

About Organisation

NRSC is part of the ISRO, Department of Space, and is located in Hyderabad. NRSC collects remote sensing data from various domestic and international Earth observation satellites. This data, characterized by diverse geographical, spectral, and temporal resolutions, supports applications in urban planning, forestry, agriculture, water management, and disaster monitoring. Advanced data processing techniques extract valuable information, aiding decision-making across multiple sectors. NRSC operates and maintains satellite ground stations to process, store, and retrieve data from ISRO's satellites, ensuring smooth satellite mission operations and timely data delivery to end users.

NRSC Vision Statement

To continue to be in the forefront of developing remote sensing applications in the country and be the technology expert in establishing ground stations and generating high quality satellite and aerial data products.

Organisation Mandate

National Remote Sensing Centre (NRSC) has the mandate for establishment of ground stations for receiving satellite data, generation of data products, dissemination to the users, development of techniques for remote sensing applications, including disaster management support, geospatial services for good governance, and capacity building for professionals, faculty and students.



Disaster Management Support



Geospatial Services



Satellite Data Reception



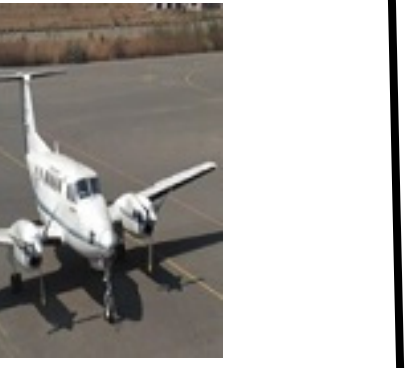
Data Processing & Dissemination



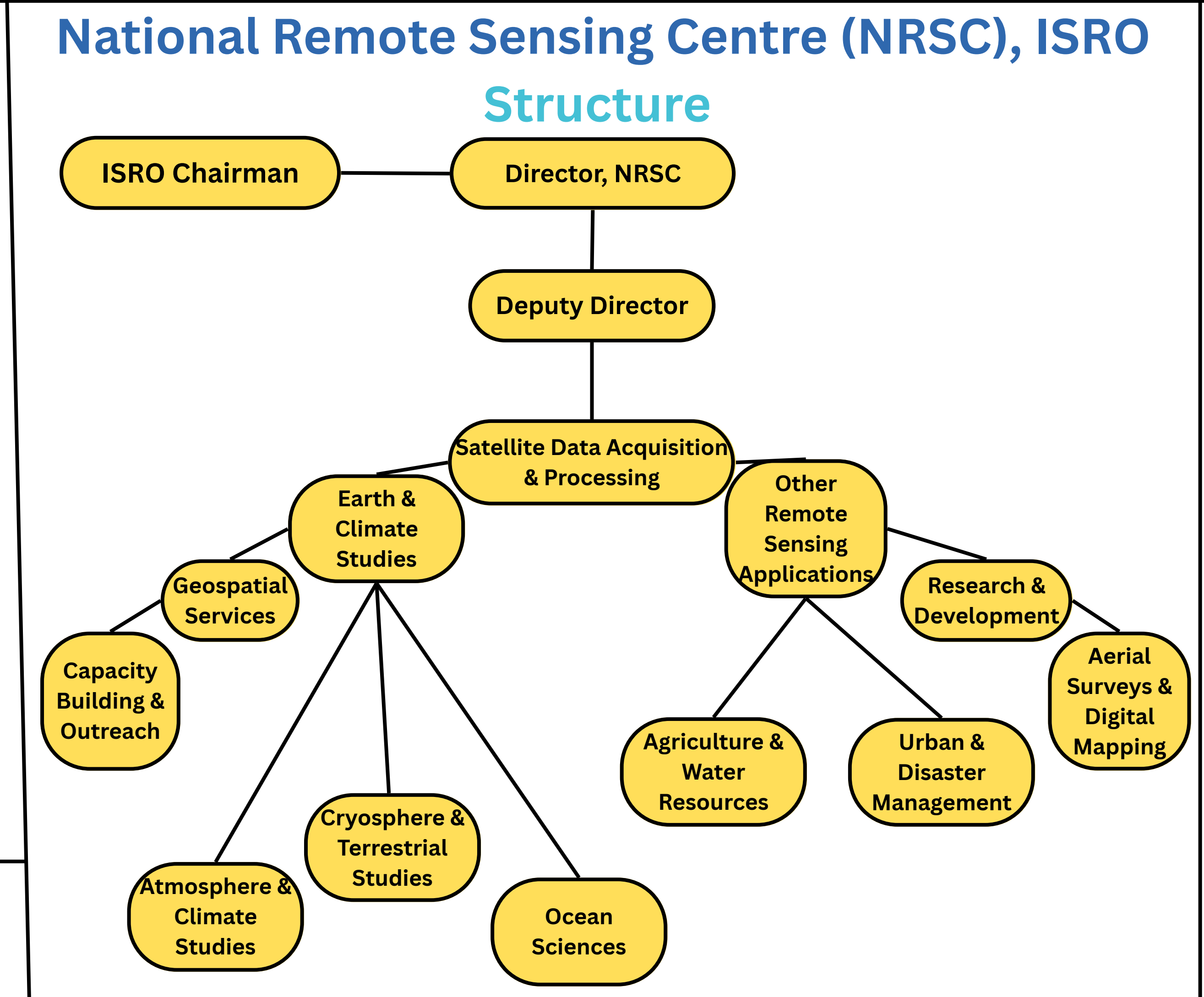
Remote Sensing Applications



Capacity Building



Aerial Services & Digital Mapping

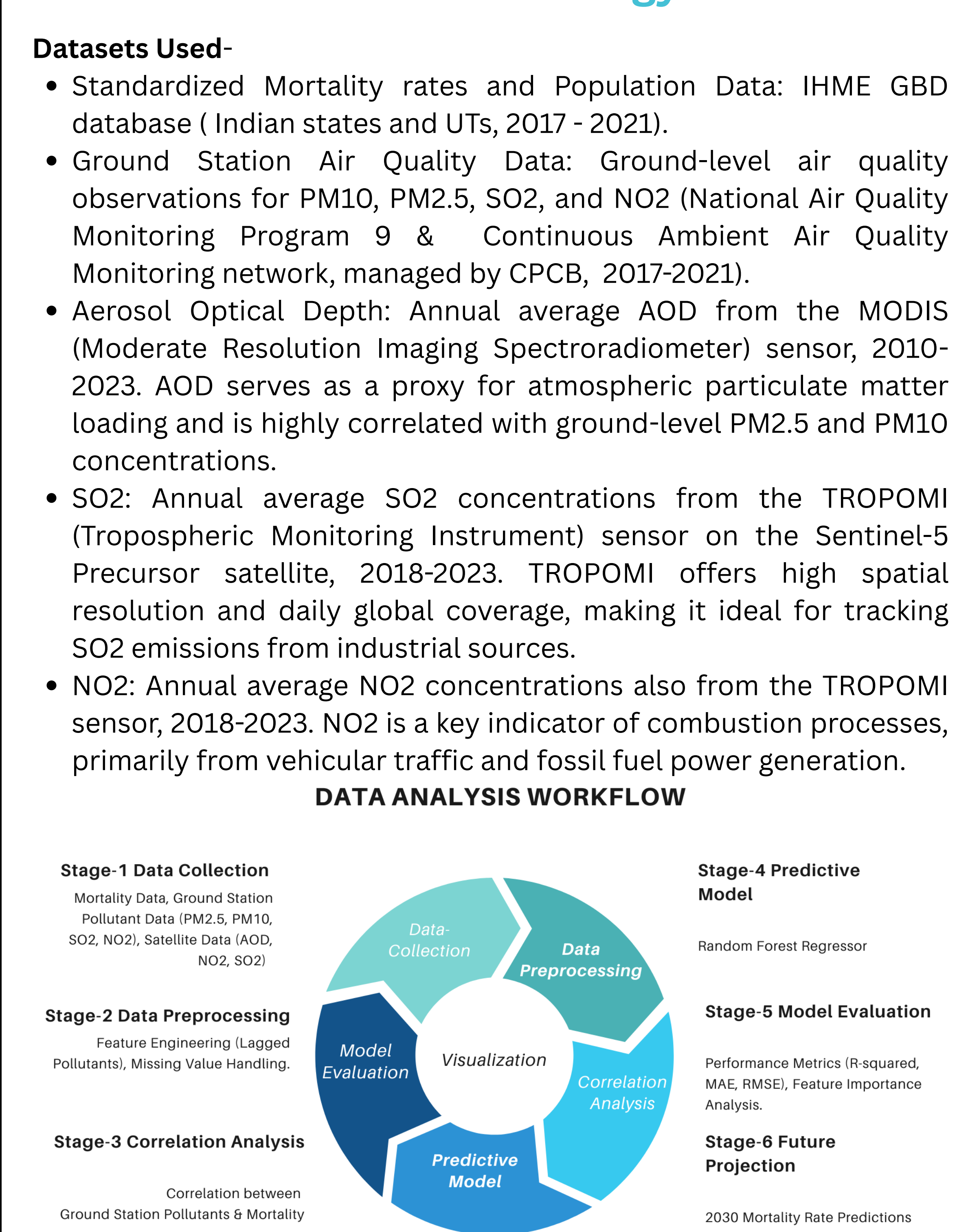
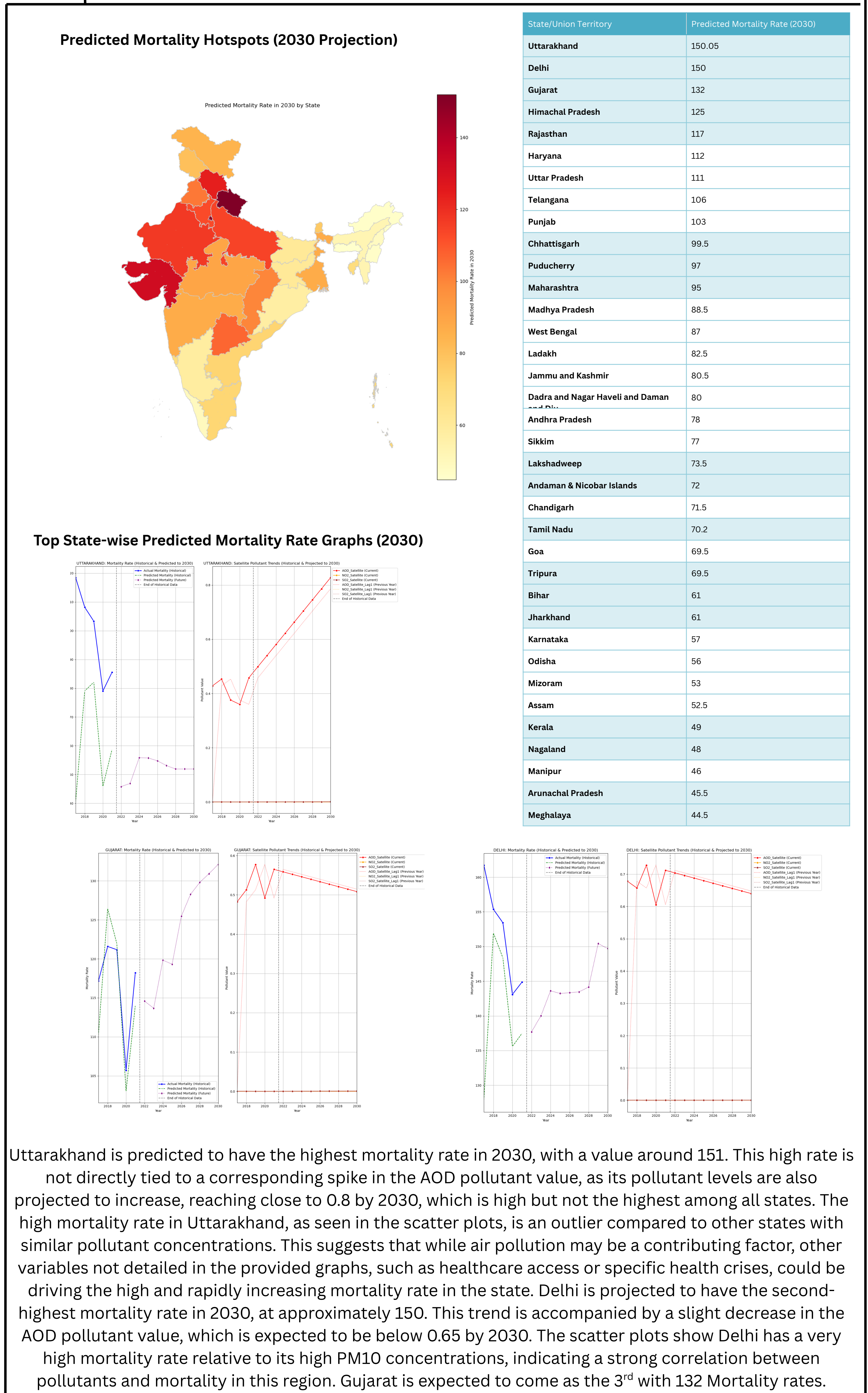
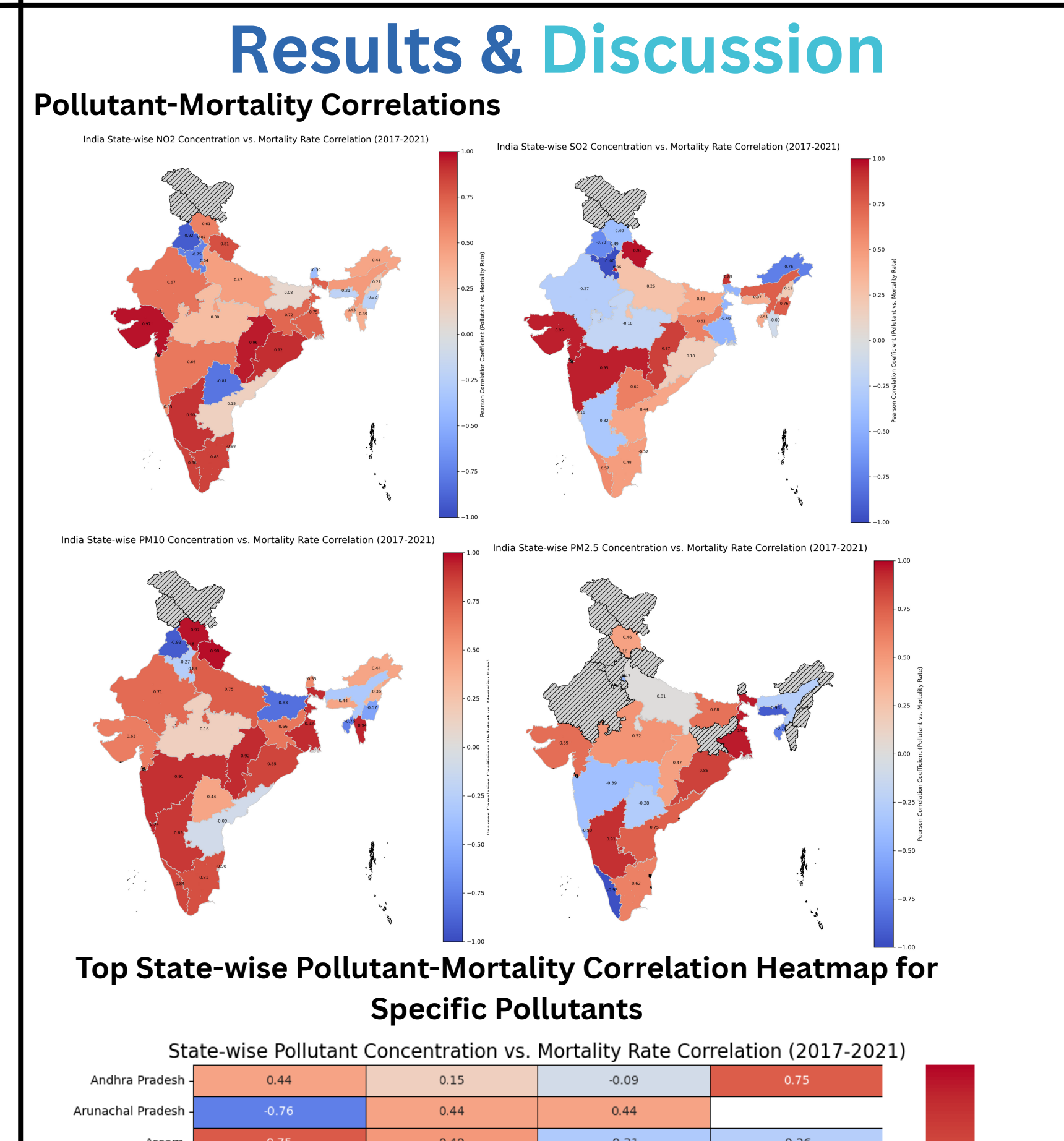


Objectives

- To establish and empirically quantify the correlations between various ground-based air pollutants and mortality rates across different Indian states, thereby illuminating regional specificities in these relationships.
- To leverage the developed predictive model to project prospective mortality rates and identify future mortality hotspots across India for the year 2030, offering vital foresight for strategic public health planning and resource allocation.
- To develop a robust machine learning model capable of predicting state-level standardized mortality rates in India by synthesizing a comprehensive dataset primarily integrating satellite-derived air quality data and mortality data.

Study Area

This study focuses on the entirety of India, a South Asian nation that, as of recent estimates, stands as the most populous country globally. Comprising 28 states and 8 Union Territories.



Challenges faced during internship

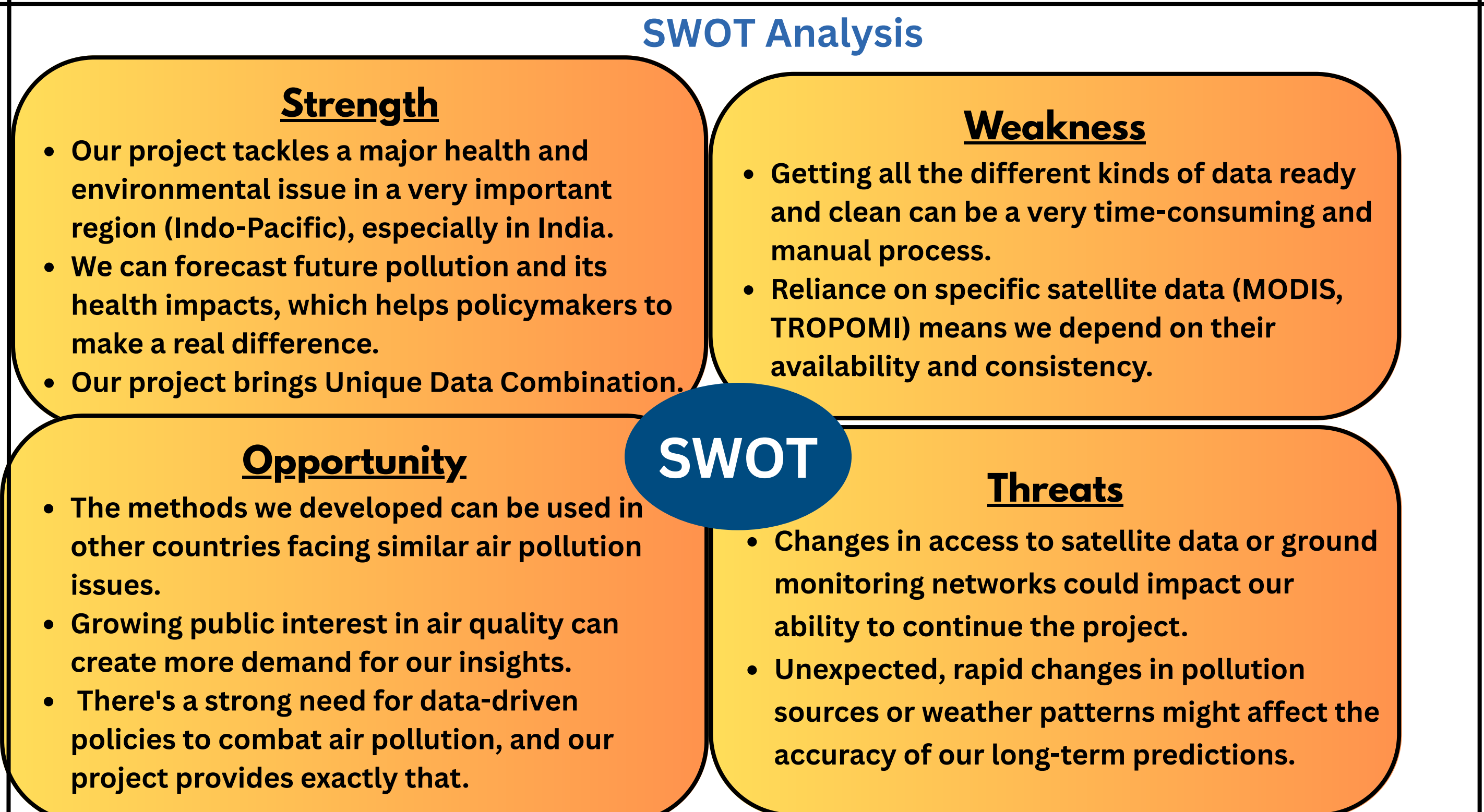
Deals with lots of different pieces of information (like mortality records, satellite data, and population numbers) that didn't easily fit together and had missing parts.

Major learnings from internship

Learned how to take a project from start to finish, from getting all the raw information to showing clear results and advice.

Suggestions for improvement

Thinking about how to make our system work for much larger amounts of data or even in real-time, so it can be used more widely and quickly.



Practical Exposure	Theoretical Learnings
Directly experienced the complexities of working with multiple, heterogeneous datasets (mortality, satellite AOD, SO2, NO2, population, geographical boundaries). This involved significant data cleaning, standardization (e.g., state names), and merging.	This project applied Biostatistical concepts like correlation to examine the relationship between environmental factors (air pollution) and health outcomes (mortality rates). Using Demographic tools, it analyzed population dynamics and mortality trends, aligning with Health and Development theories that emphasize the impact of social and environmental determinants on public health.