



Schweizerische Eidgenossenschaft
Confédération suisse
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Swiss Agency for Development
and Cooperation SDC

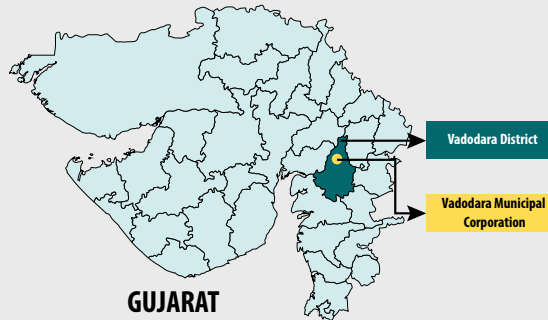


CapaCITIES
LOW CARBON • CLIMATE RESILIENT • CITY DEVELOPMENT

Vadodara



INDIA



GUJARAT

Area
220.33 sq.km

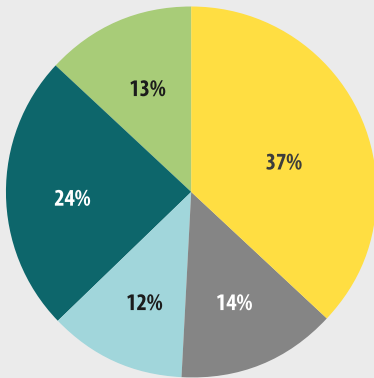
Population
2.24 Million

Total Household
613,618

Climatic Condition
Hot & Dry

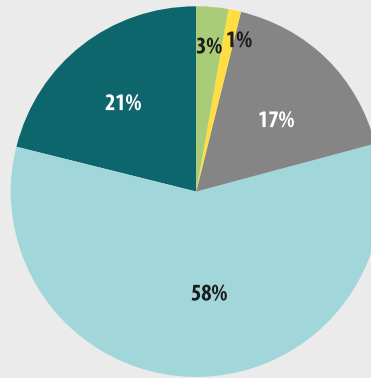
GHG Emissions (2020-21)

Community-wide Sectors



- Waste
- Transport
- Agriculture, forestry and fishing activities (i.e. mainly agriculture)
- Manufacturing Industry and Construction (i.e. Industrial sector)
- Commercial and Institutional Buildings/Facilities
- Residential Buildings

Municipal Facilities



- Transport
- Street Lighting
- Water Sector
- Waste water treatment
- Buildings



2.64

Million Tonnes CO₂e



1.19

Tonnes CO₂e Per Capita

CapaCITIES

addressing

SUSTAINABLE DEVELOPMENT GOALS

3 GOOD HEALTH AND WELL-BEING	6 CLEAN WATER AND SANITATION	7 AFFORDABLE AND CLEAN ENERGY	11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION	13 CLIMATE ACTION	15 LIFE ON LAND	



Simplified Climate Resilient City Action Plan

Urban System Challenges



Water

High dependency on sources outside city; Degraded condition of water bodies



Transport

Lack of public transport fleet & last mile connectivity



Biodiversity

Decreasing green cover, lack of scientific approach



Storm Water

Water stagnation & flooding; Illegal disposal of WW in storm waterlines



Sewage

Inadequate wastewater collection & Treatment; Septage management

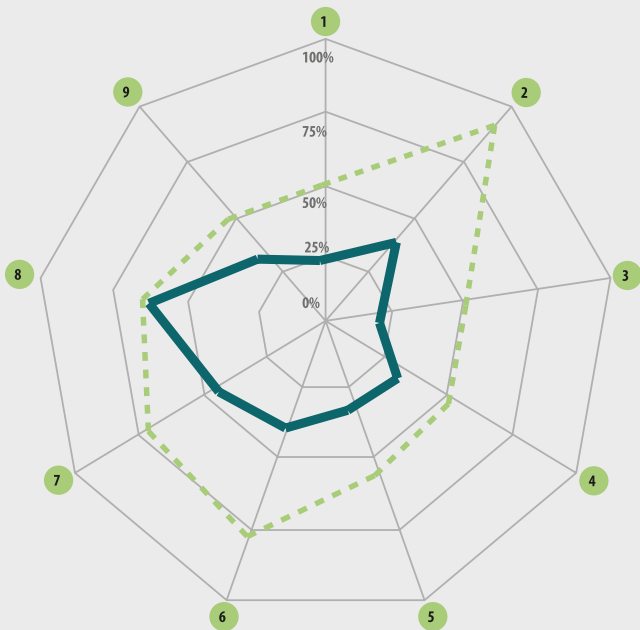


Energy

Limited use of renewable energy



Performance Assessment



- 1) Procurement & Finance
- 2) City Planning
- 3) Cooperation & Communication
- 4) Buildings
- 5) Mobility
- 6) Waste
- 7) Water & Sewage
- 8) Biodiversity
- 9) Energy / Energy Infrastructure

— Baseline
- - - Target

AREA	BASELINE		TARGET		
	GRADE	RESULT	GRADE	TARGET	
1	Procurement and Finance	1.00	25%	2.00	50%
2	City Planning	1.63	41%	3.38	84%
3	Cooperation and Communication	0.83	21%	2.00	50%
4	Buildings	1.23	31%	2.00	50%
5	Mobility	1.12	28%	2.11	53%
6	Waste	1.38	34%	3.00	75%
7	Water and Sewage	1.60	40%	2.75	69%
8	Biodiversity	2.38	59%	2.50	63%
9	Energy / Energy-Infrastructure	1.33	33%	2.00	50%
Overall		1.34	34%	2.42	60%

Example of Implemented Climate Actions (2019-2022)

Energy Efficiency in Municipal Services

100% conversion of conventional lights with LED lights



GHG Mitigation per year

4,742 tCO₂e



Mode of Implementation

Smart City Mission

Energy efficient pumps in water and wastewater pumping stations



GHG Mitigation per year

5,555 tCO₂e



Mode of Implementation

Smart City Mission

Green Cover & Biodiversity

Development of Miyawaki Urban Forest at one plot at Chhani Lake



Adaptation Benefits

Acts as a carbon sinks, increased green cover, reduced surface temperature and urban heat island effects



Mode of Implementation

Pilot Project under CapaCITIES Phase II project

Development of urban forests at 75 locations across the city



Adaptation Benefits

Acts as a carbon sinks, increased green cover, reduced surface temperature and urban heat island effects



Mode of Implementation

National Clean Air Programme (NCAP)
Municipal Budget
PPP Mode

Climate Friendly Solid Waste Management

1000 TPD Waste to Energy plant



GHG Mitigation per year

377,873 tCO₂e



Mode of Implementation

Public Private Partnership



Adaptation Benefits

Reduced waste dumping on landfill; Reduced vector borne diseases

Awareness and IEC Program to Move towards Zero Waste in one ward (under CapaCITIES II)



Scale up by City

Awareness and IEC Program for Zero Waste in some of the wards by VMC



Mode of Implementation

Public Private Partnership



Adaptation Benefits

Improving adaptive capacity of waste treatment due to segregation at source

Renewable Energy in Municipal Services

1 MWp rooftop solar PV for municipal services



Mode of Implementation

Smart City Mission, Municipal Budget



GHG Mitigation per year

1,234 tCO₂e

Water Conservation

Reduced NRW from 26% to 20% by year 2025
(Replacing old pipeline with DI network, SCADA)



Mode of Implementation

Municipal Budget



GHG Mitigation per year

4068 tCO₂e



Support Under CapaCITIES Phase II



Climate Action Planning & Net Zero Targets

- Preparation of Comprehensive Climate Resilient City Action Plan



Quick win/ Co-Financing / Bankable Project Preparation

- Development and maintenance of a pilot urban forest, through Miyawaki technique at Chhani Lake
- Awareness and IEC Program to Move towards Zero Waste in Ward No. 6; Trained 950 people.
- Pre-feasibility assessment for 2 MW Floating Solar project for municipal own use at Ajwa Sarovar
- Concept Note for 50 TPD organic waste to Bio CNG Plant on public private partnership (PPP) basis



Other Support

- CSCAF of MoHUA, Gol (received 4 star rating)
- Urban Outcome Framework by MoHUA
- Micro action plan for clean air under NCAP Supporting city under 15th FC Clean Air Programme
- Technical support for Green Cover Analysis
- Supporting city under Swachh Bharat Mission

Actions proposed in Simplified Climate Action Plan contribute to India's Nationally Determined Contribution (NDC) by enabling a 'Lifestyle for Environment', ensuring a climate friendly and cleaner path, contributing to a reduction in emissions intensity of GDP, enhancing renewable energy capacity, enhancing investments in key vulnerable sectors such as water resources, mobilizing domestic and international funds for climate action and building capacities and frameworks for quick diffusion of cutting edge climate technology in India.

CSCAF 2.0
★★★★



Implementing partners



Knowledge Partner



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