

# *Site Suitability Analysis for Tea Plantation Expansion in Kurseong Using AHP and GIS Techniques*

## **1.1. Abstract**

Darjeeling district is covering about 60.89 % of its land surface under Himalayan deep forest covers resulting in great biodiversity, climatic fluctuations, and a variety of wildlife and vegetation. As a result, there is a lot of room for agricultural development in the rural Himalayan foothills, which will help rural economies. Kurseong is a subdivision of Darjeeling, and the study area of this research. A variety of physical challenges, such as steep slopes, high elevation, dense vegetation cover, limited access to irrigation facilities, arid soil, and other factors, limit agricultural development in this district. Furthermore, socioeconomic issues and insufficient transportation impede agricultural progress in the region. Site Suitability Analysis will help to find out suitable areas for agricultural development. However, Tea is one of the important crops in Darjeeling, thus Kurseong is also suitable for Tea plantation. Here AHP i.e., a kind of multi-criterion approach with Site Suitability Modeler of ArcGIS Pro is used to find out the most suitable areas for expansion of Tea Gardens. Various Criteria maps are created with are pairwise compared and given weights to get the site suitability map. About 20% of the area falls under the Highly Suitable area in Kurseong.

**Keywords:** *AHP, Site Suitability Modeler, Tea Plantation, Kurseong.*