Challenges and Opportunities of Sustainable Urbanisation

Case study of Delhi and Rajkot

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Abstract

This paper examines the urban challenges, urban policies, sustainable urbanism, and opportunities of sustainable urbanism. Sustainable urbanism is a new term that prevails in urban planning and planning. This paper tries to put forth the need for sustainable urban development in Indian cities such as Delhi and Rajkot.

Urbanization in India has led to an unsustainable situation. It offers the proven benefits of economic growth and development, but it also offers brings with it social and ecological challenges. Various challenges related to sustainability, spatial planning, Governance, shortcomings, and execution were discussed in this paper. Specific research questions are: what is sustainable urbanism, what are the challenges to cities such as Delhi and Rajkot, and what are the opportunities of sustainable urbanism in Delhi and Rajkot?

People face many challenges that threaten the well-being of the environment, society, and quality of life. All of these challenges are complex and closely related, so one approach can have positive consequences for others. In the case of Delhi, the population growth is an extremely sensitive issue from a social and ethical point of view, has generally become a threat to the entire planet and especially to the metropolitan area, while in the case of Rajkot, increasing industrial, commercial and commercial activities has become threatening to the environment. In this study, I have also explored solutions and other issues that are important elements to discuss.

Keywords: urban development, urban governance, urban climate, resiliency and sustainability.

1. Introduction

Indian cities like Delhi and Rajkot have seen a great transformation after independence and the pace of development increased in the last two decades. This rapid urbanization comes with the benefits of economic growth. Urbanization is closely related to industrialization; Modernization and rationalization (master plan Delhi). Urban centers are the places of Opportunities, knowledge banks, innovations, creativity, and commercialization. Cities act as a magnet for rural-urban migration which resulted in human resource capitalization and talent acquisition for economic-based urbanization.

In the first years of independence, almost 82 percent of the Indian population lived in rural areas or we can say only 18 percent was live in urban areas. This was a kind of moral justification for following the spirit of Gram Swaraj - the Gandhian model of independent villages based on a just and nonviolent order (Subhojit Goswami). It served as a guideline for political decision-makers in the years that followed and was reflected in some subtle ways in rural development policy. However, despite Gandhi's socio-economic vision for rural sustainability and

the need to empower the village community, urban India continues to grow. Although it is one of the least urbanized countries, where urbanization increased by 13 percentage points in only fifty years between 1951 and 2001 (census of India). Still, it has the second-largest urban population in the world. While the concentration of capital, skills, and other resources in cities accelerated economic growth, Indian cities suffered from urban decay due to a lack of adequate investment in infrastructure and planning.

India's urban development is not sustainable because there was less time for urban development and the pressure of development was high, so social and environmental challenges have become apparent. At the time of independence, the Indian government built more than 70 steel towns and focused more on existing urban areas. Unplanned urban growth leads to stressed infrastructure, slum growth, Environmental degradation, traffic problems, and high cost of living. India's huge population, huge and diverse country Mass and poverty-related rural-to-urban migration have the administrative leaders, policymakers, and Planners, which in turn leads to inadequate governance.

1.1 Sustainable urbanism:

Sustainable urbanism is both the study of cities and the practices related to their construction (urbanism) that focus on promoting their long-term viability by reducing consumption, waste and harmful effects on people and places while improving the overall well-being will be of people and places. Well-being includes, among other things, the physical, environmental, economic, social, health, and equitable factors that encompass cities and their people.

The ever-growing urban population is bringing the issue of sustainable urbanism to serious discussion. Cities are not only environmentally sustainable but also socially and economically necessary. Urban sustainability means sustainable mobility equipment, energy, water, homes, landscapes, etc. Developing a harmonious ecosystem, however, this ecosystem must be consistent with the impact on people's needs and resources (United Nations).

1.2 Challenges and opportunities in Sustainable urbanism:

Cities are sources of both environmental problems and opportunities. On one hand, Rapid urbanization increases the environmental impact of cities. Cities make up some 75 percent of global energy consumption and over 70 percent of global carbon dioxide Emissions. Urban infrastructure is built largely without ecological considerations Sustainability. A resource-intensive consumer society drives and contributes to the urban lifestyle significantly adding to the pressure on the planet's ecosystems. The ecological footprint of mankind already exceeds the carrying capacity of the planet by 50 percent, while biodiversity is on the rise strongly negative trend. The ecosystem services we depend on for our survival and humans Wells are exposed to critical levels of deterioration. At the same time, cities have enormous potential as hubs for the development of intelligent, sustainable solutions that can help meet human needs with a minimal footprint while even more quality of life. Parallel to international processes on climate and Sustainability requires strong, visionary leadership at the urban level. Cities that are already taking strong measures to address the sustainability challenges are becoming international stars. (United Nations)

2. Methodology

Research question

In this study, I have analysed sustainable urbanism, challenges, and Opportunities of sustainable urbanism for Delhi and Rajkot. The analysis consists of three main parts, first is the current situation of sustainable urbanism in Delhi and Rajkot. Second, the challenges and opportunities in sustainable urbanism for these two cities, and third, a comparative analysis of these two cities, taking into account some aspects.

Literature study

Urbanization in developing countries: Current trends, future forecasts and central challenges for sustainability.

The purpose of this paper is to provide a comprehensive overview of the recent patterns and trends of urban growth in developing countries. Over the past 20 years, many urban areas have experienced dramatic growth due to rapid population growth and the transformation of the world economy through a combination of rapid technological and political changes. Around 3 billion people - almost half of the world's population now live in urban settlements. And while cities play an increasingly dominant role in the world economy as centers of production and consumption, rapid urban growth in developing countries is seriously exceeding the capacity of most cities to supply adequate services to their citizens. It is expected that virtually all of the world's population growth over the next 30 years will be concentrated in urban areas in developing countries. While much of the current sustainable city debate has centered on the daunting problems facing the world's largest urban agglomerations, the majority of all city dwellers continue to live in much smaller urban settlements. Many international agencies have yet to adequately recognize either the expected rapid climb of small and medium-sized cities or the deteriorating living conditions of the urban poor. The challenges of sustainable urban development will be particularly great in Africa.

Existing scenario

Rapid urbanization is happening in many parts of the planet. In 1800, only 2% of the world's population lived in urban areas. In 1900, only 15 percent of the world's population lived in cities and towns. The 20th century has changed this process as the pace of the urban population growth accelerated very rapidly from the 1950s. In 1950, more than two-thirds (70 percent) of the world's people lived in rural settlements. In 2007, for the primary time in history, quite more than half the world's population lived in cities. In 2014, 54 percent of the world population lived in urban areas. It is expected to extend 72 percent by 2050, from 3.6 billion to six .3 billion in 2050. The world is changing fast, not just in terms of the proportion of Population in urban areas but also in urban growth. There are currently 34 cities with a population of 10 million or more. Fifty years ago, only the population of New York reached this level. However, within a period of 50 years, the number of cities with a population over 1 million has increased from 80 to 5334. A large young population and high growth rates indicate that most of the urban population will come from the cities. Rapid global urbanization has enormous economic, social and environmental effects.

The challenges of rapid urbanization now lie primarily in developing countries. In the middle of the 20th century, only 17.8% of the developing world population lived in cities, but for 50 years in 1950, this percentage rose to over 40%. By 2030, almost 60% of the population of developing countries will live in cities. It is estimated that 93 percent of the longer-term city increase will happen within the developing world. Most of the urban increase is going to be what in Asia, Africa, and Latin America 54 percent, 32.5 percent, and 6.8 percent, respectively of total urban increase. (United Nations)

Selected case study

The capital of India, New Delhi, is experiencing one among the fastest urban expansions within the world. Large expanses of farmland and grassland are being converted into roads, buildings, and parking lots, attracting an unprecedented number of latest residents. By 2050, the United Nations plans that India will add 400 million urban residents in what would be the largest urban migration in the world over a thirty-two-year period.

The Rajkot city's development has historically been driven by industrial activity. With increasing industrial, commercial and commercial activity, the city's population has grown enormously. Rajkot is the most populous city in the Saurashtra-Kutch region, and its trade activities are promoted by a beneficial economic and industrial policy. Rajkot is a pioneer among cities in India preparing for a sustainable, low carbon, and climate-resilient future and is acting as a model city in Phase I of the Urban LEDS program (RUDA).

These are some reasons that I decided to take these cities for research analysis. The Author has analysed the sustainable urbanism of these cities, what are the problems or challenges, and also I have tried to find opportunities and solutions for sustainable urbanism. I have also taken some interviews of people from these cities in order to find some solutions for sustainable urbanism.

2.1 Case study no.1 – Delhi

The city is growing at an unprecedented pace and needs to be able to incorporate its elegant past as well as the modern developments towards an organic whole that requires a targeted transformation of the socio-economic, natural, and built environment. The city will be a driving force and nerve center for ideas and actions, the seat of national governance and business center, Culture, education, and sport.

Aside from critical issues like land, physical infrastructure, transport, and ecology Environment, housing, and other institutional facilities, the cornerstone for Delhi a World-class city is the planning process itself and related aspects of several agencies involved in urban services and development along with a participatory planning process on local levels.

2.1.1 Sustainable Urbanism for Delhi

The city of Delhi is predominantly urban, 75 percent of its total area (1,483 km²) and 98 percent of the total population (16.79 million) falls under urban jurisdiction. It has the highest population density in India (11,320

people per km²) and according to the 2011 census, the decadal growth rate fell from 47.02 percent in 1991-2001 to 21.20 percent in 2001-2011, but urban density did not. The urban spill-over continues in the surrounding states of UP and Haryana.

The urbanization process in Delhi has started in 1951. This urbanization process has transformed the rural areas into urban areas with the rapid growth of the urban population of NCT of Delhi. This urbanization process has reduced the amount of rural villages from 300 in 1961 to 112 villages in 2011 within the Delhi NCT. The rural population decreased from 38.1% in 1951 to 2.5% in 2011. In 1957 the MCD law was enacted by Parliament and in 1958 elections were held for the Delhi City Council, responsible for the city's planned development. The first master plan for the period 1961-81 was drawn up by DDA and notified by the Indian government in 1962. This master plan was revised by DDA for the extended period up to 2001. It was further revised for the extended period 2001-2021 and notified in 2007.

Due to a lack of proper understanding of sustainable and integrated development amongst government authorities and professionals, particularly in fast-developing regions with rapid rates of urbanization, is leading to health, social and economic issues often being solved independently instead of cohesively. The implementation of a multi-disciplinary approach to developing healthy and sustainable cities through urban planning and management is required. The United Nations Framework Convention on Climate change (UNFCCC) presented the HIGS (hazard exposure, infrastructure, governance, socio-economic variables) framework model for sustainable living. This approach aims to increase the awareness of architects and design professionals of the evolving concept of sustainable development and the interrelated elements required for the development of sustainable, healthy cities (Delhi Master Plan).

2.1.2 Challenges to sustainable urbanism in Delhi

The number of individuals projected to be living in Delhi by 2026 is around 40 million. In conjunction with the intensified challenges of environmental degradation, rapid urbanization has placed pressure on infrastructure, housing availability, and therefore the spread of slums. Another major impact of rapid population increase may be a change within the way that land is employed. Once fertile grounds and water bodies, alongside agricultural lands, are covered over by built-up conurbation. In 1951, the entire area of agricultural land within the Delhi region was 97,067 hectares. Today, it's but 25,000 hectares.

Agriculture because the primary economic driver has been replaced by a mixed capitalism. From the late-twentieth century, high-tech industries, particularly information technology and telecommunications, have dominated the older commodities trading in such goods as spices that made Delhi a crucial national commercial capital. In turn, this process of globalizing economically has generated an increasing division of rich and poor, and put enormous pressure on the access of the poor to land and houses.

Currently, Delhi features a carbon footprint of 0.70 metric tons per person. In comparison to other megacities worldwide, including Mexico City and London, Delhi's carbon footprint is notably lower. While this might seem

positive, it's the uneven development of Delhi that underlies such data and thus its carbon footprint still remains a critical issue, particularly because it is well above the national average of India. One only has got to look thus far as census data on housing to ascertain that while the bulk of homes in Delhi have either stone, slate, or concrete as their roofs, 86 percent of households in Delhi are constructed with burnt brick walls. The processes involved burnt brick production aren't environmentally friendly. And so the conundrum is highlighted, how can today's populations achieve better health and overall life quality outcomes whilst ensuring environmental prosperity within the future?

Ecological problems with Delhi are widespread, covering many various facets of lifestyle. In reference to air quality, transport regulations haven't been ready to limit pollution. The number of cars in Delhi almost doubled between 2000 and 2010 and is still the main factor behind the deteriorating air quality in Delhi. Whilst in 1998, the Supreme Court of India passed orders to aim to regulate pollution thanks to vehicles throughout Delhi, these orders were ineffective.

2.1.3 Opportunities of sustainable urbanism in Delhi

To preserve the resources for future use Generations, strict politics, and planning Implementation is required. The 3Rs reuse, recycle, reduce must be asserted and is reflected in all political plans. Corporate Social Responsibility should be an integral service Condition. Plastic should be banned that providing the availability of inexpensive substitutes made of plastic. The general public should be involved in sustainable urban development. It can be done by asking teenagers and children to list the list Problems with solutions. Behaviour Changes and a sense of belonging to the city must be inculcated. Public transportation should be made more affordable, efficient, and efficient for sure. Carpooling and training of drivers in the air 4th Pollution and fuel consumption can be encouraged. There are also strict political control measures such as Polluters pay and fixed vehicle inspection and the industry needs strict implementation. It is important to get rid of waste incineration and biomass and focus on less pollution better-ventilated kitchens.

Urban green spaces and nature-based solutions will provide innovative solutions to improve the quality of urban space and local resilience and promote sustainable lifestyles, which have a positive impact on the health and wellbeing of urban residents. Ecosystems offer us significant advantages or services. These benefits are grouped into different types of services, e.g. B. Providing services that are provided by plants and trees, regulating services in wetlands and pollinating crops, supporting services that support all other services, and finally, there are cultural services such as valuable benefits from spending time in nature. Recently, these ecosystem services have been overlooked as human pressures on the ecosystem have increased and these vital systems that are vital to sustainable living have been threatened.

Following are some green initiatives that could act as opportunities for people:

- 5 Green initiative of DMRC (Delhi Metro Rail Cooperation)
- Vertical Gardening At The Dull Metro Pillars
- Joining Hands For The Green Buildings Initiative
- Involving Kids In The Swachh Chetna - An Eco Club

- Delhi Greens
- Green Brick Eco Solution
- United way Delhi
- Decongestion plan

2.2 Case study no.2 – Rajkot

The city of Rajkot, western Indian state of Gujarat, has always been in the spotlight of its bold and innovative steps towards sustainable growth. It is the regional and local leadership of this rapidly developing city that has given the city several awards in areas such as hygiene and cleanliness, industrial development, and other contemporary aspects such as the introduction of renewable energies, the energy efficiency of buildings, an efficient transport system and use of non-motorized traffic.

Rajkot has been an important urban center since its inception and the center for social, cultural, commercial, educational, political and industrial activities for the entire Saurashtra region. Permanent settlement began in 1646 AD and the city was ruled by various Hindu and Muslim kings. In 1822 AD the Malay Archipelago Company established a kothli for the first time, and the first railway line in Kathiawar was built in Rajkot in 1872-73 AD. The Golden era of Rajkot begins from the time of Sir Lakhajiraj (i.e. 1905 AD) which shows institutions, residential areas, and markets being developed, special schools, and libraries for girls were established.

2.2.1 Sustainable urbanism for Rajkot

The Rajkot Municipal Corporation (RMC) was built as part of the Urban LEDS project on his previous achievements in climate protection and created a way for the transition to a green and inclusive urban economy. The Green Climate Cities The methodology (GCC) allowed the city to identify priorities and include a wide range of issues Stakeholders and drive the implementation of several landmark plans, including the Solar City Master Plan and the Low Carbon Mobility Plan, which reflect Rajkot's desire to maintain its status as a “liveable” city. The GCC process has resulted in the formation of a stakeholder committee for cross-departmental collaboration, which Rajkot will strengthen on his climate tour. Thesis the dismantling of institutional silos goes hand in hand with efforts to establish the mainstream Climate considerations within the community.

The Urban LEDS project helped Rajkot identify and promote potential priority sectors. Run three pilot projects to replace 291 existing high-power-consuming sodium vapour pressure (HPSV) lamps on selected roads with energy-efficient light-emitting diode lamps; 20 kWp Solar Photo Voltaic (SPV) installations during a city school and a 100 KLD decentralized sewage treatment plant (DTS) for treatment. Rajkot is scaling this type of successful demonstration of projects through several of his planning, policy, and infrastructure initiatives for a sustainable, healthy, and liveable city. (Rajkot Municipal Corporation)

2.2.2 Challenges of sustainable urbanism in Rajkot

Rajkot has a strong and growing economic sector based mainly on manufacturing and metalwork. In addition, it is the administrative center for the Rajkot District and hence it is home to many government and executive bodies.

Rajkot fights along some of the problems often associated with rapid urban development include Water scarcity, transport and service provision, and energy supply and demand to care. In 1998 the city limits were enlarged to include three nearby villages. As a results of this territorial expansion, the city's population has grown by 28.3 percent over the past 10 years, making it the fourth largest city in Gujarat state.

Rajkot is becoming increasingly urbanized and is experiencing significant growth privately vehicle use. In particular, the amount of motorcycles is increasing dramatically: as incomes rise, more people are going to be ready to afford motorcycles and lots of existing motorcycle owners are likely to get cars. The result is going to be increasing traffic jams, adverse environmental impact, and increasingly difficult operating conditions for conveyance services. Already, when the Ministry of Urban Development (MoUD) benchmarks and performance indicators for assessing the service level of urban transport in Indian cities are applied to Rajkot, they indicate that the town has serious traffic and transport problems.

2.2.3 Opportunities of sustainable urbanism in Rajkot

RMC has initiated a public cycle sharing pilot program in four prime locations (five cycles in each location) of the town. More than 25 hotels have also made cycles available for his or her guests. Also, 60 cycles altogether 18 BRTS stations and 15 cycles in corporation zonal offices are available on a rental basis, which is getting used by quite 700 people per week. After the significant response to the pilot public cycle sharing scheme, a pre-feasibility study and business plan for a public bicycle sharing system in Rajkot city have been prepared under the Urban-LEDS project to strengthen the non-motorized transport (NMT) system and accelerate a shift towards sustainable transport modes. It is intended to implement this project in a phased manner. Successful implementation of the plan will help Rajkot City reduce its fuel consumption by 867 kilolitres and greenhouse gas emissions by 2072 tons of carbon dioxide equivalents per year.

The three pilot projects implemented as part of Urban LEDS in the city of Rajkot have resulted in annual electricity savings of 1.06.629 kWh and a reduction in emissions of around 100 tCO₂e per year. In addition to implementing the above-mentioned pilot projects, the city, with technical support from ICLEI Local Governments for Sustainability South Asia, in consultation with the Core Climate Team and Stakeholder Committee formed as part of the project, also worked out the Low Emission Development Strategies (LEDs). The cumulative potential reduction in greenhouse gas emissions from the measures proposed in the various sectors for the municipal and municipal operations amounts to 4,51,825 tCO₂e, which together is about 25 percent of the annual base GHG emissions of Rajkot City in 2012 -13 corresponds. (ICLEI Local Governments for Sustainability South Asia)

3. Solutions and Findings

Rajkot is well placed to maintain its 'liability' as the city continues to grow. The RMC has proactively used programs that provide resources and skills that will greatly benefit planning for a low-carbon city. But in the case of Delhi, there are several important areas of urban research such as How to improve living conditions for the growing urban population in slums, how and where master planning of Delhi is failing to implement the Urban LEDs project.

The improvement of living conditions such as improved transport options, sanitary facilities, clean drinking water, improved sewage, and waste management as well as a well-managed infrastructure lead to preventive measures. These preventive measures are also proposed as part of the Jawaharlal Nehru National Renewal Mission. In addition, highly specialized government-sponsored hospitals that offer low-cost treatment must be set up in each city for better coverage.

Urban infrastructure and housing should follow GRIHA (Green Buildings Ratings System in India) and GCC (Green climate city) to achieve sustainability. Cities are places of creativity, innovation, and learning. Fostering these attributes is essential if the global challenge of sustainable urbanization is to be met in the face of unprecedented urbanization.

4. Conclusion

From the paper, I have concluded that the sustainable development of Delhi and Rajkot should be inclusive and meet the needs of the poorest and most vulnerable people. Strategies must be ambitious, action-oriented, and collaborative, and adapt to different stages of development. They will have to systematically change consumption and production patterns and can, among other things, result in considerable price corrections; Promoting the preservation of natural talents; Reduce inequality, and strengthening economic governance.

In the case of Delhi, there are multiple challenges to sustainable urbanism such as enormous pressure on the access of the poor to land and houses, unsustainable urban transport system, waste management, housing, and many Ecological issues as well. While in the case of Rajkot challenges are a bit different from Delhi such as significant growth in private vehicle use, traffic congestion, unsustainable Industrialisation, and increasingly difficult operating conditions for public transport services. In both cases Rapid urbanization has put pressure on infrastructure, housing availability and the proliferation of slums in the face of acute environmental degradation challenges are the same. Opportunities and solutions are also sought alongside the challenges of making cities more sustainable.

It should be emphasized that the practical form of sustainability is the main component of sustainable urbanism. It is important to acquaint society with these challenges, opportunities, and solutions, otherwise, their performance in an urban context is almost impossible. We are responsible for the next generation and future cities, thus you have to minimize your negative impact on every part of the environment with the practice of reasonably sustainable urbanization.

5. Acknowledgement

It is a great opportunity for me to write about a subject like **“Challenges and Opportunities of Sustainable Urbanisation”**. At the time of this writing, I have been through various books, research papers, and websites to help me familiarize myself with new topics. I focus on the topics that are important to us to easily understand this topic.

I would like to express my sincere thanks to my advisor, Riyazul Samad Bin Muhammad, founder of RUSBM Studio, for continuing to support my research, for his patience, motivation, enthusiasm, and immense knowledge. His guidance helped me altogether the time of research and writing of this thesis. I couldn't have imagined having a far better advisor and mentor for my study.

Apart from me, this paper will certainly be of immense importance for those who are interesting to know about this subject. I hope they're going to find it comprehensible.

I have tried hard and soul to gather all relevant information regarding this subject. I don't know how far I can do that. Furthermore, I do not claim all the knowledge during this paper is included perfectly. There may be shortcomings, factual errors, a mistaken opinions which are all mine and I alone am responsible for those but I will try to give a better volume in the future.

6. References

- Opportunities and Challenges in the Context of Climate Change by Shailendra K. Mandal and Gregg M. Garfin.
- Habitat International by Professor Eddie Chi-Man Hui, the Hong Kong Polytechnic University, Hong Kong.
- Smart, Resilient and Transition Cities (Emerging Approaches and Tools for a Climate-Sensitive Urban Development) Adriana Galderisi (University of Campania Luigi Vanvitelli, Aversa (CE), Italy) and Angela Colucci (Co.O.Pe.Ra.Te. Ildt, Pavia, Italy).
- Nature Based Strategies for Urban and Building Sustainability by Gabriel Pérez (University of Lleida, Spain) and Katia Perini (University of Genoa, Italy)
- ICLEI SA (b). Development of Rajkot Solar City: Final Master Plan. New Delhi: Ministry of New and Renewable Energy, 2012.
- ICLEI World Secretariat, 2013, GreenClimateCities methodology – www.iclei.org/gcc
- Rajkot Municipal Corporation. Revision of City Development Plan - Final White Paper. Plan, Rajkot: Rajkot Municipal Corporation, 2012. Rajkot Municipal Corporation.
- Rajkot City Development Plan 2005-2012. Rajkot Municipal Corporation, 2005. Rajkot Municipal Corporation.
- Rajkot Municipal Corporation Home Page. <http://www.rmc.gov.in/index.php> (accessed October 20, 2013).
- Department of Planning. (2011). Delhi Human Development Report, Government of India: New Delhi, India.

- Department of Planning. (2013). Economic Survey of Delhi, 2012-13, Government of India: New Delhi, India. Retrieved from [delhi.gov.in/wps/wcm/.../doit.../Economic +Survey+of+Delhi+2012-13](http://delhi.gov.in/wps/wcm/.../doit.../Economic+Survey+of+Delhi+2012-13)
- Census Data, Office of the Registrar General & Census Commissioner, India, MHA, Government of India, [http:// censusindia.gov.in/2011](http://censusindia.gov.in/2011).
- Lehmann, Steffen. (2016). Sustainable urbanism: towards a framework for quality and optimal density? Springer Open, 2:8. <https://doi.org/DOI 10.1186/s40984-016-0021-3>
- Shaw, Annapurna. (2012). Indian Cities. (pp. 1-2). New Delhi: Oxford University Press.
- TRB (1997) toward a sustainable future; addressing the long-term effects of motor vehicle transportation on climate and ecology. National Academy Press, Washington, DC
- Turo, Ivan. (2014). The Evolution of National Urban Policies A Global Overview. UN Habitat. Retrieved on 21st April 2017 from <http://www.citiesalliance.org/sites/citiesalliance.org/files/National%20Urban%20Policies.pdf>
- UNO. (2016). Sustainable Development Goals: 17 Goals to Transform our World. Retrieved on 19th Feb. 2017 from <http://www.un.org/sustainabledevelopment/cities/>