eTraverse
GEOGRAPHICAL INSTITUTE
The On-Line Indian Journal of Spatial Science

Vol. I No. 2 — 2010

Article 2

Strengthening Urban Green Infrastructure

Dr Rituparna Sengupta

GEOGRAPHICAL INSTITUTE
1949–50

eTraverse
GEOGRAPHICAL INSTITUTE
The On-Line Indian Journal of Spatial Science

Vol. I No. 2 — 2010

Article 2
Strengthening Urban Green Infrastructure

Dr Rituparna Sengupta

Paper accepted on 01.10.2010

Published by
Prof Ashis Sarkar

on behalf of
The Geographical Institute
Department of Geography
Presidency College
86/1 College Street, Kolkata 700073, India
geographicalinstitutepc@gmail.com
Ph. +91 33 2241 1960 Ext. 206

Typeset and layout by
Computer Club
ccprepress@gmail.com

Strengthening Urban Green Infrastructure

Dr Rituparna Sengupta

Keywords: Urbanization, sustainability, urban green space, unequal spatial distribution

Indian Urbanization

The enormous figures below are an alarming estimate of India's face of urbanization in the next 2 decades: 2030 as prophesied by McKinsey Global Institute's latest report on India's urbanization (McKinsey Global Institute, 2010).

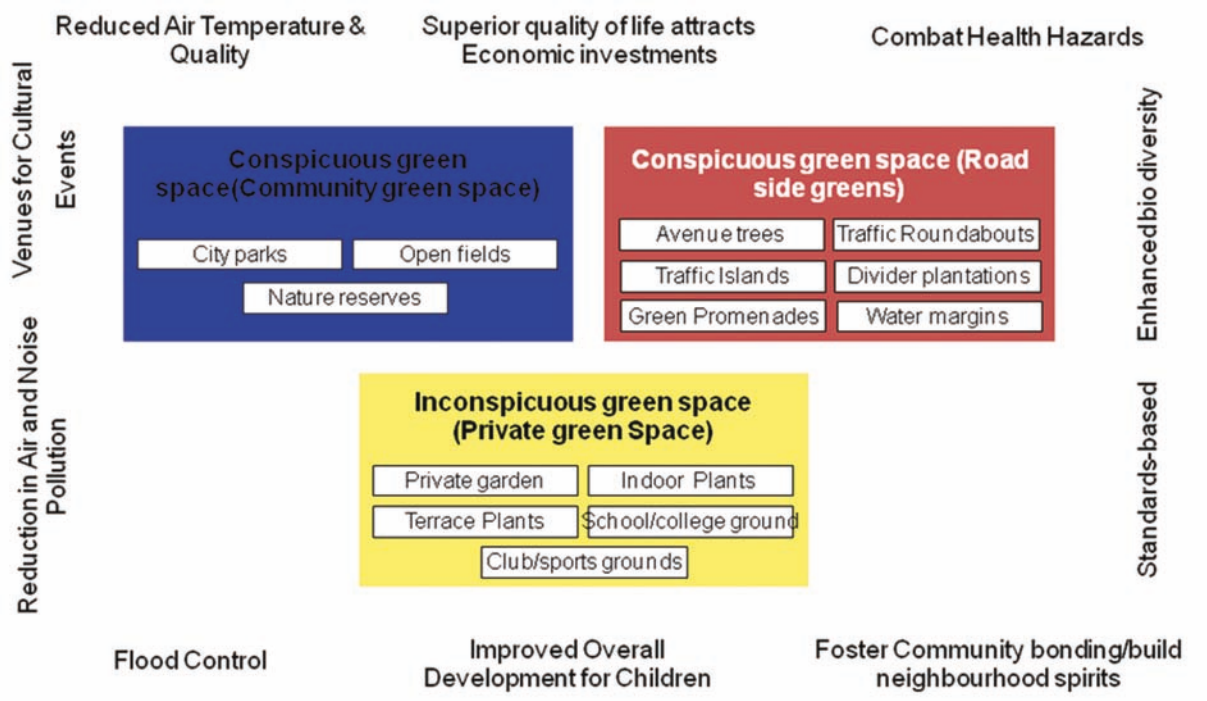
- 590 million people will live in India's cities- nearly twice the population of US now.
- 68 cities in India will have population of 1 million plus, up from 42 today.
- 700- 900 million sq. meters of commercial and residential space needs to be built – or a new Chicago every year.
- 2.5 billion Sq metres of roads have to be paved – 20 times the capacity added in the past decade
- 7, 400 kms of metros and subways have to be constructed – 20 times the capacity added in the past decade.

Such accelerated urban growth is most of the times not sympathetic towards the city's green cover. City greens would invariably fall prey to the expansion of roads, subways, residential spaces and commercial spaces. In fact when a very large population concentrates and grows in a limited space within which a variety of functions have to be accommodated, the morphology of the city is naturally harmed in various ways - the most common deformity is the shortage of and abuse of urban open green space.

To ensure urban expansion in Indian cities has a truly sustainable nature, its green sustainability assurance is a definite requirement.

Urban Greens – key component of urban morphology

Urban greens refer to any area within the city limit, which has been created and preserved for the purpose of growing plants. What grows in the green space is not as important as its preservation in today's perspective.



The importance of urban greens is defined by its manifold benefits. The key five benefits are:-

- benefits to a city's physical environment
- benefits to a city's aesthetic environment
- the economic benefits for the city
- the importance to the urban social backdrop
- The beneficial inputs to a city's cultural heritage.

Major components of an urban green space and its overall benefits may be summarised in the diagram below.

Urban Green Study of Kolkata

Detailed study of this aspect has been done in a study of Kolkata's green cover in the published doctoral thesis "Impact of 'Urban Greens' on Environment in Kolkata City – An Analysis" (Sengupta, 2007). In this study the scholar has studied this basic research problem of the tremendous impact of urban greens on the urban environment and the resultant problems in the face of their threat by unprecedented urban growth. The study has been done of Kolkata, the second megacity (Kolkata) of India, an important developing nation (India) of the world.

Kolkata's Green Challenge

The city of Kolkata has been facing much threat to its green space. In fact the open spaces are the first casualty in the reckless drive for intensive building operations. Kolkata faces a big challenge in this perspective as it is a city, which grew up without a plan. In the middle of the 19th century a three man town committee, exclusively European in composition, cleaned up and reshaped the European sector of the city but left the Indian quarters untouched. Thus an unplanned and unequal growth has been largely responsible for the city's congestion and lack of open space.

The key challenges for the city's green cover are:

- The shortage of green space.
- Lopsided/unequal spatial distribution of green space. Several areas of the city have absolutely no parks while majority of the total green space are concentrated in some select ward areas.
- Increase of built up area and increasing population density leading to congested living.

Mapping green zones

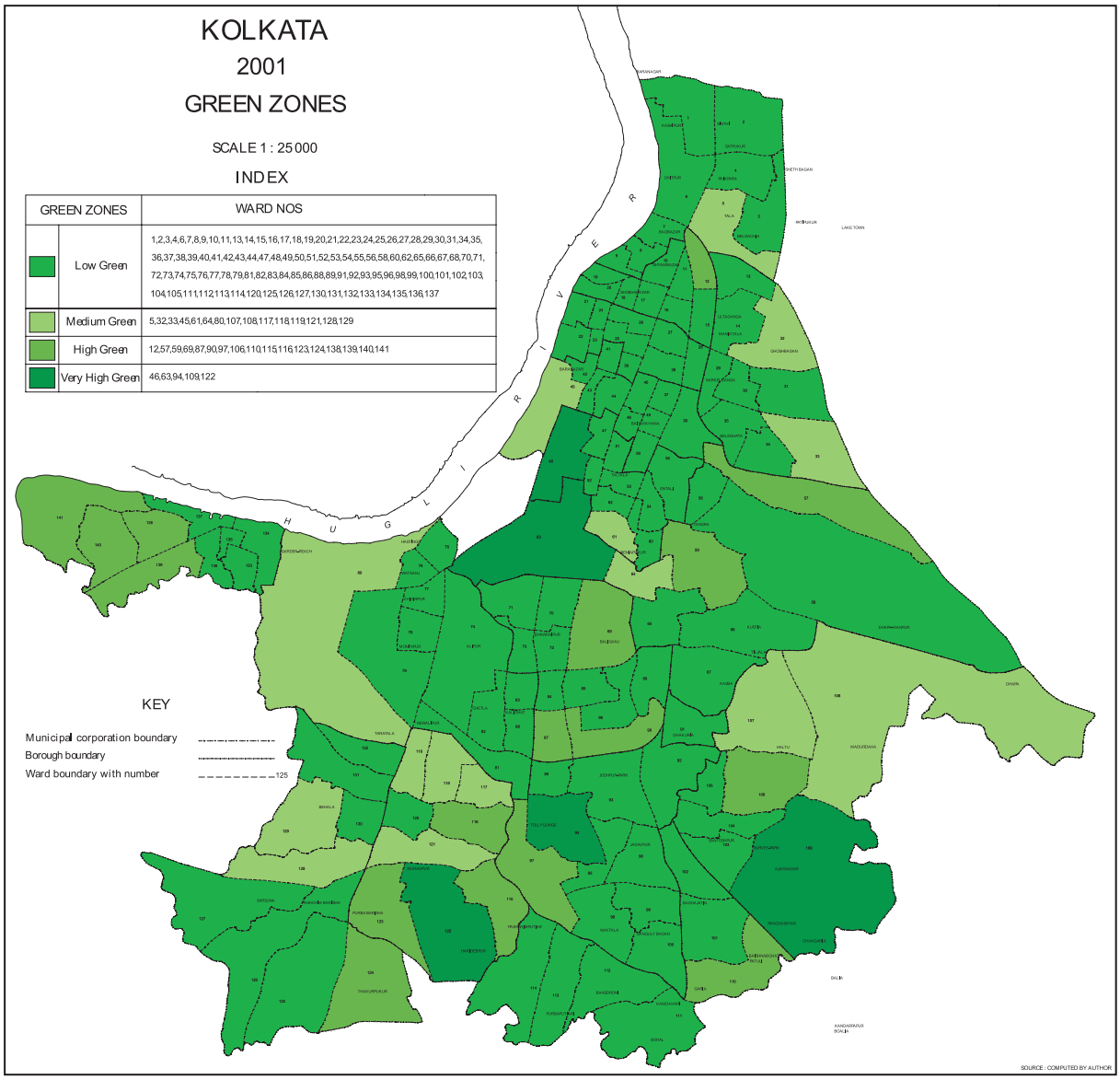
Based on % of ward green area the entire area of Kolkata Municipal Corporation has been identified in four green zones. (Refer Map: Kolkata 2001 Green Zones). Maximum parts of the city have been identified in the Low Green Zone. Parts of bordering areas on the east and west parts of the city have been identified as Medium Green Zone. These wards are parts of areas which have lesser built up area compared to the core city. The High Green Zone is observed around South Kolkata. The main concentration of the High green zone has been around The Rabindra Sarovar area. Finally a small area of the city around the Maidan and patches in the bordering wards in south Kolkata recorded formed the Very High Green Zone.

Key Recommendations

- The individual green assets (plants on terrace, terrace garden, indoor plants, private garden/ lawns et al) must be encouraged and enhanced in a large scale in the Low Green Zone and Medium Green Zone (older parts of the city). In these zones especially Kolkata faces a space crunch when it comes to planting new trees, which is why it is also difficult to plant new saplings. Hence the focus has to shift to the household green assets. Detailed environmental policy must be formulated and implemented for the household level. This exercise may be emulated in other Indian Metropolitan cities.
- The maintenance of parks and gardens should receive much more attention with active participation from the citizens themselves. One of the greatest factors is active participation from the residents themselves. Apart from residents, students from educational institutions in the neighbourhood may be truly encouraged to play an active role in the maintenance of the green space. Environmental policies may be formulated which actually join hands with the educational institutions and make these activities a joyful yet compulsory activity for the students. The perception study has already shown the students are the most enthusiastic section of citizens.

Green Action

The largest hidden potential, which may be tapped in a large scale, is the individual green assets – comprising of garden, indoor plantation and terrace plantation. This potential needs to be tapped at the household level cutting across all sections of the society. Strengthening this section along with the enhancement and protection of the visible green assets with the aid of geospatial tools, enhanced community involvement and holistic urban planning will stabilise the beneficiary role of urban green space on urban environment.



To sum up focussing on green cover in Kolkata is clearly not an elitist endeavour but a central pillar of the city's inclusive growth!

References:

1. McKinsey Global Institute, April 2010 'India's urban awakening: Building Inclusive cities, sustaining economic growth' http://www.mckinsey.com/mgi/publications/india_urbanization/index.asp
2. Sengupta, R. May 2007, "Impact of 'Urban Greens' on Environment in Kolkata City – an Analysis", University of Calcutta.

Dr Rituparna Sengupta

University of Calcutta
rituparnasg@gmail.com