

Analyzing the Challenges of Urbanization in Sustainable Development

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Abstract

India's sustainable urban development is the focus of this article. An unsustainable scenario in India has been caused by the country's rapid urbanization. In addition to the economic and social benefits that have been established, it also has environmental consequences. This study discusses a number of issues relating to sustainability, spatial design, governance, flaws, and implementation. The final section of the article discusses India's sustainable development strategies in light of the country's limited capacity to deal with these difficulties. Legal precedent, a variety of policies and programmers, institutional arrangements, technical solutions, frameworks and measuring methods have all been considered in the quest for a better present as well as a better future.

Keywords: *India, Urbanization, (UN) sustainable, development, challenges.*

1. INTRODUCTION

To fulfill the growing demands of an ever-increasing population, most cities throughout the world have increased their energy consumption. As a result, a large amount of energy is used and a large amount of greenhouse gas emissions are produced. Cities account for more than 75 percent of the world's energy consumption and 80 percent of global greenhouse gas emissions, according to a recent study. Cities with more than 20 million residents have proliferated across Asia, Latin America, and Africa, showing the importance of urban regions as worldwide phenomena. Since they consume so much, these cities are important economically, but their environmental performance suffers as a result of the high resource consumption. To highlight how large cities might lessen their negative environmental consequences, the "smart city" idea has been often employed in recent years to illustrate novel ways.

2. NEED OF THE SUSTAINABLE URBAN DEVELOPMENT IN INDIA

More than one-sixth of the world's population lives in India, which has a population of 1.22 billion people as of the 2011 census. By 2050, India is expected to overtake China as the world's most populated country, with a population of 1.6 billion (BBC News, 2004). In order to accommodate this enormous population, there is a limited amount of land and natural resources. Globalization, liberalization, and privatization have resulted in a boom in the economy, but they have also increased the load on our natural resources. Conservation of resources is a concern.

India's share of the world's or other developed or developing countries' ecological footprint³ is smaller than that of India. It takes 1.5 planets to produce the resources and absorb our garbage for the current global consumption pattern. If current trends in population and consumption continue, two Earths will be needed to accommodate humanity by the year 2030. (Fig 1). Conflicts over natural resources, war, mass migration, starvation, and other diseases are all made worse by this global ecological footprint overshoot. (Global Footprint Network, 2003-2012).

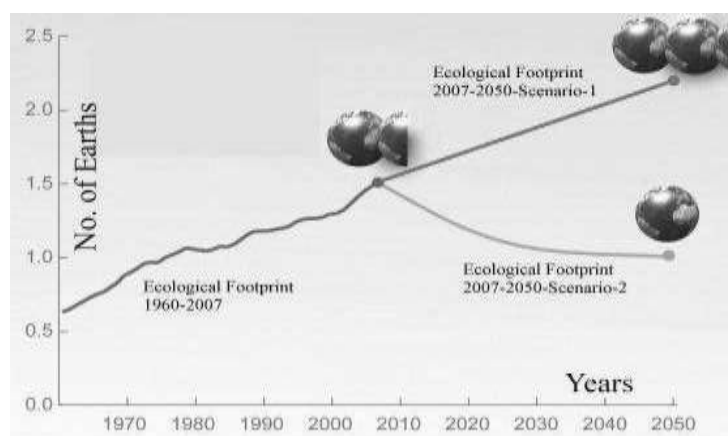


Fig.-1: Ecological Footprint Scenario;

Among the countries shown in Table 1 are the populations, density, ecological footprints, bio-capacity, and CO₂ emissions. For each country, the top and lower limits (two each) are shown in order to better comprehend their contribution. A variety of factors went into the selection of the countries included in the table below, including a mix of developed and developing nations as well as less developed countries at various stages of development.

Table 1: Countries with their ecological footprint and CO₂ emission (Brad E. et al, 2010)

Sr. No.	Name of the Country	Population (Million)	Population Density (Km ²)	Ecological Foot Print (global hector/ person)	Bio-Capacity	Ecological Remainder	CO ₂ Emission / Capita (Metric Tons)	
							1990	2007
11	United Arab Emirates	6.25	30	10.68	0.85	-9.83	29.4	31.6
2	Qatar	1.14	123	10.51	2.51	-8	25.2	55.4
3	Denmark	5.45	126	8.26	4.85	-3.41	9.8	9.2
4	United States	308.67	30	8	3.87	-4.13	19.1	18.1
5	Canada	32.95	3	7.01	14.92	7.91	16.2	16.5
6	Australia	20.85	2	6.84	14.71	7.87	17.2	17.9
7	Singapore	4.49	6389	5.34	0.02	-5.32	15.6	8
8	France	61.71	110	5.01	3	-2.01	7	6.1
10	New Zealand	4.19	15	4.89	10.77	5.88	7.1	7.8
11	United Kingdom	61.13	243	4.89	1.34	-3.55	10	8.9

12	Japan	127.4	337	4.73	0.6	-4.13	9.4	9.8
13	Russia	141.94	8	4.41	5.75	1.34		11.8
14	Chile	16.64	23	3.24	3.83	0.59	2.6	4.3
15	Brazil	190.12	21	2.91	8.98	6.07	1.4	1.9
16	South Africa	49.17	36	2.32	1.14	-1.18	9.1	8.8
17	China	1336.6	140	2.21	0.98	-1.23	2.2	4.9
18	Ghana	22.87	87	1.75	1.19	-0.56	0.3	0.4
19	India	1164.7	328	0.91	0.51	-0.4	0.8	1.8
20	Bangladesh	157.75	1002	0.62	0.38	-0.24	0.1	0.3

In spite of India's relatively little contribution to global un-sustainability, the country's large population and rising demand necessitate that it be advocated.

For India to follow a sustainable path, it must address concerns such as poverty, health, education, economic growth, and diversity (both in terms of the physical and social aspects of variety). Indigenous customs in India can be sustained; however the will to maintain or conserve these knowledge systems is waning due to the country's rapid economic growth. A consumptive society like that of industrialized nations is possible in India. At this early stage of development, it is necessary to implement sustainability measures.

3. ISSUES AND CHALLENGES IN INDIAN CONTEXT

In India, urbanization has brought with it a variety of issues. The following is a list of the most common types of problems that people face.

Climate Change leading to Environmental distress

Since 1990, India's carbon dioxide emissions have grown by 78 percent. Since 1980, coal usage has increased by a factor of three. Energy consumption in India is predicted to rise from 116 to 252 gig watts between 2002 and 2017, an increase of more than two-thirds (Wish, 2010). Climate Change has been exacerbated by the emissions of Green House Gases (GHG) from developed countries. The burning of fossil fuels, land use change, and other human activities are the primary sources of GHG emissions. Within the next two to three decades, large developing countries like China and India will be able to match the GHG emissions of industrialized countries. A large portion of India's population (mostly rural) relies on natural resources and climate-sensitive industries (agriculture, fishery, and forestry) to make a living and feed their families. Because of their limited ability to adapt, those working in these fields are particularly at risk.

Spatial Planning

Unprecedented scale: The development and planning authority faces difficulty in making urban planning decisions because of the large urban population and the limited and diverse geography. Kolkata is the only major metropolis in the eastern area, while the states of Gujarat, Maharashtra, and Kerala each have a number of major growth hubs. In India, the National Capital Region (NCR) encompasses a large region, making a single solution impracticable (Booz & Company and CII, 2010).

Social Issues

There has been a decline in cultural and social identity as a result of globalization and economic progress. Traditional ways of knowing are quickly becoming extinct as the world moves toward modernity. Despite an 8 percent growth in GDP, the number of urban poor people in India has increased proportionately. There is a growing disparity between the rich and impoverished in this country. There are more people living in India's slums than there are in the India. Slums occupy 55% of Mumbai's population, the financial capital of the world (Slum Population in India). In spite of the introduction of decentralization and an effort to strengthen local bodies, they nevertheless face a lack of skills and self-initiative. In addition, less of the general public is involved in the planning process, which results in solutions that are irrelevant and inappropriate.

Sustainability measurement and rating system initiative in India

Sustainability can be assessed with the use of measurement and assessment tools. It aids in the analysis of past patterns, existing practices, and expected developments in human welfare in the future. In industrialized countries, the majority of research on the measurability has taken place. There has already been a lot of work done to analyze sustainability in India, even though it's been a little late.

Table 2: Measurement Systems, Credit systems and Guidelines for Sustainable Development in India

Tool Indicator	Comments Feature/Spatial level or Context	Environmental/Economic/Social Sustainability	Unit of measuremer
Environmental Sustainability Index for State Informing Environmental Action (Dash)	Percentile analysis of environmental achievements, challenges and priorities among Indian states State Level	Air, Water, Land use, Forest & Biodiversity, Waste & Energy Environmental Budget Health, Natural Disaster & Population Pressure	DPSIR, 40 indicators capture the present state of the environment (State), depletion and pollution (Pressure), resulting impact on ecosystem and human health (Impact), policy and societal efforts to reduce such impacts (Response) and the driving forces (Drivers). Three steps: i) Selecting the indicators based on DPSIR framework, ii) Grouping of indicators into nine policy areas and iii) adding the equally weighted indices to form a composite index
LEED India Building System (IGBC)	Provide tools to design, construct and operate green buildings and promotes a whole-building approach to sustainability Green Factory Buildings, Homes, Townships & SEZ, New Construction Core and Shell	Site development Water savings Energy efficiency Materials selection and Indoor environmental quality Innovation and Accredited Professional points	Voluntary rating system based on point credits Four level rating: Certified (26-32, 23-27); Silver (33-38, 28-33); Gold (39-51, 34-44); and Platinum (52-69, 45-61) for new construction and core-shell respectively
'GRIHA' Rating for Inter-Habitat Assessment (GRIHA, 2011)	Evaluation tool to help design, build, operate and maintain a resource efficient built environment for buildings in different climatic zones	Preserve and protect landscape, renewable energy, water and waste management, lighting efficiency, reduce energy demand, low energy material, pollution level Efficient onsite circulation health wellbeing, safety and sanitation of workers,	Voluntary rating system developed on a point based scoring system 100 point system consisting of core and Optional points Five levels of certification: one star (50-60); two star (61-70); three star (71-80); four star (81-90); and five star

4. CONCLUSIONS

We're heading toward an unsustainable future if we don't use the above-mentioned methods. It is a must for any city's continued existence that its citizens enjoy a high level of social, economic, and environmental security. However, if the efforts and approaches to development are not obvious, failure is the result. Rapid urbanization is taking place in India, but the government is under strain because of issues such as a large population, a lack of resources, the scope and state of planning, and the lack of participation from key stakeholders, among others. The enormity of the issues necessitates a practical and people-centered response. The future security of our country depends on each and every one of our stakeholders—citizens, policymakers, designers, planners, activists, administrators, politicians, and so on. If they are to succeed, they must be aware of the obstacles that stand in their way and take action that is based on their values.

Sustainability is vital to coping with the challenges and improving the quality of urban living. In order to ensure long-term progress, India has created a comprehensive set of policies and programmers, as well as legal protections, formal institutional arrangements, and rapid technical advancements that can be measured. It appears that this is just the beginning, and more needs to be done to evolve research, produce a comprehensive and unified database, bring in more openness and technical inputs, and make an attempt to improve governance.

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