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## **RAPPORTEUR'S REPORT**

### **ON**

#### **PROBLEMS OF SMALL-SCALE FARMING [INCLUDING PRODUCTION, CREDIT, MARKETING (TRADING)]**

*Rapporteur : R. Thamarajakshi\**

The importance of small-scale farming in Indian agriculture, which has a preponderance of operational holdings of size less than two hectares, is too obvious to be stressed. The physical limitations of the land base and the constraints on capital combined with an abundant availability of family labour result in factoral disequilibrium on these tiny-sized and fragmented holdings, further leading to questions about their economic efficiency. The economic disabilities of the small farm-firms are accentuated by the tenurial handicaps faced by them, not to mention the impact that the "smallness" of the operational holdings has on the market behaviour of these farmers, especially on their holding capacity. The identification of the small operators and rectification of the economic inadequacies under which they function have become particularly relevant not only for sustaining the tempo of technological change in Indian agriculture but more importantly, from the point of view of social justice. Apart from understanding the criteria for identifying the small farms in different agro-climatic and crop zones in the country, it is necessary to (i) analyse the nature of resource availability, particularly irrigation and working capital, resource use and allocative efficiency on these farms, (ii) assess the scope for increasing the incomes of small farmers from farming under traditional technology, (iii) study the possibilities for diversifying their farm enterprise through the provision of such subsidiary activities as are consistent with the production assets of these holdings, (iv) examine the constraining factors—economic as well as institutional—that inhibit these farms from adopting the new technology and (v) outline the measures for reorienting the existing land ownership pattern, institutional framework, credit structure and marketing arrangements with a view to servicing the 'small' man in agriculture.

The papers received for discussion on this vital issue of great policy relevance have attempted to tackle some of the aforesaid aspects, though not in depth. In what follows, a broad review of these papers is presented.

#### **IDENTIFYING THE SMALL FARM-FIRM**

It may be clarified at the outset that even for a homogeneous agro-climatic tract, the definition of a 'small' holding in terms of physical acreage cannot but be arbitrary and notional. What is perhaps determinable with

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\* Director, Agricultural Prices Commission, Ministry of Agriculture, Government of India, New Delhi.

a reasonable degree of objectivity is the physical size of farm expressed in terms of a measure of efficiency and corresponding to a norm of subsistence; the minimum size of holding whose productive efficiency would enable the fulfilment of the subsistence requirements of an average farm family would then become the dividing line for distinguishing the viable from the non-viable farms. In fact, in discussions on the identification of the small farm or its operator, it is a concept of viability that is relevant. It is true that in any given context, alternative standards of viability could be established depending upon the measure of efficiency and the norm of subsistence that are adopted. Given the heterogeneity of agro-climatic conditions and resource endowments particularly of irrigation, in the different farming regions of the country, the minimum size of the viable farm, for any accepted standard of viability, would tend to be different for different regions. From the policy point of view, the farms to be identified are the potentially viable ones among the non-viable category as also such viable farm units which are not far above the dividing line.

Some of the papers have attempted to examine the alternative criteria for identifying the small operators. B. N. Banerjee and A. S. Sirohi have estimated for the Chandauli tehsil in Varanasi district in Eastern Uttar Pradesh, the practical critical size for the viable farm under different resource situations defined in terms of consolidation, irrigation and infrastructure. With the help of quadratic functional relationships between farm size and farm business income established on the basis of sample data, the size of the operational holding which could provide the minimum income required for maintaining a family of four adult units and a pair of bullocks is determined. The sizes of viable holding thus derived are not far different from the potential normative sizes obtained from parametric programming. The minimum food requirements used in this exercise have been worked out on the basis of nutritional norms; in view of this particularly, it would have been useful if the authors had presented the actual percentage of total farms which get classified as non-viable. Jagdeesh C. Kalla and Sheo R. Chaudhry have developed for the Pratappura village in Rajasthan, discriminant functions involving a joint set of criteria, *viz.*, gross income, net worth, consumption expenditure, labour expenses and size of holding for distinguishing the small from the large farms. Except for net worth, the other variables included in the aforesaid discriminant function may be taken to be, in effect, a joint consideration of incomes and consumption expenditure of the farm family, *i.e.*, the method used by Banerjee-Sirohi; as for net worth itself the practical problems of measurement of the same in respect of a farm enterprise could be immense. K. S. Suryanarayana and P. B. Parthasarathy have worked out for Mahaboobnagar district in Andhra Pradesh, alternative estimates of the size of farm corresponding to the average levels of per farm indicators of efficiency or input use such as gross value of output, net income, investment, farm workers, cattle pairs and number of ploughs. The advisability of thus severally employing alternative criteria is questionable; for instance, the range

of 'small' farm under wholly unirrigated conditions in Mahaboobnagar district emerges to be as wide as 20.3 to 32.5 acres under existing technology. S. L. Shah, V. K. Pandey and P. K. Singh however do a slightly different exercise in defining viability of the farm by employing two different norms in respect of the disposition of income; that the size of farm is considered viable where the net income is sufficient either (a) for maintaining the customary level of living, or alternatively (b) for paying off all costs, both paid out and imputed. The number of viable farms on the basis of the latter criterion is observed to be much larger than that according to the former.

#### ECONOMICS OF SMALL-SCALE FARMING : COSTS, RETURNS AND EFFICIENCY

Available empirical evidence on the basis of farm management studies pertaining to the pre-green revolution period had indicated a general inverse relationship between farm size and per hectare productivity. Whether this also reflected a higher economic efficiency on these farms depends upon the nature of explanation that is extended in respect of this phenomenon. However, this phenomenon itself seems to be weakening, if not disappearing, as is observed from the non-significant correlation between farm size and output per acre in the late 'sixties in Ferozepur (Punjab) and West Godavari (Andhra Pradesh) and the reduced magnitude of the regression coefficient in this regard in Muzaffarnagar (Uttar Pradesh) in the late 'sixties compared to the 'fifties.<sup>1</sup> This is generally explained by the fact that the factor substitution permitted by the new technical change, *viz.*, "capital for land rather than labour for land is not conducive to small farms, as small farms are not only deficient in land area but particularly deficient in capital in the form of fertilizers, pesticides, etc., which are crucial to reap the full benefits of the new technologies" (V. T. Raju).

Quite a few of the papers have analysed the economics of small-scale farming. S. L. Shah, V. K. Pandey and J. B. Singh present the costs and returns (using standard cost concepts) of small, medium and large farms in respect of wheat (HYV), paddy (HYV), sugarcane and potato in the eastern, central and western regions of Uttar Pradesh; this study is based on a sample of 264 farmers, the reference year being 1973-74. It is shown that whereas the small farms in both the western and the eastern regions of the State do not have any cost advantage over the medium and the large farms, even in regard to the most important crops of these regions, the small farms in the central region, generally, have a cost advantage over the larger farms in the cultivation of major food grains and sugarcane crop. A pertinent inference is drawn that generalisations on the basis of inter-farm cost comparisons are valid only for homogeneous agro-climatic regions. The authors

1. C. H. Hanumantha Rao: *Technological Change and the Distribution of Gains in Indian Agriculture*, pp. 204-206 (mimeo.) (in press with Macmillan, New Delhi).

have neither presented the detailed structure of costs in respect of the different crops and for the different farm sizes, nor have they explained the imputation procedures and the apportionment of costs among the different crops. It is interesting to find from a comparison of Cost  $A_1$  and Cost  $A_2$  figures for the different farms that there is no leasing-in of land by the medium and the large farmers in any of the three regions of Uttar Pradesh. Incidentally, it is hoped that the observed equality between Cost  $A_2$  and Cost B figures for sugarcane for the small farmers of the central region is the result of a typographical error. A comparison of Cost B and Cost C figures shows that the deployment of family labour is not a unique phenomenon in respect of only the small or the medium farmers; there is family labour participation on the larger farms too.

P. K. Aiyasamy, V. Rajagopalan and R. Sundaresan show on the basis of data pertaining to a sample of over 100 small farms in Tamil Nadu—drawn from the well irrigated Salem district, the canal irrigated Thanjavur district, the tank irrigated Chingleput district and the rainfed East Ramanathapuram district—that the hired labour per hectare of gross cropped area is as high as 61 per cent. The linear explanation of the quantum of family labour used on the small farms in terms of gross cropped area, gross income and wage rate for hired labour does not turn out to be strong except in the case of Chingleput district as reflected by the magnitude of the coefficient of determination. Apart from the fact that “gross income,” one of the chosen independent variables, has not been properly defined, it seems that a labour use equation could have been fitted for the sample as a whole, using dummies for the different irrigation situations instead of working out separate explanations for each of the irrigation situations. It is interesting to note that considering the statistically significant results only, the relationship between gross cropped area and use of family labour on own farms is positive for all the irrigation situations, whereas that between gross income and use of family labour is positive for the well irrigated district of Salem and negative for the canal irrigated district of Thanjavur. Explaining the latter set of results, the authors point out that “Salem zone is noted for relatively higher degree of monetization and also arduous nature of farming. An increase in the gross income may impel further motivation for family labour participation and hence the positive sign must be interpreted accordingly. On the other hand, Thanjavur zone is noted for canal irrigation and extensive rice cultivation. An increase in the gross income is likely to take off, to some extent, family labour from direct participation.” The negative and significant relationships between family labour use and the wage rates for hired labour observed in respect of sample data for Thanjavur and Chingleput districts are not clarified by the authors.

Jagannathrao R. Pawar and Rajshekhar J. Patil conclude on the basis of a production function analysis of the data relating to a sample of 29 small farms and 28 large farms in the dry farming areas in Ahmednagar district in Maharashtra, that small-scale farming is as efficient as large-scale farming

and that the productivities of resources do not show any substantial differences on the two types of farms under the existing technology. On the other hand, B. N. Banerjee and A. S. Sirohi have shown with the help of data for Tendui village in Varanasi district in Uttar Pradesh that under the existing plans, resources on the non-viable small farms are not optimally utilized; incidentally this study is an extension of the authors' exercise—already referred to above—in identification of the viable farms in this district. A similar conclusion is reached by V. Prasad in respect of a sample of 100 farms selected from the Barhpur block of Farrukhabad district; a readjustment of production expenses is indicated from human labour to manures, fertilizer and seeds for being able to optimize returns. The study by G. N. Singh and H. L. Srivastava, relating to the Pindara block of Varanasi district in Uttar Pradesh also bears evidence to the fact that the small farmers are not making optimal use of fertilizers and irrigation. S. A. Radhakrishnan and B. Sridharan analyse the sample data for 45 small farmers in the Kancheepuram taluk of Chingleput district of Tamil Nadu, work out the optimum cropping pattern for the pre-development and the post-development situations and observe that whereas the existing cropping pattern under traditional methods of farming is generally optimal, it is not so under conditions of new technology; this, in the view of the authors, is perhaps because the small farmer takes time to adjust himself to irrigated agriculture using lift irrigation. J. S. Chawla finds on an analysis of production expenditure in respect of a sample of 70 farms in Patti block of Amritsar district in Punjab that the per acre expenditure on modern inputs of seeds, fertilizer, insecticides and tubewell irrigation varies positively with the size of holding. The application of fertilizers on the small farms has also been observed to be at levels lower than the recommended doses due to "low income, high prices, ignorance" and "difficulties with regard to power supply and repair of tubewells which ultimately adversely affected the irrigation and hence the use of fertilizers;" the study refers to 1972-73. B. S. Rathore, B. M. Dixit and M. L. Bariwal compare the resource use efficiency of irrigated small holdings and unirrigated small holdings with the help of sample data for 1974-75 relating to 50 small farmers in Udaipur district of Rajasthan and discover that while labour is surplus on the irrigated holdings, additional capital expenditure without irrigation has no meaning for the unirrigated holdings.

#### ADOPTER AND NON-ADOPTER FARMS

The factors inhibiting the adoption of new technology have received the attention of some authors. In this connection, while lack of suitable crop varieties and the need for soil and water management are a couple of important issues referred to by A. K. Chaudhari and B. N. Tripathi in respect of the dry land area of Indore in Madhya Pradesh, J. P. Bhati lists, *inter alia*, high cost of HYV technology, inadequate and untimely supply of required inputs, absence of proper roads and lack of adequate transport facilities for



the flow of agricultural information as constraints to the adoption of new technology in Tharu tribal agriculture

Some of the papers have also examined the relative economic efficiency of the adopter farms vis-a-vis the non-adopter farms. V. T. Raju bases himself on data taken from the Benchmark and Assessment Surveys of the IADP district of West Godavari conducted in 1967-68 and 1970-71, compares the performance of the adopter small farmers at the two points of time and examines the resource use efficiency of the adopters and the non-adopters in 1970-71. The elasticity of gross income from crop production to the total cost exclusive of family labour and rental value of land for the adopters is observed to be almost three times that for the non-adopters. It may however be mentioned that whereas the total cost as defined in the paper explains 87 per cent of the variation in the gross income of the adopters, the corresponding percentage of explanation in regard to the production function for the non-adopters is only 65 per cent. In fact, in the more detailed production function which explains gross income in terms of expenses on seed, fertilizer, irrigation, plant protection and hired human labour, as much as 33 per cent of the variation in the gross income of the non-adopters is left unexplained by the chosen specification; also, only the coefficients of irrigation and fertilizer are significant for this category of farmers.

On the basis of a production function analysis of data for 1971-72 in respect of 36 farmers in the small farm districts of Udaipur and Chittorgarh in southern Rajasthan, S.S. Acharya and G.C. Shukla find that the total cost as also the gross income-total cost ratio are higher on the participant farms than on the non-participant farms. Curiously enough, the ratio of marginal value product of labour to its factor cost is nearly two with the result that an "increase in labour input would significantly increase the small farmers' incomes." Another inference from this study that the returns to capital in the form of HYV seeds, fertilizers and insecticides are well above its factor cost is borne out by the study by S. M. Soham and B.S. Rathore of a sample of small farmers—18 adopters and 25 non-adopters—selected from four *panchayat samities* in eastern Rajasthan; the adopter farmers have not been using the improved agricultural inputs upto the desired extent, although improved input use in package proved profitable on the small sized farms.

#### PROSPECTS FOR INCREASING INCOMES OF SMALL FARMS

It is generally accepted that considerable increases in the farm business incomes of small farms are possible even under traditional technology, if adequate resources and technical guidance are extended to them. "Farm management studies have shown that in irrigated areas of Punjab and Haryana, a one hectare farm with a current investment of Rs. 1,254 can, with improved technology, give a net monetary return of Rs. 2,750 by raising two crops—*kharif* paddy followed by *rabi* wheat. Similarly, the alternative rotation of



*kharif* maize followed by *rabi* wheat can give a net income of Rs. 2,600 with an investment of Rs. 1,075. Incomes of this order would take the farmers with irrigated holdings of one hectare above the national desirable minimum level of consumption which can be put at about Rs. 2,500 per family assuming the per capita consumption at Rs. 37 per month at 1971-72 prices. It appears possible to attain this level of income from a holding of about 2 hectares in rainfed areas, with land development, application of improved technology and necessary physical inputs. Even in holdings below this size in rainfed areas, gains are possible with such an approach although these may not be sufficient to take the family above the minimum consumption level. However, the economics clearly show that if proper arrangements are made to improve the crop production of the small and marginal farmers, both in irrigated and unirrigated areas, the income levels can be substantially improved."<sup>2</sup> That the small farmers also make rational calculation in respect of input use just as the large farmers do if only they operated under similar agro-economic environmental conditions is amply borne out by the fact that "the ranking of districts according to the adoption of improved seeds by large farmers followed the same pattern as of small farmers indicating the operation of common factors (like irrigation and extension) behind such adoption by both the groups, besides those specific to each group."<sup>3</sup>

In view of the aforesaid, the crucial importance of capital and water resources for the development of subsistence agriculture needs to be appreciated. From the operational point of view, the requirements of capital, the supply of own funds, the quantum of credit required, the actual availability of credit and the credit gap have to be assessed, particularly in the context of the new technology.

### *Role of Capital*

A.C. Gangwar and R.K. Ghakhar examine the potentialities for increasing the incomes of small farms on the basis of an analysis of data for the agricultural year 1973-74 pertaining to a sample of small farmers selected from two villages of Gurgaon block in Haryana, where the SFDA operations are intensive. Using the variable capital programming technique, the authors derive a continuous solution of capital requirements for optimum plans at the existing and improved levels of technology. Whereas under the traditional technology, an optimum plan for generating a net income of about Rs. 2,600 requires a working capital expenditure of Rs. 1,500, a little less than twice this amount of capital could suffice for an optimum farm plan under the improved technology for generating a net income of about Rs. 7,000.

2. Government of India: Interim Report of the National Commission on Agriculture on Reorientation of Programmes of Small Farmers and Marginal Farmers and Agricultural Labourers Development Agencies, August, 1973, p. 26.

3. Reserve Bank of India's study on specific problems faced by the small farmers in their farm business under different agro-economic environmental conditions prevailing in the country (p. 26) as reported in "Tale of Three Surveys," *Economic and Political Weekly*, Vol. X, Nos. 33-35, Special Number, August, 1975, pp. 1227-1229.

R. C. Verma and N. L. Agarwal have developed on the basis of survey data relating to Jaipur district of Rajasthan optimum farm plans under limited and unlimited capital availability, in respect of mechanized farms, partially mechanized farms and non-mechanized farms, and have observed that even with constrained supply of capital, the per farm return from the optimum crop plans on the different farms could be 35 to 45 per cent higher than the respective existing plans.

*Credit : Requirements and Availability*

K. V. Subrahmanyam assesses the quantum of credit requirements that would enable the small farms to adopt the high-yielding technology of paddy cultivation. Using linear programming technique and on the basis of data pertaining to a sample of small farms below 2 hectares drawn from eight homogeneous stratified zones of West Godavari district in Andhra Pradesh, optimum plans are developed in limited capital and unlimited borrowed capital situations with the high-yielding varieties of paddy introduced as the processes in the matrix. It is observed that the provision of additional capital results in 12 per cent of the total cropped area being brought under HYV paddy in the deltaic zone I of the district and as much as 100 per cent in the case of the upland zone VIII of the district, the respective credit requirements for these two zones being 67 per cent and 200 per cent over the existing capital used on the farms in these zones. That the provision of capital/credit alone will not help to solve the problem is brought forth by the fact that the relaxation of capital constraint was of no use in the deltaic zones II and III, as it would not help bring about acreage under the HYV paddy. This, the author reports, is mainly due to the non-availability of irrigation facilities in the *rabi* season for most of the farmers in these zones and the non-suitability of high-yielding varieties for *kharif* cropping.

B. M. Sharma and A. S. Sirohi also estimate by using linear programming technique, the credit needs of farms of various sizes in the context of multiple cropping in the Union Territory of Delhi. The significant conclusions of the study are that "although the productivity of credit was three times higher on the small farms as compared to that of the medium and large farms, the absolute increase in farm income due to credit was lower on the small farms because their farm holding was relatively much smaller than the large farms. The percentage increase in farm returns due to credit use was also, lower on the small farms because the per acre returns without credit were higher on the small farms than on the large farms. The per acre returns were higher on the small farms because of greater use of labour per acre."

R. P. Singh and Vijay Kumar Bhayana have pooled the data on the existing pattern of resource use and cropping pattern of a sample of 24 small farmers selected from the Bhiwani block in Haryana, developed a synthetic farm situation through the use of budgeting technique, and have assessed the

capital and credit requirements for the period 1974-75 to 1978-79. In this process of estimation, however, the magnitudes of short-term and medium-term capital availability for the different years have been arbitrarily assumed. Vipin Bihari, R.I. Singh and D. Singh find on the basis of sample data in respect of small farmers upto 3 hectares in Tanda block in Faizabad district in Uttar Pradesh that the quantum of borrowed capital both absolutely and in relation to the total input per hectare is higher on the relatively larger of the small holdings. A fairly large percentage of the short-term credit on the small farms has been extended by the co-operatives while the medium and long-term credit has been mostly obtained from the land development banks. The cost of credit is however reported to be high due to the large amount of convenience and incidental expenses. V.D. Galgalikar, N.A. Gadre and B. D. Bhole also have shown, on the basis of a case study in Akola district in Maharashtra that the lead bank played a significant role by advancing 40 to 50 per cent of the credit in the two villages in the district selected for study. The authors have however pointed to the inadequacy of credit extended in comparison to the requirements thereof; the per acre finance received by the farmers in the two villages is estimated to be 5 to 9 per cent of the estimated amount of variable cost per holding for the cropping adopted on these farms. There is a reference in this study, too, to incidental expenses that have to be incurred in obtaining the credit.

#### *Irrigation and New Technology on Small Farms*

B. D. Dhawan has focused attention on the externalities of unregulated exploitation of groundwater on the well-being of the small and marginal farmers. Groundwater withdrawals lower the depth of the water table, lead to diminished quantum of water availability and raise the marginal operational cost of groundwater. Since, however, the operational cost of new groundwater techniques is much less than that of the traditional methods and since, according to the author, measures are available to the richer adopters of the new groundwater technology to maintain intact the groundwater output, it is primarily the users of high variable cost traditional waterlifts who experience sizable external diseconomies due to a permanent lowering of the water table by the introduction of new groundwater technology in the vicinity. If the water table gets down to depths which are beyond the technical capability of not only the human waterlifts but also the animal operated waterlifts, then the small and marginal farmers would find themselves at a great disadvantage unless their capital position is sufficiently enhanced to effect a change-over to newer techniques of tapping groundwater; but even with the relaxed availability of credit for this purpose, there is the more serious problem of the economic viability of this change-over, considering their "size and fragmentation disabilities." Apart from these long-term externalities, simultaneous operation of tubewells can have "deleterious impact on crops under the command of traditional waterlifts which operate in that vicinity." The paper thus brings

forth the implications of the new groundwater technology for the technical capability of traditional lifts and therefore for the economics of the small farm-firm.

P. D. Saikia and A. K. Bora have analysed the economics of farming of about 25 small farming households in the village Nahotia within the command area of the Nahotia Electric Lifts Irrigation Project in Assam and have highlighted the impact of the irrigation project on the cropping pattern, cropping intensity, yield levels and incomes of the households. "Thus the area under HYV paddy (*rabi*) has increased from 2 per cent in 1972 to 32 per cent in 1974. The yield of HYV paddy (*rabi*) after the adoption of new methods has increased from 1,843 kg. per hectare to 2,268 kg. during 1972-74. . . . . Before the installation of the irrigation project and without the adoption of improved methods, the yield rate of traditional *Sali* (*kharif*) paddy was 1,356 kg. only. The yield rate has increased to 2,199 kg. during 1974 with the adoption of improved methods. . . the crop intensity in the small farms (upto 2.025 hectares) inside the command area of the irrigation project was found to be 127 whereas outside the command area it was only 106."

Working with sample data for 1970-71 relating to 60 cultivators from villages with field channels and 63 cultivators from villages without field channels (control villages) in the Attabira block of Sambalpur district in Orissa, Praduman Kumar examines the influence of irrigation field channels in the river valley command area of Hirakud canal system on the use of farm inputs, production elasticities and allocative efficiency. The greater degree of efficiency in the allocation of inputs in the control villages compared to the improved villages indicative of a state of input allocative disequilibrium in the latter villages is attributed by the author to the fact that these villages are in transition towards modernization. The potentialities that irrigation can open up for the small farms are corroborated by the case study on dugwell irrigation in Bankura district of West Bengal; Nakshatra Kr. Ray finds that with the introduction of dugwell programme, new crops were grown by the participant farmers, the intensity of cropping increased and the income from farms in the command area of the dugwell registered a considerable rise.

#### SMALL FARMERS' DEVELOPMENT AGENCY AND THE SMALL FARMERS

The SFDA has been intended to activate the existing institutional framework for the provision of organized support to the potentially viable small farmers. Its main functions include the identification of the eligible participants, preparation of suitable programmes for them, location of institutional help, and arrangement of extension services. It is fairly obvious that the performance of the SFDA in any region is conditioned by the nature of basic credit structure and infrastructure in terms of marketing, distribution and extension. J. S. Garg and K. N. Pandey examine the functioning of the SFDA in Pratapgarh district in Uttar Pradesh on the basis of an intensive

enquiry of a sample of 100 farmers selected from this district of whom 36 were beneficiaries from the SFDA. They conclude that the SFDA activities helped the beneficiaries to increase investment by 28 per cent, intensity of cropping by 13 per cent, value of output by 62 per cent and net income by over 100 per cent during 1970-71 and 1973-74. R. P. Singh and J. S. Chawla however have a different report to give regarding the functioning of the Amritsar-Ferozepur SFDA; in their assessment, the absolute progress of tubewells and crop loans through the agency is meagre and the identification of beneficiaries incomplete compared to the number of small farmers as per the 1970 Census. These inferences, however, seem to have been summarily drawn; for instance, it is quite likely that the number of small farmer beneficiaries on the basis of criteria used for identifying the small farmers for purposes of provision of support through the SFDA need not necessarily tally with the number of farmers who could be considered as "small" on the basis of a notion of 'smallness' of physical size of holding.

R. I. Singh, V. Prasad, Om Prakash and R. K. Singh observe that in the two blocks of Bahua and Airayan in Fatehpur district in Uttar Pradesh where the SFDA was intensive, (1) the main agencies supplying credit to the small farmers were the co-operative societies, commercial banks and land development bank, (2) the small farmers utilized the credit for the purpose for which it was raised and (3) the cumulative effect of the investments made on fertilizers, HYV seeds, cattle feed, irrigation, implements and machinery due to increased credit facilities resulted in an increase in the input cost per hectare on crop and milk production which in turn improved the net income position of the small farms.

Tej Bahadur, S. Veerasamy and P. R. Parthasarathy have studied the production economics of 80 beneficiary farmers of the SFDA (40 of whom were crop loan beneficiaries and 40 minor irrigation beneficiaries) in the Nellickuppam block and 40 non-beneficiary farmers in the Kammapuram block in South Arcot district of Tamil Nadu, the reference year being 1973-74. The beneficiaries are observed to have higher cropping intensity, diversified cropping pattern, higher value of farm assets (of which nearly 72 to 75 per cent were accounted for by pumpsets) and hence higher net income compared to the non-serviced small farmers. The authors find that all small farms—whether beneficiaries or otherwise—are experiencing constant returns to scale; but the Cobb-Douglas production function on the basis of which this inference is drawn, explains only 57 per cent of the variation in output in the case of non-serviced farms and 67 per cent for the crop loan farms. Also in the case of the production function for the crop loan beneficiaries there seems to be an arithmetical error in summing up the production elasticities; they do not add upto the value indicated in the main paper.

K. M. Udupa and B. Pramod refer to a demonstration case of efficient small farm management organized by the Syndicate Bank, on the neglected

one-acre farm of a woman agricultural labourer in Hosala village in Udipi taluk of South Kanara district. The demonstration programme consisted in the formulation of a crop-mix for the farm, extension of bank credit towards the cultivation expenses, and provision by the bank of guidance to the farmer in regard to moisture conservation and efficient dry farming practices. It was effectively shown that efficient management of the farm could result in a reasonable level of net income to the farmer not to speak of the fact that the farm family by contributing the entire human labour requirement for the cultivation of the farm, could get gainful employment on their own farm. Such demonstrations in the technique of efficient farm management can go a long way in building up the small-scale sector in the agriculture of the country.

#### DEGREE OF COMMERCIALISATION ON THE SMALL FARM

H. S. Gopala Rao and M. Sripathy Rao present the results of a case study of cotton marketing in the Hubli regulated market with reference to the market year 1974-75. Analysing the prices received by ten small and ten large farmers during every week of the peak arrival period of March to May, the authors infer that (a) prices received by the small farmers are significantly less than those received by the large farmers during all the weeks of the peak months, (b) the irregular variations in prices received by the small farmers are more volatile than for the large farmers, (c) the withholding capacity for a better price for the produce is higher for the large farmers compared to the small ones and (d) the number of small farms offering their produce for grading before sale as also the quantity so offered is smaller than those of the large farms. The authors have suggested, *inter alia*, that the regional units of the SFDA should help the small farmers to get themselves organized into co-operatives for grading and marketing of their produce. For a sample of 96 farmers of different sizes—48 of whom were drawn from a paddy growing village and 48 from a groundnut growing village in the Nellore taluka of Nellore district of Andhra Pradesh, P. B. Parthasarathy and M. Kamalakar estimate for 1971-72 the marketed surplus of paddy at 60 per cent of total production, varying between 46 to 64 per cent on the small and large farms and that of groundnut at 82 per cent, the variation between the small and large farms being very negligible. Examining the determinants of marketed surplus of paddy and groundnut, it is observed that while total production is a significant factor in the case of all farms, family size emerges as an important variable only in the case of small farms for groundnut; the explanatory strength of the specification is however not very satisfactory for the marketed surplus of paddy for the medium farms and for that of groundnut for the small farms. As against this evidence, N. L. Agarwal, S. S. Acharya and K. K. S. Chauhan show for a sample of 58 small farmers randomly selected from eight wheat producing districts of Rajasthan that for the marketing year of 1970-71, only 33 per cent out of the stocks (including production) of wheat were marketed by the small farmers.



## SALIENT ISSUES

Some salient issues which emerge from the above review of the papers may be listed as under :

1. While evolving an operationally workable criterion of economic viability of a farm unit, a composite yardstick comprising of a measure of farm efficiency and a norm of subsistence requires to be worked out. In this context, the relative merits of alternative measures of efficiency such as gross value of output per hectare, farm business income, net income, input-output ratios on the basis of different cost concepts, and rate of return on investment could be considered. Also the norm of subsistence in so far as the food requirements of the farm family are concerned, might refer to a "culturally determined level" of consumption as reflected in the average level for the region under consideration or could be defined in terms of nutritional or scientific norms. There is a further problem of taking into account the incomes derived by the farm households from non-farm sources. Moreover, in a progressive and dynamic agriculture, the minimum size of the viable holding is itself likely to vary over time.

2. In the papers presented for discussion, conflicting evidences have been advanced in regard to the economic efficiency of the small farms. This much is fairly certain that given the necessary resource base and other associated inputs, the transformation of at least the potentially viable farms into economically viable units should be possible. It is important to ensure the economic viability of the operational holdings because the diseconomies of 'smallness' of these holdings affect not only their production levels but also their contributions to the overall marketed surplus. The complex nature of the problems of small farms calls for a package approach comprising of measures aimed at (a) the improvement of the productive efficiency of the available land base *via* the provision of non-land production inputs, (b) diversification of the activity-mix of the farmer and (c) enlargement of the land base. Also, as recommended by the National Commission on Agriculture, "a compact area approach should be adopted in all the project areas in order that the programmes might benefit the small and marginal farmers and agricultural labourers in the same area."<sup>4</sup>

3. In order to achieve a significant step-up in the productivity of the limited land base of the small holding, the existing constraints in respect of capital, water and technical knowledge need to be relaxed. Timely provision of credit towards working capital expenses in respect of the new biological-chemical inputs, increased availability of water and extension of knowledge to these farmers on the use of modern inputs are indicated. In this context, the lending institutions in the rural sector should not only appropriately design their loaning policies to cater to the smaller cultivators but also combine credit with

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4. National Commission on Agriculture: *op. cit.*, p. 1.



extension and technical guidance. Further, given the fact that the existing linkages among the credit, tenurial and marketing arrangements in traditional societies generally operate against the interests of the subsistence farmers, programmes for their economic uplift should, besides helping to strengthen the production base, make adequate provision for marketing, processing and storage amenities specifically in respect of this section of the farming community.

4. In the case of cultivation holdings which continue to remain non-viable even with an elastic supply of requisite resources for crop production, the solution has to be sought in terms of an integrated programme of subsidiary activities which are linked with crop husbandry. This would be distinct from such off-farm employment that would become available to this stratum of farmers through projects for rural employment.

5. Whether it is a question of enabling the small farmer to increase his farm business income or one of providing him with supplementay avenues of income, "it is futile to search for the solution of subsistence agriculture which is not also a solution of general under-development."<sup>5</sup> In respect of an economy where agriculture constitutes the major sector, a solution of general under-development would include a reform of the agrarian structure in a manner that would help enlarge the land base for the small and the marginal cultivators.

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5. M. L. Dantwala, "Problem of Subsistence Farm Economy : The Indian Case," Seminar on Problems of Small Farmers Seminar Series-VII, Indian Society of Agricultural Economics, Bombay, 1968, p. 8.