

ABSTRACT

TITLE: SPATIO-TEMPORAL CHANGE OF AGRICULTURAL LAND USE PATTERN IN SILIGURI SUBDIVISION, DARJEELING DISTRICT: A GEOGRAPHICAL ANALYSIS

Agriculture is the largest single industry in India and is the chief occupation of the population. It gives direct employment to about 70 per cent of the total population of the country and of the rural population nearly 90 per cent is directly or indirectly connected with it. Besides being the main source of food for the vast and growing population, it is also the chief source of our national income. The future prosperity of the population and a stable self-sufficient economy is, therefore, largely based on the development of agriculture on scientific lines.

The subdivision of Siliguri, the study area, is one of the subdivisions of Darjeeling District of West Bengal. It is the northern most districts West Bengal and also known as the Terai of Darjeeling District. It covers mostly the thick alluvium and partly the piedmont plain of Mechi- Mahananda interfluves which are referred to as Chicken neck. This region is regarded as one of the most developed agricultural areas of Darjeeling District. The study area lies between $26^{\circ} 27' N$ to $26^{\circ} 57' N$ of latitude and $88^{\circ} 07' E$ and $88^{\circ} 31' E$ of longitude. The subdivision contains of Siliguri Municipal Corporation and four community developmental (CD) blocks: Matigara, Naxalbari, Phansidewa and Kharibari. The subdivision is bounded in the eastern side by Jalpaiguri district, in the northern side by Kurseong and Mirik Police stations of Darjeeling district, in the southern side by Chopra block of Uttar Dinajpur district and partly by Bangladesh and western side by Nepal.

The main objective of the work is to study the changes in agricultural land use pattern at subdivision as well as gram panchayat level. The term "Agricultural Land use" denotes the extent of the gross cropped area during the agricultural year under various crops. It is the result of the decision made by the farmers regarding the choice of crops and methods for production. For the purpose of this study researcher has analyzed the area under cultivation for each of the 14 crops individually at the GP level for the period of 1990-91

to 2010-11. To make a comment in the cropping pattern of the subdivision and its GPs researcher has considered the area under cultivation for each crop at gram panchayat level for the period 1990-91 to 2010-11(20 years).

The other objectives are to assess the changes in general land use pattern, to assess the level of agricultural productivity in the study area, to analyze the role of agricultural inputs in the existing cropping pattern, to identify the agricultural land use regions in the study area, to identify major problems in agricultural development of the study area.

To fulfill all the objectives both primary and secondary data has been used in the study. Primary data has collected by field survey through questionnaire. A GPS survey has been done for image classification to detect the changes in general land use pattern. The secondary data has been collected from various offices and different published reports. Finally, the finding of entire work has been interpreted and analyzed by both manually and by using computer and GIS environment.

We find that, agricultural land has been decreased in the study region over the periods. Built up area is gradually increasing during the study period due to the significant increase in population in the subdivision. In the context of agricultural land use pattern area under cultivation of cereals, cash crops and other crops including various types of vegetables is on the rise, but drop in area of pulses and oilseeds are seen in the study area. Five types of productivity regions have been delineated among which low and very low productivity regions should be given importance to develop their production. The growth trend analysis of yield has been shown increasing trend in case of aus, aman, maskalai, mustard, til, potato, jute and other crops and decreasing trend in case of boro and wheat in the subdivision. The whole subdivision has been demarcated into different categories of land use regions, e.g. crop ranking, crop combination, crop diversification regions.

The subdivision experienced a drop in area under cultivation of pulses and oil seeds. The drop in area of pulses and oilseeds needs to be considered by the policy makers seriously as this goes against the theory that with modernization in agriculture, multiple cropping is more prevalent resulting in general increases of net sown area and farmers tend to reduce area under cereals to produce more of various crops.