

# Sustainability: A Challenge for Urban Development

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## ABSTRACT

*Sustainability is a broader term which means a person or society lives within the resources of what the Earth can provide over a long period. It appeals integrated economic, social and environmental approaches towards development. Sustainable urban development entails to attain social equity and environmental protection while minimizing the costs of urbanization. At present, cities are considered as a growth of engine resulting population in urban areas is increasing rapidly; levels of consumption has increased and this escalating economy have created heavy demand on earth's resources at all levels. Subsequently these demands posed negatively impact on environment, communities and quality of life. Due to continuous growth cities have become an origin of urban environmental degradation and wasteful use of resources which will be prove intolerable for our present as well as future generations. In order to overcome the challenges of urban development it become essential to incorporate the integrated approach (Economic efficiency, environment adaptability and social wellbeing) which has always been neglected in our current development plans and policies. Therefore, the principle of sustainable development need to be consider in our policy and planning decisions for balanced future development.*

**Keywords:** *Sustainability, Urbanization, Social Equity, Economic Efficiency, Environment Degradation*

## 1. INTRODUCTION

Sustainability refers to the capacity to remain in existence. The word sustainability can't apply only for human sustainability on earth, but it may vary according to situations and contexts over space and time and it scale also fluctuate from local to global with respect to balance between production and consumption. Sustainable development defined as development that meets the need of the present generation without compromising the ability of future generation to meet their needs (Brundthland Report, 1987). In other words sustainable development means attaining a balance between environmental protection and human economic development and between the present and future needs. Sustainable Development insists to enhance existing resources, prevent harm to the natural environment, human health of present and future generation. According to UN, in the

period 1950–1975 rapid population growth divided urban and rural areas of the world and contributed a significant proportion in the growth of urban population. In 2008, for the first time in history, over half of the world's population lived in urban areas and by 2050 this will have risen up to 70 percent.

Urban areas in India hence grew in haphazard and unscientific manner without proper planning. As the population grew the ratio of Vehicles is also increasing. The net result is that majority of Indian cities are already facing harsh situation under its own weight. Lack of urban infrastructure has lead to roads which is good for traffic jams and congestion. There is acute shortage of housing, water, power, sanitation, public transportation facilities, inadequate playgrounds and recreational facilities. But the adequacy is less in growth of multiple problems like waste management, provision of management of services, reducing green cover, extreme micro climates and so on. Subsequently, it is clearly seen that the urban areas and its continuous growth became centres or origins of environmental degradation and wasteful use of resources, which will prove unbearable for our present and future generations.

### ***1.1 Urban Sustainability:***

The concept of urban sustainability has three components: economic efficiency, social wellbeing and ecological adaptability.

**Economic sustainability:** economic sustainability generally understood in terms of economic efficiency. For instance urban energy system in this context economic efficiency would signify efficiency at all stages such as transformation, transmission, distribution and conversion of final use of energy to services. In other words in a domestic energy system where activities like cooking, water heating, lightning, air condition convert fuels like firewood, LPG, Kerosene and electricity into desired services and waste is generated in the form of pollution at different level. Thus for an efficient urban system economic activities need to be efficient.

**Social Sustainability:** social sustianabilty view would take inequality in distribution, consumption and affordability into consideration. Social sustainability aims to promote equal opportunities for all sections of society, improved living and working conditions of people belonging to low-income and support the discriminated and socially excluded groups in urban areas. Social sustainability appeals for adequate accessiblity, reasonably priced basic services (affordability), especially in relation to employment, education and training, health, energy, transport and communications, prevent urban crime and increase safety. Strengthen capacity building among locals in order to respond the specific needs and enhance potential of communities in the deprived urban areas in an integrated manner.

**Environment Sustainability:** It enforces to improve air quality in urban areas by reducing pollution level, protection and management of surface and ground water; minimize generation of waste at source, conserve biodiversity, increase green spaces within urban areas. Minimize the environmental impacts of transport by encouraging the use of more environmentally sustainable transport modes. Achieve measurable and significant reductions of greenhouse gas emissions in urban areas, especially through the rational use of energy, the increased use of renewable energy sources and combined heat and power and the reduction of waste.

## **2. MAJOR CHALLENGES AND URBAN SUSTAINABILITY**

According to United Nations cities of twenty first century are continuously reshaping by some major factors that have raised certain challenges in front of the future city planning. These challenges are as follows:

### 1. Environmental degradation and the issue of climate change:

Cities are highly dependent on fossil fuel from power generation to driven cars and this tendency of excessive use of limited resources led present development towards destructive development.

2. Demographic challenges due to rapid urbanization resulting shrinking cities, ageing and increasing multicultural composition of cities.
3. Economic challenges due to global financial crisis have contributed in the growth of informality in urban economic activities;
4. Socio-spatial challenges, especially social inequalities, urban sprawl, unplanned peri-urbanization and increasing spatial scale of cities;
5. Institutional challenges related to governance and changing roles of local government.

The challenges discussed above are the broader in nature while apart from these problems there are three important issues that bring changes drastically and demand for immediate actions. These issues are inefficient transport system, shortage or inadequate housing and excessive use of non renewable source of energy.

### ***2.1 Sustainable Transportation:***

Transport system considered as the soul of the regional economic growth. In most of the cities condition of roads found very poor characterized by narrow roads, pot-holes and in deplorable

condition. The newly constructed airports, railway stations and Bus stands are become congested, as soon as they are constructed. Sustainable transportation means develop better transportation system with the objective of securing future social and economic development within a sustainable environment that ensures community well being. In order to develop an efficient and sustainable transport system it is necessary to assess in the light of three domain of sustainability such as economic, social and environment. The economic factors that affect transportation system is accessibility which will create an impact on the regional economic growth and will also further contribute in the economic efficiency. This accessibility will also determines the mode of choice, vehicles miles traveled and pose an impact on the travel cost and ultimately affordability will affect.

Similarly in order to assess environment sustainability of transport system certain variable need to be considered like resource use, green house gas emission, measures related to air pollution and noise pollution. Social sustainability ensure factors that are essential to evaluate the social sustainability of transport such as access to activity centers, access to major services, access to open spaces which will affect ultimately on quality of life. Due to excess use of fuels the concentration of green house gases has increased, posing negative impacts on human health and contributing in environmental degradation.

An innovative solution has been found by the scientist of Arizona state university developed a software to measure green house gas emissions in the buildings and streets. This software can also help in identifying the most effective places to cut emissions as it combines information from public databases with traffic simulations and energy consumption models. The software was developed using data from a number of sources, including air pollution reports, traffic counts and tax offices.

## ***2.2 Sustainable Housing:***

In a rapidly changing and urbanizing world provision of adequate basic services and affordable housing to all remains a key priority for all government. Even though in the directive principles of the constitution of India it has mentioned that housing as a human right and Supreme Court has considered it as an integral part of the right to life. In eleventh five year plan document (2007 – 2012), the shortage of the urban housing is estimated at 26.53 million. Most of them belong to socially and economically weaker section and still there is no comprehensive policies for these urban poor. Today's housing play an important role in sustainable development by addressing the most pressing issues such as slum prevention, the urban divide, economic and human development and climate change.

The prime characteristics of sustainable housing is to consider the green perspective like resource saving, green house gas reduction, resource and energy efficiency, environment, ecological and health safety, resilience to natural disaster etc) while designing it. Presently in most of the developing countries housing policies include only affordable housing which don't give any tangible solution for current problem because affordable homes can not be considered sustainable if they create negative impacts on the environment and social life. Thus sustainable housing policies should deal with the affordability, social justice, cultural and economic impacts of housing, and contribute to making healthy residential neighbourhoods and sustainable cities.

Recently, National housing Board has announced to formulate a policy to promote energy efficient housing in the country which is considered a forward step in the direction to achieve goal of sustainable housing. Other initiatives should be considered in this regard like establish energy building codes, green roofs and so on. Energy-efficient buildings drive a green economy and Indian cities need to adopt this model. Use of water and energy in construction should be optimal and site planning should be done in accordance to city planning and land-use pattern.

### ***2.3 Sustainable energy:***

Demand for energy is projected to increase primarily in developing countries that are beginning to drive more cars and use more electricity. There is an urgent requirement in order to meet energy demand over the next century will require not just producing more, but also using what we do produce much more efficiently. In such circumstances it becomes essential for the efficient use of energy. Wise energy use is the first step to ensuring we have sustainable energy for present and future generations. Sustainable energy is about using energy wisely and using energy generated from clean sources and clean technologies. Sustainable energy is not just about using renewable energy but it's about using energy wisely and introducing energy efficiency measures.

## **3. CONCLUSION**

Sustainable urban development means achieving a balance between the developmental activities in the urban areas and protection of the environment by giving an emphasis employment generation, adequate provision of housing, basic services, social infrastructure and transportation in the urban areas. In other words sustainable development insists environment friendly development that should be socially, economically and politically acceptable. If the socially and economically weaker sections are also part of inclusive growth of urbanization, then a sustainable faster inclusive urbanization is definitely possible. The concept of Sustainable development demand factors should be considered to achieve urban sustainability, control development through effective planning and policy control land use, emphasis on Social equality and equitable distribution of urban services, efficiency in urban transport systems, economic competitiveness and ensure public safety.

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