CHAPTER 7
CHAPTER-7

SUMMING UP

Eversince Indian agriculture entered the threshold of modernization, much has been written about the effects of green revolution and mechanization on cultivators and agricultural labourers. How equitable this growth has been? ......What have been its implications for the bulk of the rural poor?....... How far the policy goals of social justice have been met?.......etc., are some of the issues that have constantly engaged the attention of many researchers in India and abroad. Numerous empirical studies, conducted for the purpose, offer conflicting answers to each of these questions. But a general impression exists that all categories of farmers have benefited from this spectacular (agricultural) growth, atleast, in the heartland of India's green revolution, i.e., the Punjab.

Against this background, it could be expected that there are no glaring inequalities and dismal poverty amongst the enterprising farmers of the Punjab. But expectations and assertions needed to be tested against hard empirical facts. Accordingly, the present study has been addressed to the measurement and analysis of inequality and poverty amongst the cultivating households of the Punjab.

Specifically, the study is an attempt to:
(i) examine the extent of inequality of incomes, land
(area owned as well as area operated), and other
productive assets in the sampled population
(Chapter-3);

(ii) investigate the factors responsible for variability
in household incomes, and to estimate their relative
contribution towards income inequality (Chapter-4);

(iii) gauge the extent of absolute poverty amongst the
cultivating households and study the reasons thereof
(Chapter-5); and

(iv) identify the poor and study the empirical correlates
of poverty with a view to pin-point some observable
characteristics, of those households, which could
significantly discriminate between the 'poor' and
the 'non-poor' (Chapter-6).

With these objectives, a representative sample of
252 cultivating households of Patiala district (Punjab)
was selected (courtesy ICAR Project on 'The problems of
marginal and small farmers in the Punjab'). Information
pertaining to the economic, social demographic and
technological aspects of the target population, for the
agricultural year 1979-80, was obtained through a set of
three comprehensive schedules. The collection of data was
spread over the entire reference year and included five
visits to each sampled unit, for covering its activities
in both peak and lean seasons.

The data were subjected to a thorough statistical analysis in an attempt to de-mystify inequality and poverty. Several aspects of economic inequality have been estimated employing the measures like Gini coefficient, Theil's entropy measure and Atkinson's index.

The variability of household incomes was studied through several multiple regression models. This procedure helped us in decomposing inequality in incomes and obtaining the relative contribution of individual income determinants.

While Sen's—P, Anand's—A, Beckerman's—B and Takayama's—T measures have been used to gauge the extent of poverty, step-wise linear discriminant analysis has been resorted to for the identification of the factors/characteristics, which are helpful in classifying the population into 'poor' and 'non-poor'.

On the basis of the detailed analysis undertaken in the preceding chapters, it can be concluded that:

(i) there are widespread inequalities in incomes, land and other productive assets held by the operating households of the district of Patiala (Punjab). The values of all the inequality indicators are very large but they do not provide a unique ranking for all the entities considered for the measurement of inequality;
(ii) the inequalities in area operated are uniformly less than those for area owned, irrespective of the inequality index (suggesting that land lease markets tend to reduce inequalities);

(iii) similarly, the inequalities of net household incomes are less in comparison to those observed for net farm incomes (implying that off-farm incomes have a soothing effect on income inequalities);

(iv) the distribution of modern productive assets is most uneven, while that for the total productive assets is relatively even (pointing towards the inherent character of modern technology as an accentuator of economic inequality);

(v) a correction for the numerical size of the households, the consumer units in the family, and for the number of family farm workers results in mellowing these inequalities. However, the essentially egalitarian structure persists (implying, thereby, that differing demographic composition is only a limited justification for widespread inequalities).

Further, the income ranked distribution of these households suggests that:

(i) the top 10 per cent of the households account for over 58 per cent of the total 'net household incomes', 34 per cent of the crop output, 25 per cent of the
milk output and 35 per cent of the farm output; whereas the bottom 10 per cent of the households have 0.50 per cent of the total 'net household income', 4 per cent of the crop output, 7 per cent of the milk output and 3 per cent of the farm output;

(ii) on the endowment side, the top 10 per cent income bracket has 30 per cent of the total land, 33 per cent of the modern productive assets, 22 per cent of the milch cattle, 30 per cent of the liquidity, 38 per cent of the number of tractors and 17 per cent of the engines/motors; while the bottom 10 per cent has a meagre 7 per cent of the total land, 11 per cent of the traditional productive assets, 8 per cent of the milch cattle, 6 per cent of the liquidity, 0.54 per cent of the tractors, 8 per cent of the engines/motors and about 4 per cent of the modern productive assets.

Also, the determinant decomposition exercise reveals that:

(i) over 40 per cent of the income inequality can be attributed to land alone, while the number of milch cattle and farm workers contribute another 31 per cent to income inequality;

(ii) in addition, about 17 per cent of inequality gets assigned to the position hierarchy proxy, and the productivity differentials account for only 8 per cent
of the concentration; and

(iii) the education of the head, dependency ratio and off-farm sale of labour appear to be just minor irritants, explaining a meagre 4 per cent collectively.

The above kaleidoscopic view of the rural economy, thus, makes us believe that it is the uneven distribution of land, productive material assets, demographic traits, and both, the number and the quality of the work force, which accounts for prevailing inequalities of incomes in the agricultural economy under consideration. In particular, there is a close link between the highly skewed distribution of land and income. The inequalities in basic resource endowments of cultivating households contribute heavily towards disparities in their material well-being. If there were no fusion and fission of these farm families, and if there were no state intervention, these inequalities would have been self-perpetuating in character and might have led to complete polarization. However, on the basis of this cross-section study we can only testify to the existence of glaring inequalities of income and wealth in the study area.

The existence of inequalities per-se, is no proof of impending poverty in any population. Using an updated version of Bardhan's (1970) poverty norm to gauge the incidence of poverty, we find that:
(i) about 25 per cent of the cultivating households do not have sufficient purchasing power to lead a reasonable life. This figure reduces to 19 per cent when the poverty norm is taken in (per) consumer unit terms; and

(ii) the estimates for unweighted and weighted Sen's-$\bar{p}$ measure turn up to be approximately 0.18 and 0.15, respectively. While the poverty gap ratio for these poor households stands between 49 to 57 per cent, Beekerman's relative burden of poverty is just 15 per cent.

A comparative study of the poor and the non-poor, treated as two separate groups, shows that:

(i) there are no significant differences between the proportions of the poor and the non-poor households, on the basis of their scheduled caste membership, indebtedness, ownership of bullocks, engagement of 'siri', renting-in of land, off-farm employment and an efficient crop system;

(ii) significant differences in the means are observed in the possession of land, tractors, irrigation source (wells and tube-wells), threshers and ownership of carriage by the two groups;

(iii) the proportion of the poor who are either renting-out
or selling land is significantly higher than the corresponding figures for the non-poor but there are no significant differences between their proportions, so far as land renting-in is concerned;

(iv) neither all the marginal and small operators are poor, nor all the medium and large farmers are non-poor;

(v) on comparing the averages for two groups, significant differences are invariably observed in all the farm size related variables except for the value of traditional productive assets; the average for the non-poor group showing a higher value (this finding suggests that the bigger size holds a greater promise for keeping the households above the poverty line);

(vi) while there are no significant differences in the average family size, worker-consumer ratio and the number of workers in the family, the non-poor group possesses significantly higher stocks of wealth and flows of output;

(vii) though literacy rates as a whole do not differ across the groups, the poor units are headed by males with significantly lower levels of schooling than their counterparts in the non-poor group; and

(viii) finally, the poor employ more family labour per acre than the non-poor and carry out relatively more diverse
activities on the farm. Further, they devote as much percentage of area to HYV as devoted by the non-poor, and also adopt a similar area specific cropping pattern.

The above stated results very strongly suggest that, the poverty of the cultivating households is not to be misread as lethargy, inadequacy of knowledge, inefficiency of the poor, their having larger families or, on the average, a higher number of dependents. It rather appears to be directly related to a relative paucity of resources and lesser control over productive wealth. In our view, these findings have important implications with regards to the execution of the Integrated Rural Development Programme—a programme for directly helping the households identified as poor. Correct identification of the poor—the potential beneficiaries of the programme—obviously marks the first step for its effective implementation. Misidentification would mean draining off the funds with little success, and here we may point out that the use of the notional poverty line which has been till now employed for categorizing people into poor and non-poor, cannot be of real help since no dependable records of rural household’s income exist. Consequently, the search for a classification rule, based on directly identifiable objective characteristics of these households, assumes significance.
Fisher's discriminant analysis enabled us obtain such a rule—a rule which is capable of sufficiently discriminating between the poor and the non-poor besides producing a fairly correct classification. Using a step-wise procedure, we find that the variables such as area operated, number of milch cattle, worker consumer ratio, education of the head of the household, intensity of cultivation, use of chemicals per acre and off-farm employment mix can serve the purpose to a large extent. Here, once again, size of the holding dominates the show so far as the percentage contribution of individual characteristics to the total 'Mahalanobis distance' is concerned. We find that approximately 42 per cent of the 'distance is due to area operated, over 21 per cent due to urban employment, and another 11 per cent due to intensity of cultivation. While the use of chemicals and education contribute 11.20 per cent and 10.94 per cent, respectively.

Incidently, the above conclusions clearly bring to light the role of a highly inequalitarian distribution of land and other productive assets in income generation. Inequalities in current household incomes, and so also poverty, have much to do with the existing disparities in the distribution of land and other productive wealth.

Before we close, we might add that, with data flowing from such a carefully planned survey, we were quite optimistic about solving the riddle of the 'agricultural
ladder' while undertaking this study. But towards the completion of this study, we realize that in spite of our having covered some untreaded ground—we have successfully worked out the empirical correlates of inequality and poverty, and also, through a novel method, discriminated between the 'poor' and the 'non-poor', with a high degree of statistical confidence—a lot still needs to be done for comprehending the processes that generate inequality and perpetuate poverty over time. Perhaps, a time-series of cross-section data, covering the same set of farm families may provide further insight into these phenomena. Yet under the circumstances, given the limitations of working with a single period cross-section data, whatever has been attempted here, does cover some fresh ground besides prompting us to dwell deeper upon these problems at a later juncture.

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