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WRI India



Balekundri Circle, Bengaluru

Photo Credit: Chetan Sodaye/WRI India

# Towards a Net-Zero and Climate Resilient Bengaluru

## Bengaluru Climate Action and Resilience Plan

Bengaluru, once famed as the Garden City of India, has witnessed many changes over the last few decades. As the city's economy grows so is its population and urban built-up area. This, coupled with the increasing frequency of climate hazards, is impacting the city's liveability making it imperative to reimagine its future through the lens of climate change. Fundamental to this vision is the preparation of a data-driven, target-oriented and collaborative climate action and resilience plan aligned to the Paris agreement with a focus on reducing GHG emissions and building healthy, equitable and resilient communities.

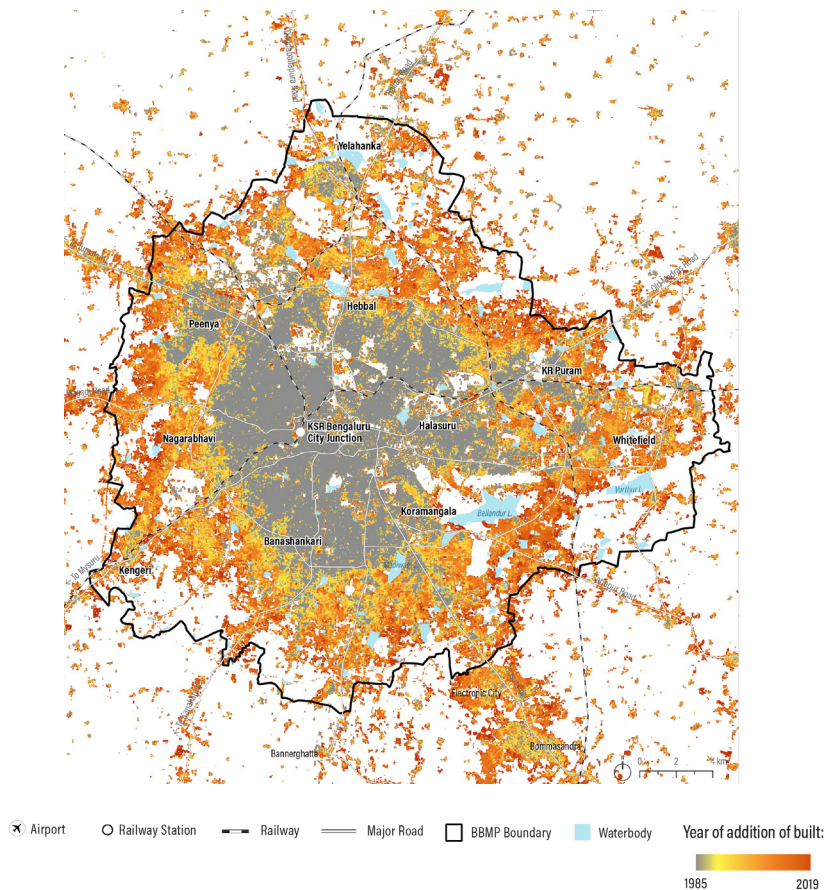


Bengaluru has seen a 170% increase in its built footprint between 1990 to 2015. Along with this unprecedented growth the city is also seeing increased greenhouse gas (GHG) emissions and is experiencing the impact of climate change – grappling with multiple climate induced hazards including extreme rainfall events, urban flooding and urban heat among others.

The Bengaluru Climate Action and Resilience Plan (BCAP) offers the city the opportunity to intensify and coordinate its efforts to plan and manage its urban growth, in an equitable climate-aware manner, aligned to the global climate agenda.

The BCAP serves as a data-driven, multi-stakeholder collaborative roadmap for the city, addressing the dual challenges of climate change mitigation (reducing greenhouse gas emissions) and adaptation (strengthening urban climate resilience). The Bruhat Bengaluru Mahanagara Palike (BBMP) initiated preparation of the BCAP in 2021 in collaboration with C40 Cities and WRI India as knowledge partner.

### BUILT FOOTPRINT EVOLUTION ACROSS BENGALURU (BETWEEN 1985-2019)



Source: WRI India analysis using World Settlement Footprint (WSF) Evolution 1985-2015, and WSF 2019; German Aerospace Center (DLR)

### HOW WILL THE BENGALURU CLIMATE ACTION PLAN BENEFIT CITIZENS?

<b>PREVENT</b>	The loss of lives, properties, and opportunities
<b>IMPROVE</b>	Air quality, support better health
<b>MAKE</b>	Commute easier and eco-friendly
<b>REDUCE</b>	Financial burden of citizens
<b>CREATE</b>	New opportunities for green jobs
<b>SECURE</b>	The city's natural resources for the future



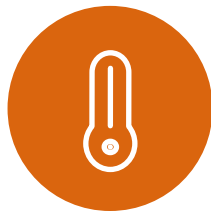
The launch of the BCAP makes Bengaluru just one of a handful of cities in the world, and the third in India, to have a detailed global standard climate action plan.

## CLIMATE & ENVIRONMENTAL HAZARDS IDENTIFIED

Bengaluru experiences extremities in two major climate variables – rainfall and air temperature – and this manifests itself into different climatic hazards. In addition, air pollution, an associated anthropogenic environmental hazard, is impacting residents' health and productivity.



Urban Flooding



Urban heat



Drought



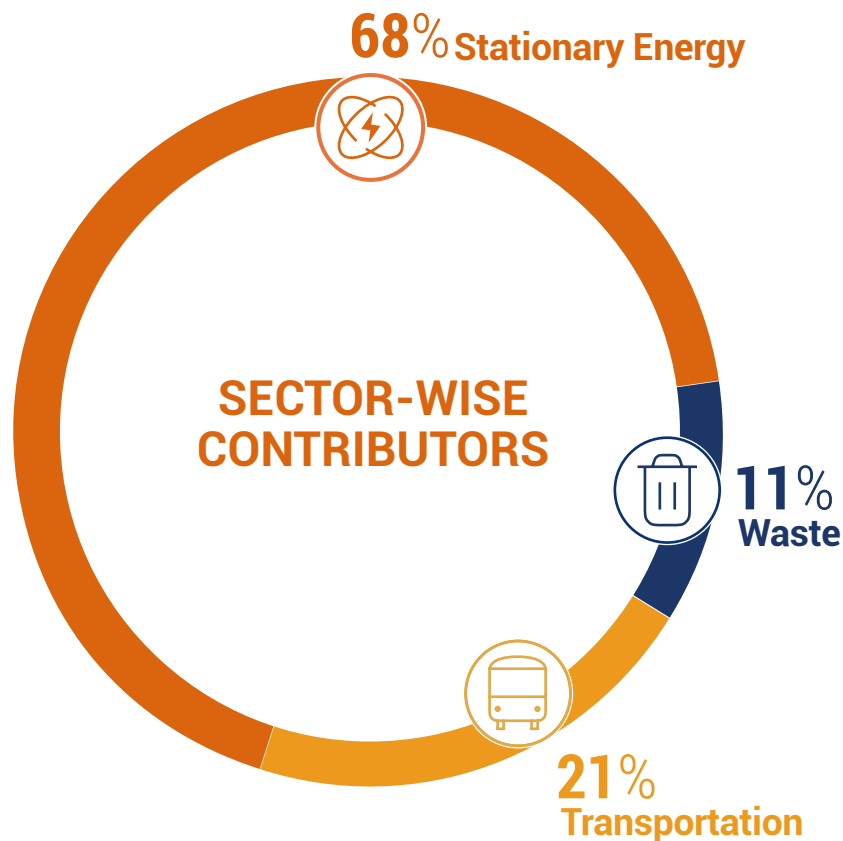
Thunderstorms and Lightning



Air Pollution

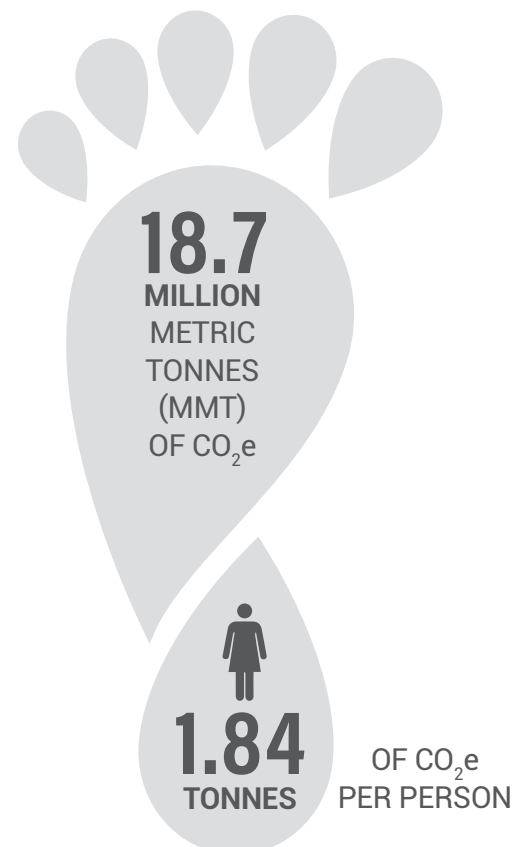
## BENGALURU'S GREENHOUSE GAS (GHG) EMISSIONS

GHG Baseline 2019 for Bengaluru (BBMP Area)



Source: WRI India analysis for BBMP jurisdiction based on GHG-GPC framework (BASIC Level)

## BENGALURU'S CARBON FOOTPRINT



Bengaluru has embarked on an ambitious journey to reduce GHG emissions by 56% by 2050 (as compared to 2019 baseline). As part of the BCAP, an exhaustive analysis of all major sectors and sources of GHG emissions has been conducted (as per GPC reporting framework-BASIC level) to establish Bengaluru's first-ever GHG inventory.

The pathways scenario, under the BCAP, establishes an evidence base on which Bengaluru can set its mitigation (potential to reduce GHG emissions) and adaptation and resilience (capability to absorb shocks from climate hazards) targets aligned to seven major sectors – energy and buildings, transportation, solid waste management, water, wastewater and stormwater, air quality, urban planning, greening and biodiversity, and disaster and management.

### PRIORITY SECTORS FOR ACTION ORIENTATION



Source: As identified by BBMP with the knowledge support of WRI India

Photo Credit / Praseeda Mukundan/WRI India





# WHAT LOW CARBON AND RESOURCE EFFICIENT CHOICES CAN YOU MAKE?

Reuse greywater\* & adopt rainwater harvesting



Protect & enhance natural resources



Reduce your consumption, reuse as much as you can



Compost wet waste



Use public transport, choose to walk and cycle whenever possible



Switch to electric vehicles for private usage



Install a solar power system



Switch to energy-efficient appliances & low flow fixtures



*\*Greywater is water that has been used for washing dishes and clothes, or bathing, and that can be reused for garden usage if properly treated*

## WHAT CAN RESIDENTS WELFARE ASSOCIATIONS (RWAs) DO?

Consider setting up community solar installation

Establish EV charging infrastructure

Arrange regular e-waste/recyclable collection drives

Set up rainwater harvesting and greywater treatment

Set up water metering

Ensure scientific greening within premises

Encourage segregation at source and community composting

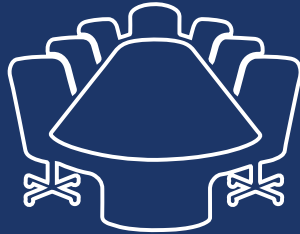


# WHAT CAN BUSINESSES AND COMMERCIAL ESTABLISHMENTS DO?

Engage employees in Information, Education & Communication (IEC) activities to promote low carbon, and resource efficient solutions and celebrate good practices

Comply with Extended Producer Responsibility (EPR) for recycling and safe disposal of discarded material/waste

Consider public-private partnerships for wastewater reuse & install solar PV on the premises



Transition to 2 & 3-wheeler electric vehicles for delivery/freight

Provide incentives to staff/ encourage staff to use public transport

Use CSR funding for climate friendly initiatives such as scientific greening, sustainable transport and flood management

**PERSONAL 2 PUBLIC**

Make the move from personal vehicles to public transport at least twice a week



# WHAT CAN STUDENTS AND TEACHERS DO?



## PUSH FOR CLIMATE EDUCATION

Ask for climate action based educational curriculum. Organize climate action-based sessions, seminars and talks on campus

## CHOOSE LOW CARBON TRANSPORT

Choose school buses, public transport and cycling as much as possible

## BE AN ENVIRONMENT AMBASSADOR

Join an environment club or start one in your neighborhood or on your campus

## GET YOUR CAMPUS TO GO GREEN

Protecting and enhancing natural resources in the campus, initiate backyard gardening, facilitate installation of solar PV, energy efficient equipment and low flow fixtures

## REDUCE LANDFILL WASTE

Practice segregation and composting. Start/Support on-campus zero-waste initiatives

# WHAT CAN COMMUNITY-BASED ORGANIZATIONS AND NGOs DO?

Facilitate communication of early warnings and health advisories in local mediums and languages

Push for reforms to overcome regulatory barriers that hinder equitable service distribution in vulnerable localities

Build capacity of health workers on identifying and treating climate-induced risks and illnesses in local mediums and languages

Raise awareness and support distribution of energy efficient appliances in low-income communities



Conduct trainings for, and support, waste pickers and self-help groups

Facilitate provision of electricity, water, sanitation facilities and waste management for urban poor communities

Develop low-cost, nature-based solutions (like cool roofs and greening) to reduce heat stress in high-risk neighbourhoods