

## **PREFACE**

### **Site suitability analysis for Tea Plantation in Sivasagar, Assam, using AHP and GIS Techniques**

Northeastern India's Assam state is located along the valleys of the Brahmaputra and Barak Rivers, south of the eastern Himalayas with a diversified flora and fauna. However, due to several physical threats, agriculture has not yet evolved to its full potential in this area. For instance, a very steep slope and elevation, a lot of vegetation, insufficient irrigation systems, dry soil, etc., socio economic issues, and inadequate transportation. Side by side, the economy of Assam mostly depends on the tea industry with high involvement of tourism. A favorable climate and abundant biodiversity may encourage the growth of agricultural operations and rural tourism. Hence, analysis of the appropriateness of the land using a proper Land Suitability Assessment can surely help to assist in formulating the plans for increasing agricultural productivity. A Site Suitability model assessment using AHP with the integration enforcement with GIS applications such as Multi criteria decision analysis was utilized for evaluating best suitability of land for growing tea in some parts of Assam especially Sivasagar - a city and also headquarters of the Sivasagar district of Assam has been chosen. There are around 85 tea estates in Sivasagar district which can be used to assist using a proper suitability model the development of the Indian Board of tea industry that actually seeks to regain the presence it once had in the specialty tea market is the main realization of this project. The study's approaches, methodology, and findings can be used to determine which land in hilly areas is suitable for tea cultivation.

**Keywords** Assam· Agricultural operations · AHP . Integration enforcement with GIS · Site Suitability model· Tea cultivation. Multi criteria decision analysis