

# CEBPOL POLICY BRIEF

## The Case for Multi-stakeholder governance for the City Biodiversity Index in India

***“Our struggle for global sustainability will be won or lost in cities,”***

- UN Secretary-General Ban Ki-moon, 24 April 2015, at the 25th session of the UN-Habitat Governing Council in Nairobi, Kenya.

***“Cities occupy less than 2 percent of the Earth’s land surface, but house almost half of the human population and use 75 percent of the resources we take from the Earth”***

- Klein Goldewijk and van Drecht (2006), Netherlands Environmental Assessment Agency

### Urban India, Biodiversity and Ecosystem services: enabling participatory governance

The conventional focus on Biodiversity governance in India has been in biodiversity-rich areas – protected areas and forests. The green and blue spaces in the urban areas have traditionally been part of the mandate of local government administrative structures, as part of public health, sanitation, and urban planning mandates. State forest departments also manage reserve forests in city-limits or the outskirts, and have a degree of overlap with the biodiversity conservation and sustainable use mandates.

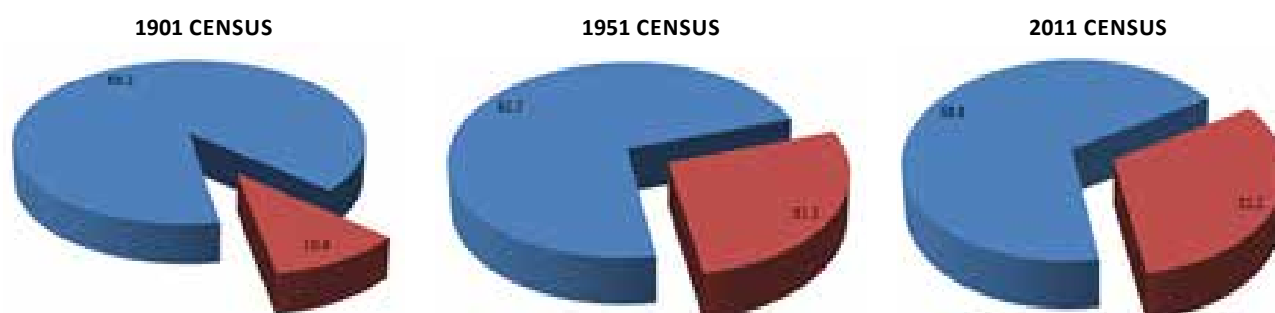
As Indian cities expand in size and grow in number, the need for the ecosystem service-values of green and blue spaces in cities to be taken note of and stewarded more consciously, and with more engaged participation of diverse stakeholders, is also growing. It is possible through the use of the City Biodiversity Index (CBI) tool being promoted by the Convention on Biological Diversity (CBD). The objective of the brief is to explain the CBI tool as well as the New

Institutionalism (NI) in governance for a participatory approach to operationalizing the CBI.

The Convention on Biological Diversity estimates that by 2050 the global urban population will be 6.3 billion or almost double compared to 2010. In India, one in three persons will be in urban areas. Around 60% of the area that is projected to be urban in 2030 is yet to be built. Most of this growth is due in small and medium towns and not in megacities and this is both a challenge and opportunity. Rapid urbanization will take a toll on our critical natural capital reserves unless greater awareness and participatory planning and management to prevent it, is in place. Ecosystem conversion to make way for more built-up areas, increased water consumption and impacts on biodiversity within cities as well as on sensitive ecosystems in the periphery (like coasts/oceans) from waste generated, need to be checked.

India’s urban population has roughly doubled every 50 years since 1901, as the figure below captures

Figure 1: Trends in urban-rural population in India



Source: Census of India, 1901, 1951 and 2011

Together with the four old metropolitan centres of Mumbai, Delhi, Kolkata, and Chennai; Bengaluru together with Hyderabad, Ahmedabad, Surat, Pune and Jaipur together represent the 10 biggest urban centres with populations greater than 3 million, and growing. Some of these major Indian cities harbour

a very high degree of biodiversity, comparable to those with the highest in the world. There are 40 other cities with a million-plus population, so collaborative efforts in the protection and conservation of green and blue areas of these urban centres is imperative.

## Urban biodiversity in Indian cities: a snapshot

(Compiled from Chaudhry, Bhaga and Singh, 2011; Sethi, 2015; Sudhira and Nagendra, 2013)

- Urban forests account for 12.73% of the geographical area of Delhi, or over 10.5 m<sup>2</sup> per inhabitant (using population data of 2011).
- Delhi National Capital Region has more than 400 bird species. It has the highest number of bird species for any city, second only to Nairobi
- Bengaluru's sprawling urban parks have made it the 'garden city'.
- The high biodiversity of some cities is explained by their location in transitional biogeographic zones, proximity to forested areas such as the Western Ghats (e.g. Pune). Coastal cities have mangrove ecosystems and much marine life - Olive Ridley nesting sites in Chennai. Pune and Bengaluru harbor several species of amphibians.
- The existence of sanctuaries and national parks within or close to the boundaries of cities is not uncommon. eg Mumbai has the Sanjay Gandhi National Park, Chennai Guindy National Park and Bengaluru the Bannarghatta Bioreserve.
- Natural or man-made wetlands and rivers criss-cross the urban Indian mosaic and attract thousands of migratory waterfowl every year.
- Urban managed wetlands also exist. The East Kolkata wetlands represent the largest assemblage of sewage-fed fisheries in the world. These wetlands provide food and livelihood security to 0.2 million of the poorest peri-urban citizens and provide up to 80% of the fish and 60% of the agriculture to the city of Kolkata.

## What is the City Biodiversity Index?

Since the 9th CBD-Conference of Parties (COP) in 2008, Cities and Biodiversity emerged as a thematic focus area. A monitoring tool - the City Biodiversity Index - was developed, in partnership with the city of Singapore, and launched at COP 10 in 2010 to assist local authorities for evaluation of their progress in urban biodiversity conservation.

The CBI serves as a self-assessment tool for cities to benchmark and monitor the progress of their biodiversity conservation and ecosystem service management efforts against their own baselines. Governance within cities is a key driver that enables both biodiversity conservation and management of ecosystem services. For this reason, the CBI captures indicators in relation

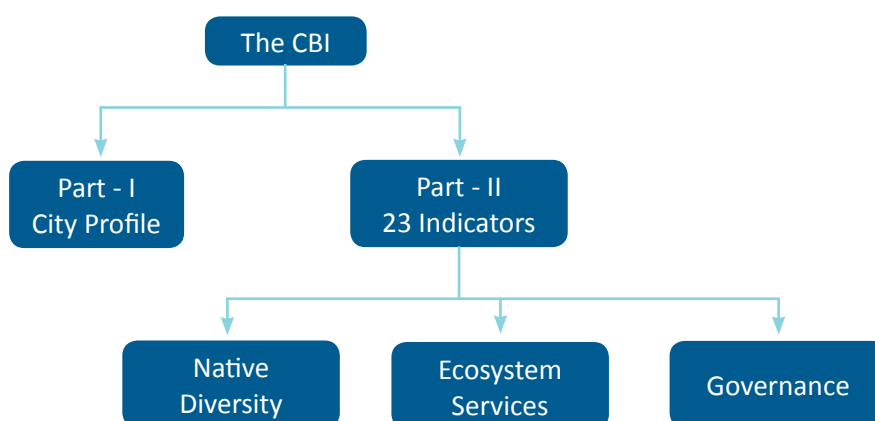
to Native Biodiversity, Ecosystem Services and Governance.

## Urban biodiversity in Indian cities: a snapshot

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As a policy mandate, the focus on Cities and Biodiversity has linkages to the CBD Strategic Plan 2011-20 and to India's National Biodiversity Targets (NBT) 3 (Safeguarding Natural Habitats) and 8 (Ecosystem Services). Further, if institutionalised through a multi-stakeholder approach, CBI will also further NBT 1 (Biodiversity Awareness) and NBT 10 (Inclusive Governance)

## The CBI Tool at a glance



## Unpacking the CBI: Reporting on what, and who can do it

Table - I CBI Part I

S.No	Parameters	PART I _Profile of the city (Can be compiled from various Government websites/ reports)
1	Location and size	Geographical coordinates (latitudes and longitudes); climate (temperate or tropical); rainfall/precipitation (range and average); including maps or satellite images where city boundaries are clearly defined
2	Physical features of the city	Geography, altitude, area of impermeable surfaces, information on brownfield sites, etc.
3	Demographics	Including total population and population density; the population of the region could also be included if appropriate and for the purpose of placing it in the regional context
4	Economic parameters	Gross Domestic Product (GDP), Gross National Product (GNP), per capita income, key economic activities, drivers and pressures on bio-diversity
5	Biodiversity features	Ecosystems within the city, species within the city, quantitative data on populations of key species of local importance, relevant qualitative biodiversity data
6	Administration of biodiversity	Relevant information includes agencies and departments responsible for biodiversity; how natural areas are protected (through national parks, nature reserves, forest reserves, secured areas, parks, etc.)
7	Links	To relevant websites including the city's website, environmental or biodiversity themed websites, websites of agencies responsible for managing biodiversity

## Table - II CBI Part II

Part II- Indicators to be measured in partnership with multiple stakeholders

Core Components	Indicators	Maximum Size
Native Biodiversity in the City	1. Proportion of Natural Areas in the city	4 Points
	2. Connectivity Measures	4 Points
	3. Native Biodiversity in Built Up Areas (Bird Species)	4 Points
	4. Change in Number of Vascular Plant Species	4 Points
	5. Change in Number of Bird Species	4 Points
	6. Change in Number of Butterfly Species	4 Points
	7. Change in Number of Species (any other taxonomic group selected by the city)	4 Points
	8. Change in Number of Species (any other taxonomic group selected by the city)	4 Points
	9. Proportion of Protected Natural Areas	4 Points
	10. Proportion of Invasive Alien Species	4 Points
Ecosystem Services provided by Biodiversity	11. Regulation of Quantity of Water	4 Points
	12. Climate Regulation : Carbon Storage and Cooling Effect of Vegetation	4 Points
	13. Recreation and Education : Area of Parks with Natural Areas	4 Points
	14. Recreation and Education : Number of Formal Education Visits per Child Below 16 years to Parks with Natural Areas per Year	4 Points
Governance and Management of Biodiversity	15. Budget Allocated to Biodiversity	4 Points
	16. Number of Biodiversity Projects implemented by the City Annually	4 Points
	17. Existence of Local Biodiversity Strategy and Action Plan	4 Points
	18. Institutional Capacity : Number of Biodiversity related functions	4 Points
	19. Institutional Capacity : Number of City or Local Government Agencies Involved in Inter-agency Co-operation pertaining to Biodiversity Matters	4 Points
	20. Participation and Partnership: Existence of Formal or Informal Public Consultation Process	4 Points
	21. Participation and Partnership: Number of Agencies/Private Companies/NGOs/ Academic Institutions/International Organisations with which the City is Partnering in Biodiversity Activities, Projects and Programmes	4 Points
	22. Education and Awareness: Is Biodiversity or Nature Awareness Included in the School Curriculum	4 Points
	23. Education and Awareness: Number of Outreach or Public Awareness Events Held in the City per year	4 Points
<b>Native Biodiversity in the City (Sub-total for indicators 1-10)</b>		<b>40 Points</b>
<b>Ecosystem Services provided by Biodiversity (Sub-total for indicators 11-14)</b>		<b>16 Points</b>
<b>Governance and Management of Biodiversity (Sub-total for indicators 15-23)</b>		<b>36 Points</b>

### Together we can: CBI needs synergies to be built within cities

The User's Manual developed as a companion document to the CBI details how each indicator may be calculated, where to get data, and how to assign points to each indicator. Details are easily

accessible online in the document entitled: USER'S MANUAL ON THE SINGAPORE INDEX ON CITIES' BIODIVERSITY listed in the Additional Resources section.

For instance, CBI PART 2- Indicator 1: Natural areas in a city, may be forests, mangroves and waterbodies and their surface area, in proportion to the total area of the city may be calculated with the use of satellite images. Similarly, the three key taxonomic groups that are most surveyed worldwide, i.e., plants, birds and butterflies, have been selected as “core indicators” (CBI PART 2- Indicators 3-6). To reflect the

diversity and uniqueness of cities bio-geography and ensure fairness and objectivity in the index, cities are encouraged to select two other taxonomic groups that would best reflect their biodiversity – marine or fresh water fishes, sea grass, corals, amphibians or anything else.

Some challenges and the way to overcome them in the Indian context are as discussed in Table - III

**Table - III Challenges and Possible Responses in relation to the CBI**

Indicator	Challenge	Possible Response	Additional Comment
Indicators 4-8	Absence of Baseline data	Make the first year data the baseline and proceed from there.	While the Zoological Survey of India and Botanical Survey of India have been in existence since pre-independent times, and are engaged in survey and exploration of biodiversity, collation of data on the urban biodiversity of Indian cities, per se, has not been attempted. This could also be explored.
Indicator 14	It is intended to give an indication of school children’s use of recreational services provided by ecosystems, but in deep and meaningful ways, not a mere ‘walk-through’	Prepare for the visit through prior-contact with relevant subject matter experts/ specialist agencies if any in your city, and coordination among teachers within school, as well as guides (if any) at the site being visited.	Experiential learning about nature has to be tailored in age and stage appropriate ways.  More details in the additional resources section on CEE’s Sundervan in Ahmedabad
Indicator 15	Budget allocated to Biodiversity can be thought of as cross cutting in areas like Solid Waste Management (SWM), rather than narrowly focused, especially if it encourages waste management at source, and reduction of transport to, and actual accumulation in landfills.  Budget can also be allocation for parks and green spaces	Encourage SWM coverage to be part of this indicator of the CBI to foster greater accountability and transparency in the existing arrangements in the city, in keeping with Indian SWM Rules 2016	Household coverage of SWM is only currently only 35% in Indian cities in general, the waste collection efficiency in 70-90% in the larger cities and the extent of waste segregation is less than 50% (ASICS, 2016, p.10).  The low level of aggregate municipal expenditures in India is also an issue that needs to be addressed in connection to this. As a proportion of combined expenditure of union, state, and local governments; that of the last tier accounts for less than 6.5% (Mohapatra, 2012). As per cent of GDP (1.1%), it compares very unfavourably even with other BRICS countries such as Brazil, Russia and South Africa. (World Cities Report, 2016: 25). The case to set right the continuing mismatch between resources and responsibilities can be strengthened by emphasising the need for the same and concerted demands and citizen-action.
Indicator 18	Institutional capacity can be captured in terms of whether the ‘functions’ of the institutions mentioned, exist in the city, rather than the physical infrastructure.	Examine universities, research centres for institutional capacity.  Socio-culturally contextualized resources like medicinal plant gardens can also be included.	The CBI is encouraging of localization and cultural adaptation of indicators.  Additional resources section offers some leads

Indicator 21	Possible challenges to forging and sustaining Informal and formal partnerships for the CBI could be –  Continuity in partnerships challenged by turnover/ change in leadership of institutions/ associations.  For partners to mobilise or commit financial resources to the task.	Informal and formal partnerships need to be creatively and thoughtfully forged depending on the requirement, and human and institutional resources available in the partnering institution/ agency. Communication among focal points and mobilisation work needs to be ongoing and sustained within the institution (SBB or BMC or any other appropriate agency, willing to anchor the CBI for their city)	Funding opportunities may be available from university departments, as well as a host of private organizations, foundations and individual contributors/ trusts.
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## Enabling ‘multi-stakeholder governance’ for the CBI, to allow for Local Biodiversity Strategy and Action Plans (LBSAPs) and achievement of the National Biodiversity Targets (NBTs)

The CBI Indicators 18-21 cover ‘Institutional Capacity’ and ‘Participation and Partnership’ as key elements for the CBI related aspect of ‘governance’ related indicators. The interesting thing is, these also point to the ways in which city-level ownership for, and sustaining the process of the CBI can be brought about. The CBI allows for putting in place a “New Institutionalism” (NI) for city biodiversity and ecosystem governance. The NI in the literature on governance, as distinct from the traditional Public Administration (PA) thinking on governance, chooses to conceptualise governance not just as what government does. The differences between the two are elaborated below -

Some key elements of Public Administration as set out by Osborne (2006: 378) are:

- a central role for the bureaucracy in policy making and implementation;
- the ‘politics–administration’ split within public organizations
- a focus on administering set rules and guidelines
- a commitment to incremental budgeting
- Institutional reform to include the private sector and voluntary organisations in decision making

As against the traditional Public Administration sense of the term ‘governance’ as per the New Institutionalism it refers, among other things, to (Hewitt, 1998: 107-108)

- Institutional reform to include the private sector and voluntary organisations in decision making
- Strengthening civic cultures, promoting voluntary action and improving the societal basis for democracy

- Improving public sector management
- Introducing accounting and auditing practices
- Supporting decentralisation of certain public services in keeping with the subsidiarity principles

### Key Recommendation : CBI enabled by relevant partnerships

- /BMC begins with participatory public consultations/ awareness raising exercises
- Match indicators to institutions to build the city-level ‘Institutional Resource Network’ (IRN) for the CBI
- Identify absolutely essential external funding needs (if any) and sources that will address them in a collaborative manner
- Streamline processes like:
  - Capacity building support for the IRN entity
  - Clarification of roles and responsibilities
  - Co-ordination mechanisms and timelines
  - Information sharing platforms : to build visibility and ownership for the CBI exercise and outcomes

## Governance to strengthen deliberative and participative democratic culture



CBD\_COP 11, hosted by India in the city of Hyderabad, had a parallel event in the second summit on cities and biodiversity, hosted by ICLEI. A key statement in the decision document that India too as party to CBD and host to COP 11, endorsed is:

*Invites Parties and other Governments to develop, with their local and subnational governments, guidelines and capacity building initiatives to develop, enhance or adapt local and subnational biodiversity strategies and action plans (LBSAP), or to mainstream biodiversity into sustainable development, in line with their national biodiversity strategies and action plans, so as to ensure harmonious and coherent implementation of the Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets at all levels of governance;*

The CBI could be the first building block of an LBSAP.

### Additional Resources

USER'S MANUAL ON THE SINGAPORE INDEX ON CITIES' BIODIVERSITY (also known as the City Biodiversity Index) pp.11-25 <https://www.cbd.int/doc/meetings/city/subws-2014-01/other/subws-2014-01-singapore-index-manual-en.pdf>. Terracon Ecotech Pvt Ltd, an Ecosystems Advisory Service Company in Mumbai has used the CBI for Meera Baidar and Thane Municipalities. For more information, visit the website.

CEE India ([www.ceeindia.org](http://www.ceeindia.org)) a centre for excellence of MoEFCC, is also the Communication Education and Public Awareness (CEPA) focal point for the CBD, and has the following resources related to making cities more sustainable and for handholding of stakeholders who can support the CBI:

- **Teacher's Training Resources:** Teachers are trained in themes like Biodiversity, Energy, Waste Management, Water and Sanitation, Culture and Heritage under the NGC and Paryavaran Mitra School programmes. Environment related queries from schools are addressed through Paryavaran Sathi, a toll-free helpline (1800-3000- 0996).
- **Nurturing Medicinal Plants (Indicator 18):** CEE has facilitated Medicinal Plants Garden Development through a project for the same supported by Ministry of AYUSH, Government of India and can partner similar efforts.
- **Learning about Sustainable Agriculture:** Project Based Learning in sustainable agriculture and population and development, is facilitated as part of the ICT enabled Environment Education module for schools, CEE ka Bioscope.
- **Collaborating with Universities:** It is part of CEEs mandate support trainings, research and consultancy projects related to environment for Higher Education Institutions (HEIs). Colleges and Universities that are part of City-Resource-Networks for the CBI can contact their nearest CEE office for support in this regard.
- **Discovering Nature (Indicator 14):** Sundarvan, a nature discovery centre and mini zoo of CEE in Ahmedabad, facilitates programmes like reptile awareness, nature trail, bird watching, wildlife photography, green birthdays and quizzes.
- **Biodiversity Management Plan:** CEE has partnered the development of a Biodiversity Management Plan for Goa which has been submitted to the state government.
- **Capacity-building for ULB:** CEE has been engaged in participatory capacity-building exercises for the ULB on 'Waste and Sanitation Audits' with the Pune Municipal Corporation (PMC)
- **Panel discussions for awareness raising:** The State of the World (SoW) is a series of books published annually since 1984 by the Worldwatch Institute. The series attempts to identify the most significant environmental challenges. This year's edition focuses on 'Can a City be Sustainable?' CEE has facilitated panel discussion on the Indian edition of the book in Ahmedabad, Gujarat and Bhopal, Madhya Pradesh.

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## ABOUT CEBPOL

Centre for Biodiversity Policy and Law (CEBPOL) is a Bilateral Cooperation project between India and Norway and Policy Research Centre administered by the National Biodiversity Authority (NBA), Chennai, India. CEBPOL's objective is strengthening policy research and practice related to both countries being signatories to the Convention for Biological Diversity (CBD). NBA is a statutory body established by India's Biodiversity Act (2002) and the country's designated competent authority for the CBD.

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