

PREDICTION OF **DENGUE** WITH CLIMATE CHANGE OVER **DELHI** & **RAJKOT**

“A statistical
analysis and
development of
warning system”



Integrated Research and
IRADe Action for Development

BACKGROUND

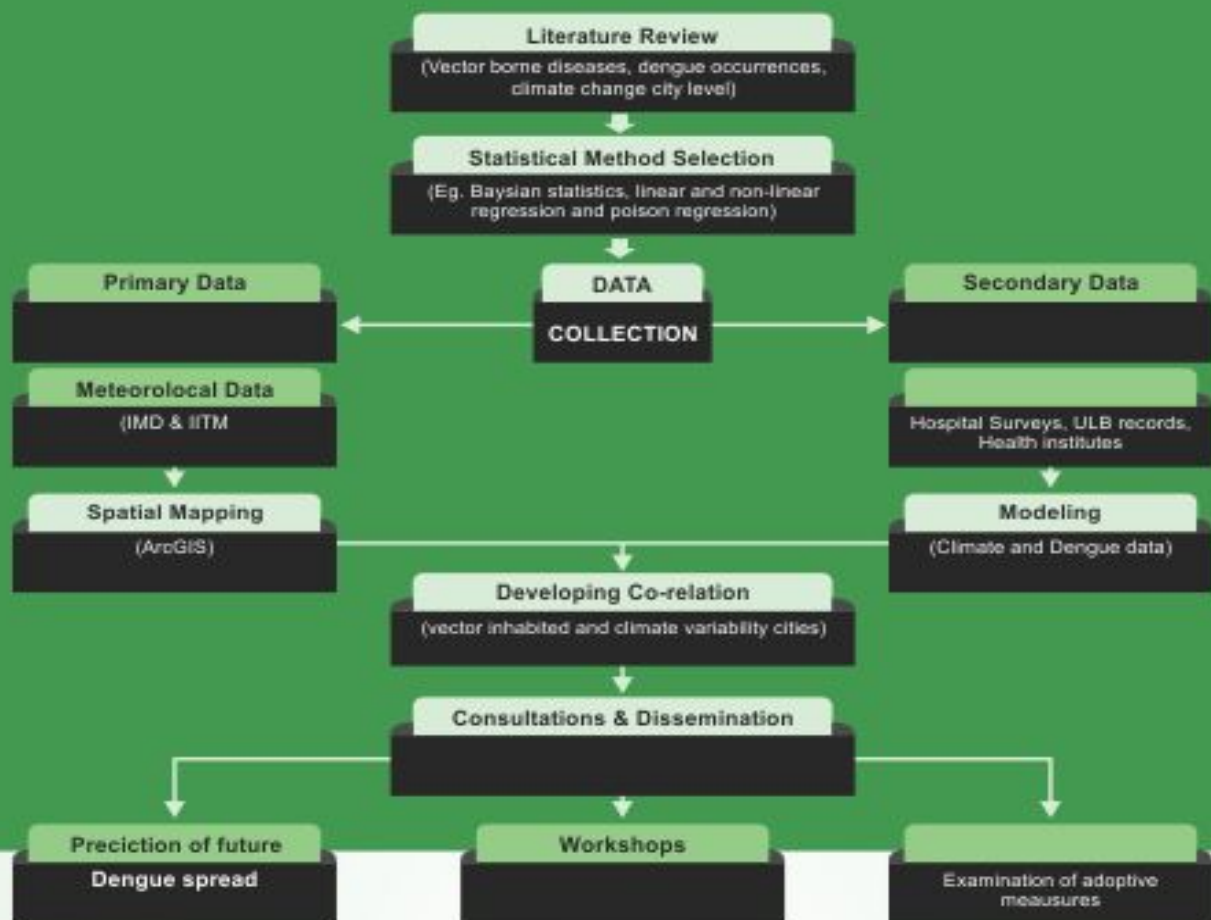
Dengue, one of the major vector borne diseases has shown a rapid increase over India in recent years. The trend seems to be a major concern for public health. Over the recent years, major dengue outbreaks have been seen regularly across India. Studies have shown that meteorological factors that influence transmission intensity of vector borne disease such as Dengue include temperature, humidity, and rainfall patterns. In view of that, it is very important to understand the degree of association of Dengue with local climatic factors and demographic parameters in order to predict its spread in future and to build a robust warning system as a part of mitigation measures. **IRADe** with support from **Department of Science & Technology, Govt. of India** will undertake an inter-disciplinary research connecting meteorology, statistical modelling and geo-spatial mapping to develop the warning system.

AIM

Since Dengue intensity shows large spatial variation over the affected region, the project aims to build the warning system on a fine spatial scale while co-relating the variations of meteorological parameters with the Dengue intensity.

OBJECTIVES

- To map the distribution and intensity of Dengue spread over Delhi and Rajkot on a fine spatial scale for the last few years
- To analyze the variation of climatic parameters including temperature, rainfall, relative humidity and ENSO index over Delhi and Rajkot for the past ten years.
- To find the co-relation between climatic parameters and factor such as demographic pattern with Dengue distribution at municipal levels.
- To develop future scenarios of Dengue outbreak using climate projection based on statistical model and to build an early warning system covering the whole range of projected climate scenarios.
- To help in building the future adaptation plan well in advance.



DELIVERABLES

- Mapping of current Dengue affected zones in Delhi and Rajkot city in Gujarat
- Both the present day inter annual variability and seasonal variability of Dengue affected cases over Delhi and Rajkot city
- Temperature range in Delhi and Rajkot, conducive for Dengue propagation.
- Development of an early warning system for Dengue and similar vector borne diseases in Delhi and Rajkot.
- Establishing Correlation between vector inhabited and climatic variability Establishing statistical dependence of climatic variables such as temperature, precipitation and relative humidity on Dengue spread
- Mapping out potential Dengue vulnerable zones in Delhi and Rajkot for future up to the year 2020 & 2030.
- An action plan for Delhi incorporating cost-effective adaptation measures to reduce the impact of Dengue and other mosquito borne diseases.



WHO WE ARE

IRADe is the Centre of Excellence of Ministry of Urban Development for Urban Development and Climate Change. It is a fully autonomous, non-profit & non-governmental advanced research Institute, conducts research and Policy Analysis and connect various Stakeholders including Government, Non-Governmental Organizations (NGOs), Corporations, and Academic and Financial Institutions. Its research areas include Energy & Power Systems, Urban Development, Climate Change & Environment, Poverty Alleviation & Gender, Food Security & Agriculture, as well as the Policies that affect these areas. IRADe has been involved in assessing Sustainable & Disaster Resilience in urban development for the smart cities, Ahmedabad & Guwahati.

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