Introduction
Agriculture is the mainstay of the economy of North Bihar Plain, where it engages directly or indirectly about 82 per cent of the total population and contributes a major share in the state's economy. It is, therefore, needed to make a regional assessment of crop productivity and levels of agricultural development. The assessment of agricultural development serves an ideal purpose for planning and allocation of resources in order to increase the productive efficiency in a substantial manner, thereby providing the means for raising the standard of living.

Even after more than half century of independence, achieving a sustained self-sufficiency in food production remains country's prime concern. One obstruction in this way is an increasing population. The total population of the region is 55.17 million with an increasing rate of 2.8 per cent per annum, and an average density of 1003 persons per sq. Km. (Census of India, 2001). Net cultivated area has remained constant, whereas per capita availability of cultivated land is decreasing gradually. It is, therefore, needed that agricultural development should be examined on a regional basis in order to assess the variations in space and time.

No doubt agriculture is a multi-dimensional phenomenon, but it is true that climate and soil play a decisive role in growing of crops. An understanding of these phenomenon may, therefore, be considered as the prerequisite in ascertaining the existing and future potentials of crop production. In view of the importance of ecology, the author in the present work has attempted to examine the role of ecology in agriculture of North Bihar Plain.
North Bihar Plain was selected as the study of area because in this region basically the cultivation of crop is one of the predominant occupations of the people. Moreover, being the homeland of the author, the area is well known, and it forms a well defined geographical region.

North Bihar Plain lies between the latitudes 24°31'N and 27°25'N and the longitudes 83°51'E and 88°15'E with a geographical area of 58,050 sq.Km. It forms a part of the state of Bihar, and is bordered on the north by Nepal and on the south by the Ganga river. On the west it is bounded by the districts of Deoria and Ballia of the state of Uttar Pradesh, and on the east by the district of Darjeeling of the state of West Bengal. The entire region lies to the north of the Ganga river, except the district of Bhagalpur, some portion of which extends to the south of the Ganga river.

For the administrative purpose, the region in 1985-90 comprised 18 districts, later on for reorganizational purposes, the number of districts increased from 18 to 22 (Census of India, 1991) with the creation of 4 new districts of Kishanganj, Araria, Supaul and Sheohar (Fig.1). However, the districts of Supaul and Sheohar were incorporated in the present study only for the period of 1995-2000 because of the non-availability of data for the previous years. After the bifurcation of the district of Bhagalpur (Census of India, 1991) and creation of a new district of Banka, this new district was excluded from the study for the period 1995-2000 as it lies exclusively to the south of the Ganga river and forms a part exclusively of the plateau surface. With the exclusion of the area of the Banka district, the region accounts for a geographical area of 54,990 sq.km.
The main objectives to take up the present study are:

(i) to study the physical characteristics of the region which provide the basic framework for evaluating the characteristics of agriculture.

(ii) to examine the impact of ecological parameters which are responsible for variations in agricultural development.

(iii) to study the existing land use pattern and cropping intensity in the study area and changes occurred wherein between 1985-90 and 1995-2000.

(iv) to study the agricultural development with special emphasis on crop productivity.

(v) to examine the levels of agricultural development and its correlation with climatic, edaphic and technological factors.

(vi) to prepare a strategy for minimizing the existing regional inequalities in agricultural development with the help of some suggestive measures.

The present work is based on data collected from secondary sources: Climatological Tables of Observatories in India, Indian Meteorological Department, New Delhi, Annual Season and Crop Report; Bihar Through Figures and official records of Directorate of Statistics and Evaluation, Government of Bihar, Patna. Data pertaining to soils were obtained from Directorate of Soil Conservation, Government of Bihar, Patna.

In order to examine the impact of ecological factors on agricultural development, district was taken into as the unit of study and the period considered for the study extends from 1985 to 2000, for three different
points of time. For each period, five years annual figures were averaged indicating as the periods: 1985-90, 1990-95 and 1995-2000.

For the present analysis a total of 17 major crops grown in the region were considered and they have been grouped into as: cereals (wheat, rice, maize and barley); pulses (gram, lentil (masoor), tur (arhar), khesari and peas); oilseeds (mustard and rapeseed, sesamum, linseed and sunflower) and cash crops (sugarcane, jute, potatoes and tobacco). To analyse the impact of technological factors on levels of agricultural development, data corresponds to the period of 1999-2000.

Different methods have been applied to examine the agricultural scenario in the study area. Taking into consideration of total cropped area as percentage of net sown area gives an index to ascertain the cropping intensity. Productivity indices were calculated on the basis of the Crop Yield Index method initiated by W.V. Yang. The ecological and technological factors considered as the correlates of agricultural development were incorporated for the application of factor analysis technique by selecting a set of 12 variables. The job for the computation of data was performed on SPSS Programme on ALPHA System at the Computer Centre, A.M.U. Aligarh. Finally, the levels of agricultural development were determined with the help of computed composite indices.