

Increasing Development of the Cities and its Impact on the Environment

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ABSTRACT: Cities are physical structures that have been built in the heart of nature by human beings. The growth rate of urbanization has been increased after the industrial revolution and urban sprawls are considered some kind of invasion of natural spaces around the city. Currently converting natural areas to urban residential spaces and urban application, conversion of natural forests to agricultural land and villa construction and road building, uncontrolled growth of consumer industries, pollution of water sources, increased artificial uses of the Earth and environmental pollution, have caused a lot of damages to normal appearance of the Earth and continuation of this trend can cause the interaction of nature and consequently make life of current and future generation face to face with danger. Environment as a development platform has an important role in the development of the cities and healthy environment and sustainable ecosystems not only provide necessary platform in development process but also, the appropriate environment for human being to live in and his appropriate participation in the process of human development. Therefore any operation of the nature to construct and develop the cities should take place after evaluation of the resources and regarding the capacities of the natural environment. No city enjoys being completely prepared to guarantee its future sustainability and environmental requirements, force urban planners to observe the requirements of sustainable development. Accordingly, they should organize urban system and modes of production and methods of urban life such that urban development moves towards environmental sustainability. In sustainable urban development the subject of conservation of the natural resources for the present and future through optimal use of the land and causing the least damages to its resources are considered.

Keywords: Urban development, Environment, Sustainable Development

INTRODUCTION

City is one of the phenomena in the environment to human settlements, livelihoods, economic and social relations and the like. Indeed, urbanization has been the second major issue is human being's life after the agricultural revolution. World population is now 7 billion people and by 2050 this figure is predicted to reach 9 billion people. Half the world's people now live in cities, and nearly 60 percent of world population over the next two decades. Now half of the world's population lives in cities and during the next two decades about 60 percent of the world's population – 5 billion people – will be urban residents (World Bank, 2009).

The process of urban increasing development seriously began since the eighteenth century after industrial revolution and extensively affected natural resources and environment. Reduction in mortality, population growth and increase in the harvest of natural resources were among the results from industrial revolution that mainly led to urban sprawl. Urban sprawls in large-scale is considered some kind of Invasion of the natural spaces around the city. Now conversion of natural areas into urban residential spaces

and urban land uses, conversion of natural forests into agricultural lands and villa construction, uncontrolled growth of consumption industries, pollution of water resources, increase in artificial uses of the land and environmental pollutions have caused many damages concerning the natural appearance of the Earth and continuing this trend can cause a direct reaction from nature and together with other consequences of the life jeopardize the lives of the current and next generations (Buzbee, 1999).

Along with the development of urbanization and social urban developments, environment and agricultural lands around cities have been at risk due to the trends of urban life and needs of industry and machine world and in this way, urban development regardless of principles of sustainable development and environmental constraints will be associated with environmental pollutions (water, air, soil, and noise). As cities grow in size and population, coordination among their physical, social and environmental aspects are of great importance and stability of the cities will depend on the agreement among these factors. In between, environment as a development platform has an important role in urban development and healthy environment and sustainable ecosystems provide not

only necessary background in development process but an appropriate environment for human life and for his participation in the process of human development. Urban development management enjoys different aspects including optimal allocation of the uses in regard with environmental capacities, qualitative and quantitative management of water resources, waste management, energy efficiency, development of urban transport, noise pollution control, air and water pollution control, optimal distribution of urban green spaces and reduction in environmental hazards.

In recent decades, the incidence of many of the environmental issues has led human society to find out that the scope of its activities on the environment is limitless (Mitchell, 1996; Kates, Parris and Leiserowitz, 2005). On the other hand, environment is also accompanied with some limitations that are not expandable even taking the advantage of the best existing technologies, and ignoring these limitations during urban development process, will bring destruction to the environment (Habitat, 1992; Moran et al., 2008). Therefore, any use of natural resources for the construction and development of cities should take place after assessments of resources and within capabilities and capacities of the environment. After years of experience, human being has found out that in order to prevent environmental resources destruction, he must move with nature and exploit the land as much as it power or its productive force (Nix, 1985).

Following this concept in geography, the phrase "Sustainable Development" was common. In its traditional term, sustainable development is prudent use of natural resources and their reservation. Sustainable development is a socio-economic change that while moving toward economic development, doesn't eliminate existing ecological and social systems in societies and habitats.

United Nations as the center and axis of promoting the sustainable development culture has made strenuous efforts since the nineties decade to deepen environment protection programs. This development means that in order to prevent the emergence of social debts for future generations it is necessary for enough investment in the field of environment protection (Habitat, 2008).

Sustainable urban development is a more complex process, because establishing a balance between urban developments while considering environmental issues is very difficult. Modern man has unlimited desires but the environment power is very limited and in many cases natural environment also seems fragile. For example, promoting urban welfare level takes place through increasing the urban facilities such as roads, bridges, housing passages and spaces constructed by human being. In turn, they also ask for more spaces of natural level of the earth and of the natural resources on the whole. Therefore, promotion of urban welfare reduces and weakens the natural environment and since, human being on the whole is a part of integrated body of the nature and needs to have organic relations with it, pressure on the environment will in turn reduce level of human welfare. Therefore, man must create a stable equilibrium between his unlimited desires and natural limitations of the

environment which he himself is a part of it. These concepts and their effects on each other have shown in the following figure.

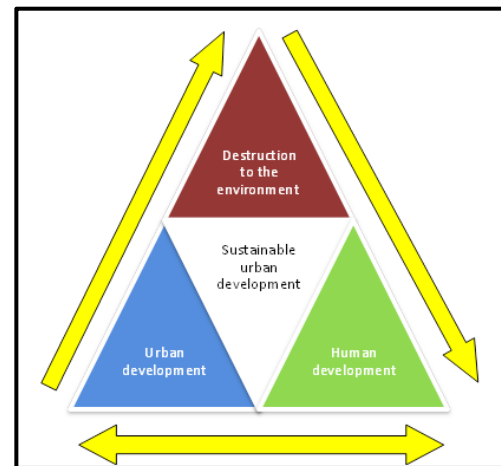


Figure 1. The tri-relationship among urban development, environment and human development

At first, we deal with recognition of the past and present situations in relation to urban development issues and then, we will review destructive relationship between urban development and environmental projects. At the end, we will refer to urban stable development and the environmental requirements in planning for urban development.

MATERIALS AND METHODS

Growing developments of the cities

Cities are physical structures that have been built by human being in the heart of the nature. Until the Industrial Revolution, cities enjoyed appropriate interactions between natural environment and human environment. But, since the twentieth century confrontation of the construction and urban development (or the built environment) and nature caused unlimited tension factors to be created and in this way, discussions on sustainable urban development increased.

Cities are gathering places for buildings, streets, roads, bridges, public places, transport stations, airports and centers for production and consumption of goods and services, and therefore, they are locations of too much traffic and in order to continue their own activity and development processes as well as to be able to include population, labor force, capital and technology, they need inputs such as the earth, natural resources and spaces. Urban development as a spatial concept can be defined as changes in land use and density level to meet the needs of residents in the areas of housing, transport, leisure and social needs, etc. Having a look at the subject, we will see that tripartite-intertwined role of geographical foundations in urban development process is as follows:

1. The city as a source of production of goods and services.
2. The city as a space for the establishment of population and activity.
3. The city as a place for providing emotional and physical needs of human beings.

This tripartite function of the cities has been / is the origin of appearance and formation of the cities in the past and the future. But, together with developments in the cities some challenges and discrepancies are created among these three functions (Xu and Yeh, 2005).

Thus, we see that, environmentally, cities are considered both threats and opportunities. Because of the large number of population, threats raise land, energy, water, goods and services uses in a limited place and consequently, they impose a severe strain on the environment of the region. On the other hand, despite the destruction of the environment, and concentration of people and buildings at a point, opportunities cause saves in the use of resources or rare environmental goods. Furthermore, lands are used densely and optimally which is another opportunity to protect the environment (Moran, 2010).

The impact of urban increasing development on the environment

Environmental problems are among the most important issues of nowadays cities and they come from their conflict and confrontation with natural environment because, urban development is inevitably associated with domination of buildings, industries, transport, and economic activities over natural spaces, and over time this domination has been changed into the form of domination of the city over the nature. This process will lead to the lack of equilibrium and will create conflict between man and nature and ecosystem relationships will be impaired. Urban environmental problems mainly appear in the following forms:

- Land use problems: if urban development doesn't take place according to the principles of sound land use planning, it may cause difficulties in land uses. Urban facilities may allocate a land for themselves which is more appropriate for other uses such as agriculture, parks and (Louw, 2007).
- Environmental events: poor designs for land uses and designs of facilities engineering of urban development can cause erosion, landslides, floods and other complications. Construction of infrastructure in places where natural environment cannot bear them causes drift and erosion and sliding and the risk of flooding and shoreline changes in some places.
- Gradual loss of national parks and protected areas, and difficulties in keeping these places because they are located near major towns (Habitat, 2008).
- Pressure on water resources and problems in the natural water balance in the region.
- Water pollution: If proper sewage system is not intended for buildings and towns, it will lead to pollution of underground waters, rivers, lakes or beaches (Xu and Yeh, 2005).
- Air pollution: air pollution comes from excessive use of internal combustion vehicles (cars, buses and motorbikes) and, these vehicles are the major components of intra-urban transportation systems. Of course, air pollution also includes the dusts arising from the lands without vegetation.

- Noise pollution: noise from motor vehicles, machines and airplanes can be harmful to the ear and create physical and emotional stresses.

- Visual pollution: This pollution can be caused by several sources:

- Buildings with inappropriate view that are unlike the local building codes, or the uses of inappropriate materials on the outer surfaces and creating inappropriate prospects and/or using very large and massive advertising signs and also inappropriate prospect of telephone lines and electricity facilities and finally, barrier disruption of urban facilities for landscapes to be seen.

- Waste disposal problems: garbage in areas with dense urban points especially its central core are common problems that come from many people who use the central area. Solid waste from hotels, hospitals and public places publish vermin, diseases, and pollution and cause unpleasant sights to be created.

- On the other hand, urban economic development brings increase in level of incomes and this also leads to increase in the amount of traffic, demand for more space and also increase in heating and cooling energy. As a result, Universality problems such as climate change become more severe.

Sustainable development

From the view point of J. Coomer sustainable society is the one in which environmental limitations are considered. Such a society is the one in which growth limitations are recognized rather than a community with no growth, and thus the ways for replacing the growth are paid attention to. Michael Redcliff considers the phrase "sustainable development" an expression of ecological teachings in economic processes and Turner believes that in principle, sustainable development to achieve an optimal policy for sustainable development must be such that while adopting a growth rate of real per capita income, prevents destruction of national capital reserves or reserves of natural capital (Elliot, 1994).

Sustainable development implementation is the most effective non-technological method to reduce pollution, reduce environmental degradation, depletion of natural resources and using population growth as human power resources for future development and benefit the society.

In United Nations the main issues to reach sustainable development, emphasized by the World Commission on the development and environment, are as follows: population and development, food security, energy, industry and urban challenges. Thus we see that, except for food security which is related to agricultural development, all of the above mentioned cases are directly or indirectly in relation with urban development issues (Habitat, 2008).

Environmental requirements, force urban planners to enter into the arena of competition for sustainable development for the purpose that the cities organize urban system and production methods and

urban lifestyles such that urban development moves toward the environmental sustainability.

Requirements of sustainable urban development

Theory of sustainable urban development has come from discussion of environmental issues on the environment, especially in urban environment which was presented following the sustainable development theory for environmental protection. This theory has been about the subject of preserving natural resources for present and future through optimal use of land and causing the minimum damage to resources.

In a brief vision, theoretical foundations on sustainable urban development include the following:

Development harmonious with environmental power of the region, reducing the excessive use of soil and water resources and emphasis on protection of natural resources ,reducing pollution, reducing the volume of municipal wastes, increase in recycling, management of non-recyclable wastes, reduction in energy consumption, increasing the urban trees and green areas, urban decentralization and reduction in fragmentations, reducing the communication distances, expansion of public transport and reducing road congestion, increase in average densities in the suburbs and small towns, diverse development of housings in employment centers and centers for production of goods and services, development of small towns to reduce dependence on large cities.

Most cities are still far from sustainable development and sustainable urban development can succeed with the existing urban challenges in relation to environmental degradation and Coordinate urban development with environmental policies.

RESULTS AND DISCUSSION

Cities are phenomena that man establishes them in the heart of nature to make use of the gift of life. Man chooses accommodation in town to produce and consume goods and services, and technology. With the development and growth of human society its needs and tastes are expanded while the power of natural environment is limited and pressure over its capacity causes undesirable consequences. Therefore, urban development should take place according to the environmental powers of the context and taking the region's limitations and characteristics into account. Sustainable urban development was presented following the sustainable development theory to support environment against the increasing developments of the cities. This theory brings up protection and maintenance of natural resources for present and future through optimal use of the land and causing minimum wastages of resources in urban development plans.

REFERENCES

Buzbee,W., 1999. Urban Sprawl, Federalism, and the Institutional Complexity. *Fordham Law Review*, Vol. 68.

- Carr, Dara, 2004, "Improving the Health of the World's Poorest People", *Health Bulletin of the Population Reference Bureau*, No 1
- Elliot, Jennifer A.1994. *An Introduction to Sustainable Development: The Developing Countries* Routledge, 1994 - Political Science - 121 pages.
- Habitat, T. A. 1992. *A Methodological Framework of EIA for Urban Development*. UN Centre for Human Settlements: 11- 18.
- Kates, R.W., Parris, T.M. and Leiserowitz, A. A. 2005. What is sustainable development? Goals, indicators, values, and practice. *Environment*, 47:10- 21.
- Louw, Erik. 2007. *Land assembly for urban transformation--The case of 's-Hertogenbosch in The Netherlands*. *Land Use Policy* In Press, Corrected Proof.
- Mitchell,G., 1996. Problems and fundamentals of sustainable development indicators. *Sustainable Development*, 4: 1- 11.
- Moran, A. 2010. Government warming to a carbon tax. *The Institute of Public Affairs Review* 62(4):39–41.
- Moran, D., Wackernagel, M., Kitzes, J., Goldfinger, S., & Boutaud, A. 2008. Measuring sustainable development nation by nation. *Ecological Economics* 64(3):470–474.
- Nix. H. A. 1985. What is environmental management. In *Environmental Planning management* ed J. J. Basinski and K. D. cocks) CSIRO. Canberra: 31-36
- UN-Habitat, 2008, *The State of African Cities 2008: A Framework for Addressing Urban Challenges in Africa*, Nairobi
- World Bank, 2009, *World Development Report, Reshaping Economic Geography*, Washington DC, and the *Africa Development in 3D*, Washington DC.
- Xu, J. and A. YEH. 2005. City Repositioning and Competitiveness Building in Regional Development: New Development Strategies in Guangzhou, China *International Journal of Urban and Regional Research* 29 (2):283-308