Chapter 1

Introduction

The study of changes in agriculture in this region has prime importance because majority of population (73.3 %) depends upon agriculture for livelihood. Therefore, a little development or change in this sector may change the socio-economic scenario of this region. On the other hand, there is a direct impact of population on the investment and development of agriculture. If modern yield raising techniques are employed they may increase the production, but may not improve the overall socio-economic development of this region. The agricultural sector was quite backward in the pre-independence period, when the productivity and production was insufficient in Madhya Pradesh. The planners have given a prime importance to develop this sector through green revolution. Consequently, the situation has improved and this state has witnessed a significant development of agriculture. Madhya Pradesh became one of the surplus producers in 1960s, since then, the agricultural production has been stable or declining and this region is again returning to the stage of food shortage as it was in the fifth decade of the century (Mishra, 1989).

The agricultural productivity and production was quite small during the Pre-Independence period and the state was facing acute shortage of food grains. The proportion of net sown area was relatively small, while the percentage of cultivable wastelands, fallow lands and
other cultivable land was relatively high. Some agricultural land was under permanent pastures and grazing lands. This was the time of food crisis in the state. With the implementation of First Five Year Plan some cultivable wasteland, fallow land and other cultivable land has been reclaimed and therefore the net sown area has increased during 1956-71. During the year 1956 to 1971, an overall development in agriculture was remarkable and the state has become one of the surplus producers of food grains.

During last five decades the remarkable changes in the land use pattern have been recorded in Madhya Pradesh. The net sown area was 10.09 million hectares in 1950-51 which has increased to 13.87 million hectares in 1970-71; it was an increase of 37.5 per cent. Between 1971 and 1991, about 7.35 per cent increase has been recorded in the net sown area, from 13.87 million hectares in 1970-71 to 14.89 million hectares in 1990-91.

About 48 per cent increase has also been recorded in the net sown area during the period. Consequently, an increase of 77.5 per cent has been recorded in the total cropped area. On the other hand, proportion of cultivable waste lands, old fallows, areas under permanent pastures and other grazing land has been reduced nearly 60 per cent, from 8.7 million hectares to 3.3 million hectares during last fifty years. This is because of horizontal expansion in the agriculture through the development of irrigation facilities and mechanization. In the state 3.56 million hectares area is under double cropping, which is equivalent to the total geographical area of Haryana state. About five times increase in the double cropped area has been recorded during last half century, from 0.71 million hectares in 1950-51 to 3.56 million hectares in 2002-03. The food grains have occupied major part nearly two-third in the total cropped area, more than one-fourth under oilseeds, and the remaining gross cropped area was under other crops in the year 2002-03. The area
under food grains has increased by 29.6 per cent between 1956-57 and 1970-71, from 9.9 million hectares to 12.95 million hectares. Moreover, during 1971 to 1991 the rate of growth was slow down when comparison made with the previous decades. Since land has certain limits to increase the agricultural production in a given socio-economic scenario, therefore agricultural production cannot increase indefinitely. This fact has been proved in the next decade, when the production was either stable or decreasing in this state. Not only the production but the productivity has also been stabilised or decreasing now in the state. The pressure of population is increasing continuously on existing agricultural resources in our country. Majority of population of Madhya Pradesh is living below the poverty line, and people have little economic resources for agricultural development. Poverty is a socio-economic problem which reduces the purchasing power, which has both direct and indirect impact on the development of agriculture. This is one of the basic reasons for the stability in the agriculture. A major part of the agricultural land is devoted to food crops and the productivity level is quite low. Since 1990-91 instead of increase in the production of food grains it has recorded fluctuations in the next ten years. About 1.81 per cent decrease has recorded in net sown area from 14.89 million hectares in 1990-91 to 14.62 million hectares in 2002-03. The area under fallow and cultivable wastelands has been reclaimed to its maximum possible limit. In recent years, a decrease of 1.7 lakh hectares (1.17%) in net sown area has been recorded in the state between 1998-99 and 2002-03. This is due to an increase in fallow lands, from 1.04 million hectares (1998-99) to 1.62 million hectares (2002-03). About 61.5 per cent increase in the fallow land has been recorded during last five years.

After 1991, this growth rate could not been maintained, because of several reasons. The production of foodgrains has registered a declining rout after 1999-2000. This declining trend in Madhya Pradesh
is because of failure of monsoon in many years. The state was under draught condition in the year 2000-2001, when 32 districts out of 45 were affected by this natural calamity. The year 2002-03 has also known as draught year when 33 districts out of 45 were affected by draught condition.

Review of Previous Work

Various studies have been carried out in the field of agriculture. These studies are related to different topics such as land use pattern, size of land holdings, development of irrigation facilities and irrigated area, adoption of farm technology, development of other agricultural inputs, changes in the cropping pattern, agricultural productivity and the levels of agricultural development.

These studies may be classified into two categories: (i) the studies carried out before 1951, and (ii) the studies carried out after 1951. The studies carried out before 1951 are of descriptive in nature and mostly related with the area and production of crops. Due to lower agricultural development little are related with the development of agricultural inputs. But, after First Five years Plan, which was mainly based on the agricultural development in the country, consequently most of the studies have been related with the changes in the land use pattern, size of land holdings, development of irrigation facilities and irrigated area, adoption of farm technology, development of other agricultural inputs, changes in the cropping pattern, agricultural productivity, the levels of agricultural development, etc. In this field the Indian Council of Agricultural Research (ICAR), other Agricultural Institutions and universities have been engaged in research studies.

Some methodological studies in Agriculture Geography have been carried out during first half of the century. Kendall (1939) has analysed the geographical distribution of crop productivity in England.
Weaver (1954), Doi (1957), Coppock (1964), and Ayyar (1969) have carried out the studies related to the crop combination regions.

Shafi (1960) has analysed the measurement of agricultural efficiency in Uttar Pradesh. Enyedi (1964) has analysed the geographical types of agriculture. Sapre and Deshpande (1964) has analysed inter district variation agricultural productivity in Maharashtra state. Sharma (1964) has analysed the regional approach to agricultural development in India.

Dhurandhar (1965) has made a study on Agricultural Geography of Madhya Pradesh. This is perhaps first detailed study on Agricultural Geography on Madhya Pradesh in its kind.

Saxena (1967) has carried out a study on Agricultural Geography of Bundelkhand, Madhya Pradesh. He has described different aspects of Agricultural Geography of a well known regional unit.

Bhatia (1967) has worked out a new method for the measurement of agricultural efficiency in Uttar Pradesh.

Symons (1968) has written a book on Agricultural Geography, which includes different topics of agriculture. Mishra (1968) has described trends in the diffusion of agricultural innovations. Sisodia (1968) has described some aspects of high yielding varieties programme in India, at district level.

Sinha (1970) has analysed the measurement of agricultural efficiency in India. Sharma (1970) has analysed the pattern of rainfall and its variability as an indicator of agricultural change in a region.

Chakravorti (1970) has adopted a method for measuring food grain surplus and deficit areas, based on the actual production of food grains, minus the allowances for wastage between farm and kitchen and for grains used for seed and feed at the rate of 16.8 per cent.
The method is useful in the calculation of Carrying Capacity of land in an area.

Shafi (1972) has analysed the measurement of agricultural productivity in the Great Plains of India. Harris (1972) has analysed the role of high yielding varieties programme in Indian agriculture. Joshi (1972) has carried out a study on Agriculture Geography of Narmada Basin.

Randhawa (1974) has made a study of Green Revolution taking Punjab as an example. Singh (1974) has given a technique for the measurement of agricultural productivity taking as an example of Haryana state. Singh has prepared an agricultural atlas of India, which also includes the details of Agricultural Geography of Madhya Pradesh.

Sharma (1975) has made a study on changing pattern of resources in the Baghelkhand plateau of Madhya Pradesh, agricultural resource is one of them. Sheonai (1975) has prepared a new strategy for agricultural development in India. Singh (1976) has written a book on Agriculture Geography of Haryana. He has described various aspects of agricultural development in the state. Thorner (1976) has find out the agrarian prospects of India.

Mishra (1977) has described the changing pattern of resource use in the eastern Satpura region of Madhya Pradesh. Dasgupta (1977) has analysed some aspects of the Green Revolution in India.

Agro-economic research centre of the Jawaharlal Nehru Agricultural University (1977) has analysed inter-district comparisons of agricultural development in Madhya Pradesh. This research centre again made a study on agricultural development in Madhya Pradesh in 1979.

Thussu (1979) has analysed the regional imbalances in the agricultural development of Madhya Pradesh. Joshi and Dubey (1979)
has measured the regional disparities in agricultural development in Madhya Pradesh. Krishan (1979) has described the basic concepts of agricultural development.

Sharma (1980) has made a study on correlation between agricultural productivity and density of rural population in Madhya Pradesh.

Shafi (1984) has analysed the agricultural productivity and regional imbalance in Uttar Pradesh. Singh and Dhillon (1984) has described various aspects of Agricultural Geography.

Sharma and Jain (1985) have made a study on spatio-temporal dimensions of of the changes in agricultural productivity in Madhya Pradesh. Singh and Sharma (1985) have discussed the determinants of agricultural holdings for land use planning. Vidyanath (1985) has analysed the agricultural productivity in Andhra Pradesh. Kumar and Pal (1985) have made a review study on limitations and prospects of irrigation development in Haryana state. Qureshi and Ahsan (1985) have measured the levels of agricultural productivity in eastern Uttar Pradesh.

Shafi (1986) has analysed the perspective in Agricultural Geography with special reference to India. Singh and Azam (1986) have analysed the correlation between irrigation and crop output in western Uttar Pradesh. Chatterjee (1986) has described methods for determining the crop combination in West Bengal. Govind (1986) has analysed regional prospects in agricultural development in India. Khan (1986) has analysed the spatio-temporal changes in crops in Ganga - Yamuna Doab during 1911-61.

Chandrabhan (1986) has analysed the farm mechanization and social change in India. Dubey has described the issues and application in Agricultural Geography.

During the decade 1990-2000, various studies have been carried out in the field of agriculture. These studies are related to different topics of agricultural development, few are related with Madhya Pradesh.

Sohal (1990) has analysed the regional disparities in crop productivity in Punjab. Tyagi (1994) has analysed the levels of agricultural development in Aligarh district. Singh and Dillon (1994) have contributed a book on Agricultural Geography. Bhalla and Singh (1997) have analysed the recent development in Indian agriculture. The study presents a state level analysis.

Mishra (2000) has analysed the trends and pattern of the development of irrigation in Madhya Pradesh.

Mishra and Mishra (2004) have analysed the spatial pattern and level of agricultural development in Jaunpur District, U. P.


Deosthali, Akmanchi and Salunke (2005) have analysed the Soybean agriculture in India.

Mishra (2005) has analysed the present level and trends in the cropping pattern and production of food grains in Madhya Pradesh. Mishra (2006) has analysed the present level and trends of agricultural pattern, food resources and nutritional level in Madhya Pradesh.

The present study of agricultural change is in Madhya Pradesh for the period of last five decades. The study is related to different topics of agriculture such as land use pattern, size of land holdings, development of irrigation facilities and irrigated area, adoption of farm technology, development of other agricultural inputs,
changes in the cropping pattern, agricultural productivity and production in new Madhya Pradesh.

Objectives of the Study

1. The primary consideration of the present study was that the agricultural resources are developing and the production from agriculture is increasing gradually in the state in the light of all round development in the economy of the state and the country.

2. During the period 1956 to 1971, an overall development in agriculture was significant and the state became one of the surplus producers of the country. Since then the rate of growth in the area and production has been slow down or stable in the state when comparison made with the previous decades. Again, after 1991, the area and production has been stable or declining, and this region is returning to the stage of food shortage as it was in the fifth decade of the century.

The main objectives of the study are as follows:

(i) To know the level and trends in the agricultural change in new Madhya Pradesh, this is again reorganized in the year 2000.

(ii) To analyse the changing pattern of the dimensions of agriculture at district level such as land use pattern, size of land holdings, development of irrigation facilities and irrigated area, adoption of farm technology, development of other agricultural inputs, changes in the cropping pattern, changes in the agricultural production and productivity, etc.

(iii) To find out suggestions to improve the present pattern of agricultural change in the state.
Source of Data & Methodology

The analysis of changes in the agriculture in Madhya Pradesh is based on the data obtained from the publications of Director of Agriculture, Government of Madhya Pradesh, Bhopal; and Commissioner of Land Record, Gwalior. The data for the period of 1950-51 and 1956-57 have been obtained from the Statistical Abstract of Madhya Pradesh, 1958-59, published by Director of Economics and Statistics, Bhopal.

Madhya Pradesh has again reorganized by the separation of the Chhattisgarh state in the year 2000. The data for new Madhya Pradesh are available for few parameters only. There is a problem of comparability of the data for the previous decades. Most of the data have been calculated by subtracting the data related to Chhattisgarh.

The map categories related to the area and production of crops are based on the log scale method as described by Davis (1975, p. 60), while for the normal distribution of data the map categories are based on the percentage deviation from the average value of the state (Sharma, 1980, Mishra, 1989). The mean value is taken as 100 and the upper and lower boundaries on either side of it have been worked out as percentage of the mean.

The changes in the different parameters of agriculture during last five decades are based on the percent change. The agricultural productivity has been analysed on the basis of agricultural output in terms of yield rate, ranking method (Kendall, 1939), Index of Productivity and Carrying Capacity of land.
The district has been taken as a unit of analysis, because the data related to most of the aspects of agriculture are available at district level only. Moreover, to make a comparison of different aspects of agriculture the district gives a clear picture of the facts. There were 45 districts in new Madhya Pradesh during the period of study.

The Study Area

New Madhya Pradesh has been taken as the study region to analyse the changes in agriculture during last five decades. Madhya Pradesh is characterized by diversified land including extensive plateaus, upland plains, river valleys and hills. Madhya Pradesh is situated in the northern part of the Deccan plateau. The average height ranges from 300 meters (Narmada valley) to 1325 meters (Satpura hills). The general slope is towards north and north-east direction.

Climate is considered to be one of the most important factors which determine the cropping pattern and agricultural production in an area. The state has a sub-humid climate and three well know seasons in a year. The average annual rainfall in the state is about 1200 mm and it varies from 670 mm in Bhind district in the extreme north of the state to 1600 mm in Balaghat district in the south-eastern part of the state. The proportion of rainfall decreases towards north-west.

Soil is another important physical factor which determines the pattern of agriculture in an area. Generally, the soils of the state are deficient in nitrogen, phosphorus and organic matter which results in low productivity (NCAER, 1967). On the basis of colour, texture, availability of water and level of land surface five distinct types of soils have been recognized in Madhya Pradesh- alluvial soils, black soils, red & black soils, sandy red & yellow soils and gravelly soils.

Economy: Agriculture is the main economic activity of population, while other economic activities are mining, household
industries, small and cottage industries. A little less than three-fourth of the total workers is engaged in agricultural activities. More than one-fourth area is under forests, a little less than one-half area is under cultivation; more than one-tenth is under fallows and cultivable waste lands; and the remaining one-fifth geographical area is under various other non-agricultural uses.

Nearly half of the geographical area (48.65%) is net sown in Madhya Pradesh which is slightly higher (2.04%) that that of the national average of 46.6 per cent. It is much lower than Punjab, Haryana and West Bengal, and it is higher than Andhra Pradesh, Bihar, Orissa, Tamilnadu and twelve other states of the country. About five times increase in the double cropped area has been recorded during last half century. Food grains have occupied major part, nearly two-third, in the total cropped area; more than one-fourth is under oilseeds, and the remaining gross cropped area was under other crops in the year 2002-03.

Population of Madhya Pradesh is 60.39 million in the census year 2001, which is equivalent to the population of United Kingdom (United Nations, 2003). Madhya Pradesh is seventh state in terms of the size of population and second in terms of geographical area in the country. Population density is 196 persons per square kilometer, which is very much lower than the average of the country (324 persons). A little less than three-fourth (73.3 %) of the total population of the state lives in the rural areas, which indicates the predominance of rural character of the society. Population growth is very high 24.34 %, it is higher than the national average population growth rate of 21.34 per cent. A little less than two-third population (64.1%) is literate; it is slightly lower than the national average literacy rate of 65.4 per cent. About 42.8 % of the population is engaged in various economic activities. Out of the total workers a little less than three-fourth (71.6 %) are engaged in agricultural activities and the remaining nearly one-fourth
(28.4 %) are engaged in non-agricultural occupations. About one-third of the total population belongs to the socio-economically backward sections of the society i.e. scheduled castes and tribes. About one-third of the total population belongs to the economically weaker sections and living below poverty line.

The Scheme of the Study

The thesis is divided into nine chapters. The first chapter deals with the introduction of the thesis, second chapter deals with the natural and cultural environment of the study region i.e. Madhya Pradesh. Third chapter deals with the changes in the land use pattern in the state, during last five decades. Fourth chapter deals with the changes in the size of land holdings, during last thirty-five years. Fifth and sixth chapters analysed the changes in the cropping pattern; and the agricultural inputs in the state during last five decades. Seventh chapter analysed the changes in the agricultural crop production in the state during last five decades. The eighth chapters analysed the level and changes in the agricultural productivity in the state. The ninth chapter presents the conclusions and suggestions. The bibliography is appended in the last part of the thesis.

References

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