



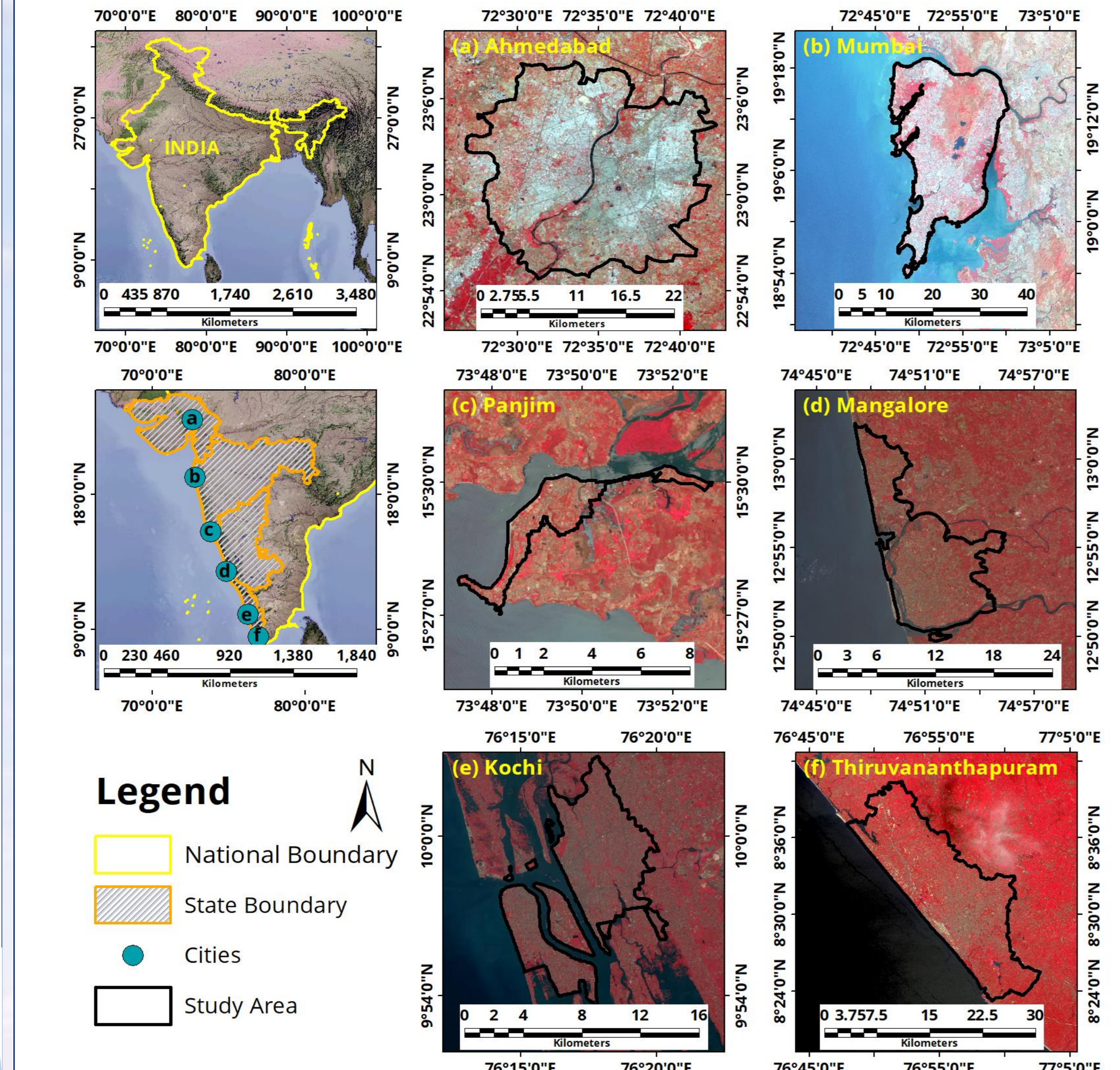
## 1. INTRODUCTION

**Drivers**

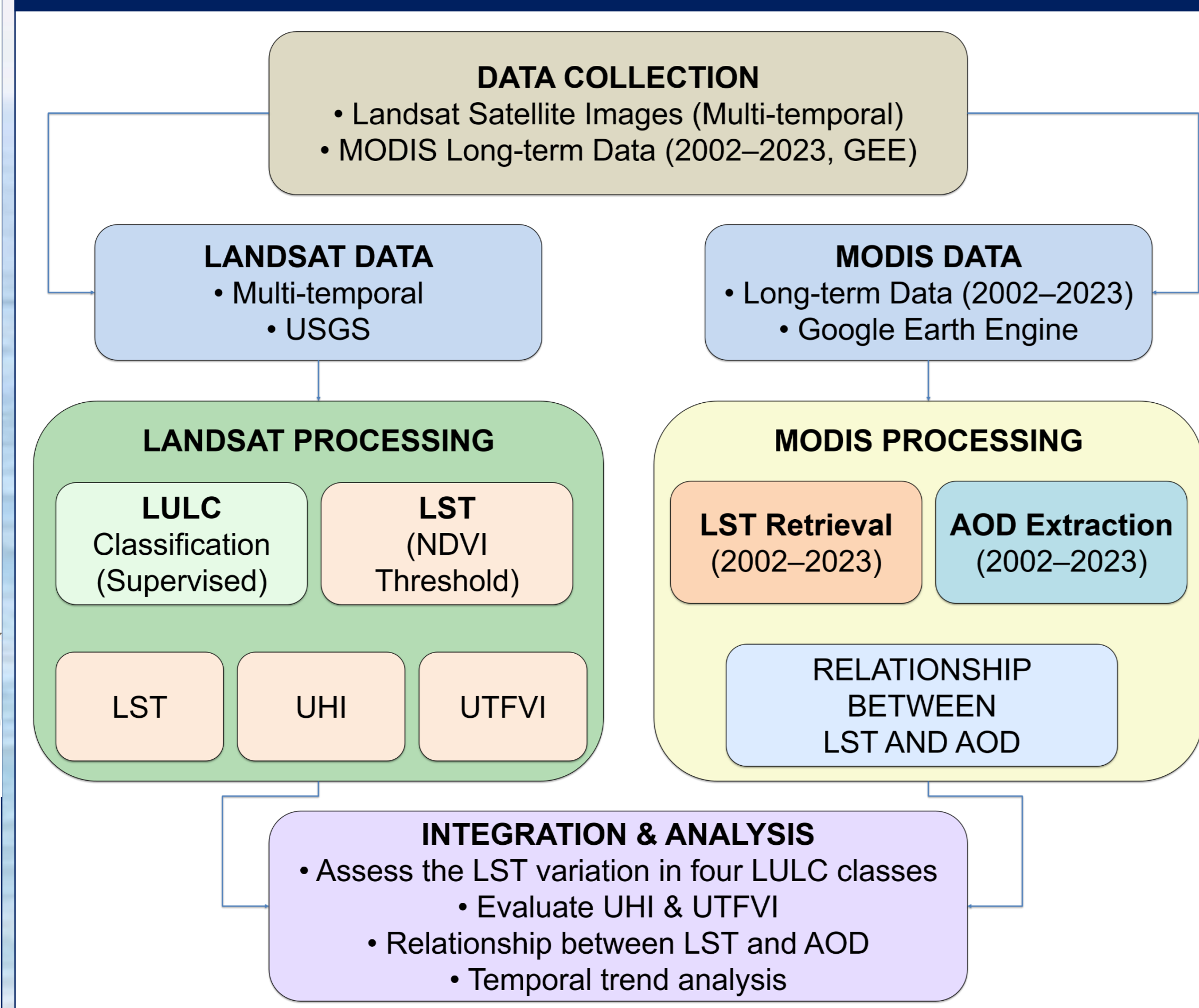
- Population
- Urbanization
- Climate

**URBANIZATION LED LULC VARIATION**

## 2. STUDY AREA



## 3. METHODOLOGY



## ABBREVIATION

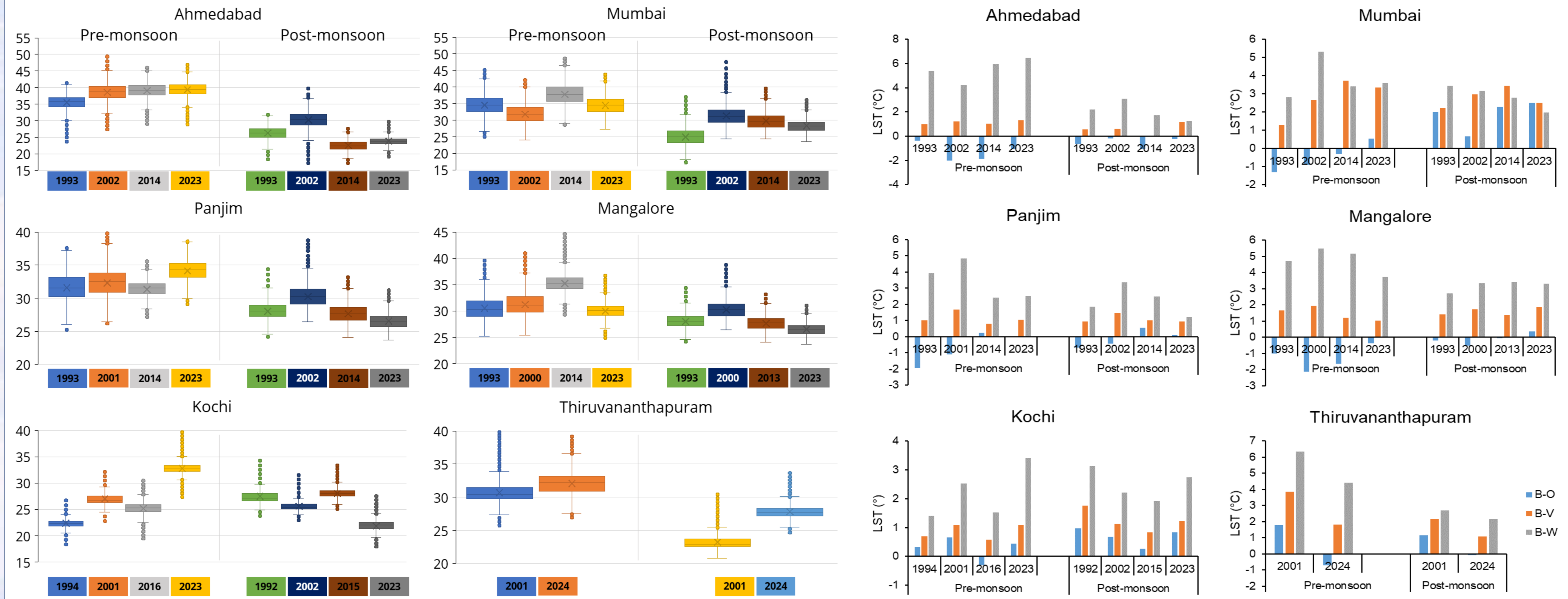
LULC- Land Use Land Cover.  
 LST- Land Surface Temperature.  
 UHI- Urban Heat Island.  
 UTFVI- Urban Thermal Field Variance Index.  
 NDVI- Normalized Difference Vegetation Index.  
 AOD- Aerosol Optical Depth.

## SUSTAINABLE URBAN PLANNING

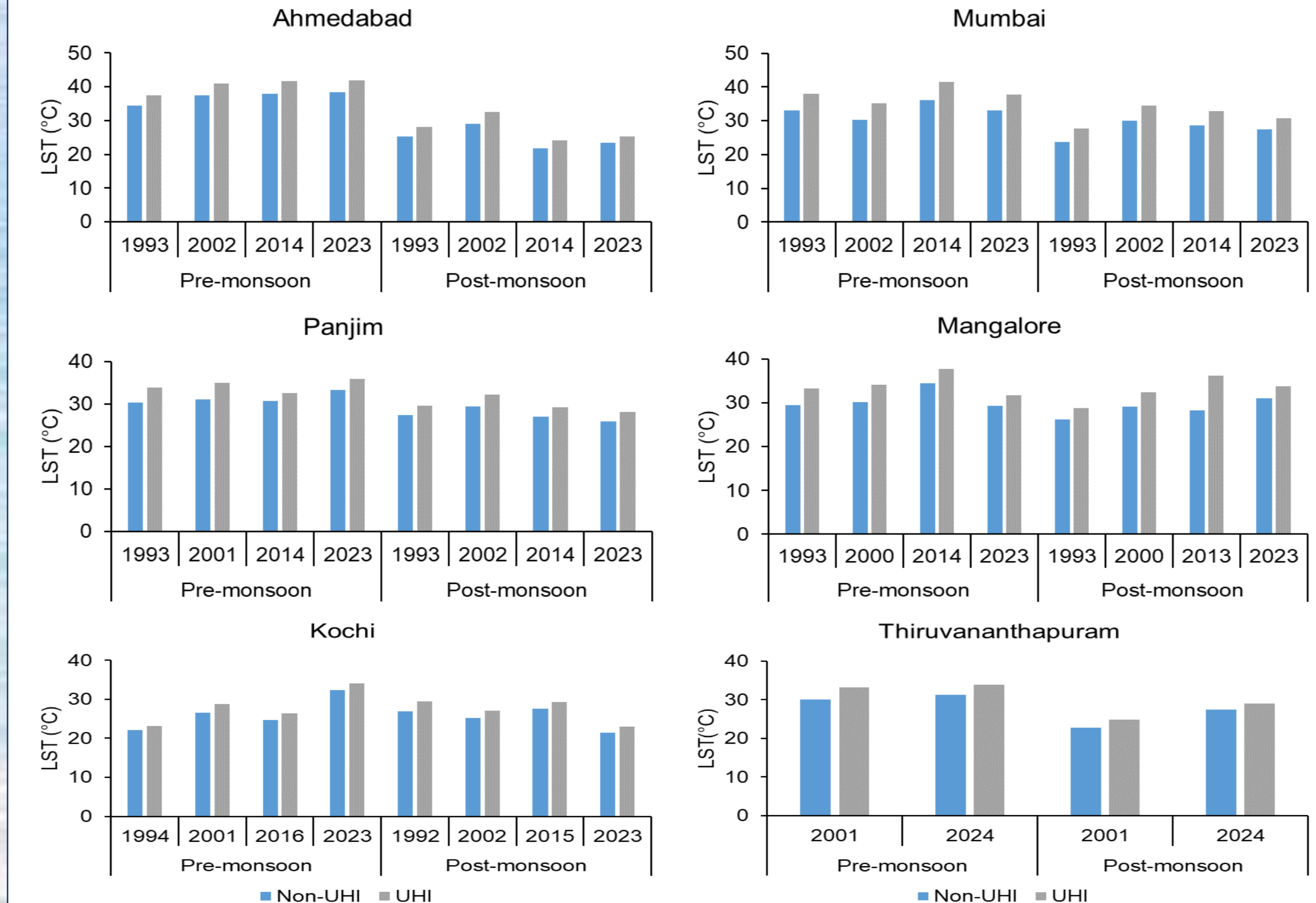
- Prioritize urban greening
- Protect and restore blue infrastructure
- Adopt heat-sensitive zoning
- Promote cool materials & design
- Air quality measures
- City-specific strategies

## 4. RESULT

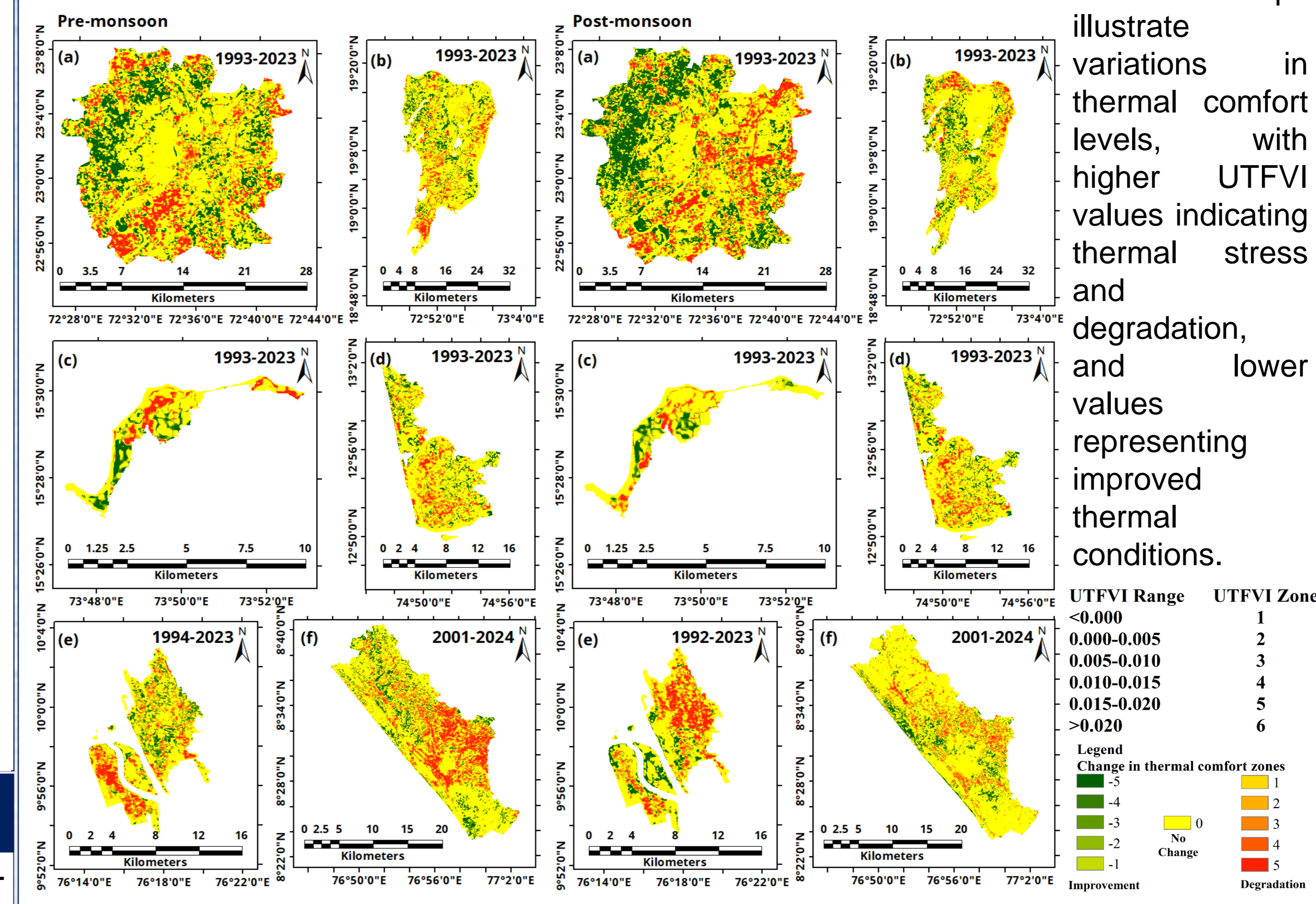
Seasonal and inter-annual variability of LST and its relationship with land-use types across major Indian coastal and inland cities. Boxplots depict temporal LST distribution, whereas bar plots quantify LST contrasts between built-up and other land-use categories (open land (O), vegetation (V), water (W)), emphasizing the role of land cover in modulating urban thermal environments.



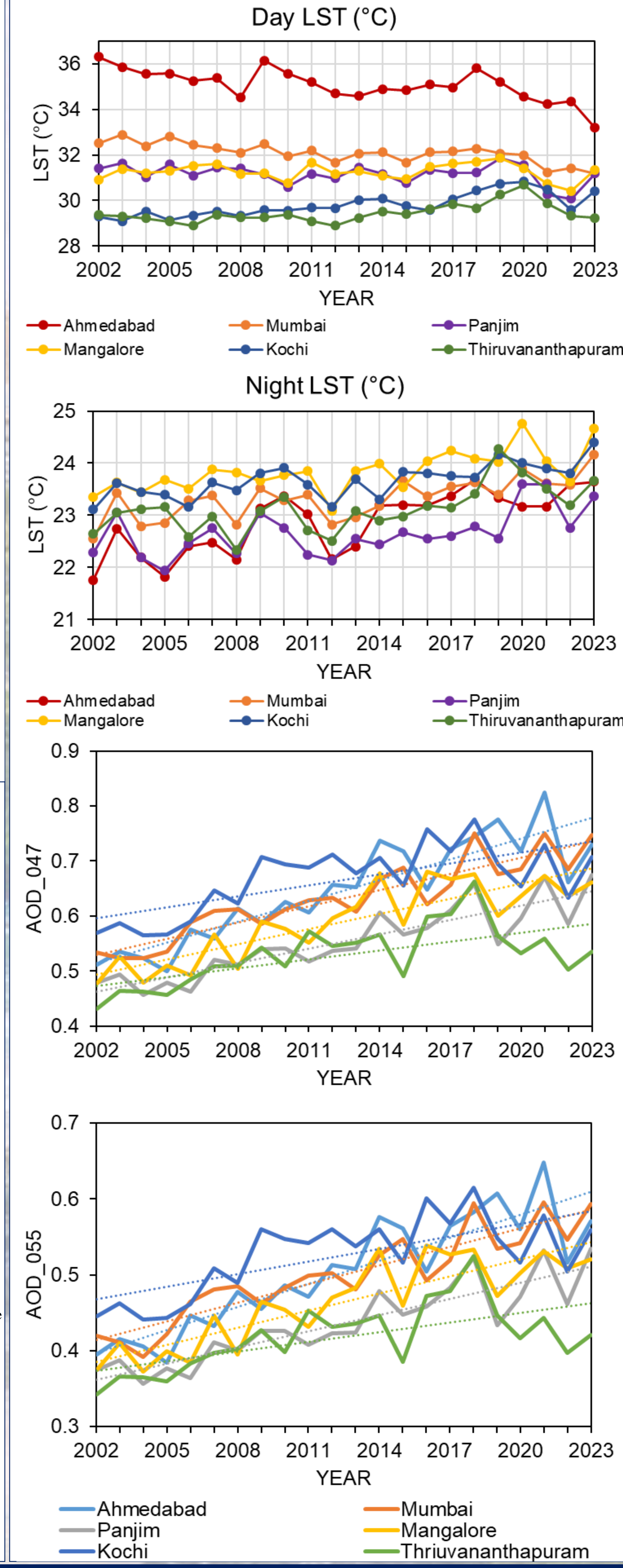
## Comparison of LST between Non-UHI and UHI areas



## Seasonal spatial variation and distribution of UTFVI across selected cities.



Temporal trends of daytime and nighttime LST and AOD (047 and 055) from 2002–2023 across selected Indian cities.



## 5. CONCLUSION

- UHI effect persists: Built-up areas consistently show higher LST than non-urban natural covers.
- Seasonal contrast: Pre-monsoon LST is highest; post-monsoon shows reduced thermal intensity.
- Aerosols both trap heat and scatter radiation, leading to a non-linear influence on surface temperature depending on atmospheric conditions.

## 6. ACKNOWLEDGEMENT

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