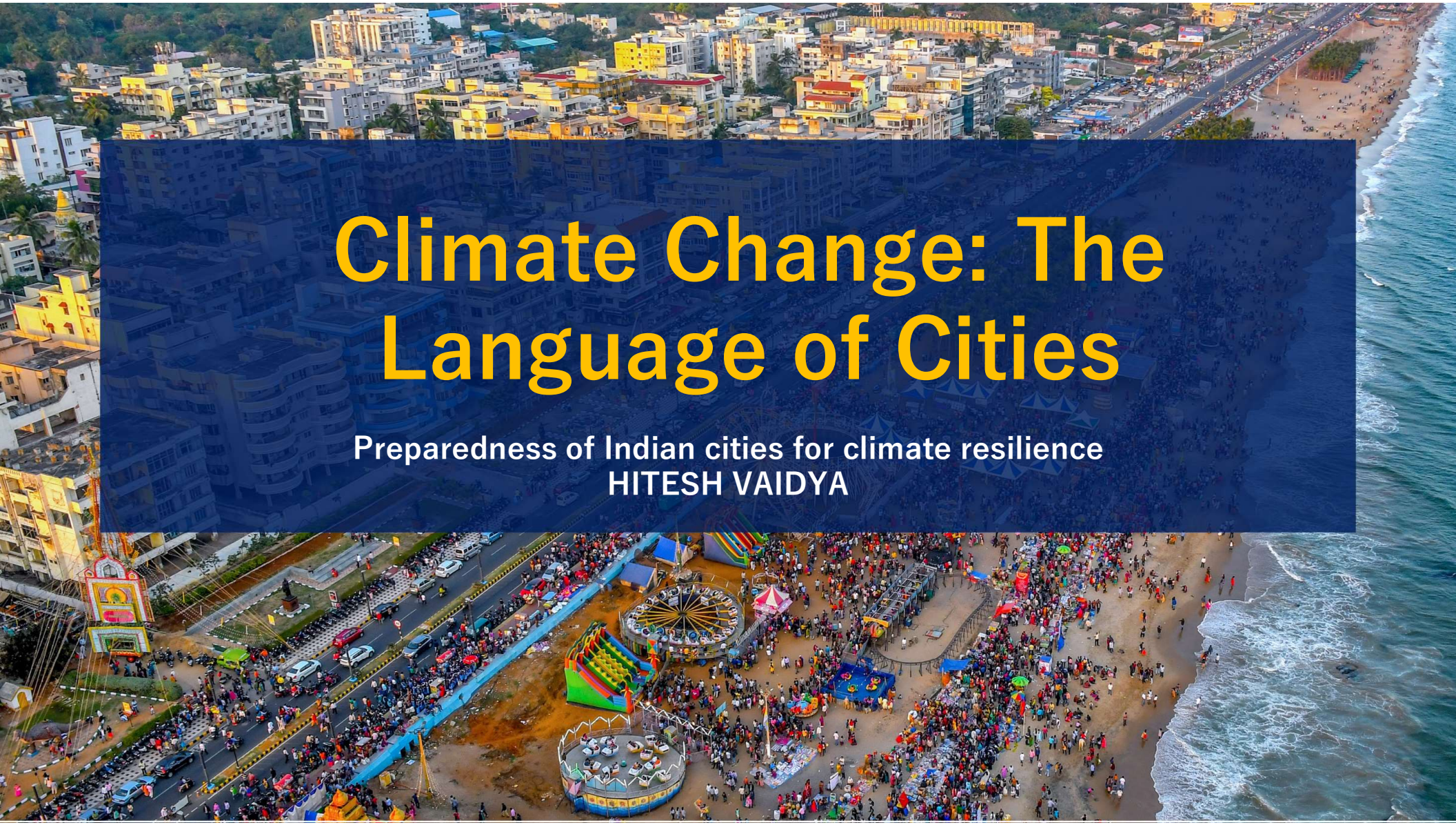


Climate Change: The Language of Cities

Preparedness of Indian cities for climate resilience

HITESH VAIDYA

Impacts Of Climate Change

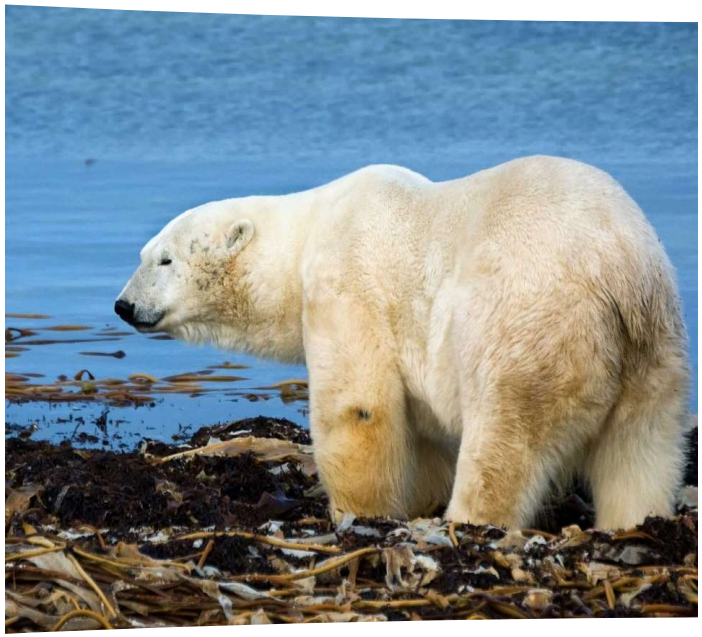
Extreme Weather Events

Impacts Of Climate Change

Poor Air Quality and Pollution

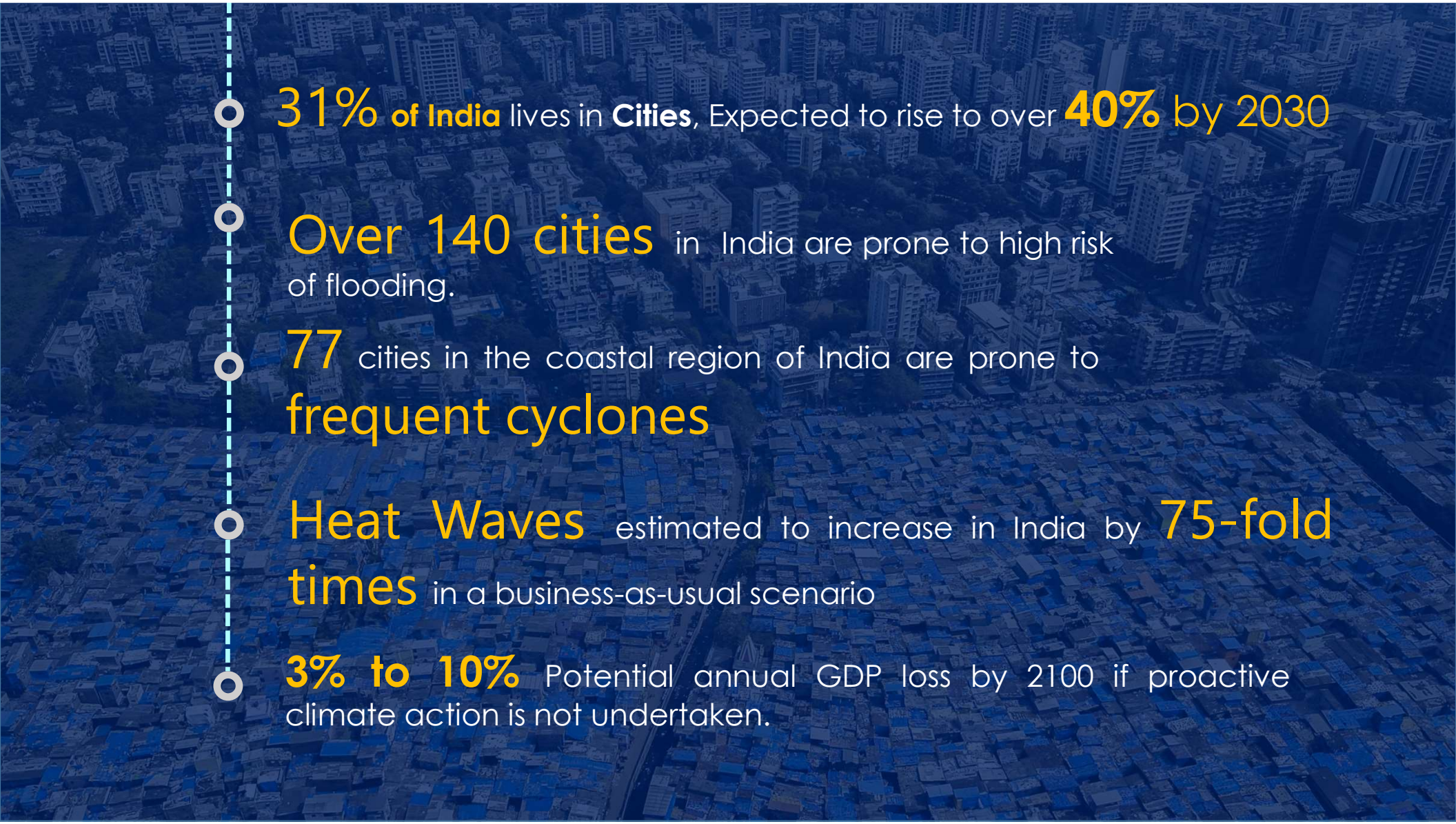
Impacts Of Climate Change

Loss of Biodiversity and Green Spaces



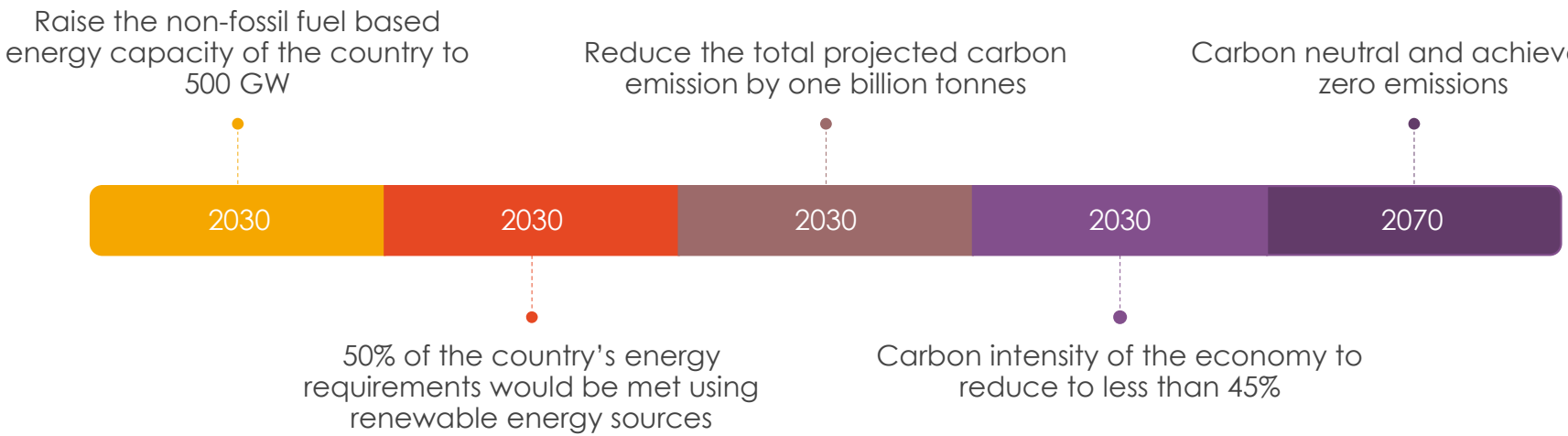
Impacts Of Climate Change

Economic and social Vulnerability

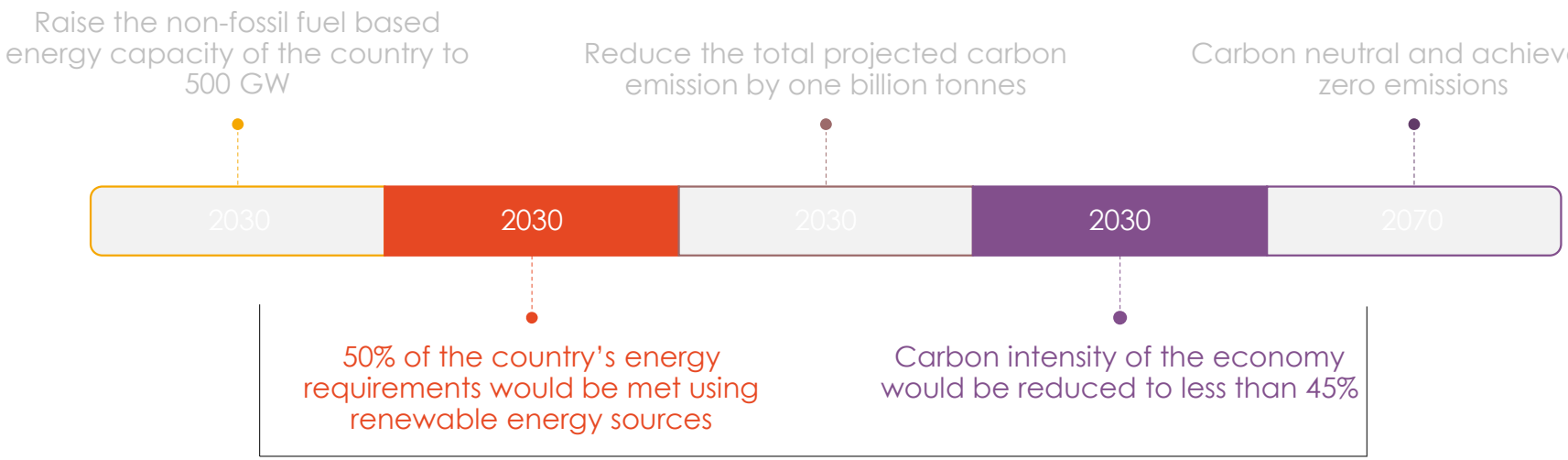

31% of India lives in Cities, Expected to rise to over 40% by 2030
Over 140 cities in India are prone to high risk of flooding.
77 cities in the coastal region of India are prone to frequent cyclones
Heat Waves estimated to increase in India by 75-fold times in a business-as-usual scenario
3% to 10% Potential annual GDP loss by 2100 if proactive climate action is not undertaken.


Inclusive and Participatory Governance
Urgent Climate Action at the Urban Level
Cities as Engines of Sustainable Development
Digital Transformation for Sustainable Cities
The Power of Cooperation and Convergence

National Commitments at COP 26



India Actions



NDC approved by the Cabinet

CLIMATE ACTION

PARIS CLIMATE AGREEMENT

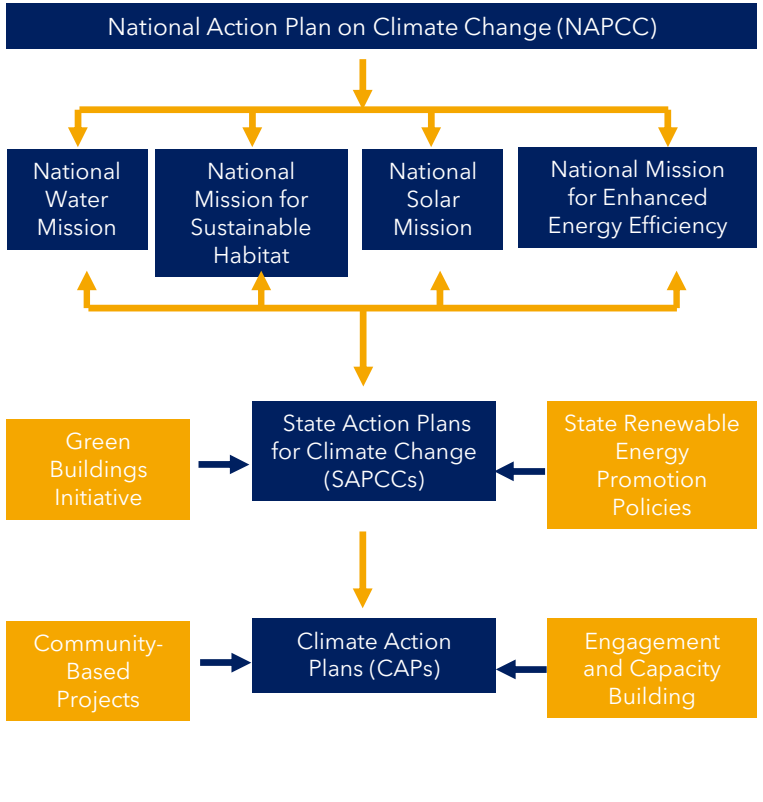
- National Mission for Strategic Knowledge on Climate Change
- National Solar Mission
- National Mission for Sustainable Habitat
- National Mission for Sustainable Agriculture
- National Mission for Enhanced Energy Efficiency
- National Mission for Sustaining the Himalayan Ecosystem
- National Water Mission
- National Mission for Green India

- Energy and green buildings
- Urban planning, green cover & biodiversity
- Mobility and air quality
- Water Management
- Waste Management

National Level

State Level

Municipal and Neighbourhood



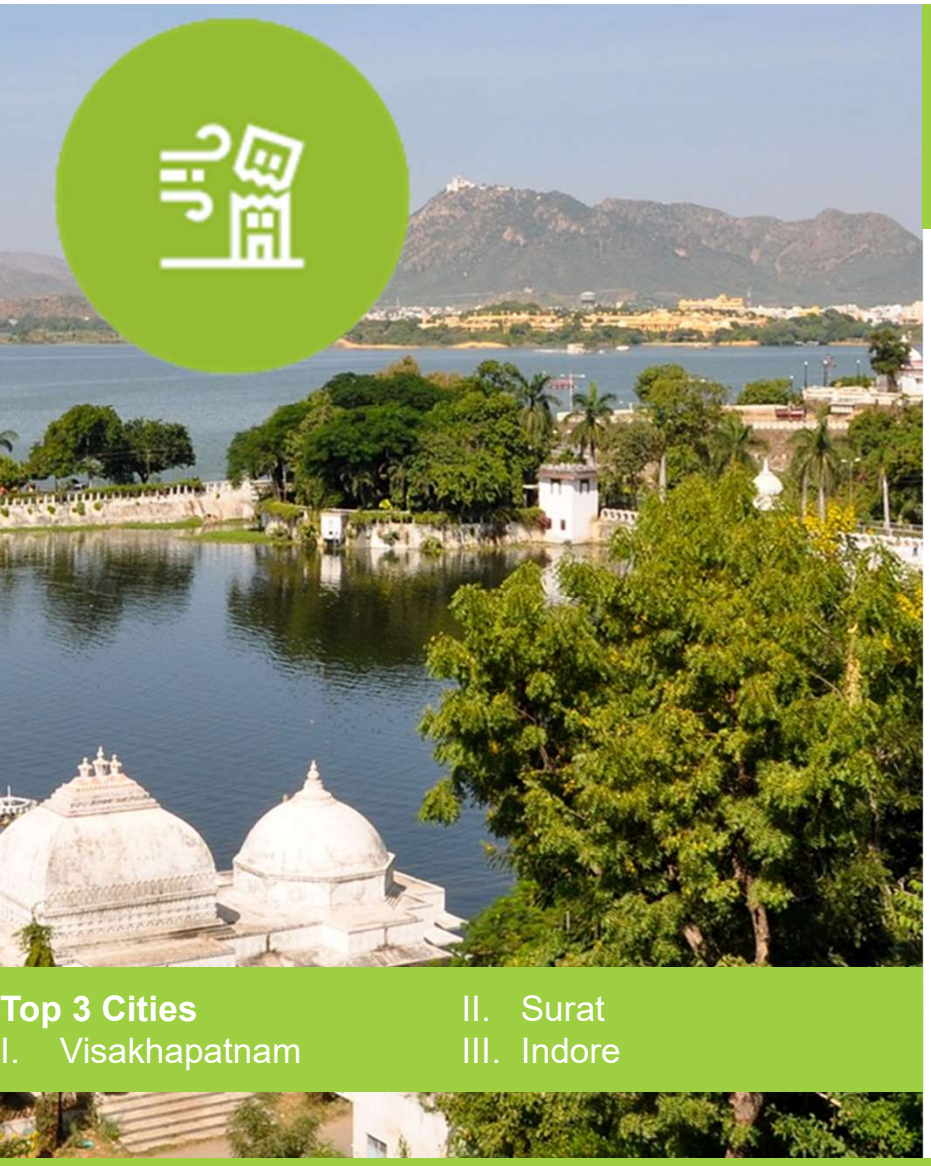
01. Data & Monitoring

The **spatial granular database** at the neighbourhood level can bring out **innovative, novel, context-specific solutions**.

Need for establishing systems and processes that are **grounded in data, mapping and analysis of inter-linked sectors on a real-time basis**

Developing comprehensive climate monitoring systems to **leverage technology for mapping and monitoring vulnerabilities** through established **standards, platforms, and processes.**

CSCAF	Development Level Explanation
Climate Champion	Cities are able to showcase **implementation / actions / impacts**
Climate Leaders	Cities have **allocated budgets** / started **implementing** climate **actions**
Climate Trendsetters	**Committees** are in place / plans in place / **project proposals** initiated
Climate Explorers	Cities have started **collecting data / formed committees** / hired technical agencies to start planning climate action projects
Climate Warriors	Cities have either not started thinking about climate change or in the **process of thinking** about climate actions



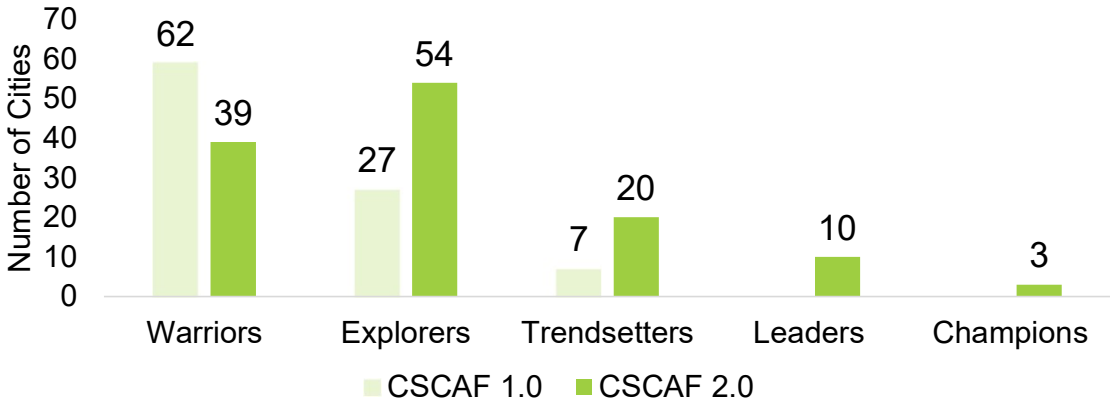
Top 3 Cities

I. Visakhapatnam
II. Surat
III. Indore

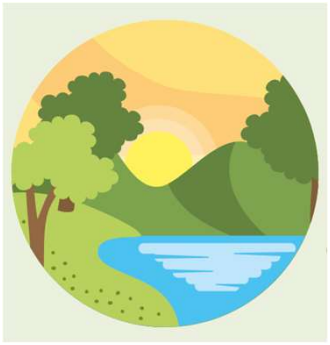
Urban Planning, Green Cover & Biodiversity

- Rejuvenation & Conservation of Water Bodies & Open Areas
- Proportion of Green Cover
- Urban Biodiversity
- Disaster Resilience
- City Climate Action Plan

UPGCB Progress



Urban Planning, Green Cover & Biodiversity

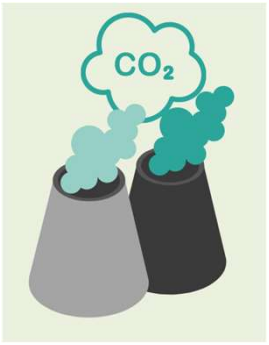


44 Cities

have formulated strategies/action plans and have **allocated a budget for rejuvenation** & conservation of water bodies and open areas

73 Cities

are meeting the prescribed URDPFI norm of **more than 12% green cover** within their municipal boundaries



30 Cities

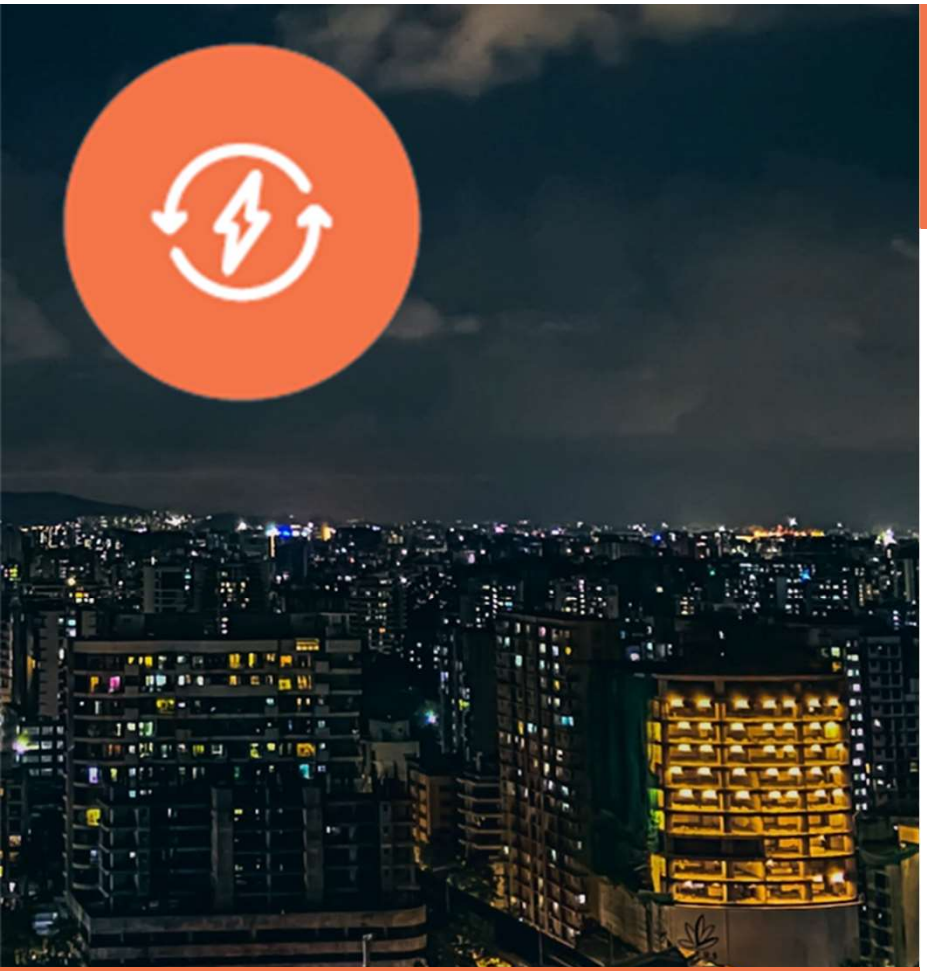
Have initiated/completed **vulnerability assessments** and **GHG inventory**

41 Cities

have initiated preparation of **city disaster management plans**

63 Cities

have **instituted** a Biodiversity Management Committee **(BMC)**



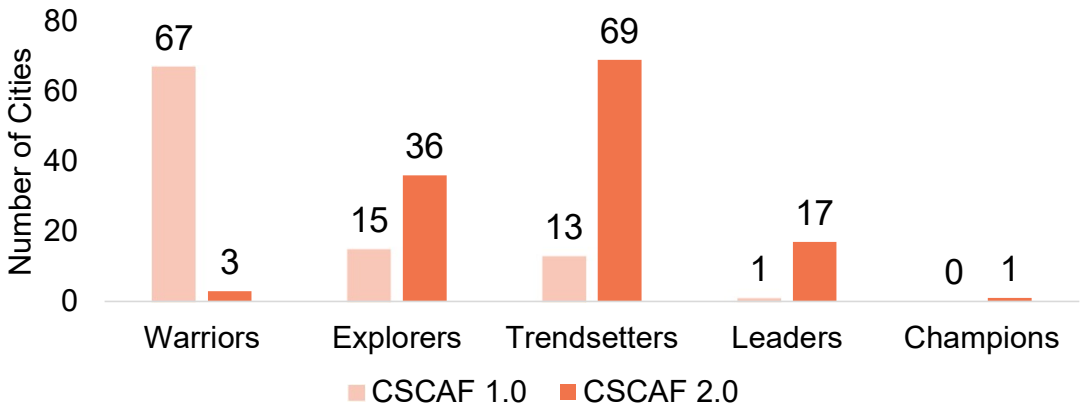
Top 3 Cities

I. Pune
II. Surat
III. Gandhinagar

Energy and Green Building

Total Electricity Consumption in the City	Electrical Energy derived from Renewable Sources	Fossil Fuel Consumption in the City
Energy Efficiency Street Lighting in the City	Promotion of Green Buildings	Green Building Adoption

EGB Progress



Energy and Green Building

Average electricity consumption per capita per annum

Champion cities – **416 kWh**

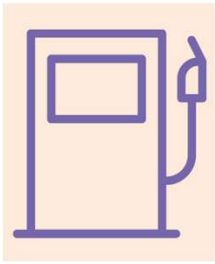
Warrior cities – **2,337 kWh**

13 Cities

have **more than 15%** of their electricity needs generated through **renewable energy**

All States and UTs

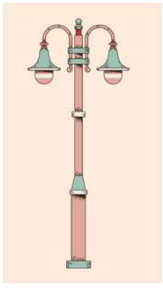
have established **green building cells**



Average fuel consumption per capita per annum

Champion cities – **25 litres**

Warrior cities – **230 litres**



88 Cities

have converted **all streetlights to energy-efficient** or renewable energy operated

101 Cities

are **promoting and implementing green buildings**

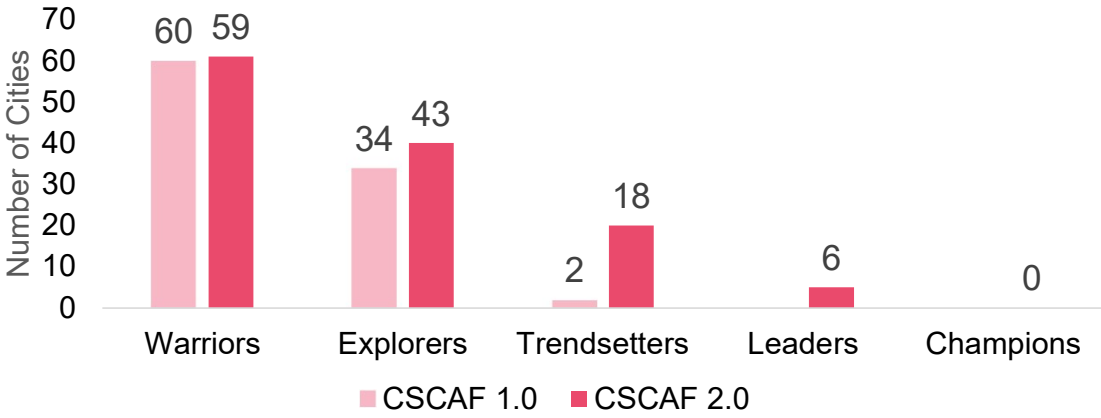
Top 3 Cities

I. Surat
II. Indore
III. Ahmedabad

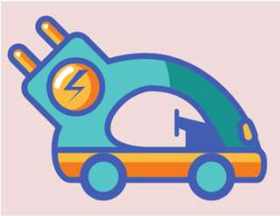
Mobility and Air Quality

- Clean Technology Shared Vehicles
- Availability of Public Transport
- Percentage of NMT in the city
- Level of Air Pollution
- Clean Air Action Plan

MAQ Progress



Mobility and Air Quality



59 Cities

have reported that they **use CNG based** (low carbon) or **Electric Rickshaws**

16 Cities

have **more than 35%** Non-Motorised Transport **(NMT) road Coverage**

21 Cities

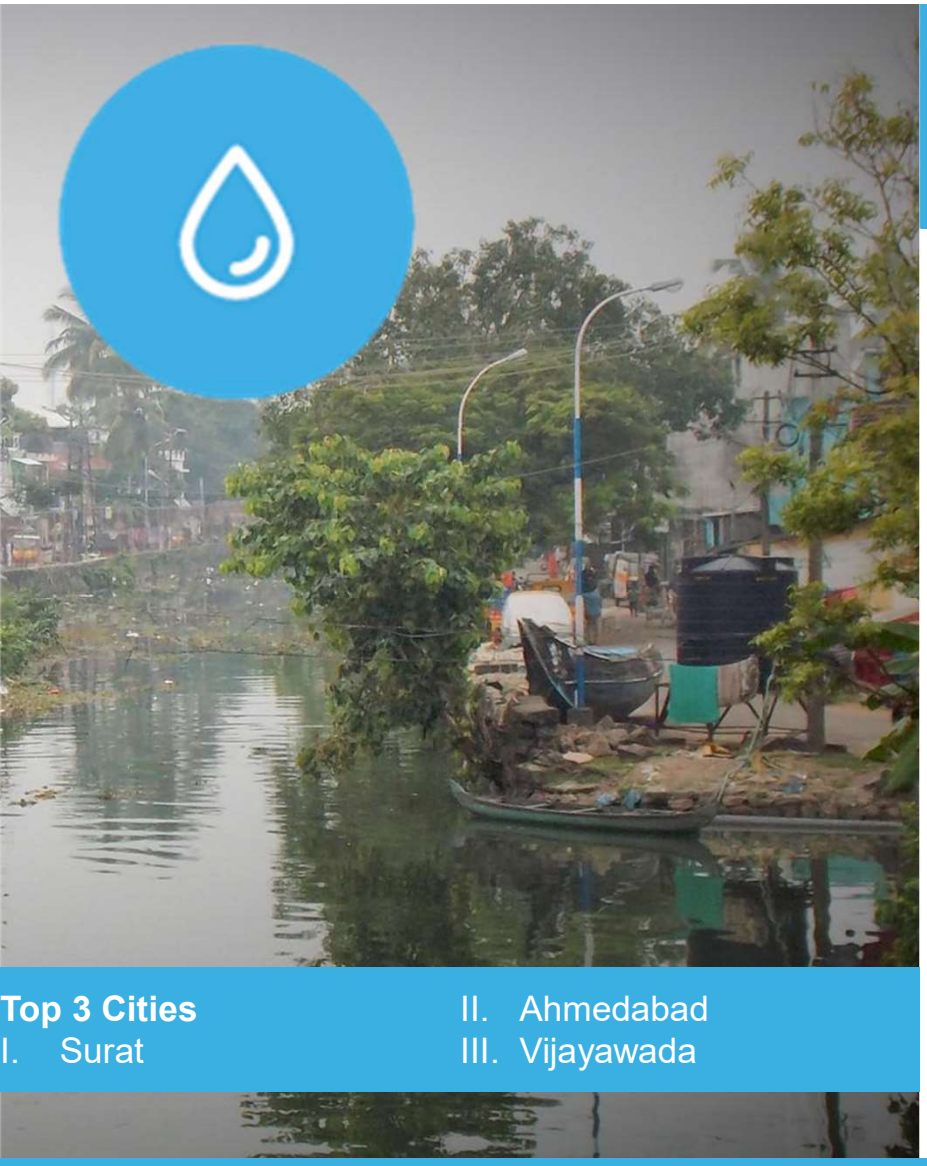
have attained MoHUA's SLB for the **availability of public transport**

108 Cities

have some form of **air quality monitoring stations** in their cities

19 Cities

have **achieved National Air Quality Standards** with two or more pollutants



Top 3 Cities

I. Surat

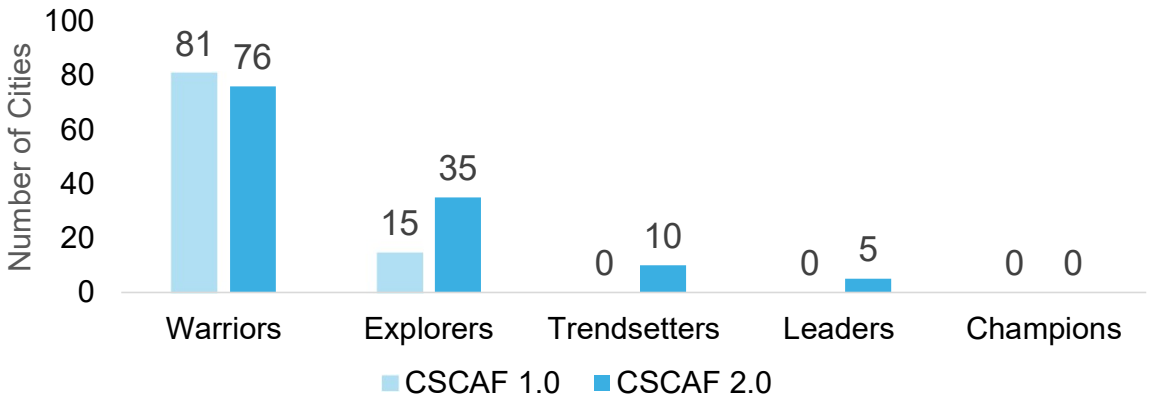
II. Ahmedabad

III. Vijayawada

Water Management

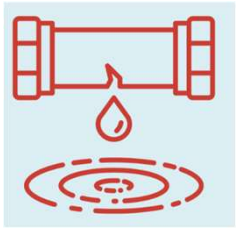
- Water Resources Management
- Extent of Non-Revenue Water
- Wastewater Recycle and Reuse
- Flood/ Water Stagnation Risk Management
- Energy Efficient Water Supply System
- Energy Efficient Wastewater Management System

Water Progress

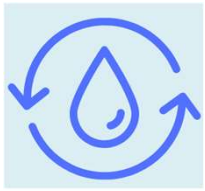


Water Management

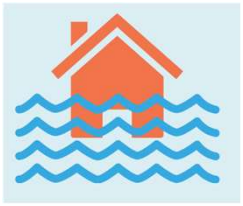
26 Cities
have **developed** Water Resource Management **(WRM) Plans**



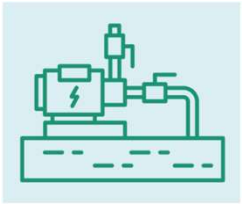
41 Cities
have **less than 30%** Non-Revenue Water **(NRW)**



43 Cities
have instituted mechanisms for **promoting recycle and reuse of waste water**



44 Cities
have **conducted** flood/water stagnation **risk assessment**



41 Cities
conduct regular (annual) **energy audits** of their **water supply system**

16 Cities
conduct regular (annual) **energy audits** of their **wastewater supply system**

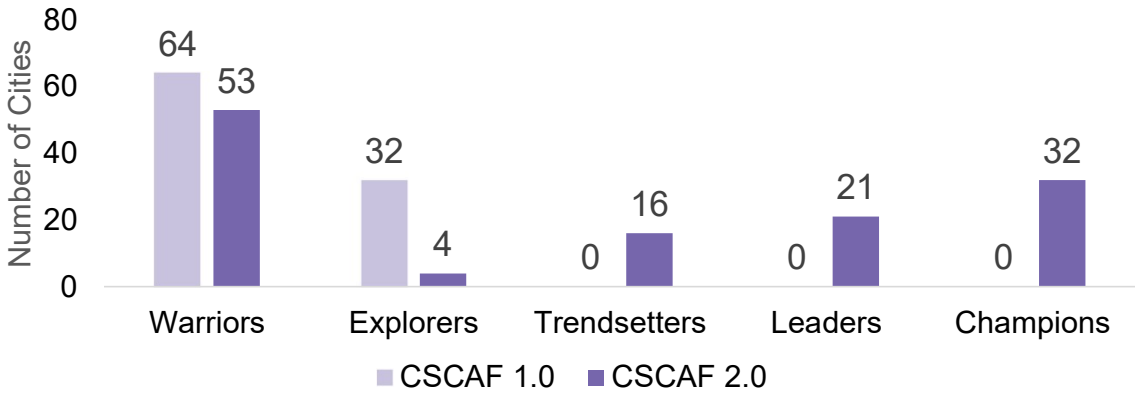
Top 3 Cities

I. Surat
II. Vijayawada
III. Mysore

Waste Management

- Waste Minimization initiatives undertaken by the City
- Extent of Dry Waste Recovered & Recycled
- Construction & Demolition Waste Management
- Extent of Wet Waste Processed
- Scientific Landfill availability & operations
- Landfill/ Dumpsite Scientific Remediation

Waste Progress



Waste Management

98 Cities

have **banned single-use plastics** including plastics <50 micron

40 Cities

have **more than 95%** of generated **dry waste** (excluding plastic & domestic hazardous waste) collected that is actually **processed/recycled/reused**

17 Cities

have **successfully implemented** Construction & Demolition **(C&D) Waste Rules**

40 Cities

have instituted mechanisms for **processing 100% of collected wet waste**

45 Cities

are **scientifically managing landfill sites**, meeting CPEEHO, Solid Waste Management Rules, 2016

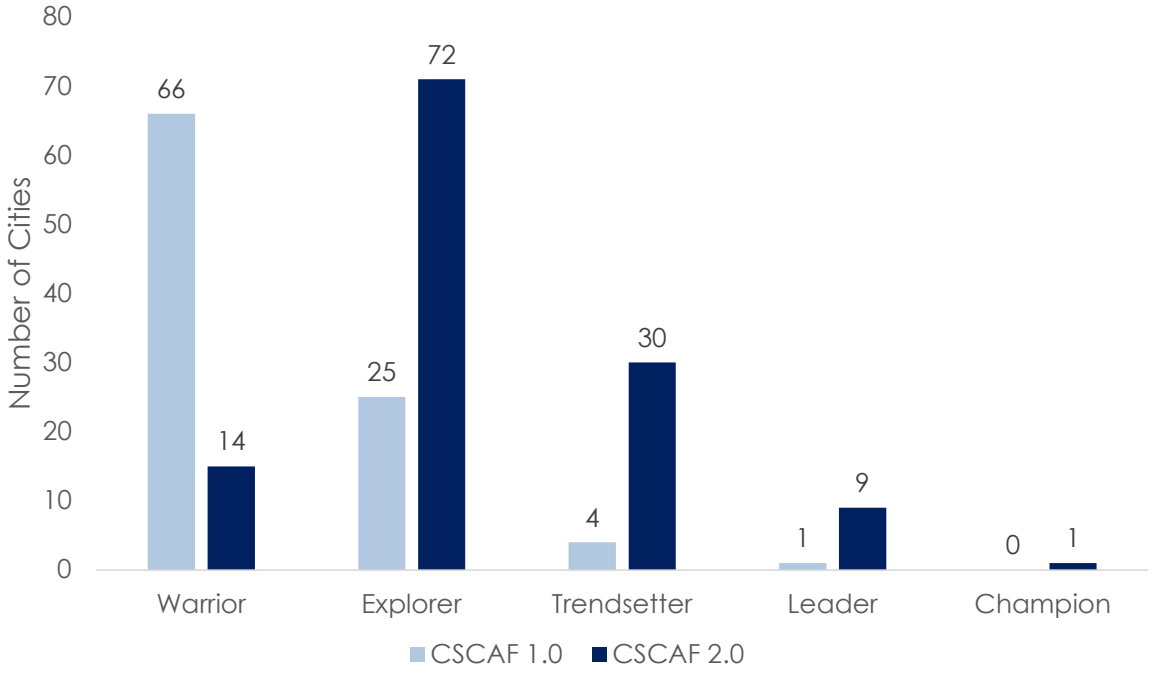
45 Cities

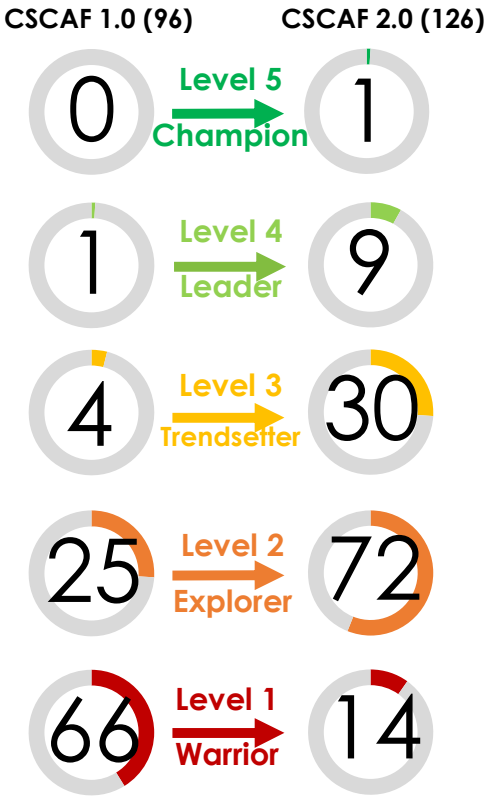
Have implemented **scientific remediation** of their landfills

City Progress

Year on year progress of cities

14	72	30	9	1
Climate Warriors	Climate Explorers	Climate Trendsetters	Climate Leaders	Climate Champion





02. Planning

- Integrate climate **resilience and sustainability into city planning,** urban design, and infrastructure projects.
- **Adaptive Planning :** Strategic and dynamic city planning frameworks
- Allocating green spaces, **protecting natural habitats**, and ensuring sustainable land use practices.

03.Action Research & Advocacy

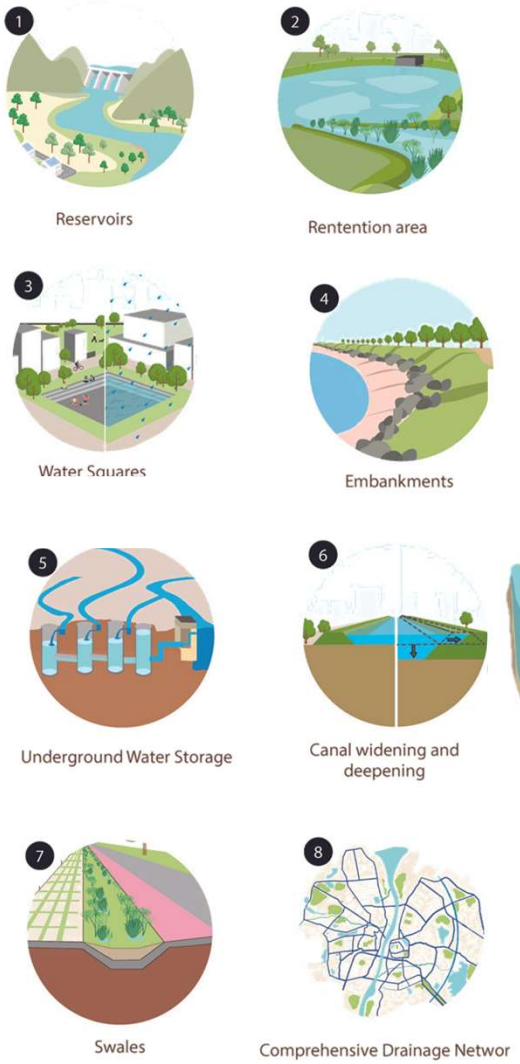
Individual changes – Nudging behaviours for reducing energy consumption and energy efficiency.

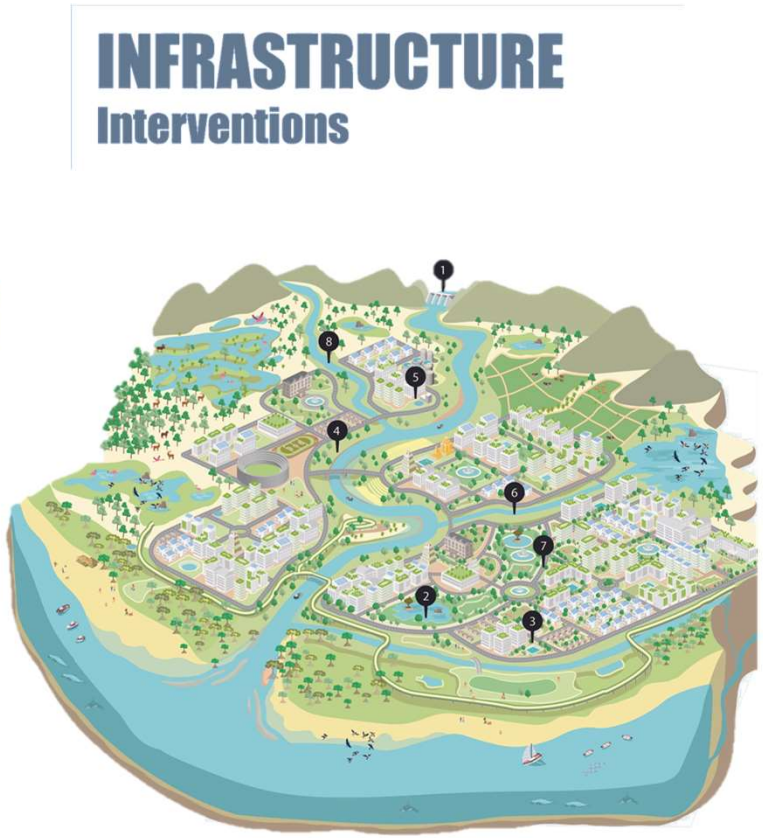
Institutional changes – Nudging decision-making of institutions to incorporate resilient and energy-efficient measures in their work.

Systemic changes – Streamlining inter-departmental coordination in cities for enhanced climate actions.

04. Projects

- **Demonstrative projects**
- Technical assistance to the cities in implementation
- Promoting **local and innovative solutions**





05. Capacity Building

- Develop **leaders** and Champions at the city level to **drive decisions & policy interventions**
- **Training Modules (Right recipe for right dish)**
- **LCCM**
- **Mapping of institutions and their constituencies (Accidental institutional efficiencies)**
- **Project Maturation Facility**

06. Partnerships

Collaboration Across Sectors: Foster partnerships between **government, the private sector, NGOs,** and communities to address climate challenges collaboratively.

Sharing of successful analytics use cases

E3=I3
Engage- Evolve Empower to Ideate innovate and Initiate

Urban Climate Alliance
River Cities Alliance
Parvat Manthan

07. Nurturing Future Leaders

- Climate Practitioner Network
- SAAR
- Internship Program
- Thesis Competition

TOWARDS MAINSTREAMING CLIMATE ACTION

EVIDENCE BASED

- Strong data framework to assess where we are
- Strategies and norms based on ground realities and assessment of future potential

INCLUSIVE

- Citizen and stakeholder engagement for plan-making
- Equity in terms of class, gender, age and ability as core principles
- People-friendly (easy to understand) doc

OUTCOME ORIENTED

- All norms geared towards achieving outcomes
- Clear road map - Short-term priorities & projects
- KPI-based assessment framework

DYNAMIC

- Integrated Spatial Planning
- Feedback loop with stakeholders
- Strong action plan and course correction

THANK YOU