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BUDGETING AND PROGRAMMING AT FARM AND NATIONAL LEVEL

D. SINGH and S. D. BOKIL
Institute of Agricultural Research Statistics
(I. C. A. R.)
New Delhi

Farm planning has for its objective better utilization of farm resources for increasing farm incomes and for improving the standard of living of the farm families. Budgeting techniques help this process by enabling the farm planner to test the possibilities of alternative plans; this approach possesses the merit of simplicity. However both budgeting and programming techniques call for much input-output and price data which are often not available. This imposes serious limitations on the development of realistic farm plans. These lacunae in required data could be removed by intensifying research in several fields, particularly, cost of production of agricultural commodities, experimentation in cultivators' fields, analysis of price movements and data on marketing. There is also a need for developing mass farm planning techniques to enable extension workers to advise individual farmers without intricate and time-consuming calculations.

The Indian Council of Agricultural Research has undertaken a number of investigations in recent years which provide data very useful for farm planning. In fact data collected by the Council in fertilizer demonstration trials and trials on cultivators' fields conducted in collaboration with the Indian Agricultural Research Institute seem to have been already used for farm planning. The Council has also undertaken a number of cost of production surveys and some more have been conducted by the Commodity Committees (Sugarcane, Arecanut, Coconut, etc.) with technical guidance of the Council. Data collected in these surveys should be very useful for farm planning.

The cost of production surveys of the Council fall broadly into two categories: (i) surveys relating to field crops and (ii) those relating to animal husbandry products. The survey conducted by the Council between 1933-36 to study the cost of production of a number of crops in important cotton and sugarcane producing regions of the country was the first large scale survey of its kind. The method of sampling adopted in the survey was however not satisfactory; further the results obtained, especially in terms of monetary values, are quite out of date now. In 1952-53, the Council undertook a pilot scheme for studying the cost of production of cotton and rotation crops in Akola district of erstwhile Madhya Pradesh, jointly with the Indian Central Cotton Committee and the Indian Central Oilseed Committee. The survey was based on random selection of villages and holdings and the report of the survey provides cost data for three most important crops of the district, namely, cotton, *jowar* and groundnut. The average inputs and outputs for the three crops during 1952-53 are reported to have been as in Table I.

The money value of human labour input was almost equal for the three crops and judging by the net return it would appear that at the level of output and prices prevailing during the year cotton was the most profitable crop followed by groundnut and *jowar*. However note should be taken of the fact that, as mentioned in the report, output level of groundnut was much below the normal,

TABLE I

Item of Input	Inputs in Rupees per Acre		
	Cotton	Jowar	Groundnut
1. Human labour	19.99	19.75	20.57
2. Bullock labour	15.88	16.80	16.74
3. Seed	1.65	0.63	13.70
4. Manure	5.41	1.49	2.13
5. Implements	0.66	0.67	0.64
Total	43.59	39.34	53.78
Output in <i>Maunds</i> per Acre	2.69	5.39	3.68
Value of Output at Prevailing Prices* (Rs./Acre)	69.94	48.51	66.24
Net Return, <i>i.e.</i> , Gross Output— Prime Costs	26.35	9.17	12.46

*Rs. 26, Rs. 9 and Rs. 18 per *maund* for seed-cotton, *jowar*, and groundnut (in pods) respectively.

i.e., 9 *maunds* per acre, owing to adverse weather conditions. Hence under normal conditions groundnut would appear to be even more profitable and alternative farm plans based on greater acreage under groundnut should be investigated by budgeting techniques with the help of the necessary input data available from the report. Incidentally it may be observed that because of seasonal fluctuation in the rate of inputs and outputs of crops, study for farm planning should be based on data collected for several seasons.

A similar survey with much greater coverage and studying a number of rotation crops has been taken up recently by the Council jointly with Cotton and Oilseed Committees in a number of important cotton and oilseed producing regions in the country. The results of this survey would be very useful for farm planning as they provide representative and reliable cost data for a number of alternative crops.

In the field of animal husbandry the Council conducted a survey for estimating cost of production of milk in urban and rural areas of Delhi territory between 1953-55. Another such survey in urban and suburban areas of Madras city and surrounding rural areas was undertaken between 1957-59 and a similar survey was initiated in Calcutta area in 1960. The report of the survey in Delhi territory has been published and provides useful data regarding costs involved in milk production in the particular area. The data include costs and quantities of different kinds of feeds, cost of human labour required in the upkeep of cattle, costs on account of depreciation of animals, etc. Similar investigations for studying the economics of sheep rearing and wool production, and poultry keeping have recently been planned. These data would be of value in applying budgeting techniques to mixed farming plans.

An interesting experiment to test the farm planning approach under Indian conditions was undertaken recently by the Directorate of Economics and Statistics, Ministry of Food and Agriculture, Government of India, in a number of regions in conjunction with their Farm Management Surveys. A consolidated report¹ of results obtained under the scheme has been published recently in a

1. E. F. Daniel: *Farm Planning and Management*, Directorate of Economics and Statistics, Ministry of Food & Agriculture, Government of India, New Delhi, 1960. pp. 280.

book form though some of the findings were published earlier in the progress reports of the scheme. In general alternative plans of farming recommended aim at achieving better farm incomes and better standard of living for the farm families by increasing multiple cropping (with more diversified rotation of crops), expansion of area under cash crops, greater use of fertilizers, use of better and (often) more seed, keeping fewer and more productive and efficient livestock and addition of poultry. As land is a scarce factor there is probably not much scope for increasing income by acquiring more land and, under conditions of relative abundance of labour as exists in the country use of expensive labour-saving machinery was not likely to be profitable and also may not be socially desirable. It should be noted, however, that various measures recommended for improving planning at the farm level have certain large scale implications which extension workers should keep in view particularly as almost the whole burden of extension work rests in our country on governmental agencies.

Take, for example, the question of increasing production of cash crops. In general cost and price data on crops such as cotton, sugarcane and jute would indicate that it would be profitable for an individual farm to produce more of these to the extent possible with their present resources and if there is any assurance of stable and remunerative prices, the production of these commodities would increase without any appreciable effort on the part of extension workers. Such an assurance regarding prices might, however, lead to a continuous expansion of production until the disposal of commodity becomes a problem at both the farm and the national level as in the case of sugarcane. This emphasizes the need of keeping farm planning advice in line with the trend of home demand and export possibilities with regard to various commodities and the overall governmental policy.

Multiple-cropping to the extent possible with the irrigation and labour resources available on the farm, on the other hand, would seem to be relatively free from such drawbacks as it aims principally at providing more products for home consumption and improving the quality and quantity of food available to the farm family and the livestock of the farm. With a greater variety of products it will also give the cultivator certain advantage in marketing and thus might be relied on to give greater cash income to the farm family. Possibilities of multiple and more diversified cropping might therefore be taken to be particularly promising and should receive greater attention of farm planning experts.

As regards greater use of manures and fertilizers, both the prices of fertilizers and the agricultural produce determine the profitability of particular doses of fertilizers. While extensive trials on cultivators' fields conducted by the Council have indicated that much higher doses of fertilizers than used at present would be profitable at existing level of prices, the non-availability of the fertilizers probably acts as a bottle-neck restricting their greater use at the present moment. Farm plans calling for much additional supplies of such fertilizers may therefore not be workable in practice. Programming research might therefore have to be confined for some time to working out the optimum allocation of available supply of fertilizer between different crops.

Similarly recommendation of use of improved seed (*i.e.*, seed whose superiority has been tested on cultivators' fields in a region) in greater quantities presumes ready availability of such seed. However, past experience shows that when such seed is available and its superiority has been demonstrated, cultivators accept such seed readily and it is frequently the scarcity of improved seed that restricts its greater use.

The inefficiency of our livestock has been the subject of frequent comment and it would seem that both individual farm planning and national policy should aim at keeping fewer and more efficient livestock and an expansion of poultry-keeping on modern lines. As regards reduction in the number of unproductive livestock it seems the extension workers are up against social factors which will have to be tackled on an educational level. It is not enough to show to the cultivator that he stands to gain by getting rid of his useless cattle and replacing them by productive ones.

On the whole, it seems that to the extent that farm planning aims at augmenting the supply of farm products available to the farmer for home consumption it is on surer ground. Where it involves investments with the object of producing for the market, the cultivator, because of difficulties of communication and his isolation from the outside world, is faced with serious difficulties with regard to marketing and the return that he gets for his produce. These difficulties discourage him in his efforts to better his economic position by producing for the market. Representatives of cultivators through organizations such as the *Bharat Krishak Samaj* have been therefore appealing to the Government for taking suitable steps to ensure satisfactory and stable price levels for agricultural commodities. The success of farm planning both at the farm as well as the national level might very well depend on the extent to which the price situation inspires confidence in the minds of the cultivators. Authorities concerned with planning have shown awareness of the importance of this aspect of agricultural economy and are striving to tackle various problems in this field which are undoubtedly very difficult.