

# GEOGRAPHICAL ANALYSIS OF THE TARAI REGIONS IN CONTEXT OF SUSTAINABLE DEVELOPMENT OF EASTERN UTTAR PRADESH

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## **ABSTRACT:**

The Tarai region of Eastern Uttar Pradesh has been especially selected as area of study because this is the most backward among the four economic regions. This occupies first rank in terms of population, area, density of population and total dropout rate in primary education among four economic regions of Uttar Pradesh. But as far as the development indicators are concerned, it ranks fourth in terms of composite index that is based on 36 indicators of development which includes 10 indicators of agriculture and allied activities, 7 of industrial sector, 10 of economic infrastructure and 9 of social infrastructure (Planning Department, U.P., 2011, p. 308). Evidently, the development in the area under study is in deplorable state even after six decades of independence.

**Keywords:** Sustainable, Education, Economic development, Tarai, Population

## **Study area**

Importance of agriculture in the context of economic development has been debated since long time. The study area, Tarai districts of Uttar Pradesh lies between 27° 7" North and 29° 29" North Latitudes and 78° 38" East and 83° 57" East longitudes. It covers an area of about 62995 miles and accounts for total population of 3.84 crores. It comprises 13 districts namely Bijnore, Moradabad, Rampur, Barielly, Shahjahnpur, Pilibhit, Gorakhpur, Deoria, Basti, Sidharthnagar, Kheri, Gonda and Bahraich. Four river systems, viz., the Gandak, the Ghagra, the Gomati and the Ramganga, all being major affluents of the Ganga, account for the drainage of the Tarai region. They have hundreds of tributary streams of unstable character, many of them originating in the upper "spring-belt", others, particularly the major ones, viz., the Rapti, the Sarada, the Deoha, the Kailas, the Gola, the Kosi and the Phika, coming into the Tarai through the Bhabar from the hills. But the little Gandak reappears from an old channel of the Great Gandak and the Burhi Rapti, that of the Rapti, while the Gomati and its tributaries originate in the Pilibhit Tarai swamps.

## **Objectivity:**

- i) To measure the regional patterns of the levels of agricultural development.
- ii) To assess the impact of agricultural development on sustainable development.
- iii) To suggest remedial measures for sustainable development of the region.

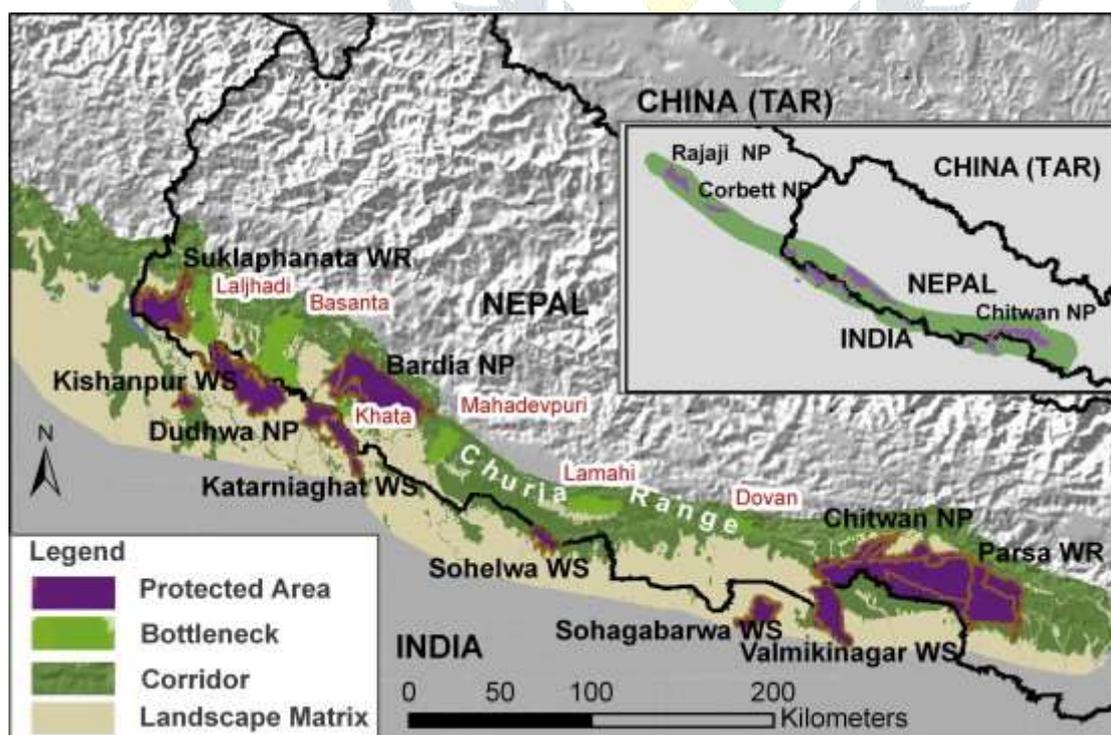
## Methodology:

The present research work based on the observational description and observational rational methods in order to decipher the theme of the research. Various statistical and cartographic methods has applied where ever needed. The present research study based on both primary and secondary data. The primary data collected through personal observation, interview, questionnaires schedule etc. while the secondary data collected from concerned district or block headquarters. Map and diagrams, graphs etc. have been widely used in this research papers.

## Discussion

The drainage system of the Tarai has been aptly likened to the reticulations of a leaf, the streamlets on the edge of the moist country uniting to form larger channels which again fed the arterial lines of drainage and all eventually join the great mid-rib stream<sup>^</sup> and thus manifests a characteristic dendritic plan. Climate : The Tarai region has been notorious for its unhealthy climate. It has been popularly known as a "Penalsettlement" because of its malarial climate, which is characterised by excessive heat and humidity, particularly during the rainy season. The debilitating climatic factor has surely stood in its way of progress and has been responsible for its under developed economy and socio-cultural stagnation.

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Agriculture forms the only part of economy that produce a surplus above the current requirements of labour and capital employed. Agriculture sector, besides being a prime source of food, is also a source of raw materials for expanding industries. Agriculture development would lead to an increase in the purchasing power of the rural poor and the growth of non-agricultural sector by providing a marked increase in production from industries.

## Review of literature

Davey (1975) 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 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) 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 36 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. Khurana (1992) 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) 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) 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.

All agricultural operations particularly those of sowing, harvesting and thrashing necessitate the use of some implements, tools or machines. Most of the agricultural tools and implements that are in use today in any part of the country have been undergoing continuous and gradual changes based on farmers' experiences and technological innovations. Therefore, these are in consonance with the local conditions of soil, climate, cropping practices, working capacity of men and animals, availability and use of power etc. In order to create favourable soil conditions for the germination of seeds and proper growth of crop plants, land needs to be tilled. It is generally done with the help of various types of the ploughs of which the wooden one is the most common. Therefore, agricultural implements and machinery are changing inputs for better productivity of land, as their use increases farm efficiency, save time and minimise production cost. 74 Tractors: In India about one million farmers have their own tractors and another three millions farmers depend on loaning facilities. Tractors are useful for various purposes such as ploughing fields, thrashing crops, running pumpset, transporting agricultural produce and inputs etc.

In the new strategy, fertilizer has been regarded as kingpin because, when soil fertility is low, better performance of crop productivity failed to achieve. The continuous deteriorating soil fertility on account of regular cultivation can also be replenished to a great extent by resupplying in the soil through the use of fertilizer, and subsequently enhance the agricultural productivity per unit area. Recent studies and F.A.O's reports have pointed out that the use of fertilizers is the most important component of agricultural developments because wherever efforts are being made.

In India, only one million of farmers have their own tractors and remaining farmers use the wooden and iron plough for the cultivation of their land. Plough is the traditional implement for the agriculture in India where more than 90% of farmers have this type of implement. Tables shows that the distribution of plough per thousand of cropped land in Tarai district of Uttar Pradesh has decreased during last three decades. During 1975-76 the average plough per thousand of cropped land was 457.06 plough, which decreased to 420 ploughs, in 1985-86 and again decreased to 407.19 plough in 1995-96 in Tarai district of Uttar Pradesh.

The role of education in agricultural development is very significant. It is very helpful in enhancement of knowledge and the diffusion of agricultural innovations. It has been seen during green revolution that educated farmers adopt high yielding varieties of seeds quickly because they have knowledge of their benefits. Hence literacy was selected as one of the indicators affecting agricultural development. The rate of adoption of new ideas techniques and practices is higher among the literate farmers than their illiterate counterparts. Table reveals the spatial patterns of literacy rate in Tarai district of U.P. There were 3815231 literate persons accounting for 16.60 percent of the total population of the region in 1971. The total number of literate persons was increased to 5991939 or 20.61 percent in 1981. The total number of literate person again increased in 1991 and reached 9044608 or 27.26 percent. Efforts of the government for expansion of education facilities i.e. National literacy mission and adoption of adult education programmes were responsible for increase of the education or literacy in the region.

During 1991, the percentage of literates to total population increased in each districts of the study region. Fig 3.13 indicates that high concentration of literate persons was found in Bijnore, Deoria and Gorakhpur with more than 37.30 percent literate persons to the total population. While the medium concentration of literates person was recorded in Moradabad, Barielly, Shahjahanpur, Pilibhit and Basti where the percentage of literate persons was found between 30.70 to 37.30 percent. The low concentration of literate persons were recorded in remaining five districts namely Rampur, Sidharth Nagar, Kheri, Gonda and Bahraich with 30.70 percent.

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