per acre than mechanised ones. Among non-mechanised farms the Government Farm, Meerut gave the highest profit per acre of wheat, sugarcane planted, sugarcane *ratoon* and gram (pulse), whereas in the case of cotton and *Kharif* fodder private farms recorded the highest profit per acre. Comparing the mechanised State farms, Ganga Khadar and Hastinapur with mechanised private farms, we find that the former gave higher profits per acre for wheat, sugarcane *ratoon* and wheat and gram.

TABLE VII—COST OF PRODUCTION

Crop	(Per Maund in Rupees)				
	Non-mechanised farms			Mechanised farms (tractor cultivated)	
	Govt. Farm Meerut	Private farms	Cultivators' holdings	State Farms Ganga Khadar, Hastinapur	Private farms
Wheat	9.00	18.46	18.27	11.41	16.59
Sugarcane <i>Planted</i>	0.96	0.89	0.81	1.22	0.99
Sugarcane <i>Ratoon</i>	0.56	0.57	0.52	0.13	0.48
Gram (pulse)	6.56	11.37	11.04	—	10.69
Rice	—	10.09	7.93	16.11	12.94
Cotton	32.30	14.59	20.53	—	33.12
Wheat and gram (mixed) ..	—	18.64	15.09	5.91	14.87

Non-mechanised farms incurred higher costs of production per maund in the case of wheat, sugarcane *ratoon*, gram and wheat and gram than mechanised farms. Among the non-mechanised farms, the Government Farm, Meerut recorded the lowest cost of production per maund for all crops except cotton.

Input-Output Relationship

The co-relation study performed on the input-output data in the cultivation of crops has given quite useful results. The yield per acre has been found to be increasing as the input of labour and manure increases in the case of all the three crops, namely, wheat, sugarcane planted and sugarcane *ratoon*, the data for which have been analysed. But it has been noted that the strength of relationship between the output and the input as well as the value of the ratio of output to input, goes down as input increases.

Income, Expenditure and Net Profit or Loss

Table VIII shows the income, expenditure and net profit per farm as well as their per acre values on different categories of farms.

TABLE VIII

(Per Acre in Rupees)

Particulars	Average size in acres	Income		Expenditure		Net Profit	
		Total	Per acre	Total	Per acre	Total	Per acre
A. <i>Non-mechanised Farms</i>							
Govt. Farm, Meerut ..	68.42	34,144	499	20,745	303	13,399	196
Private farms ..	53.71	31,653	589	20,041	373	11,612	216
Cultivators' holdings ..	12.85	6,341	493	3,831	298	2,510	195
B. <i>Mechanised (tractor cultivated)</i>							
State Farms, Ganga Khadar and Hastinapur ..	1,140.00	2,35,859	207	1,33,222	117	1,02,637	90
Private farms ..	166.01	69,951	421	36,792	222	33,159	199

The table reveals that the income, expenditure and net profit per farm increased with the size of the farm. By reducing the figures to a per acre basis it can be seen that Government Farm, Meerut closely resembles the cultivators' holdings. Bullock operated farms showed higher values of income, expenditure and net profit per acre than all the other types of farms. On mechanised private farms, the income and expenditure per acre were significantly lower than on bullock operated private farms, but the difference in their profits per acre was negligible. State farms at Ganga Khadar and Hastinapur stand last in the list, the expenditure, income and net profit per acre being the lowest in comparison

to the other farms. The area of these farms was the largest and due to mechanisation and lack of irrigation facilities, the standard of cultivation on these farms was very low.

A noteworthy feature is that with increase of expenditure per acre, the income and net profit per acre also increase. The increase was more significant in the case of mechanized farms than non-mechanized ones.

C. P. SHASTRI*

SIZE OF THE PRIMARY RURAL CO-OPERATIVE

This note proposes only to review the trends in official thinking regarding the size of the primary co-operative society. Such a review has become necessary at this stage due to continued debate on the subject and consequent uncertainty ruling the policy formulation and adoption. The issue involved in the debate is regarding the conflict between the close association of members on the one hand and economic efficiency on the other. If one follows the debate carefully one finds that the controversy has always centred round one or the other extreme position and rarely round the achievement of the best results with the available material and in the prevailing economic background.

The opinion on the problem of the size of primary society has always been divided since the beginning of the co-operative movement in India. One section believed that adherence to the principle of 'one village, one society' has been one of the important causes of the failure of co-operation. The Rural Credit Survey Committee concurred with this view. The Committee believed that a single village society has not only failed in fostering the basic postulate of mutuality — mutual knowledge, mutual help and mutual supervision — but also gave rise to economically weak and inefficient units as a result of small uneconomic turnover and meagre command over resources. They therefore recommended that "the future line of development of co-operative credit at the village level should be unhesitatingly in the direction of bigger societies covering larger areas.....to cover according to local conditions, groups of villages with reasonably large membership and reasonably adequate share-capital" so that they may secure 'adequate business.' The Committee unsuccessfully attempted to define in round-about manner phrases like 'bigger societies,' 'optimum size,' and 'large-sized,' by linking them with 'reasonable' membership, share-capital, business, etc. How many members may be considered reasonably large? What should be the reasonable share-capital? What local conditions should be taken into account in determining reasonableness? How much business can be considered adequate? What functions should this business include? Should this test of adequate business be satisfied at the commencement or at some later date? By leaving these and such other questions unanswered, the Committee gave rise to extraordinary vagueness.

The Second Five-Year Plan of Co-operation drawn up broadly on the lines recommended by the Rural Credit Survey Committee, echoed almost in the same

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phraseology the necessity of organising large-sized societies. The term 'large-sized' in preference to bigger or optimum sized seemed to acquire some concrete meaning when the plan said "it would have a membership of about 500....a minimum share-capital of about Rs. 15,000, and would serve an appropriate number of villages grouped together providing (wherever possible) a total annual business of about Rs. 1.5 lakhs." The Second Five-Year Plan definition failed to say anything on 'appropriate number of villages' either maximum or minimum, and added to the confusion in regard to the total annual business to be transacted by inserting a qualifying clause 'wherever possible.'

But the planners seemed to be in two minds, when they said 'the area of jurisdiction should on the one hand be large enough to make it an efficient unit and on the other it should not be too large that it might become difficult to secure amongst members the knowledge, etc.... and the question of combining small villages into units with the population about 1,000 *deserves* to be examined.' This statement unwittingly revived the old controversy on economic vs. co-operative aspects of the primary co-operative. For the first time it attempted to define operational area in terms of population, viz., 1,000 which may come to 200 households. Now assuming that every household has one member, the total membership will come to 200 as against the prescribed 500. Small membership means smaller business, at any rate initially, and here therefore we realise the significance of the qualifying clause 'wherever possible.' The question of potential business as against the present is implied when it says that "co-operation should extend to all activities in the village including cultivation." It leaves any one at his wit's end as to how two contradictory statements found their place in the same chapter.

The contradictory position merely reflected the divided opinion in the Government circle. The Prime Minister spearheaded the second view. As early as in November, 1956, while inaugurating the National Co-operative Development and Warehousing Board, he strongly deprecated the growing official control on co-operative movement and somehow came to associate large-sized co-operatives with greater official control. Again in his inaugural address at the Third Indian Co-operative Congress held in New Delhi in April, 1958, he specially raised the question of the size and said "it may well achieve some temporary results but in achieving these temporary results possibly it will do permanent harm and will again come in the way of the very development of that spirit of self-dependence, self-reliance, of co-operating with each other and will encourage something which I believe is completely wrong and which is so much prevalent in this country, of just looking up to the Government for everything." Presumably referring to the same aspect he went on to say "I think our Government was quite wrong in accepting some of the decisions of the Rural Credit Survey Committee, not all but some. I am sorry for it.....the approach in some respects was not a sound approach and tended to push the co-operative movement in the wrong direction."

These lengthy quotations and their timings are key to the Resolution of the National Development Council on Co-operative Policy in November, 1958. The whole period covering about two years witnessed not only a gradual departure from the accepted policy but also an active search for an alternative form that may achieve both the objectives. They found in 'service co-operative' such an alternative, that may preserve the local character and at the same time become economically viable by covering uncovered families and exploring spheres of potential

expansion. The Resolution said "for the development of co-operation as a people's movement, it was essential that co-operatives should be organised on the basis of the village community as the primary unit, and that responsibility and initiative for social and economic development at the village level should be placed fully on the village co-operative and the village panchayat.....where villages are too small, with the consent of the communities concerned, it will be convenient to form them into larger groups with a population of about 1,000. As a rule, the co-operative and the Panchayat should serve identical areas." To analyse the implications of this Resolution the Working Group on Co-operative Policy was appointed which fully endorsed the views of the N. D. C. on the size of the primary co-operative. It however accepted the possibility of unsuitability of such a general pattern in tracts which are specially backward in the economic sense or are sparsely populated as also in areas in which co-operative societies have for various reasons been chronically stagnant and fail to render even the minimum services. In such special circumstances individual societies should be brought into a 'credit union' for the primary purpose of credit so as to command adequate business, the credit union might cover a compact area comprising a group of villages with a population of 4,000 to 5,000 and its area should not ordinarily cover more than 3 miles. "The total membership of the Union should be at least 250 when it is registered and when it fully developed it may be about 800 to 1,000.... with share capital of about Rs. 20,000 to Rs. 25,000." Such unions were also supposed to help in developing non-credit functions. With large parts of our areas being backward and co-operative societies almost chronically stagnant, we may witness an emergence of wide net-work of credit unions. This in itself means a great concession to the concept of large-sized societies. Perhaps it is a more cumbersome method of introducing it. The policy letter (May, 1959) of the Ministry of Community Development and Co-operation completely accepted the recommendations of the Working Group on the question of size.

Encouraged by the temporary concession in the form of credit unions, the advocates of large-sized societies continued to exert from time to time pressure on economic grounds. The problem with its attendant confusion was so much in the air that when the Committee on Co-operative Credit was appointed in September, 1959, following the recommendation of the Conference of State Ministers in-charge of Co-operation at Mysore in July, 1959, obviously to offer concrete suggestions as to how to expand credit for agricultural production on an appreciable scale, the whole issue of the size came once again under comprehensive review. This Committee brought us back to the same place from where we had started. Except for the substitution of the term 'viable unit' in place of the 'large-sized' the Committee reaffirmed its faith in both the logic and conclusions of the Rural Credit Survey Committee. We are reminded, for instance, of the existence of a large number of weak and dormant societies that need urgent reorganisation. One of the most important considerations governing reorganisation is economic viability. They defined a viable unit as that "which may be expected within a reasonable time to render the more important of these services both adequately and to as large a number of producers as possible, without depending on financial assistance from Government except for a limited time. In order to do this the society must have the ability not only to command the service of the competent personnel but at the end of the stipulated period be able to meet fully the expenditure incurred on such personnel.... (and) earn profits in order to provide for reserves, to maintain a fund for bad and doubtful debts and to pay a reasonable return on share

capital." Conceding the superiority of 'one village, one society' ideal from the point of view of development of co-operative spirit the Committee accepted 'the need to combine two or more villages in order to secure viability.' They further added that "no village included in a society should be at a distance of more than three or four miles from the headquarters village... as regards the number of families the majority of us are of the view that a broad indication of the maximum should be given, since, otherwise, the societies formed might in some instances, be too large." The limit put by the majority was a population of about 3,000 (*i.e.*, 600 families or about 500 cultivating families). The majority decision was almost identical to the one embodied in the Second Plan. It was essentially a compromise between the two extremes. In emphasising strongly the need for 'workable compromises,' a "flexibility in approach" and cognisance of local conditions, the Committee warned the enthusiasts of both the schools against taking rigid stands. So again we come back to the position where we know as little or as more about the exact connotations of a 'viable unit' or reasonable membership or share-capital or adequate business (to mention only a few) as we did from the Report of the Rural Credit Survey Committee. The Committee on Co-operative Credit consisting of eminent co-operators, has not succeeded in dispelling the atmosphere of uncertainty and vagueness and the proof of this was amply available when the conference of the State Ministers in-charge of Co-operation met at Shrinagar in 1960.

The whole controversy on the size, which became acrimonious at times, was rather misdirected. It seems to have arisen out of the misconception of the word 'large-sized society.' The word 'large-sized' was a misnomer; what is really implied was 'economic units', units that might have enough business and resources to run in economically efficient manner. The need for such efficient units cannot be gainsaid, particularly at the time when we have accepted primary co-operatives as the basic institution of rural development. Stagnant and weak primary societies will prove serious hindrance to rural development. So far we have no evidence to prove that mere smallness of their size is primarily responsible for the promotion of co-operative spirit. On the contrary we have many examples to show that promotion of co-operative spirit largely depends upon the successful working of co-operatives. It is wrong to presume that there is any contradiction between the economic viability and co-operative aspect of the primary society. In many of the western countries, the orthodox concept of co-operative spirit has been considerably modified in the face of fast expanding co-operative enterprises and new ways and means are explored to promote co-operative consciousness among their members. In the changed context of rapid rural development, the economic aspect of co-operatives can be neglected only at great costs and the orthodox ideological aspect needs a critical examination. We have almost taken for granted that limited membership and operational area necessarily promote co-operative spirit, that they are essential and indispensable parts of co-operative ideology and that no other ways and means can be found to fill the ideological gap that may arise from compromising with them. The working of the co-operative movement in our country for more than 55 years and also the experience of other countries should help us in trying to examine our assumptions. A clearer understanding of the ideological aspect of a co-operative will greatly help us in determining its economic nature.

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