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Vol XXII
No. 2

ISSN 0019-5014

APRIL-
JUNE
1967

INDIAN JOURNAL OF AGRICULTURAL ECONOMICS



INDIAN SOCIETY OF
AGRICULTURAL ECONOMICS,
BOMBAY

CHANGES IN LAND-USE PATTERN IN INDIA—A COMMENT

In his article on "Changes in Land-Use Pattern in India," R. Giri* has made an attempt to study the changes in the land-use pattern in the country during the period of the first two five-year plans and the first three years of the Third Plan and the associated factors motivating changes in land-use pattern. Data presented in the article show that between 1950-51 and 1963-64 the total geographical area of the country, according to village papers, increased by 15.8 million hectares (mh.). The author has ascribed this increase mainly to an improvement in the "reported area" figure for Forests. Only a "small part" of the change in reported area is attributed to the re-measurement of the other categories of land by cadastral survey methods. This may well be. But to say this on the basis of a two-point comparison on an all-India basis does not appear to be the best thing to do. Of the 15.8 mh. rise in reported area between 1950-51 and 1963-64, 15.3 mh. appear to be due to change in forest area, only a small part remaining to be explained in terms of re-survey results. But taking any other pair of years would not have given the same results. Thus, the change from 1950-51 to 1951-52 was twice as much in forest area as in the total geographical area, 8.4 mh. against 3.5 mh. In 1953-54 forest area declined while geographical area increased. Years 1958-59 and 1961-62 can also be cited in this regard.

This is at the all-India level. At the level of the States, the figures for Gujarat, for example, show a different trend. Throughout this period, as forest area declined, geographical area showed an increase. (The data are not presented here). Similarly in Andhra Pradesh, forest area increased without any corresponding change in the geographical area in 1962-63.

The author finds the small rise in the area under 'current fallow' (0.4 mh. over 13 years) a disturbing feature. Current fallow is due to a variety of circumstances, rotational requirements, particularly on inferior or what is sometimes called sub-marginal land, being one of them. The considerable expansion of net sown area, as the author suggests, possibly has been due to large tracts of inferior land being brought into cultivation. The rise in current fallow would then be a natural consequence. The important thing to note is whether current fallow as a proportion of net cropped area has increased or decreased. From this point of view, the data do not appear to warrant pessimism.

In assessing the contribution of irrigation to extension of cultivation, the author assumes "two-thirds of the increase in the net irrigated area . . . to be originating from the area already sown and the remaining one-third from the newly reclaimed and sown land." There appears to be no basis whatsoever for such an assumption. (The reason given for such an assumption—"The net sown area in India is generally two-third of the total arable land"—is no reason at all.) Indeed, there are innumerable instances where expansion of cultivation to new land was made possible without irrigation and there are also instances where expansion of irrigation only helped to expand multiple cropping of old land.

**Indian Journal of Agricultural Economics*, Vol. XXI, No. 3, July-September, 1966, pp. 23-32.

The calculations based on this unjustified assumption lead to statements like those in the last but one para on page 28 of the article (highlighting the increasing role of irrigation in extension of cultivation) which are just about as good as the assumption itself.

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AND

P. V. S. RAO†

CHANGES IN LAND-USE PATTERN IN INDIA—A REPLY

The purpose of this note is to clarify the comments made by D.S.P. Rao and P.V.S. Rao on my article on "Changes in Land-Use Pattern in India" published in this Journal.

Variations in "Reporting Area" in different States have arisen broadly as a result of four factors. Firstly, some of the areas which were not 'reporting' have become 'reporting' as a result of their cadastral survey, *de novo* or revisional, and/or 'institution of the reporting agency.' Secondly, the village records have been corrected and brought up-to-date in some areas. Thirdly, some expropriatory forests which were not covered, have been brought under the purview of 'reporting area.' Fourthly, the demarcation and survey of forests, *de novo* or revisional, and correction in the forest records have led to variation in forest area and consequently in the 'reporting area.' While the first and third factors have invariably led to increase in 'reporting area,' the other two factors have caused increase in 'reporting area' in some tracts, while decline in others. After cancellation of positive and negative values in different States, the picture that emerges at the all-India level shows that the net increase in 'reporting area' in the country as a whole has taken place mostly as a result of extension of reporting to forests which were not covered earlier and recalculation of forest area as a result of demarcation and survey of forests and reconciliation of the differences in the forest area according to village papers and that according to forest records.

Different States may reveal different trends. In Gujarat, forest area declines, yet 'reporting area' increases perhaps as a result of cadastral survey and institution of reporting agency in tracts not covered thus far. In some parts of other States, correction in village papers might have led to a downward revision in 'reporting area.' In Andhra Pradesh, the increase in the forest area may, among other things, be due to reclassification as 'forest' of some area which was previously classed otherwise.

Besides changes in 'reporting area,' transfer of area from one land-use category to another in the process of adoption of standard concepts and definitions and classification of land-use categories, is another factor which has led to changes in their areas arising purely out of statistical improvements. These two types of changes may or may not be operative simultaneously, and if operating simultaneously, they may be in the same or different directions. A year-to-year comparison of forest area by village papers, or for that matter, of any other land-use category, may not thus be always meaningful because of the confounding of these

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changes and uncertainties at the primary stage in classifying areas under different land-use categories in the transitional period when new concepts and definitions were being introduced. A comparison after the lapse of the period of frequent classificatory changes appears more valid.

As regards increase in current fallow, "the need for keeping a larger extent of current fallow as a natural corollary of extension of cultivation to all kinds of arable land including land of low productivity" is realised, but reduction in this area is also possible if such extension of cultivation is "supplemented by fertility-sustaining measures like application of fertilizers, land development and soil conservation." Rise in current fallow may be disturbing to the extent the fertility-raising measures were lacking.

The break-up of the increase in irrigated area between old sown area and new sown area in 2:1 ratio is based on the assumption that the share in new irrigation of newly sown area might not exceed the proportion of uncultivated land in the total arable land. The conclusion in my article is that the extension of cultivation was possible mostly through "land development, soil conservation and land reclamation measures without irrigation. For moisture, this area had to depend on rainfall and such land development and crop rotation measures which helped retention of adequate moisture for cultivation." What D.S.P. Rao and P.V.S. Rao want to make in this respect does not appear at variance with this conclusion.

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