PREFACE

The importance of planning in the scientific development of resources can hardly be over emphasized. In India the major portion of the natural resources consists of land and by far the largest proportion of her inhabitants are engaged in the exploitation of land. In any scheme of planned development of the country, therefore, agricultural land use planning is of basic importance. Owing to the increasing pressure of population on land and the growing demand for food and raw materials, there has been a growing desire to nationalize the agriculture in order to utilize every piece of land properly. This desire calls for a scientific study of the utilization of agricultural lands. In any plan which aims at utilizing the resources in a scientific, rational, and economic manner, land use surveys are of fundamental importance. The value of such surveys lies in the detail information it provides with regard to the existing use and mis-use of land and this information when analysed leads to a better understanding of the existing use of the land and of the possibilities of its further development. An attempt has, therefore, been made to study the agricultural land use of Ghaghara-Rapti Doab through local surveys in the fifteen selected villages. It is true that the selected villages constitute in no way a substitute to field-to-field survey of the area as a whole, but considering the cost incurred, and the time spent in the latter, sampling is the only proper way of assessing the capability and the existing carrying capacity of the lands of the area.
The present study is divided into four parts and altogether there are twelve chapters. The thesis opens with a discussion of geographical background and makes an analysis of its complex and varied problems. The first part of the study consists of five chapters viz., structure and relief, including drainage and physiographic divisions, climate, soil, agricultural land use, and the selection of villages. The region is a part of Ganga plain and is built of alluvial deposits brought by the Himalayan rivers. The discussion of physiography and drainage is based partly on field-work and partly on the topographical maps. The chapter on climate is based on the data collected personally from the India Meteorological Department, New Delhi. Scientific data on soils of the area are far from adequate and, therefore, the chapter on soil is based on field-work, district gazetteers, and settlement reports of the districts of Bahraich, Gonda, Basti and Gorakhpur. All these chapters have been discussed in such a way as to lay emphasis on those aspects which have direct bearing on the agricultural land use of the area. Chapter IV deals with the general agricultural land use of the area. Apart from the study of the general land use, land use in kharif and rabi seasons, the area has also been divided into crop-combination regions on the basis of Doi's formula. Chapter V reviewing the pioneer works done in the field of land use, deals with the principles of the selection of villages for an intensive study of land use. The area has been divided into four homogeneous strata and villages have been selected from each stratum.
Part II which is entirely based on field enquiry attempts to study land utilization and pressure of population in fifteen selected villages of the region under study for the year 1965-66. It consists of five chapters. The first/these chapters is devoted to a short description about the selected villages. Chapter VII is an account of the land utilization and pressure of population in the five villages situated in the first homogeneous stratum. Chapter VIII deals with the villages of second stratum; Chapter IX takes into account three villages lying in the third stratum. Chapter X is concerned with three villages of the fourth stratum. For an assessment of the nutritional standard of the village people in terms of calories, Food Balance Sheets have been prepared for each village. The extent of agricultural development based on land productivity and Potential Production Unit has also been attempted in each village.

An enumeration of population was also undertaken in each village during the course of the survey. On the basis of the occupational structure, the population was divided into three groups. The first group includes the primary rural which exclusively depend on the cultivation of land; the second group consists of secondary rural population which serve the primary rural through ancillary services, and indirectly depend on land. The third group viz., adventitious population includes people who live in the village by choice rather than by necessity. The number of such people is, however, negligible. The third part consisting of only one chapter which deals
with nutrition and nutritional deficiency diseases in the selected villages. This chapter is entirely based on writer's field-work.

In the light of this study conclusions have been drawn in part IV (Chapter XII) which also includes suggestions for an over-all development of the area.

It may be observed, therefore, that the study is a practical appraisal of the conditions and facts of land use in Ghaghara-Rapti Doab. Attempt has been made towards a logical approach supplemented whenever necessary by statistical means. Every possible care has been taken in the accuracy, reliability and homogeneity of the statistical information given. The work develops, therefore, a systematic study and may be designated as the first micro-study of this region. And this may serve a basis for the future scientific agricultural planning of the area.

Since no basic work of importance has so far been done on the use and misuse of agricultural lands in the Ghaghara-Rapti Doab on the basis of intensive local surveys, the sources of information to the present work are few. A study of considerable value based on intensive land use survey and dealing with various problems connected with Eastern Uttar Pradesh has come from


However, the sources of information which have been available to the writer in undertaking this work may be grouped under

three heads: (i) published books, reports, and articles; (ii) statistical records; and (ii) field work. As regards the first group of information, there is hardly any standard work of reference on land use problems of Ghaghara- Rapti Doab. Certain books and reports do give a general account of the agricultural condition of the whole of Uttar Pradesh, but besides being out of date, they make little attempt to study the land use on the basis of intensive local surveys. In the second group of the sources of information, the Season and Crop Reports of U.P. are included. They provide yearly statistics for land use and agriculture in the state. These statistics, however, serve little purpose for two reasons. In the first place they are far from reliable, and secondly, they do not show actual distribution which can be depicted only after undertaking field-to-field survey.

For the third group of information, the writer has conducted an intensive land use survey of fifteen selected villages which are typical of their region differentiated on the basis of soil, availability of water for irrigation, and consequent varied range of crops. For an intensive land use study, outline maps of each village showing field boundaries were obtained from the headquarters of the Revenue Departments. These villages were visited during the kharif and rabi seasons of 1965-66 and the use of land was recorded on the out-line map by inspecting the fields on the spot. Further information regarding the general agricultural conditions, method of cultivation, use of implements and manures, yield of crops, rotation of crops, tillage practices, irrigation problems, and the general standard of living of the people were also obtained.

1. C. W. Moreland, W. H. The Agriculture of U.P. (1912); (id) Bag, C. M., Agricultural Improvements With Special Reference to U.P., (Allahabad, 1928); (id) Report on Agriculture in U.P. submitted to the Royal Commission of India, Agriculture, 1926;
Besides this, an intensive door to door survey of the dietary habits, and nutritional deficiency diseases was also undertaken and these data were correlated with the deficient nutrient elements of the diet.

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(Noor Mohammad)