

**ISSUES AND CHALLENGES IN SUSTAINABLE URBAN
DEVELOPMENT: A CASE STUDY OF MIRZAPUR CITY, U.P., INDIA**

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ABSTRACT

Urban Planning involves objective or target based process adopted for sustainable urban development. It involves analyzing and predicting the urban environment quantitatively and qualitatively to identify and evaluate alternative policy options leading to a beautiful urban living environment. The quantitative increase in the number of urban centers and populations do not suffice the goal of planning. In India, there is marked increase in the number of cities and the urban population, but in reference to the quality of urban life, it puts a big question mark. When sustainability in terms of good living environment comes, many serious questions arise with no responsible agency or authority to answer. Presently there are 7,935 cities and towns in India [Census, 2011], which have increased by 2,774 in number since last decadal census of 2001. The total urban population in the country as per Census 2011 is more than 377 million constituting 31.16% [27.8% in Census, 2001] of the total population with 53 Million Cities [35 in census, 2001]. The living environment of Indian cities is dwindling fast owing to inefficient land use, increasing number of automobiles, heavy pollution, mismanaged waste disposal, poor quality of housing, water, sanitation, hygiene etc. Detachment of local community in urban development has made the issues worse. The present case study is based on Mirzapur city (25° 11'15''- 25°7'15''N and 82° 30'E – 82° 36' 30'E) situated on the southern bank of the Ganges river in Eastern Uttar Pradesh, India. It is a small Indian city [Area: 38.85 Sq. km and Population: 233,691 (Census of India, 2011)] which despite its urban status since more than a century and being district headquarter, is showing no significant change in sustainable living environment of the city. It has almost all the resources required for the sustainable urban development. The beautiful city is in a very sorry state owing to negligence of local people in planning and a very strong nexus of corrupt politicians, businessmen and bureaucrats at the top. The secular culture

of city is represented by peaceful co-existence of the communities of hindus in Vindhyanchal and muslims in Kantit Sharif. The city has been famous for its carpet and brassware industry ever since the middle periods [16th century]. There are many beautiful natural spots and hills on the outskirts of the city as Rajdari, Devdari, Lakhaniyadari, Windom falls, Sirshi etc. River Ganges has been the life of this city. The present paper concludes with the suggestions in planning for sustainable urban development of Mirzapur city.

Key words: sustainable urban development, urban planning, global sustainability, Public Private Partnership, peace and security, heritage, centrality, urbanization.

Introduction

Geography is idiographic in focusing attention upon the uniqueness of places, which to the geographer is the special interest of the world about him. The scientific concern on the other hand strives to overcome what it regards as the tyranny of the particular as it seeks regularities that can be subsumed in ever more simple, economical and wide-embracing generalizations about man and the world in which he lives, which is thus reduced to concepts (Smailes, p.12). Although the concept of sustainability has not been new to India, but at the global level this initiative took its shape in policy and planning only in 1992 when the United Nations conference on environment and development (Earth Summit) at Rio de Janeiro exhorted the world to abandon those practices that are self destructive in favor of sustainable development (Agenda 21). Ten years after the first 'Earth Summit' in Rio. (It was therefore also informally nicknamed "Rio+10".) The World Summit on Sustainable Development, WSSD or Earth Summit 2002 took place in Johannesburg, South Africa, from 26 August to 4 September 2002. It was convened to discuss sustainable development by the United Nations. WSSD gathered a number of leaders from business and non-governmental organizations that reaffirmed their commitment to the Rio declaration. It was emphasized that poverty eradication, changing consumption and production patterns and protecting and managing the natural resource base for economic and social development are overarching objectives of sustainable development.

To study urban geography is to study the living environments of more than half the population of the planet. The diverse nature of urban environments is illustrated at the macro scale by the fact that, as many Western cities evolve towards a post industrial, postmodern

future, most Third World cities are striving to attain the characteristics of a modern industrial city. These differences generate particular problems in each sphere. For Western cities the major challenges include the impact of de industrialisation, inner-city decline, urban sprawl, traffic congestion and excessive energy consumption. Third World cities, on the other hand, are confronted with problems relating to ‘over urbanisation’, including serious infrastructure deficiencies in the face of burgeoning population. In addition to such differences, all cities of the world share common problems such as poverty, pollution and social polarisation to varying degrees (Pacione, p.849).

In the post World War II era, the concept of development was synonymous to economic growth which is measured in terms of temporal increase in gross national product (GNP) and per capita income/per capita consumption. Even the countries having high economic growth, experienced speedy rise in poverty because of its unequal distribution. By 1970s, the phrases such as *redistribution with growth* and *growth and equity* were incorporated in the definition of development. While dealing with the questions related to redistribution and equity, it was realised that the concept of development cannot be restricted to the economic sphere alone. It also includes the issues such as improving the well-being and living standard of people, availing of the health, education and equality of opportunity and ensuring political and civil rights. By 1980s, development emerged as a concept encapsulating wide-spread improvement in social as well as material wellbeing of all in a society. The notion of sustainable development emerged in the wake of general rise in the awareness of environmental issues in the late 1960s in Western World. It reflected the concern of people about undesirable effects of industrial development on the environment. The publication of ‘*The Population Bomb*’ by Ehrlich in 1968 and ‘*The Limits to Growth*’ by Meadows and others in 1972 further raised the level of fear among environmentalists in particular and people in general. This sets the scenario for the emergence of new models of development under a broad phrase ‘*sustainable development.*’ Concerned with the growing opinion of world community on the environmental issues, the United Nations established a *World Commission on Environment and Development* (WCED) headed by the Norwegian Prime Minister Gro Harlem Brundtland. The Commission gave its report (also known as *Brundtland Report*) entitled ‘*Our Common Future*’ in 1987. The report defines

sustainable development as a “*development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*”

Sustainable development has been defined in many ways, but the most frequently quoted definition is from *Our Common Future*, also known as the Brundtland Report [WCED, p. 43]:

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

- *the concept of **needs**, in particular the essential needs of the world's poor, to which overriding priority should be given; and*
- *the idea of **limitations** imposed by the state of technology and social organization on the environment's ability to meet present and future needs."*

The concept of Sustainable development gives a vision to see the world as a system in space and time. A good living environment ensuring good quality of life to the citizens is its sole aim. The long discussion ever since the days of Club of Rome (1969) and final consensus by the Rio summit has very well created awareness among the people and the Governments throughout the world regarding sustainability.

The recent Rio+20 Conference summit outcome was the agreement by member States to launch a process to develop a set of Sustainable Development Goals (SDGs), which will build upon the Millennium Development Goals and converge with the post 2015 development agenda. It was decided establish an "*inclusive and transparent intergovernmental process open to all stakeholders, with a view to developing global sustainable development goals to be agreed by the General Assembly*".

In the Rio+20 outcome document, member States agreed that sustainable development goals (SDGs) must:

1. Be based on Agenda 21 and the Johannesburg Plan of Implementation.
2. Fully respect all the Rio Principles.

3. Be consistent with international law.
4. Build upon commitments already made.
5. Contribute to the full implementation of the outcomes of all major summits in the economic, social and environmental fields.
6. Focus on priority areas for the achievement of sustainable development, being guided by the outcome document.
7. Address and incorporate in a balanced way all three dimensions of sustainable development and their interlinkages.
8. Be coherent with and integrated into the United Nations development agenda beyond 2015.
9. Not divert focus or effort from the achievement of the Millennium Development Goals.
10. Include active involvement of all relevant stakeholders, as appropriate, in the process.

It was further agreed that SDGs must be:

- Action-oriented
- Concise
- Easy to communicate
- Limited in number
- Aspirational
- Global in nature
- Universally applicable to all countries while taking into account different national realities, capacities and levels of development and respecting national policies and priorities.

The outcome document further specifies that the development of SDGs should:

- Be useful for pursuing focused and coherent action on sustainable development
- Contribute to the achievement of sustainable development
- Serve as a driver for implementation and mainstreaming of sustainable development in the UN system as a whole
- Address and be focused on priority areas for the achievement of sustainable development

The Rio+20 outcome document “*The Future We Want*” resolved to establish an inclusive and transparent intergovernmental process on SDGs that is open to all stakeholders with a view to developing global sustainable development goals to be agreed by the UNGA. The outcome document specifies that the process leading to the SDGs needs to be coordinated and coherent with the processes considering the post 2015 development agenda and that initial input to the work of the Open Working Group will be provided by the UNSG in consultation with national governments. An important principle for selecting goals and targets is that they should add up to a set of objectives (goals and targets) that reinforce and complement each other. In the first place, they should as a whole cover the minimum objectives of the environmental, social and economic aspects of sustainable development.

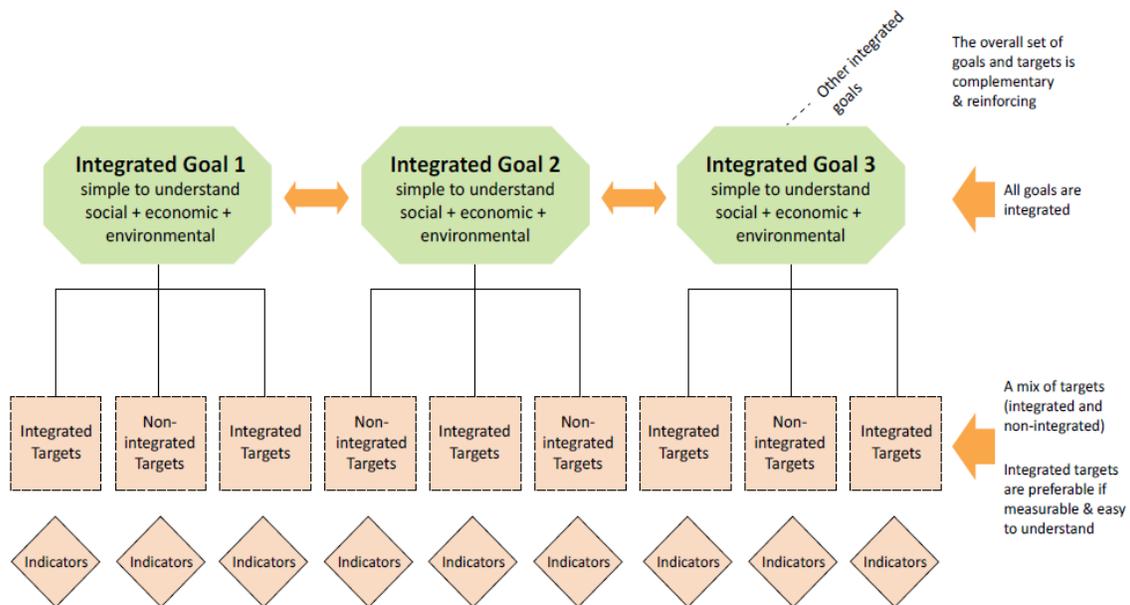


Figure 1: Integrated Approach to Sustainable Development Goals (UNEP Post-2015 Discussion paper-1, p.16)

Keeping in view such development goals, it is the need of the hour to formulate them for the urban, rural, hilly and tribal areas based on their respective requirements. Instead of three dimensions of Development now UN Task team on Post-2015 UN Development Agenda and the Sustainable Development Solutions Network has come up with the fourth dimension in terms of Peace and Security (UNEP, p.4). Urban sustainability is the intersection of two extremely complex and not yet fully understood processes: urbanization and global sustainability, which

increasingly overlap as urban populations continue to grow. The issue of urban sustainability needs to be considered in terms of a local context, concerned with the conditions within the cities that make them livable—and a global context, concerned with the reciprocal impacts of the urban phenomenon and global sustainability. These two contexts often clash, but ultimately one implies the other (Bugliarello, 2006).

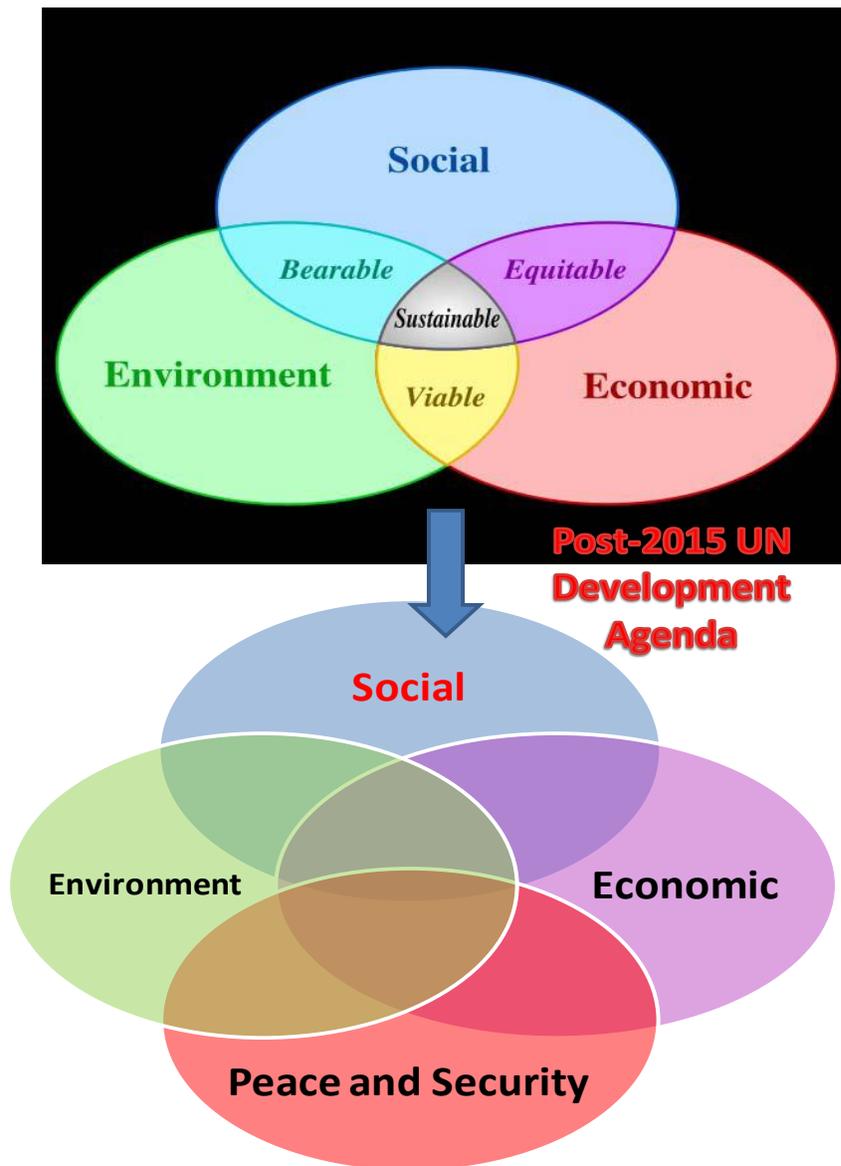


Figure 2: Post -2015 UN Development Agenda (Prepared by Researcher)

The cities in the developing world experience rapid population growth, possess less qualified human resources, relatively large young population, less organized industrial sector and a poor quality of life in terms of living environment. Their energy and materials consumption per inhabitant is lower. Unfortunately, they are often hampered by corruptive practices and stifling bureaucracies.

There are three key dimensions to the debate over the interrelationship between cities and the environment. These are outlined below. Many of the issues highlighted here are picked up in the subsequent discussion.

- *Cities as a threat to the environment* Cities are major contributors to global environmental problems including pollution, resource depletion and land take. While occupying a mere 2 per cent of the world's land surface, cities contain half of the world's population, which is increasing at a rate of 55 million people per year, consume three-quarters of the world's resources, and generate a majority of the world's waste and population (Blowers and Pain 1999: 249). This voraciousness is only likely to increase as urban growth rates increase, particularly in less developed countries. The environmental demands of city dwellers vary enormously. For example, city dwellers in developed countries typically generate up to twice as much waste per day as those in less developed countries (Haughton and Hunter 1994: 11). There are variations of a significant magnitude within, as well as between, developed and less developed countries. Whereas previously the consequences of these problems were primarily local, the scale of urbanisation and consequently of these problems ensures that their consequences are now global. For example, cities now typically draw on resources from all around the world, rather than from just their local region. Similarly, the pollution they generate is dispersed around the globe. The discovery of the depletion of the ozone layer starkly highlights the threat posed by cities and the processes fuelling their development.

- *The environment as a threat to cities* The environmental problems generated by cities are felt most severely within cities (Blowers and Pain 1999). Environmental problems such as pollution and its manifestations (for example, severe photochemical smogs) are both long established and increasingly apparent aspects of everyday life for many of the world's urban population. In addition, problems of land contamination from former industrial land use have imposed a severe

constraint on urban development in many cities, and pose a very direct threat to individual health in some areas.

• *Social processes as mediators of environmental impacts and costs* In the same way as the impacts of, say, economic processes such as de-industrialisation are felt unevenly across different social groups, the environmental consequences and costs of urbanisation impact unevenly upon different social groups (Haughton and Hunter 1994). The environmental problems resulting from urbanisation tend to impact most severely upon the most vulnerable groups in urban society. These groups are less able to insulate themselves from the impacts of environmental problems. They tend to occupy marginal, sometimes contaminated, land, in shelter that may be unplanned or have only very basic amenities. The contrast between the risks borne by vulnerable groups from events such as floods or earthquakes, or from land contamination and sewerage discharge, for example, and the comparative lack of risks facing the wealthy in developing world cities, bears this out most clearly. To a lesser, but by no means insignificant, extent the same applies to the cities of the developed world (Hall, 2006, pp.153-154).

Study Area

The present case study is based on Mirzapur city (25° 11'15'' - 25°7'15''N and 82° 30'E – 82° 36' 30'E) situated on the southern bank of the Ganges river in Eastern Uttar Pradesh, India. It is a small Indian city [Area: 38.85 Sq. km and Population: 233,691 (Census of India, 2011)] which despite its urban status since more than a century and being district headquarter, is showing no significant change in sustainable living environment of the city. It has almost all the resources required for the sustainable urban development. The beautiful city is in a very sorry state owing to negligence of local people in planning and a very strong nexus of corrupt politicians, businessmen and bureaucrats at the top. The secular culture of city is represented by peaceful co-existence of the communities of hindus in *Vindhyanchal* and muslims in *Kantit Sharif*. The city has been famous for its carpet and brassware industry ever since the middle periods [16th century]. There are many beautiful natural spots and hills on the outskirts of the city as *Rajdari*, *Devdari*, *Lakhaniyadari*, Windom falls, *Sirshi* etc. River Ganges has been the life of

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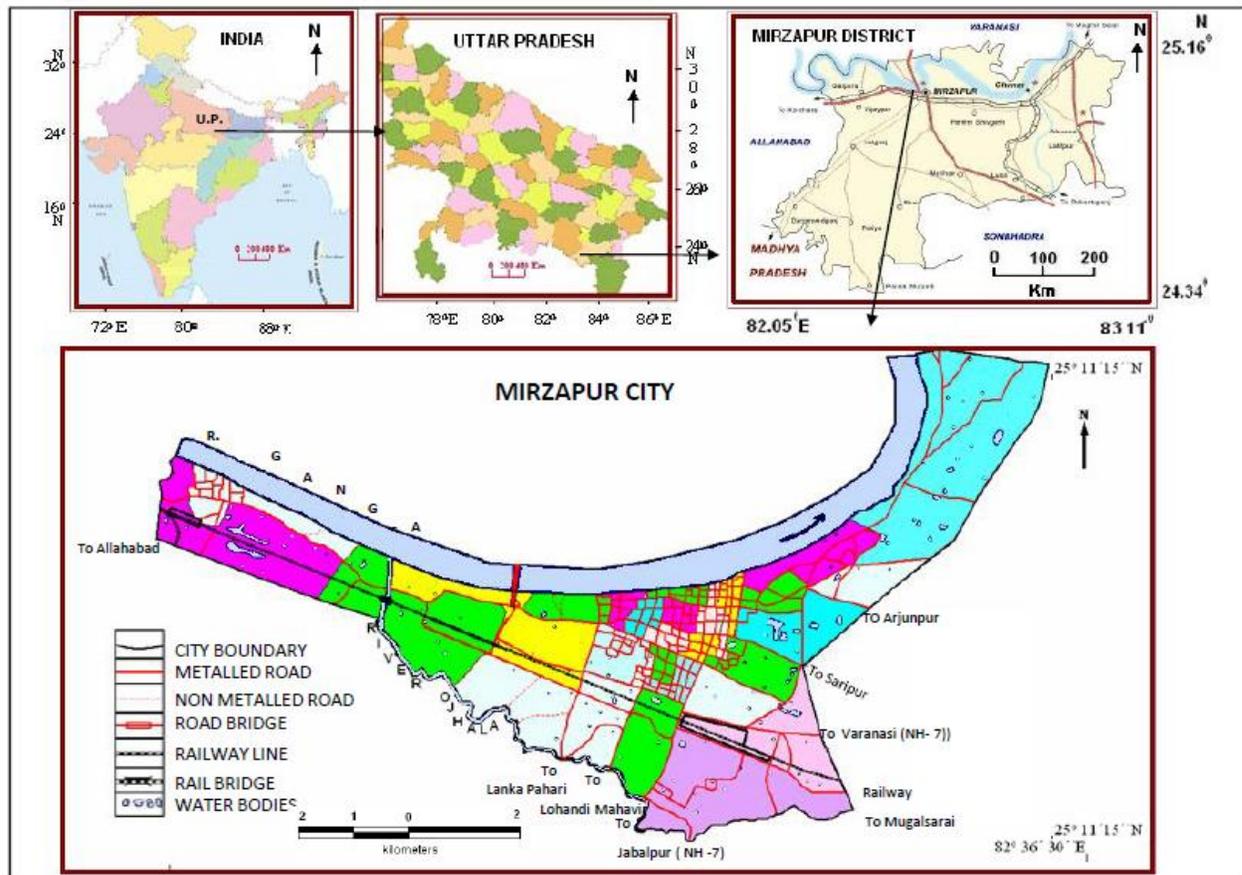


Figure 3: Location of Study Area (Mirzapur City, 2013) [Prepared by Researcher with the help of IKONOS Satellite imagery on Arc GIS software]

Statement of Research Problems

1. Uncontrolled Urbanisation of the city has dilapidated the living condition.
2. The infrastructural facilities and urban amenities are very poor in the city.
3. Commercial and industrial growth is stagnant.
4. There is large scale corruption among bureaucrats and politicians.
5. The master plan approach for development of the city is not dynamic as it doesn't involve local people

Research Questions

1. Will urbanization ensure balanced growth of the city as well as its periphery?
2. Can it attract more tourists from neighboring Varanasi or Allahabad?
3. Would the city ever get connected as global city to reach global sustainability?
4. Would PPP (Public Private Partnership) and participation of local community aid in achieving sustainable urban development goal?

Research Objectives

1. To ensure sustainable urban development of the city in which citizens can have a good quality of life.
2. To ensure better infrastructural facilities and urban amenities in the city.
3. To ensure Commercial and industrial development of the city.
4. To make people aware for the participation in development of the city.
5. To suggest a dynamic sustainable urban development plan instead of the static master plan.

Database and Methodology

It is based on both the primary and secondary data. The study is purely based on extensive field survey which has been carried out at different periods of time during the years 2007 to 2012. Personal Interviews were conducted in all the wards of the city with the local people, civil servants, lawyers, intellectuals, politicians, social workers etc. The researcher has done the work himself with the print outs of Google Earth Satellite Imagery and topographic map of the study area. The IKONOS Satellite image has been mosaiced on ADOBE PHOTOSHOP software and digitized on Arc GIS Software. MapInfo Professional 8.5 software has also been used in preparing some thematic maps. The maps have been prepared by the digitization of the study area from topo sheet no. 63 K/12 and mosaiced IKONOS satellite imagery at 1m resolution.

Issues and Challenges

Mirzapur city has such a very long histogenesis. It has been famous for the carpet and metalware industry as well as Vindhyanchal (Very ancient place of pilgrimage). The centrality of the city of approximately 80 Km between Allahabad (or Prayag, famous for Kumbh festival) in west and

Varanasi (or Kashi, ancient city of India with always a lively environment) in East provides good opportunity for the attracting tourists from these two places to the city. There are some major problems in the city which are to be addressed to achieve sustainable urban development. They may be discussed in the following points:

1. The urban development of the city is managed by Mirzapur-Vindhyanchal Development Authority, Mirzapur Municipal Board and many other government agencies with no clear demarcation of their roles and responsibilities. Due to lack of coordination, it is tough to ensure proper accountability.
2. The natural boundaries of the city are formed by two rivers; the *Ganges* in the north and the *Ojhala* in the south. The former is navigable while the southern has been encroached to a level as it looks as a canal.
3. The terraces at the bank of River *Ganga* are in very bad condition and proper ferry or steamers are not used in the river. The repair of these step terraces and provision of good steamers can promote tourism in this old and heritage city.
4. The traffic congestion and poor terminal facilities Due to slow moving traffic and lack of parking spaces huge congestions and chaos in the city prevails.
5. There are only two government guest houses one in city and another in Vindhyanchal, which fall short of demand during hindu pilgrimage of Navratri twice a year in *Vindhyanchal* and Urs of muslims in Kantit.
6. The congestion of shops, lack of drinking water and sanitation make the situation worse during these periods leaving little interest among the people to stay here. The temporary arrangements (parking, drinking water, toilets etc.) by civic authorities are inadequate in quality and quantity.
7. The poor law and order make the situation worse.
8. The old heritage place of the city lack maintenance and majority of them are encroached by the people and have become areas of urban slum.
9. There is heavy population concentration as well as housing density with dilapidated condition of the houses in the central part of the city. The living condition is very poor. The narrow lanes make the situation worse in this part of the city.

10. The open spaces in the city have been occupied by the land mafias with the nexus of politicians, bureaucrats and contractors. These can be developed as Urban green spaces after removal of the encroachments.
11. In the city only 63.42% of households is served by tap water. With over two lacks of population, this is below national average of 73% for the class I cities. The capacity utilization of the supply water is below 50 %, which must be increased to more than 75 %. The present supply of water is 30 ML (Million Litres) per day of against the demand of 44 ML per day. By 2021, the projected population of this city would be 3 lakh, by that time the demand for drinking water would be 70 ML per day. The infrastructure for meeting this demand must be improved. The storage capacity of the city falls well short and requires 14430 KL (Kilo Litre) of storage capacity as against the present 7730 KL. By 2021, the need to increase the storage capacity may be by 1000 KL. There is one artificial water reservoir at *Lanka Pahari* for the drinking water supply of the city. It gets water from the Tanda reservoir. This reservoir requires immediate reparings. The transmission and distribution pipelines of water supply in the city are old and need immediate replacement. In order to improve the distribution line of water supply, it is required to change the old pipelines and laying of an additional 150 Km of pipelines. There is no water quality testing facilities in the city for the maintenance of good water quality. There is only one sewerage treatment plant at *Lal Diggi* with 14 million litres per day of capacity. The present sewerage treatment plant consumes very high energy, thus there is need for the scientific and low energy consuming technology for the sewerage treatment and disposal of the solid wastes (Tiwary, A.N. 2011 b, pp 97-98).
12. The toilets in majority of the houses in the city are not connected to the existing sewerage system which must be planned for a renewal and redevelopment proposal as a perspective plan.
13. There is serious water logging problem during monsoon. Siltation reduces the carrying capacity of drains leading to water logging, particularly during monsoons causing both surface as well as sewerage choking in the city.
14. Frequent clogging of drains due to dumping of waste in the drains lead to unsanitary conditions and pollution at large.
15. There is lack of lined drainage in the city leading to contamination of ground water supply.

16. There is no scientific treatment and disposal of the solid wastes in the city. Presently there is no provision for the sanitary land fills of the solid wastes. They are openly dump in *Putali Ghar* and the other open lands in the peripheral parts of the city.
17. The electric supply in the city is not more than twelve hours. This is one of the deciding factors for closing down of the industrial and commercial establishments.
18. There is no control of civic authorities on the unauthorized residential colonies.
19. Introduction of alternative mechanisms is needed for financing the development projects in the city. Heavy reliance on HUDCO (Housing and Urban Development Corporation) and other govt. agencies will do no good in the renewal and redevelopment plan of the city.
20. The people of the city are more agrarian. Urban community and society should be improved by resolving the socio-economic problems. The original inhabitants of this land; *Cheros, Kharwars, Cols etc. and the later inhabitants; Nishaads* who happen to be the oldest community in this region are negligible in number today. Their condition is very poor and therefore, need a social revival (Tiwary, A.N. 2013, pp 4-6).
21. The scheduled castes population of this city resides in the old discarded houses or in the huts built in the open spaces with no facility for their sustenance. They get no benefits from the government welfare schemes as desired regularly.
22. The literacy in the city is not adequate (60.14%, Census of India 2011) to pronounce this city as urban in quality. The poor students leave the schools in search of jobs and either get engaged as child labour in the manufacturing units in the city or go to Mumbai, Surat or nearby cities of Varanasi and Allahabad.
23. The health facilities in the city are inadequate. There are only three government hospitals and many private nursing homes and clinics, but they are insufficient for the city.
24. The traditional carpet weaving, dye, metal ware and other handicraft industries in the city are not showing any signs of growth. Workers are employed without secure contracts and limited access to public infrastructure and benefits. They do not have access to markets for proper sell of their finished products. They have limited access to the credit market/institutional market for setting up self employment ventures. There is no proper revival policy to re-place for sick small scale units and other manufacturing units. The commercial and industrial activities in the city are mainly facing the problem of finance and capital. The industries are closing everyday.

Many industrial and commercial activities are being run in the residential premises to save taxes. The government has no official data available on them. These units rarely follow any security norm, which often leads to serious fatality of the poor labors that do not get any compensation for an accident or casualty (Tiwary, A.N. 2010, pp. 17-22).

25. The industrial and commercial establishments do not dispose their wastes scientifically. They contain heavy metals like Lead, Zinc, Nickel etc. Industrial and commercial establishments do not reuse and recycle treated sewage to reduce fresh water demand. They contaminate the ground water and there is no authority to take any stringent action against them.

There are many other issues and challenges to achieve sustainable urban development. Special emphasis should be given on women, young people and marginalized groups, eradicating poverty, protecting the resources and emphasizing sustainable consumption and production (Ryo et al., MDG, 2013, p.1). The transition to sustainable development must not mean any diminishment whatsoever in the commitment to ending poverty. As underscored in the outcome document of the United Nations Conference on Sustainable Development, held in Rio de Janeiro, Brazil, in 2012 (General Assembly resolution 66/288), poverty eradication is an indispensable requirement for sustainable development. This is a matter of basic justice and human rights. It is also a historic opportunity. If ours is the generation that can end poverty, there should be no deferring this essential mission, no shrinking away from the task. In a world of great wealth and technological advances, no person anywhere should be left behind. No person should go hungry, lack shelter or clean water and sanitation, face social and economic exclusion or live without access to basic health services and education. These are human rights, and form the foundations for a decent life. Nor can progress be achieved or sustained amid armed conflict, violence, insecurity and injustice. These ills often have roots in social and economic deprivation and inequality. In the same vein, poverty can be a precursor and breeding ground of instability. We know that upholding human rights and freeing people from fear and want are inseparable; it is imperative that we do more to act on this basic truth. (Ban Ki-moon, p.3). It is suggested to have a participatory and bottom up approach towards development and planning of the city. The development plan should incorporate the local needs and try to solve the problems of the people at local level. This needs thorough involvement of field surveys and studies of the people and city. The study and appraisal of both human and natural resources of the city is required. The

involvement of the experts from history, geography, psychology, economics, statistics, archeology, arts and aesthetics, management, engineers etc. is required. The use of modern tools and techniques of Remote Sensing (RS), Geographical Information System (GIS), Global Positioning System, etc. are required. The use of computer, survey analysis softwares (as; SPSS, NUD*ST) and Mapping Softwares (ARC GIS, Map Info, ERDAS, GEOMEDICA etc.) are the need of the hour (Tiwary, A.N., 2011a, p.128). Restructuring the system of governance and reduction of public expenditure on infrastructure and civic amenities has thus been perceived as the most crucial element in a strategy to meet the challenge of urban crisis (Kundu, 2003, p.3086). It is important to look after the physical, socio-economic, political and matters related to planning and administration which work together to achieve the Sustainable Development Goals for the development of the city.

References :

1. Ban Ki-moon (Report of the UN Secretary General). (26 July 2013). Follow-up to the outcome of the Millennium Summit: “ *A life of dignity for all: accelerating progress towards the Millennium Development Goals and advancing the United Nations development agenda beyond 2015*” Sixty-eighth session, Item 118 of the provisional agenda, p.3
2. Blowers, A. and Pain, R. (1999) ‘The unsustainable city’, Pile, S., Brook, C. and Mooney, G. (Ed.). *Unruly Cities? Order/Disorder*, London: Routledge/Open University, pp.249-255
3. Brundtland Commission (1987). “Our Common Future” (*Report of the World Commission on Environment and Development, Annex to United Nations General Assembly Document A42427*) (New York: United Nations, 1987), p. 43
4. Bugliarello, G. (2006) “Urban Sustainability: Dilemmas, Challenges and Paradigms,” *Technology in Society* 28:1-2, pp.19–26.
5. Bugliarello, G. (2011): “Critical New Bio-Socio-Technological Challenges in Urban Sustainability”, *Journal of Urban Technology*, 18:3, pp.3-23
6. To link to this article: <http://dx.doi.org/10.1080/10630732.2011.615561>
7. Hall, T. (2006). *Urban Geography*, 3rd Edition, Rutledge, London, UK, pp. 153-154.
8. Haughton, G. and Hunter, C. (1994) *Sustainable Cities*, London: Regional Studies Association., p.11

9. Kundu, A. (2003). "Urbanisation and Urban Governance: Search for a Perspective beyond Neo-Liberalism", *Economic and Political Weekly*, Vol. 38, No. 29 (Jul. 19-25, 2003), pp. 3079-3087
10. Pacione, M. (2010). *Urban Geography: A Global Perspective*, Routledge, London, U.K., p.849
11. Ryo Nakamura and Keith Ripley (2013): "A Briefing Note on the president of the United Nations General Assembly's Special Event towards Achieving the Millennium Development Goals" , *International Institute for Sustainable Development (IISD) VOLUME 153, NUMBER 10, FRIDAY, 27 SEPTEMBER 2013, p.1*
12. Smailes, A.E. (1971). "Urban Systems", *Transactions of the Institute of British Geographers*, No. 53 (Jul., 1971), pp. 1-14 Published by: Blackwell Publishing on behalf of The Royal Geographical Society (with the Institute of British Geographers)
13. Tiwary, A.N. (2010). "An Appraisal of Urban Land Use and Planning of Mirzapur City" *National Geographical Journal of India (NGJI), Varanasi, ISSN No. 0227-9374, Vol. 56, Pts. (3-4), Sep.-Dec., 2010, pp. 17-22*
14. Tiwary, A.N. (2011a). *An Appraisal of Urban Development and Planning of Mirzapur City* [Ph.D thesis published] (ISBN No. 978-3-639-35917-6), VDM Verlag Dr. Müller, Germany, p.128.
15. Tiwary, A.N. (2011b). *An Appraisal of Urban Development and Histogenesis: A Case Study of Mirzapur City* (ISBN No. 978-3-8443-0167-0), LAP LAMBERT Academic Publishing GmbH & Co. KG, Saarbrücken, pp. 97-98
16. Tiwary, A.N. (2013). "A Geographical Study of Slums in Mirzapur City (Uttar Pradesh)" *Akados, Kamla Nehru College, Univ. of Delhi, New Delhi, ISSN No. 2231-0584, Vol. VII, 2013, pp. 4-16*
1. United Nations Environment Programme (UNEP) (2013). "Embedding the Environment in Sustainable Development Goals" *UNEP Post-2015 Discussion Paper 1, Nairobi*.

Paper can be downloaded at <http://www.unep.org/pdf/embedding-environments-in-SDGs-v2.pdf>