Chapter - 2

Review of Literature
If one makes review of Indian geographical literature, finds out that a lot of works have been done in the field of agricultural development and original planning. Most of these studies are mainly concerned with measurement of regional patterns of agricultural productivity and efficiency, technological and institutional determinants of agricultural productivity and development, role of markets and price on cropping pattern and commercialisation and diversification of agriculture. However, the role played by agriculture on socio-economic development of any region has been ignored. Such type of studies assumes immense significance in a developing country like India in general, and Tarai districts of Uttar Pradesh in particular which is one of the backward regions of the country, where stage of economic development is still at initial phase.

Indian agricultural has undergone change owing to the governmental efforts and scientific utilisation of land. After independence, the economist, geographers, agriculture planners and the government of India have all been concerned with agriculture and its development. Tara Shukla (1969) pointed out certain problems of growth of traditional agriculture, stages of increasing
agricultural production, spread of new technology and bases of technological research.

Shafi (1981)\(^2\) emphasised that the optimum use of land for production depends on to a large extent on the level of technology and the system of farming. In his opinion there are two ways for increasing food production:

a) increasing the area under cultivation.

b) increasing the output per head.

He also points out that one of the major hindrance in the optimal use of the land lies in the land tenure system. Noor Mohammad (1981)\(^3\) has emphasized that the use of modern technology for bringing about a change in agricultural output. He pointed out that the technological factors such as fertilizers, improved seeds, pesticides and new far implements are capable of increasing the Agricultural productivity.

In view of Kunwar (1969)\(^4\) for maximum output from land, it is required to bring more land under irrigation, fertilizers, High yielding varieties of seeds and better organic technology.

S. Thirumalai (1954)\(^5\) opined that the development programme based on technology are related to the
conservation of soil resources, expansion of irrigation facilities, intensive farming through the application of modern techniques, manures, fertilizers and HYV of seeds.

Pal (1968)\(^6\) pointed out that the irrigation alone cannot increase the required agricultural production, it is other inputs also used with adequate water supply which can increase the agricultural production.

The immediate outcome of the green revolution was in the form of increased agricultural production, but in view of Arshad (1986)\(^7\) it has failed to make any appreciable differences in the overall rate of agricultural growth. According to him, the introduction of high yielding varieties of seeds along with new technology and fertilizers alone cannot balance agricultural production. An all round production and growth in all the crops in all the regions is the only solutions.

Sharma (1976)\(^8\) has suggested that the development of Agriculture should be assessed not only by productivity levels but also with reference to inputs such as fertilizers improved varieties of seeds and irrigation.
The policies of increasing the fertilizer use as suggested by Desai (1986)⁹ should be based upon a strategy which aims at both rapidly converting the untapped potential into actual use and continuously raising the economic potential of fertilizer use through upward shifts in response functions. It has been seen that fertilizer diffusion has been most rapid on crops and varieties which respond to fertilizer use dramatically, even though they did not have best price environment.

Jaine Quizon (1985)¹⁰ suggested that fertilizer is the crucial input in raising the agricultural productivity, it is because of its importance that the government intervention in the fertilizers market to encourage its more widespread production and use has been a common phenomenon. As the availability of fertiliser is limited. Arora and Sharma (1981)¹¹ have proposed to increase under pulses or other non-fertilizers using crops whereas HYV of wheat and Paddy may be raised under irrigated conditions. Jain (1970)¹² concludes that Agriculture is now paying well on account of the availability of a wide array of HYV of seeds and hybrid seeds. If institutional finances are made available to the ferm, they can purchase all these costly inputs and agricultural
productivity can be increased. Reg (1969)\textsuperscript{13} pointed out the relationship between soil, water and plant and suggested use of irrigation to get assured crop especially during drought. It is now widely recognised that in plans for agricultural regeneration in India, irrigation has to play a catalyst role. Bhatia (1984)\textsuperscript{14} feels that the use of the fertilizers and HYV of seeds requires assured water supply of the farmers.

Roy (1979)\textsuperscript{15} suggested that the irrigation development and improved water management are crucial to India's agricultural development. The supply of land being inelastic accelerated growth in production is possible only through increased multiple cropping and realisation of higher crop yields per unit area, both of which are heavily dependent on irrigation.

Vasant (1987)\textsuperscript{16} suggested that efficient management of the developed water resources and supply and application of all other inputs needed for irrigated agriculture can produce sufficient foodgrain for the over increasing population of India.

Singh (1984)\textsuperscript{17} pointed out that increasing the agricultural production is a must and their protection from pests is as important as use of irrigation, HYV of
seeds and fertilizers. He has suggested that the farmers need to be educated about judicious use of fertilizer otherwise boon can turn in to bane.

Gond (1987) concluded that the strategy of agricultural development is the extending for proper financial assistance to the farmers so as to improve them from clutches of money tenders and for rapid agricultural development. He reveals that there should be a separate agency to finance the farmers at village level. He also state that primary agricultural co-operative credit societies play an immense role in transformation of the traditional agriculture into a modern one.

Chawdhari (1970) pointed out that in India the first comprehensive analysis of the whole problem of Agricultural credit was made by the Committee of Director of All India Rural credit survey appointed by the RBI in August 1951, its report suggested three important ingredients

a) The governments concern must assume major responsibility for provision of funds.

b) The realisation of the intimate relationship between the Agricultural credit and marketing of agricultural credit and marketing of agricultural produce.
c) The agricultural credit based on the productive capacity of the borrower is feasible and ought to replace credit based on the security on immovable property.

Kumarswamy (1969)\textsuperscript{20} pointed out that a study published by Union Ministry of Co-operatives and Panchayati Raj shows the importance of cooperative in the development of Agriculture providing loans and other important inputs. Cooperatives ensure the full share of all the farming community through balanced growth of production.

Nath (1970)\textsuperscript{21} emphasized that the development of cooperatives and expansion of infrastructure will help in the development of Indian Agriculture. Agricultural development throughout the world is strongly motivated by the incentive of the farmers, which may take the form of pride and ownership, security of occupancy and expectation of the just division of farm income between landlords and tenants. These factors everywhere have the impact in improving the conditions of land.

Hunter (1969)\textsuperscript{22} concluded that the degree to which market forces have penetrated an area and the scale upon which they operate will be the crucial factors in
almost every question of agricultural development. The percentage of cropped area under cash crops may be used as a parameter of commercialization of agriculture. The density of market centres per 1000 sq.km of area can also provide a clue to the degree of commercialisation of agriculture.

Davey (1975)\(^{23}\) pointed out that the development of agriculture is also to be judged from the degree of equity in farm incomes and the nature of agrarian relations. The test of any development is the extent to which it delivers social justice. The unequal distribution of land ownership and economic power makes it possible and profitable for the landowner to combine various modes of exploitation of the rural poor. Frankel (1971)\(^{24}\) concluded that one of the conspicuous weaknesses of the Green Revolution was that it widened the disparities in farm income. An endeavour of agriculture development however should not produce deterioration in ecological conditions. It should not lead to defacement of forests, exhaustion of soil nutrients, depletion of underground water and emergence of water logging conditions. Conservation of
physical resources is an integral part of any agricultural development. A review of geographical literature reveals that in India very few attempts have been made to define agricultural development and to select criteria in the light of any conceptual framework. Rarely a distinction is made between the elements of agricultural development and the factors in agricultural development. Among all the studies the dominating focus is only on productivity dimension.

Sharma (1971) pointed out that Agricultural development should be assessed not only by the levels of productivity or trends in agricultural production but also with reference to various physical inputs like irrigation, fertilizers, improved seeds and extent of cultivated area.”

Krishna (1992) pointed out in this paper, that agricultural development, in true sense, denote the quality of agricultural system of a region in terms of productivity, diversification and commercialization consistent with desired state of Agrarian relation and ecological balance.

According to Thakur (1992) after independence, particularly during the last two decades, there
considerable change in almost all the parameters of agriculture in India, due to the variation in physical and socio-economic conditions, these changes in agriculture are not uniform all over the country either spatially or temporally.

According to M.R. Khurrana (1992)\textsuperscript{28} the differences in the levels of Agricultural development in a particular districts are largely in terms of differences in irrigation facilities, rural electrification, use of chemical fertilizers, adoption of HYV of seeds and so on.

Gangwar (1997)\textsuperscript{29} pointed out that since, the mid 1960's there have been rapid increase in agricultural production in India as a result of diffusion of package of improved cultural practices involving high yielding varieties of seeds use of fertilizer irrigation, application of pesticides and farm mechanization.

Swaminathan (1999)\textsuperscript{30} concluded that before the mid sixties, increase in foodgrain output in the country was attributed mostly to the growth of the cultivated area and the extension of irrigation, since, then, the new farming system symbolized by HYV of seeds, use of agro-chemical and mechanization had the powerful impact on the food sector of the country.
Sen Gupta and Sadasyuk (1961)\textsuperscript{31} have worked out the economic regionalization of India in an attempt to provide a hierarchy of regions useful in national planning.

Schwartzberg (1962)\textsuperscript{32} made the earliest study in the level of development. The use of composite index of development brought out areal differences in levels of development, although these differences could not be further put to rigorous regional analysis as the data were on the basis of states (Prior to 1956), which are not ideally suited to reveal regional differences.

The map prepared by Shat (1964)\textsuperscript{33} indicates the pattern of industrial development in the background of resource potential in different areas. Contiguous areas of urban-industrial development occurring along the edge of the Krishna-Godavari Delta or from the Coimbatore placetateau to the Kerala coast are the resultants of a relatively developed agricultural based industries. The patterns of levels of development as brought out by mapping the index values seems to explain the causes of disparities in levels of development in an objective way. The study shows that areas having low levels of development coincided roughly with those
having low land productivity or lack of good resource base and occurrence of small and stagnant towns without much industrial activity and inter-town relationship. On the other hand, Hyderabad occurs as an 'Island' of development in the relatively underdeveloped area of Telengana.

Pal (1965)\(^{34}\) put a more systematic attempt in the construction of a composite index of selected variables which permit several stages of analysis in relation to the group of variables contributing to overall development, with a study of All India level it may be regarded essentially as a contribution to methodology in areal differentiation by factor analysis. To be of use in policy decisions these studies need some of the important variables like per capita income and production which are directly related to the levels of development.

Mitra (1965)\(^{35}\) using a somewhat different method has grouped 324 districts of India into four levels of development. For this study he selected 63 variables and these were grouped into six convenient blocks. The variables pertains to natural factors, agricultural infrastructure, traditional economy, human resources, organized industry, etc. This study is unique for its
simplicity and systematic approach. Nevertheless, the author himself pointed out in his introductory remarks that, the lack of more important indices and methods of giving weights to different variables is a limitation to this study. The data of per capita income is difficult to calculate below the state level.

Nath (1970)\(^{36}\) on the basis of state and district level data worked out the regional patterns of economic development and economic growth within India. Analysis of the level of economic development has been made for both states and districts, but analysis of growth rates has been made by only for states. The level of economic development of states has been measured in two ways: (i) on the basis of per capita income, and (ii) through the use of a composite index of economic development based on four indicators. Analysis of economic growth rates of population, agricultural output, per capita value added in industry, and per capita income. He mapped the states of India into two categories of relatively developed and less developed.

Nair (1971)\(^{37}\) examined empirical validity of the hypothesis that as income of nation increases, inter-regional differences in income between the regions of
the nations automatically diminishes. He used three measures in his analysis the Quotient of disparity, the weighted coefficient and the income relatives. He reaches to the conclusion that a reduction in inter-regional income differentials does not necessarily follow automatically from an increase in the income of the nation.

Varma (1972)\textsuperscript{38} using per capita product as an indicator of development analysed time series of regional disparity in per capita product during the period 1949-50 to 1967-68 in Pakistan. He used fitted equation in his analysis.

Sharma and Katiyar (1972)\textsuperscript{39} emphasised the need of developing a synthetic index of development rather than a single index of a specific variable because it does not give an over all picture. They developed certain indices and used the composite index method to determine the level of development of Uttar Pradesh.

Knox (1974)\textsuperscript{40} surveyed the concepts and techniques so far developed in establishing social indicators and applied them in describing spatial variations in the social well-being of the people of England and wales.
He described the utility of development of social indicators and measurement of spatial variation of well-being and the problems involved.

Nair (1977)\(^1\) using rank correlation technique, studied regional disparities industrial wages in India. His study reveals that wages in organised industrial sector have been very low in the states of Jammu and Kashmir and Andhra Pradesh while the reverse is the case with Bihar and Maharashtra. The states of Karnataka, Orissa, and Madhya Pradesh seem to be improving their position in this regard with the opposite being the situation in Assam and Punjab. But the relative position of the states does not seem to undergo major changes during the period while there are some signs of decline in disparities.

Sampath (1977)\(^2\) using measure similar to the coefficient variation, studied inter-state inequality in income during 1951-71. He measure inequalities at three levels: at the level of regional net domestic income, at the level of sectorial income, and other level of regional per capita income. He prepared the index of economic performance in order to show the relative positions of the states.
Prakash (1977) assessed the regional inequalities and economic development in relation to infrastructural facilities in India. He selected several infrastructural factors: the various population characteristics that reflect the development of infrastructural; the determinants of industrialization; the development of power; irrigation and agricultural implements; and road transportation, communication and banking services. He obtained two important conclusions from the analysis of development of individual region in various fields: (i) there is no region which is equally developed or under-developed in all the fields. For examples, developed areas like Tamil Nadu, West Bengal, Andhra Pradesh, Maharashtra, Kerala and Punjab are under-developed in one or most of the fields like literacy, work force participation rates, per capita power consumption, irrigation or mechanization of agriculture while the under developed regions like Jammu and Kashmir, Nagaland, Arunachal Pradesh, Mizoram, Rajasthan, Bihar and Madhya Pradesh are quite developed in one or more fields like literacy, density of population, work force participation rates, urbanization, power consumption and road transportation. It would, therefore,
be more useful for policy purposes to identify individual areas of deficiency rather than to bracket regions as developed or under-developed in general so that the remedial measures to make up the deficiencies could be evolved and implemented; (ii) the other important result is that the same regions/regions come under the category of developed regions if one indicator is used while they fall in the category of under-developed regions if some other indicator relating to the same field is used for classification. It implies that an appropriate indicator should be chosen to determine the stage of development of the regions.

Prakash and Rajan (1979) using Gini coefficient, measured degree of concentration of agricultural inputs and agricultural development. They reached to the conclusion that agricultural productivity per hectare is widely diffused but agricultural inputs like iron plough, tractors, fertilizers, HYV seeds, irrigation, etc. are highly concentrated. There are hardly any regions which is not totally under-developed or developed.

Ajit (1979) analysed the trends in inter regional and inter districts income differentials in Uttar Pradesh over the period 1951-71. His study revealed that per
capita income of western Uttar Pradesh is higher than eastern.

Bronger (1986) measured levels of development in terms of 36 indicators in Andhra Pradesh taking districts as a unit of the study. He applied factor analysis in identifying backward and developed regions as well as investigating dimensions and dynamics of development in the state.

Dadhibhavi (1989) measured regional disparities in terms of net domestic product at factor cost at three points of time i.e. 1960-61, 1970-70 and 1975-76 in Karnataka. He took district as a unit of analysis. His study reveals that there is wide variation in the level of development during 1960-61 and 1975-76. Inequality reduced marginally but ranking of the district remain same. Variations in active participation and the degree of industrialization have increased but there has been a decline in respect of effective work participation rate, labour productivity, degree of organisation, literacy rate, and composite index of infrastructure. Multiple regression analysis indicates that effective participation and productivity are the only significant variables to inter-districts variation in Karnataka.
These studies of regional patterns of developments in India provide a conceptual and methodological framework to extend them to micro level with necessary modification. The present study employs extensively concepts and methodology developed in these studies to analyse the patterns of regional development in the area of study.
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