

## **Preface**

Air transport is crucial for connecting distant destinations, particularly in India's vast and diverse landscape. The Airports Authority of India (AAI) has been instrumental in developing the country's aviation infrastructure since 1911. However, rapid growth in air travel demand has led to congestion and overcrowding at existing airports, highlighting the need for new, well-equipped airports. This study focuses on estimating and identifying suitable sites for new airports in Raigad and Kanchipuram districts using the ArcGIS Suitability Modeler. This GIS-based tool evaluates multiple criteria such as topography, land use, and environmental conditions to create suitability maps.

In Raigad, the western parts are most suitable for airport development, while the eastern and central regions, characterized by hills, are least suitable. For Kanchipuram, the western region is favorable, with the northeastern region being the least suitable. Despite the suitability maps, the model requires a "locate tool" to pinpoint the best sites. The study identified four potential sites in Raigad and three in Kanchipuram, which were further analyzed and validated. The size requirements for new airports, driven by anticipated passenger footfall and the need to alleviate overcrowding at existing airports in Mumbai and Chennai, ensure ample space for future expansion and operational efficiency. The findings align with government plans for future airport construction and underscore the effectiveness of GIS in site suitability analysis.