

SUSTAINABLE URBAN ENVIRONMENT

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Abstract: This article is based on the urban dimension of the environmental challenge and the environmental dimension of urban development. For the first time in human history, a majority of the earth's population lives in cities. But though great cities have been among humanity's supreme achievements down through the ages, they now face an uncertain future, threatened by forces that could undermine the very things that have made them great. There is an urgent need to plan and manage the cities in order to sustain them. Thus, sustaining cities is an imperative.

Key-Words: sustainability; urban; environment; globalization.

1 Introduction

Globalization processes in every field of current era such as finance, communication, business, trade and so on. Architecture and urbanization are also directly affected from all of the global approaches. The human habitat is rapidly urbanizing and this is causing problems all over the world. The urban growth in the world amounts to a town of 100.000 inhabitants a day. More than two thirds of the urban population live in developing countries. And two thirds of the population increase in these countries is in urban areas.

Urbanization as such is not a problem. On the contrary, it brings considerable social and economic benefits. The problem is that the development of infrastructure and services in the towns and cities is not keeping pace with the rapid population growth. As a result, living and environmental conditions are deteriorating and slums and shantytowns are mushrooming. An alarmingly increasing part of the world's urban population is living in absolute poverty.

In a world faced with the dangers entailed by rapid growth and development, depleting resources, and impairment of the environment,

preservation-related issues have become urgent. Across a wide range of phenomena, from international markets to telecommunications, from popular culture to mass production, it appears that the world is becoming compressed. That is not to say that people's experiences are necessarily becoming more similar; the past twenty years have witnessed a growing distance between the wealthy and the poor. A global world is not a uniform world for societies. But, there are threats to the global environment. So, more attention has to be paid for a global identity around environmental issues. Modern substances and modern technology could cause pollution on a global scale [1].

A general acceptance, regarding environmental crisis is reflected on both local and global levels that, the present form and degree of resource exploitation and associated consumption practices are unsustainable. Cars and factories can be thought as the most obvious enemies of the environment, but buildings consume more than half the energy used worldwide.

The quality and well-being of the cities of the future will depend on how the natural resources are exploited and the ecosystems are managed which are the basis of life itself. So,

cities play an important role in meeting the goals of sustainable development.

The aim of this paper is to focus on the overall principles for sustainable cities. But before that, initially, it is essential to explain the impacts of cities on environment.

2 The Impact of Cities on Environment

Cities are centers of production, education, and social and cultural activities. Although cities are taking up only 4 percent of the earth's land, they use huge amounts of natural resources, such as energy, water, minerals, and often the best lands. Where resources are flowing into the cities, wastes in solid, liquid and gaseous forms are emitted and exported by the cities. This has severe environmental impacts, first and foremost to the city residents, but increasingly also on the direct surrounding areas of the cities and the national, regional, and global levels.

Cities play a key role in the emissions of Carbon Dioxide and other green house gases (GHG) that contribute to the warming of the global climate. Activities in cities, or generated by cities, generate close to 80% of all carbon dioxide and other GHG, only 20 percent or less is originating from rural areas. The impact of climate change on cities includes flooding and landslides, sea level rise affecting coastal cities, extreme temperature fluctuations, water shortages, windstorms and other extreme weather events, air pollution, and intensification of urban heat islands. Land use and land use change play a key role in global climate change. The change of non built-up areas into built areas is a key contributor. Urban expansion, including the destruction of forests and plants, has a strong effect, not only on GHG emissions, but also on the change of the local and regional climate.

Cities have great impact on water bodies, rivers, lakes and coastal areas. Approximately

60% of the world's population lives within 100 km of the coast, an area that accounts for only about 25% of the land mass. By 2025, over 80% of the largest 30 cities in the world will be in developing countries, and the majority will be coastal mega-cities. Growing urban populations along coastlines are discharging their wastes into seas, lakes and rivers. These waste water streams give damage to both human health and the original flora and fauna [2].

Besides these environmental problems that cities cause, it is essential to mention on the effects of globalization on cities both in social and cultural sense. According to the UN-Habitat Report, *The State of the World's Cities, 2004/2005*, a vast, international migration of people in search of better lives and opportunities has been set in motion by globalization. This flow of humanity, while benefiting many cities through cultural diversity could lead to greater fragmentation and larger inequalities between rich and poor.

By 2030, 60 per cent of the world's population will live in cities. Nearly all of this global population growth will be absorbed into the urban areas of the world's least developed regions. If one of the great strength of cities is their openness to the economic functions that strangers fulfill, their great weakness is a slowness to absorb them in the micropolitics of everyday life, in both public spaces and private institutions.

The standardization of urban culture is significantly reinforced by the increasing multicultural nature of cities, which is itself a direct result of international migration. The principle outcome of this has been the emergence of what may be called urban ethnic spaces within cities, often in the form of ethnic ghettos, but also in the form of culturally distinct non-residential spaces, such as shops and restaurants. This, of course, has given rise to some fundamental challenges about how to manage multicultural cities. Despite cities presumed air of tolerance and real social

diversity, they have always been flashpoints of ethnic hostility [3].

However, cities also provide opportunities to improve the quality of life. In cities residents find medical services, access to information technology, learning institutes, financial services and other facilities. Cities also provide opportunities to address these issues, to improve the situation for the local residents and to reduce the contribution to regional and global environmental issues.

The basic criterion for the future cities is the concept of sustainability which is dynamic and multifaceted [4].

3 Sustainability

The term “sustainable development” and the associated notion of sustainability have risen to international prominence following the publication of the Brundtland Report (World Commission on Environment and Development, 1987). Sustainable development refers to a form of socioeconomic advancement which can continue indefinitely without exhausting the world’s resources or overburdening the ability of natural systems to cope with pollution.

Sustainable development is defined by Brundtland as: *“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”* Thus the Brundtland Report, even its very title ‘Our Common Future’, offered sustainable development as the ‘shared goal’ of humankind. As with global warming or ozone depletion, the only apparently sensible level for carrying out policies for sustainable development is that of the globe because non-sustainability by even a minority will undermine sustainable development for all. Previously, economic growth was a development objective that could be pursued by all nations individually. For the first time, sustainable development is not something that everyone can do separately but a joint global

project; as the Brundtland Report expresses it, ‘the goals of economic and social development must be defined in terms of sustainability in all countries’ [5].

The fundamental understanding of the sustainable development is that environment and economy cannot be seen separately. The two are inextricably linked. Environmental goals should be integrated into the economy, so pollution is prevented in the first place. The concept has since gained significant momentum and popularity in Rio in 1992 and in Johannesburg in 2002 [6].

Sustainability requires profound changes to occur on all levels of society: In governance, in technology and in life styles. *UN Preparatory Committee for Habitat II* stated that: *“Cities can be part of the world economy and be the engines for sustained economic growth and sustainable development. If present urban problems are not solved, however, they will become obstacles to stability well-being and the attainment of sustainable development.”*

Urban development should be kept within the carrying capacity of the region, and national and international cooperation should enhance development which is sustainable. Human capacity building requires improvements in the basic living standards of the presently disadvantaged.

4 Principles for Sustainable Urban Environment

The paradigm of urban sustainability projects cities onto the global scene of the future. It advocates a balance between the quality and quantity of development and asks for integration of socio-economic and environmental concerns. The Charter of European Cities and Towns Towards Sustainability, seen as the European version of local Agenda 21 states that, sustainable development helps cities and towns to base living standards on the carrying capacity of nature and progress towards social justice,

prosperous economies and environmental improvements. In order to achieve sustainable urban environments some basic principles have to be applied. These basic principles are put down below:

4.1 Renewable Energy Use

Energy is a precondition and a catalyst of development. During the 20th century, the number of people on earth increased fourfold, but energy use was multiplied by sixteen. Cities have to meet the growing energy demand in a secure and sustainable way, diversify energy supply and enable a smooth transition from a fossil fuel-based energy economy to one based on renewable energy sources. Improving energy efficiency across all sectors and throughout activities is a key factor for advancing towards sustainable cities [7].

4.2 Balance With Nature

There must be a balance between nature and human endeavor. There is a level of human habitation wherein the resources that are consumed will be replaced, through the replenishing cycles of the seasons, creating environmental equilibrium. The balance of nature can be maintained when fragile areas are reserved for preservation and conservation activities, or used for low intensity habitation. Common wisdom must include the fundamentals of balance between man and nature [8].

4.3 Green Spaces

Green spaces provide important services for a city. They improve the quality of life of its inhabitants. However, the benefits of the green spaces are not easy to express in monetary terms. As a result the green spaces do not get enough attention in urban planning. Building and production are given priority over natural areas and the green infrastructure in the city slowly disappears. Benefits generated by functions of the green spaces are: The protection of the existing biodiversity; fuel wood, timber and food supply; health benefit-improvements in physical and mental health; social gathering and community building; beautification of the urban natural area;

securing water supplies; prevention of erosion; prevention of dust; air quality improvement; noise reduction; climate control; flood control [9].

4.4 A Balance With Tradition

The traditional architecture has the order engendered into building systems through years of adaptation to climate, to social circumstances, to available materials and to technology. These features have to be respected by contemporary architecture, to promote architectural styles and motifs, which communicate cultural values. Cultural heritage is more than old monuments. If the preservation and restoration of unique historic environments should be justified on its own merits, as a universal value in itself, it may actually also play an important and integral part in promoting sustainable social and economic development [10]. There is a link between signs and symbols; decoration and motifs; iconographic structures and shared cultural wisdom. This is a silent language, which bonds a people together through a meaning system. These all form part of the unwritten, unspoken traditional knowledge system of a culture. These local knowledge and meaning systems, as expressed through art, urban space and architecture, have to be used to orient and structure urban plans [11].

4.5 Social Sustainability

Sustainability of the urban environment is not just a technical question; without generous social conditions it cannot be realized. In the developing world and in the large cities of the developed world, the environmental considerations cannot be made acceptable if they are not coupled with an efficient program of easing primarily urban poverty. A minimum requirement in these places is to improve urban infrastructure, education and health care services, but this cannot be done without giving equal rights to the poor and other disadvantaged social groups [12]. To be socially sustainable, practices should aim to provide equitable access to services for all citizens [13].

4.6 Conviviality

Vibrant societies are interactive, socially engaging and offer their members numerous opportunities for gathering. The hierarchies can be conceptualized as a system of social tiers, with each tier having a corresponding physical place in the settlement structure. Sustainable urban environment identifies these places and assures they become components of the urban milieu. These places can be defined as; a place for individual, for friendship and householders, a place for neighborhood, communities and for the public domain.

4.7 Accesibility

A major concern of sustainable cities is transport. While recognizing the convenience of personal vehicles, it attempts to place the costs (energy consumption, large paved areas, parking, accidents, negative balance of trade, and pollution) on the users of private vehicles. Affordable public transport has to be promoted. Residential development has to be along with complimentary social amenities, convenience shopping, recreation and public services in compact, mixed-use settlements. So, people can access these services at a walkable distance.

4.8 Human Scale

An abiding axiom of urban design and city planning has been the promotion of people-friendly places, pedestrian walkways and public domains where people can meet. The last three decades have seen the loss of such spaces where the public domain has shrunk into privately managed shopping malls, entertainment complexes and gated suburban communities. Development has spread out privately managed, "limited access" public amenities along automobile roads and highways. The new urbanism focuses on isolated enclaves. These new urbanism communities are in fact hideaways for an alienated elite. Architecture, campus planning and city planning, over the past half century, have all focused on isolated monuments, on their own isolated plots, often enclosed in their own compound walls and behind lockable

gates. Largeness, grandness and technological feats have been the new trend, where the goal is often to amaze the public. The end results are tourist destinations and not communities. Sustainable urban environment promotes the scale of the pedestrian moving on the pathway, as opposed to the scale of the automobile on the expressway.

4.9 Opportunity Matrix

Sustainable cities have to be viewed as opportunity system, as playing an equalizing role allowing citizens to grow according to their own essential capabilities and efforts. These cities have to promote a guaranteed access to education, health care, police protection and justice before the law, potable water, and a range of basic services. Indigenous knowledge and creativity should also be seen as important assets to sustainable city development [14].

4.10 Regional Integration

Cities have to be seen as a part of a larger social, economic and geographical organism. It has to be taken into attention that a city exerts an influence over its immediate surrounds. It can catalyze upliftment, or deterioration of the hinterland that supplies its raw materials, food, workers, recreation areas and environmental cushion. If the wholeness of the city and its region, does not recognized the city will ruthlessly exploit its surrounds, denuding the forests of trees, quarrying out hillsides for stone, grassing of the biomass for milk and meat.

4.11 Vision

For sustainable cities, even the smallest decisions, must be based on a broad vision of the future. This vision must be nurtured from positive and constructive aims of the nature of the future. Vision entails making an integrated and holistic assessment of the future; evaluating possible options based on their likely impacts. Sustainable urban environment needs a common vision of the city by the city users and their leaders.

5 Conclusion

Cities are first and foremost places of social synergies, economic interactions and cultural efflorescence. Their success depends largely on the quality of life they offer to citizens and their capacity to generate and distribute wealth. Energy is the common denominator of all human activities, synonymous with life and vitality. The paradigm of sustainable development inaugurated a new civilization, enriched with concerns about the quality of development. The most inexhaustible energy resources are not only renewable sources, but also knowledge and innovation.

Cities are the places where most knowledge is created and most innovations take place. Sustainability means also “sustain ability to create and innovate” [15].

While there is concern about the growth of mega-cities, there is recognition that people will continue to move to such huge conurbations despite poor living conditions. The imperative is to find ways to provide and manage basic services for all the millions who have chosen to live there. It is also important to point that, political sustainability and good urban governance and decentralization of authority and resources are essential to implementing adequate urban environment policies.

The new major force in the world is technology, and the globalization and its effect on development, the new required technology

and the environment should be reconsidered [16]. The real safety of the inhabitants of the world lies in technology, a major tool in the progress of economic, agricultural, and environmental growth, which is facing a real threat.

To achieve a sustainable urban environment, changes in attitudes and behaviour will be required on all levels of society. For a smooth transition, all sectors of society need to be aware of and accept the need to change. Education, research and full-scale demonstration projects with local participation will be necessary. Besides these local changes, international cooperation in both technical and financial fields is vitally important [17].

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