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BENGALURU SUSTAINABILITY MANIFESTO

A BOLD CITIZEN VISION FOR A GREEN AND RESILIENT BENGALURU BY 2030

JULY 2020

Cities occupy **only 2%** of the Earth's terrestrial surface
but consume **over 75%** of natural resources
and produce **more than 60%** of greenhouse gas emissions.

UN Environment

In Bengaluru, green space has declined
from **nearly 70%** about 50 years ago
to **less than 3%** in 2020.

Dr. TV Ramachandra et al., Indian Institute of Science

"We are the last generation that can prevent **irreparable damage** to our planet. **11 years** is all we have ahead of us to change our direction"

UN General Assembly President
Maria Fernanda Garces (Ecuador)
Citing IPCC Report 2019

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Introduction

Experts say that the recent pandemic, cyclones, floods, increasing average temperatures, droughts and economic challenges are only the first of many interconnected crises that will test our communities' resilience to ecological, economic, and public health crises in the future.

Many megacities around the world have responded to this realization by setting up dedicated departments of sustainability and resilience within their city governments. They have also developed and started to implement urban sustainability and climate action plans and are well on their way to systematically improving systems and infrastructure to reduce their environmental footprints, improve quality of life, and bolster resilience.

Meanwhile, as India makes strong national commitments to climate action on the international stage, Bengaluru is barely coping with the massive population explosion and subsequent consequences of the past few decades. It is time to move past survival mode and adopt an ambitious roadmap for our future. In the twenty-first century, it is no longer practical to talk about planning and development without acknowledging sustainability and resilience as central themes. We need to fundamentally rethink our approach to governance, infrastructure investments, and the economy. City level sustainability leadership is the need of the hour to achieve this.

In this Manifesto, we lay out a bold vision for Bengaluru to begin its sustainable development journey this decade. **While this is a high level, aspirational, and long-term set of demands, B.PAC shall begin curating discussions and working closely with citizens and the government to improve upon ideas presented in this working document and translate these into incremental steps that the city can start to implement immediately.** Our goal is to build a collective vision for what our city could achieve by 2030, and we welcome all stakeholders - citizens, government, business, institutional, and social sector organizations to provide inputs, join the movement, and help us realize this vision.

Make Sustainable Development a City-Level Priority Now

- **Integrate sustainability and climate action into all levels of decision making -** including all governance, planning, infrastructure, and investments.

- **Invest in research and education** to fully understand and communicate the extent of threats that Bengaluru will face in the coming years - ensure government, businesses, institutions, and citizens are consistently made aware of risks and solutions.

- Environmental sustainability affects every aspect of our lives, and as such, every government decision, policy, investment, or development permit must undergo a **streamlined environmental and social evaluation** and meet minimum threshold standards of compliance prior to approval.

- Sustainable development and climate action must become a mandatory **election issue,** with candidates and parties developing sustainability action plans and discussing them during public debates.

Establish a City-Level Bengaluru Department of Sustainability by 2021

- **Establish a single city-level sustainability body or Bengaluru Department of Sustainability (BDS)**. Because of the high levels of coordination and integration required between sustainability planning and every other aspect of governance, the BDS shall be headed by a senior Director or Chairperson who will report directly to the Minister for Bengaluru Development and Chief Secretary of State. The BDS Director will be an urban sustainability expert in the ranks of Additional Secretary.

- **Goal:** BDS's purpose will be to establish city level sustainability goals, develop a **Bengaluru Sustainability and Climate Action Master Plan (BSCAMP)**, and work with all other governmental departments and non-government partners to drive collaborative change towards the established goals.

- **Responsibilities**

  - <u>Goal setting:</u> BDS shall set city level goals that prioritize and drive long term progress in the following areas:

    - Advancing safety, public health, liveability, quality of life, access, equity, and inclusivity for all city inhabitants - across income

groups, age (including children and the elderly) groups, gender and gender identity (including men, women, and LGBTQIA+), disability (physical and mental), class, caste, religion, culture, etc., and also including animals - pets, strays, and urban biodiversity/fauna.

- **Advancing sustainable development.** Resource management should be focused on **efficiency** (to reduce wastage of energy, water, materials, etc.) **and self sufficiency** - towards the goals of net zero energy, net zero water, net zero waste, and net zero emissions. This can be achieved through a combination of minimizing footprint and offsetting impact through regenerative development. These improvements should be integrated into all new planning and investments, as well as through retrofitting, revising, or updating existing systems as needed.

- **Planning for disaster preparedness** and long term resilience.

○ **Alignment with international, national, state level goals, and translation to ward level micro-goals**: BDS must ensure that the BSCAMP is aligned with international, national, and state level goals, such as India's Intended Nationally Determined Contribution (INDC) per the COP21 Paris Climate Agreement.

○ **Benchmarking and performance metrics**: BDS shall develop appropriate metrics for the masterplan, and begin a systematic benchmarking process to baseline the city's performance on various sustainability indicators. Example: Greenhouse gas inventory, percentage green cover, air quality, etc.

○ **Best practices and financial viability**: BDS shall identify, establish, innovate, and share global best practices in design, implementation, and monitoring of all aspects of sustainability policy and infrastructure. All solutions adopted will be appropriate to the local context and economically viable. Financial tools and mechanisms will be developed and adopted to make greening the city also ethically profitable.

○ **Data-driven**: The BDS shall maintain a central online information portal with all relevant environmental data and information for the city. This portal will be accessible, transparent, and user friendly to ensure that it is of practical value to citizens and problem solvers.

○ **Advising and coordination**: BDS will serve as a coordinating and advisory body for all other branches of government operating in Bengaluru (city and state level), and ensure that their goals, strategies, and investments are aligned with the BDS vision and masterplan, maintaining sustainability as a key priority.

- ○ <u>Integration into existing systems</u>: BDS shall integrate into existing master plans, agency missions, schemes, and other government systems to enhance and improve outcomes.

- ○ <u>Filling gaps</u>: Where necessary, the BDS will either fill gaps by developing new service offerings for citizens or advise higher authorities on strategic administrative interventions to address needs.

- ○ <u>Policymaking</u>: In addition to collating the best information and seeking expert inputs from citizens, the BDS will develop suitable policies, incentives, and penalties to drive progress towards BDS goals.

- ○ <u>Approving development proposals</u>: The BDS shall have an Environmental and Social Impact Assessment Cell that will evaluate and approve all development proposals within the city to ensure that basic standards are met.

- ○ <u>Grantmaking</u>: The BDS will administer a grantmaking program to foster environmental innovation in the city and award successful change makers.

- ○ <u>Communications</u>: The BDS shall have a comprehensive communications, education, and behavioral change division that focuses on developing a more informed, active, and responsible citizenry.

- ○ <u>Processes and Accountability</u>: The BDS will ensure participatory governance and rigorous monitoring and evaluation processes to guarantee ongoing financial and performance accountability and improvement.

- ● **Structure and Processes**

  - ○ <u>Composition</u>: The BDS will comprise of

    - ■ Leadership: BDS Director and Director's office staff who oversee BDS operations

    - ■ Interdisciplinary committees: BDS sub-departments and committees shall comprehensively cover various areas of sustainability governance - such as land use and conservation, energy and climate change, water, waste management, community engagement, finance and economics, etc, who will oversee sustainability progress in each of these sectors. These committees will include a full-time project manager and support staff.

    - ■ Inter-agency teams: Sectoral committees will also include appointed members from each relevant governmental agency such as planning, administration, and utility. Example: the water committee will include a representative each from the water

supply and sewerage board, the lakes department, the building code office, etc.

- **Expert advisors**: BDS Director's office and the Sectoral Committees shall be advised by an expert committee of advisors comprising professionals representing various sectors in Bengaluru - infrastructure, utility, business, policy, research and community engagement.

- **Citizen and beneficiaries' input**: Citizens and beneficiaries shall have the opportunity to review and provide feedback on BDS's plans and progress via regular and open forums.

- <u>Recruitment</u>: All appointments at the BDS shall be conducted through a transparent, ethical, competitive, inclusive, and merit-based process.

- <u>Diversity and inclusion</u>: An open and inclusive process will ensure that geographically, demographically, and disciplinarily diverse voices can easily participate in informing decision making.

- <u>Contracting and Procurement</u>: All contracting and procurement shall be transparent, ethical, and performance based. Any contracted vendor shall be obligated to deliver a minimum level of performance before contracts are renewed, and evaluations shall be conducted by third party professional organizations, with evaluation reports open and available to the public.

- **Budget**: An appropriate and sizable annual budget must be allocated to the department, commensurate with its roles and responsibilities. An initial allocation of INR 100 crores in the first year must be provided to drive the sustainability agenda in Bengaluru at the required scale and pace.

Launch a Bengaluru 2030 Sustainability and Climate Action Master Plan by 2023

GOVERNANCE

- The BDS and BSCAMP scope shall be agile and scalable to comprehensively represent the entire city and its complex issues in the long term.

- Strategic elements of the city-level BSCAMP shall be integrated into ward-level micro planning and involve active ward committee engagement.

- The BSCAMP shall include structures and processes to ensure participatory governance and a continuous feedback loop from administrators, citizens, and scheme beneficiaries.

- BDS and BSCAMP projects, targets, and plans will be reviewed annually by the parent body along with a citizen and expert advisory panel.

INFRASTRUCTURE

- **Land use and zoning**

  - <u>Conservation of existing biodiversity and expanding green infrastructure:</u> The BSCAMP shall prioritize the conservation of existing watersheds, ecological spaces (forests, lakes, rivers, etc.), flora, and fauna, and expansion of green infrastructure and integrated land use and watershed management on mission mode. Green infrastructure includes public parks, street trees, terrace gardens, vertical gardens, community edible gardens, ecological stormwater infrastructure, groundwater recharge rain gardens, pollinator gardens, and other such solutions that integrate nature into the built environment and offer ecosystem services that improve health and quality of life.

  - <u>Compact and high-density development (vertical growth)</u>: The BSCAMP must develop a strategic land use and growth pattern for Bengaluru integrating compact development, transportation, and watershed planning. It must include incentives for non-motorised transport (i.e., high walkability, bikeability, and accessible to the elderly and disabled), safety, livability, convenience, and sustainability. This is possible if well planned vertical development is prioritized over indefinite sprawling. This will also help protect existing green spaces from development and make space for new green spaces within the city, rather than pushing nature further towards the outskirts. Note that compact and high density is not the same as congestion. Structurally safe, healthy, and green high rises can both save precious land, enable more efficient resource sharing, and increase square footage available per person.

- **New construction:** The BSCAMP must develop strict regulations for all new infrastructure constructions to meet minimum third-party sustainability standards such as GRIHA, LEED, or other rating systems that continually push the envelope of environmental performance. The regulations will cover all built infrastructure in the city including -

  - <u>Buildings</u>: includes energy and water efficiency, waste management, healthy materials, air quality, safety standards, etc.

  - <u>Public spaces:</u> includes designing public spaces to be safe, accessible, clean, sustainable, and include an element of placemaking, aesthetics, and local culture.

- ○ <u>Transportation networks and infrastructure:</u> includes planning for safety, pedestrian, bicycle, wheelchair and senior citizen access, public transit, and EV infrastructure.

- **Existing infrastructure retrofits:** The BSCAMP must parallelly develop a plan to systematically retrofit existing aging and unsafe infrastructure with greener retrofits. The regulations will cover all built infrastructure in the city including -

  - ○ <u>Buildings:</u> includes energy and water efficiency retrofitting, waste management, safety improvements, disaster proofing, air quality improvements, etc.

  - ○ <u>Public spaces:</u> includes retrofitting public spaces to be safe, accessible, clean, sustainable, and include an element of placemaking, aesthetics, and local culture.

  - ○ <u>Transportation networks and infrastructure:</u> includes enhancing walkability, bikeability, safety, wheelchair and senior citizen friendly retrofits, public transit, and EV infrastructure.

- **Utilities and services:** The BSCAMP shall work closely with all utility provisioning agencies to improve measurement, monitoring, controllability, efficiency and sustainability of key utility systems including -

  - ○ <u>Energy</u>: Improving access to energy efficiency, clean energy technology, and smarter control of assets. Transitioning the grid to 100% renewable energy.

  - ○ <u>Water, sanitation, and wastewater</u>: Improving access to water and sanitation, water efficiency, decentralized wastewater treatment, rainwater harvesting, as well as improving the condition of lakes and groundwater recharge. Transitioning towards self sufficiency.

  - ○ <u>Waste</u>: Incentivizing low/zero waste products and business models, advancing consumer behavioral change, and improving access to decentralized waste management technologies towards a circular local economy. Advancing waste segregation, collection, transportation, and processing in an efficient and equitable manner towards the goal of zero waste to landfill and zero open burning.

  - ○ <u>Connectivity and smart systems</u>: Improving universal access to connectivity for enhanced performance and strengthened disaster resilience

    - ■ Telecommunications and digital infrastructure; while minimizing the harmful effects of electromagnetic radiation from cell towers, high tension wires, etc.
    - ■ Information access
    - ■ Physical/road access

- **Smart city infrastructure:** Substantial importance shall be placed on efficient and effective operations of all infrastructure and utilities through the use of smart metering, monitoring, evaluation, and data transparency.

- **City assets**

  - Real estate: The BSCAMP shall include a rigorous plan to transition all government owned real estate to carbon, energy, water, and waste neutrality, and enable them with digital technologies for smarter operations.

  - Fleet management: BSCAMP shall include a plan to move all government fleets including official vehicles, waste tippers, mechanical street sweepers, police cars, etc. towards fuel efficiency and EV.

- **Disaster management and resilience planning:** All infrastructure must be built to function well and last through several impending ecological, economical, public health, and social disasters. This means smarter, more agile, decentralized, and adaptable infrastructure, rather than rigid and expensive outdated infrastructure, which is the status quo.

ECONOMY & SOCIO-ECONOMIC EQUITY

- **Responsible investment of city financial assets**

  - BDS must guide city departments towards responsible investments in the clean economy and divestment from polluting industries.

- **Green economic development plan**

  - Circular city strategic plan: BDS will work closely with economic development and revenue divisions, solid waste management division, businesses, and other relevant stakeholders to develop and implement an ambitious plan to transition Bengaluru to a circular economy. This must be an economic development priority across all sectors of the economy in Bengaluru.

  - Industry regulation, monitoring, and Extended Producer Responsibility (EPR): BDS must update industry regulation standards to ensure that industry meets prescribed environmental performance thresholds and shares data for tracking emissions and other indicators. BDS must also revise producer responsibility regulation and develop incentive structures to attract responsible businesses to Bengaluru and enforce a strict polluters pay policy.

  - Economic incentives for sustainable development: The BDS shall develop a strong first of its kind in India low carbon economy development plan. By strengthening environmental and labor laws, not only will the quality of the indigenous economy and magnitude of local

buying improve, it will also lead to increased investments from companies who are not merely interested in low regulatory barriers and cheap labor. Further, environmental improvements, such as increasing green space, are attached to economic benefits like increased property value. Such tangible and intangible benefits must be capitalized to attract investments towards green projects. Examples of incentives - expedited permitting or property tax credits for green buildings.

○ <u>**Environmental innovation ecosystem:**</u> Beyond circularity, BDS will work towards an economic development plan that includes sustainability and social equity as core components. Just as Bengaluru is currently known for innovations in IT, BDS will enable an ecosystem of environmental innovation, so that Bengaluru can also be known as the "Sustainability Capital" of India.

○ <u>**Education and green jobs:**</u> BDS must work with educational institutions and employers to develop a green workforce training program to build capacity for a new generation of skilled workers that can solve environmental challenges. Examples of job training programs: green manufacturing, green cleaning and service industry, solar installation, green building products and technologies, energy efficiency retrofitting technicians, waste entrepreneurs, community gardeners, green roof installers, arborists, water auditors, green educators, etc.

● **Equitable access to sustainability opportunities**

○ BDS must ensure that the incentives, grants, and opportunities offered through the department will be accessible to all citizens. There shall be minimum entry barriers to participating in the sustainable economy.

● **Branding, culture, and behavioral change**

○ The BDS must develop a strategic branding plan to position Bengaluru as a leader in sustainability in India, and as an emerging green global megacity. This will attract greater green investments to the city and make Bengaluru a destination of choice for responsible industry leaders and innovators.

○ The environmentally conscious native cultural practices, cuisine, crafts, and traditions of Bengaluru must be celebrated, preserved, and integrated into education and behavioral change campaigns to bring a sense of pride and ownership to the sustainability movement.

○ Existing natural resources and heritage must be revitalized to build a thriving eco-tourism industry and inspire the public's appreciation for nature.
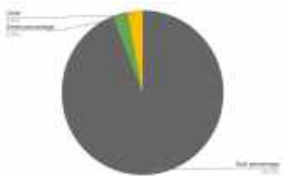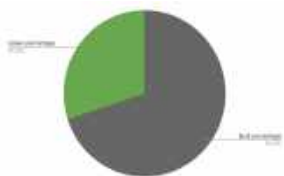
- ○ Proven behavioral change techniques shall be employed to empower all citizens to participate in Bengaluru's sustainability journey.

Appendix 1: Towards Developing Targets
(Research in progress)

The BSCAMP developed by the BDS must include strategic targets that are both ambitious and realistic to ensure steady progress towards a sustainable Bengaluru by 2030. In the interim, however, until the BSCAMP is set in motion, here are some key targets the city must immediately begin working towards.

Note: This is a non-exhaustive list of tentative/example targets, which will be improved based on expert and citizen input. The bottom line is that progress must begin immediately. You will see that many of the 2020 statistics are estimates - the research to benchmark current status is in progress. We invite collaborators to help in this endeavor.

THEME	2020 STATUS	TARGET BY 2030	AREAS IMPROVED`e
LAND USE & WATERSHED PLANNING *Integrated land use, transport, and watershed planning*	94% built up area 3% vegetation (IISc, 2017)	**70%** built up area **30%** healthy green spaces and water bodies (In line with India's Paris Climate Agreement & state policies)	Emissions Energy Transport Green space Air quality Health & quality of life Economy
TRANSPORT *Increase share of non-motorized & public transportation*	48% public transport use	**80%** public transport use; all PT vehicles to be EV **15%** of all commute to be via non-motorized transport - ie., walking and bicycling	Emissions Energy Transport Air quality Health & quality of life Economy
BUILDINGS & UTILITIES *Green buildings, efficient use of resources to minimize waste, and renewable resources towards self sufficiency*	Est. < 5% green buildings (IGBC) (ET, 2017) Accurate data currently unavailable.	All existing and new buildings must **increase energy and water efficiency by 40% above 2020 city average**. City average to be established by end of 2021.	Emissions Energy Water Waste Transport Green space Air quality Health & quality of life Economy

EMISSIONS & ENERGY	GDP Emissions intensity of Bengaluru = 2.18 (IISc, 2015 - based on 2009 data) BESCOM has a 12% solar purchase obligation	100% households must be electrified Emissions intensity must be 50% below the 2009 baseline 100% of energy should be sourced from distributed renewable energy assets: solar, biogas, wind, etc.	Emissions, Energy, Air, Health and quality of life, Economy
WATER & WASTEWATER	Water supply and quality assured to ~50% population by BWSSB 60% wastewater treatment capacity (Of which 72% is actually treated) 25-40% leakage loss Est. 64,000+ buildings don't harvest rainwater (Bangalore Mirror, 2019) Overall, heavy dependency on imported fresh water	100% population must receive clean and reliable municipal water supply Achieve 100% wastewater connections and treatment to acceptable standards <5% leakage loss Achieve 100% rooftop RWH 90% non rooftop water to be recharged or treated before entering water bodies Meet 50% of total city water demand through in-situ water: i.e., rainwater and treated sewage and stormwater.	Emissions, Energy, Water, Health and quality of life, Economy
WASTE	Only 68% total waste being collected 38% composting capacity for wet waste. Only 10% recyclables being recycled	Achieve 100% waste collection 100% responsible disposal (i.e., zero waste to open landfill, open dumping, or open burning)	Emissions, Energy, Water quality, Waste, Transport, Green space, Air quality, Health & quality of life, Economy
AIR	PM 10 - exceeds NAAQ standards in 93% testing locations PM 2.5 - exceeds NAAQ standards in 26% testing locations Overall AQ: 4.7x higher than WHO stds. (KSPCB)	Establish scientific measuring and monitoring process AQ must meet NAAQ and WHO stds in 100% locations in 95% tests for each location	Emissions, Air, Health and quality of life, Economy

Appendix 2: Next Steps

As mentioned, this Manifesto is an aspirational document, the sole intent of which is to set a broad vision for the future of Bengaluru in this decade. We believe that goal setting is an important first step, but we also recognize that it is meaningless if not followed by strategic action towards the goal. As such, the next phases of the Manifesto project are more action focussed (see below). We welcome the participation of all citizens and stakeholders in these next steps:

PHASE 1

- Manifesto is launched
- Build citizen support through communications campaign
- Welcome feedback and support from all citizens and stakeholders

PHASE 2

Webinars and focus group discussions will be conducted on specific topics under the manifesto with experts. Focus of these convenings will be to review existing data to benchmark the city's performance on various key indicators as described in the Manifesto, develop meaningful targets, and curate effective action plans to take us from the current situation to the goal. As this is a big undertaking, we welcome all experts and stakeholders to participate in this process. The resulting targets developed can be submitted for inclusion in the 2021 budget.

PHASE 3

Focus on implementation of both the key Manifesto asks (setting up BDS, allocating adequate budget, and developing a BSCAMP), as well as specific targets developed under Phase 2. Implementation will include:

- Breaking down city level targets to ward level targets and developing guidance resources
- Creating theme-wise or sector-wise clusters of collaborating organizations that can align their work and diverse approaches to the common city level targets and goals.