Changes in Cropping Pattern

Economic Criteria

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In evolving criteria for determining the possibilities of crop shifts, full appreciation is not generally accorded to economic factors which operate at the micro level. In two recent articles on the subject id-The Economic Weekly (S C Jain, "Possibilities of Crop Shifts", January 13, 1962, and S S Bhatia, "Possibilities of Crop Shifts: Yield Criteria Not Sufficient", April 7, 1962), for example, no reference is made to economic considerations at all.*

Certainly, the farmer, while taking a decision to vary crop acreages or to add or drop crop-enterprises, does not put aside considerations of monetary return. It would be readily granted that in the Indian agricultural economy there are factors other than the economic which are important determinants in regard to such decisions, and that commercialisation of farming or the resort permeated deeply into the thinking of most Indian farmers. However, some rough guidance is undoubtedly provided by the financial return.

SHRI S C Jain suggests that yield rates be used as an indicator of the desirable shifts in cropping pattern. On the basis of per hectare yield comparisons of some crops, he makes out a case for shifting area under low yielding to high yielding crops.†

The above argument suffers from a number of shortcomings. The concept of yield per unit of land, though important in the context of increasing overall agricultural production, can hardly form the main basis for a farmer to shift acreage from one crop to another because what matters to an individual, by and large, is the economic return from farming rather than the physical return (quantity of produce per unit of land). Thus, the "yield-rate concept" neglects two considerations. First is the price factor, the inclusion of which reflects gross returns;

8 In the article by Shri S S Bhatia, macro-level economic factors (such as marketing and transport facilities) are presumably included under geographical factors, although no specific mention is made of these important considerations as such.

Even though it is nowhere put in definitive terms, it appears that the author is confining himself to the problem of increased food-grains' availability; thus, the absence of reference to other high-yielding crops, such as, sugarcane which, over large land areas, also enjoys comparative economic advantage over most other crops, may be a purposive omission.

Also, inasmuch as prices vary a good deal from region to region, gross monetary returns would also differ in the various regions, even where the physical output per acre is the same; this points up the desirability of using regional prices in the context of evaluating the profitability of various crops.

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this would definitely enhance the value of the yield-rate criterion for determining shifts in acreage from the viewpoint of the farmer. It is true that generally the high yielding foodgrains like rice, wheat, etc. have not only relatively high yield rates per unit of land but also command relatively high prices and, in view of this directional correspondence, yield alone may serve as a sufficient indicator of useful shifts in acreage. However, there are certain minor crops, e.g. some of the "other pulses", which are also priced quite high. Therefore, no unconditional case can be made for a shift from small millets and minor pulses to high yielding cereals; a recommendation to this effect must be preceded by a proper study of yield characteristics as well as the price structure with respect to the various crops under consideration.

The 'Net' Return

Secondly, what ultimately counts (or should count under ideal conditions) with the farmer is the net return that he obtains from farming," and it cannot be denied that some influence is definitely exercised by the net return, especially in regard to the introduction of new enterprises. To elaborate the point pertaining to net return: for some of the crops, the cost of cultivation is very low with the result that even though the yield per unit of land is small (and if the price is positively correlated with yield, the gross return is also small), the tact return may be high because all that the farmer probably does to realise the return is to broadcast the seed after meagre preparation of land and harvest the crop when it is ready. In extreme cases of this type, no irrigation is given, no manure or fertiliser is applied and no interculture worth the name is performed. Under such circumstances, for poorer soils and/or in backward farming regions where inputs in agricultural production are low (quantitatively and qualitatively), crops like small millets and pulses may be the right enterprises for the farmer. Generally, the high yielding crops are sensitive in the matter of fulfilment of their agronomic and physiological requirements, and would not do well under such adverse circumstances; whereas, some of the minor crops do quite well in circumstances normally regarded as unfavourable, and may hot really do much better under improved conditions of input application and adoption of better farming practices.

It would be promptly conceded that the task of determining net returns is a difficult one owing to

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3 Assuming for the moment that the influence of non-economic factors (e.g., greater utility, in the estimation of the farmer, of a variety for table purposes, even though its market price is relatively low) is constant.

Also, there is, in a large number of cases, sound economic justification (though sometimes interpreted by the farmer in an aggravated form, such as, undue discounting of returns in the light of risk) for the farmer's production policies and practices.

8 Some of the oilseed crops, which have responded very poorly to intensive measures of cultivation, illustrate the case in point.
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the inadequacy of data on costs of production. However, of late, a number of studies have been made in various regions to supply somewhat limited but, nonetheless, very valuable information on the subject. Also, it should be possible to construct enterprise-budgets from the data, gathered by quick field inquiries, or even to draw up hypothetical budgets utilising the date available from Government Agricultural Farms (experimental and commercial), or basing these on the experience of agricultural workers (extension personnel, etc) as also of intelligent farmers.

**Economic Factors**

Other drawbacks — other than the neglect of economic considerations — that accompany the adoption of the simple "yield-rate concept" criteria put forth by Shri S C Jain, have been pointed out by Shri S S Bhatia in his article. The importance of geographical factors and the prevailing phyaico-cultural environment has been properly emphasized. Thus:

"the problem of crop pattern change cannot be isolated from the geographical facts concerning the distributional patterns of crops in India as well as from the functional aspects of small millets and other pulses in the agricultural landscape... Besides the macro and micro physical factors, the human factors too are important. Among the human factors affecting crop patterns may be included the food habits, the local traditions built in the agricultural calendar and the familiarity as well as the association of the local populace with certain crops that have been grown there previously."

However, stress on the importance of these factors to the complete exclusion of economic factors amounts to stretching the argument too far. Growing monetization in

the rural sector, introduction and the enhanced availability of modern inputs of agricultural production, improved means of transport and communications, growing contact of the farmers with the outside world, particularly the extension agencies, have all broadened the vision of the man-behind-the-plough and presented him with an array of possibilities in regard to the varying scales of operation of the existing enterprises, introduction of new enterprises and changes in the composition and use-levels of the various input-resources.

**Importance Will Grow**

Economic considerations, in fact, always did play a part in influencing the crop-patterns. Introduction of and increases in acreage under crops like groundnut and tobacco (which are not native crops), and first the increase and then the ultimate dwindling in acreage under indigo took place because economic circumstances were favourable or unfavourable for the particular crop, and not because the geographical or physico-cultural environment were governing the pace of their changing fortunes.

As a matter of fact, in a number of cases, economic factors would seem to have exercised in such matters? a great influence — greater than what is warranted by their importance. While talking about the imbalance between economic and geographical factors, an Economic Geographer has complained that a large part of Indian jute is grown in relatively unfavourable geographical conditions.

And, in future, the impact of economic factors would be increasingly felt with the progress of planned programmes of development. Economic factors at the macro level would facilitate changes in crop patterns while farmers are expected to respond increasingly to economic considerations at the micro level. The point being emphasized is that geographical factors and the prevailing physico-cultural environment are not something which can be treated as strictly "given". Progress in scientific, economic and social field, would open up opportunities for adjusting crop patterns to suit the changing needs of the advancing economy.

The Comparative Advantage Criteria

To revert to Shri S C Jain’s article, another criterion may be added to those described by him. (The two possibilities mentioned there are: “Either to shift or transfer the areas of small millets and other pulses to the higher yielding Rabi or Kharif cereals and millets and pulses; or to evolve improved strains of small millets and other pulses so that the yield per acre could increase considerably”). The criterion recommended here is that whenever the per acre yield of a particular crop varies between the two regions (say, Regions A and B), attempts may be made to concentrate the growing of the crop where the yield per unit of land is higher (say, in Region A), provided the cost structure does not vary significantly between the two regions. This proposition needs, of course, to be examined in the light of the alternative possibilities for the use of land in Region B. In case the crop in question, though low yielding as compared to its output in other regions, is the best alternative for farmers in Region B (from where it is proposed to transfer it to the other region, viz. Region A), the farmers should, of course, continue growing this crop unless better alternative land uses are developed.

It would be clear from the above that it is possible to increase the overall yield per hectare by shifting the crop from areas of low per unit yield to areas of high per unit yield, provided, of course, that other conditions are more or less similar. And, therefore, the concluding statement of Shri S S Bhatia that "better strains, extension of irrigation facilities and application of fertilizers, etc are perhaps the only means available for increasing agricultural productivity" (italics mine), leaves out the promising avenue of increasing productivity through

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6 See, for example, "Studies in the Economics of Farm Management", issued by the Economic and Statistical Adviser to the Government of India, Ministry of Food and Agriculture, based on regional studies in Bombay, Madras, Punjab, UP, West Bengal and Madhya Pradesh, conducted between 1954-55 and 1956-57. Work at some additional centres is in progress currently.

7 Sen Gupta, (Miss) P "The Indian Jute Belt". Orient Longmans, 1959, P 147.

regional specialisation in the light of comparative advantages.

**Lack of Opportunities Not Unwillingness**

Perhaps too much emphasis is laid on the unwillingness of farmers to try new varieties and to take to the cultivation of crops not grown previously. Shri S C Jain, for instance, states that "most of the cultivators are reluctant to adopt new varieties and those who are willing to adopt them, do not get the opportunity to introduce such new varieties" (italics mine). It appears that the italicised part of the sentence embodies the real hurdle, rather than the reluctance of the farmers to try new things. The difficulties under this head are fairly well-known. Attempts should be made to overcome the same by making advance arrangements for teaching farmers the growing of new varieties or types of crops. The experience in some of the areas which were brought under the "command" of major irrigation projects has been unsatisfactory because no advance preparations were made to train cultivators in the art of using water and raising new crops, and even where the farmers possessed willingness and the necessary know-how there were other difficulties (mainly due to defective organisational set-up) in full utilisation of the facilities created.

It may be emphasised that physical suitability of land, climatic factors and the availability of prerequisites for efficient production of the proposed crop should not be overlooked while deciding land use in the light of economic considerations. In some of the lands under small millets and pulses, it would be virtually impossible to grow rice, e.g., in some sandy soils of the south-eastern portions of the Punjab. And, in some of the lands under small millets and pulses where rice can be grown today if water is made available, it should not be grown on long-run agronomic and physiographic considerations. In brief, economic motivations should not supersede non-economic considerations relevant to the planning of efficient and flexible land use pattern.