Sustainable Planning Interventions towards Sustainable Cities and Communities: A Contemporary Evaluation of Different Forms of Sustainable Cities

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Abstract

Cities are now home to more than half of the world's population and this proportion is expected to reach two-thirds by 2050. This global megatrend of accelerated urbanization, while bringing greater opportunities for growth and human well-being, will continue to exert pressure on resources (e.g. energy and water), as well as on the environment's carrying capacity to absorb waste and emissions. As urban growth will happen mostly in developing nations, combating the adverse effects of urbanization and industrialization will require integrated and practical solutions. The way cities are governed and developed, therefore, cannot continue as usual and must incorporate action towards reducing environmental footprint, while addressing increased vulnerability from the effects of a changing the climate, and additionally providing higher quality public services. There is an imperative today to foster sustainable development for sustainable cities and communities. The main aim of this research article is to theoretically analyze different sustainable planning approaches and interventions towards sustainable cities and communities as well as to analyze different forms of sustainable cities such as inclusive city, safe city, resilient city concepts etc.

Introduction

Cities are now home to more than half of the world's population and this proportion is expected to reach two-thirds by 2050 (UNDP, 2017; UNIDO, n.d.; United Nations, 2017; World Bank Group 2012). They are focal points for ideas, commerce, culture, science, productivity, social development and much more. Although cities have enabled people to advance socially and economically, many challenges exist to maintaining cities in a way that continues to create jobs and prosperity while not straining land and resources. Common urban challenges include congestion, lack of funds to provide basic services, a shortage of adequate housing and declining infrastructure (EUKN, 2014; European Union, 2015; United Nations, 2017). This global megatrend of accelerated urbanization, while bringing greater opportunities for growth and human well-being, will continue to exert pressure on resources (e.g. energy and water), as well as on the environment's carrying capacity to absorb waste and emissions. Industries located in or near cities, are key resource users as well as sources of pollution, waste, and GHG emissions. Especially as urban growth will

happen mostly in developing nations, combating the adverse effects of urbanization and industrialization will require integrated and practical solutions. The way cities are governed and developed, therefore, cannot continue as usual and must incorporate action towards reducing environmental footprint, while addressing increased vulnerability from the effects of a changing the climate, and additionally providing higher quality public services (UNDP, 2017; UNIDO, n.d.; United Nations, 2017). There is an imperative today to foster sustainable development. Making cities safe and sustainable means to ensure access to safe and affordable housing as well as upgrading slum settlements. It also involves investment in public transport, creating green public spaces, and improving urban planning and management in a way that is both participatory and inclusive (UNDP, 2017).

Objectives of the Research

The main objective of this research article is to theoretically analyze different sustainable planning approaches and interventions towards sustainable cities and communities as well as to analyze different forms of sustainable cities such as inclusive city, safe city, resilient city concepts etc.

Methodology

The present research work is mainly qualitative in nature and has been done through thematic analysis procedure. Thematic analysis is a process of data reduction through developing themes on a certain issue in order to gain a deep insight of the issue and it is done through extensive studying and reviewing of relevant literatures (Grbich, 2013). In order to fulfill the objectives of the research, data from secondary sources were collected and evaluated. Literatures regarding the sustainable city and its different forms in the contemporary urban planning contexts such as inclusive city, safe city, resilient city concepts etc. were reviewed. Subsequently the concepts were evaluated in relation with the current planning and development context of sustainable planning interventions towards sustainable cities and communities.

Basic Concept of Sustainable Cities and Communities

A sustainable city is a city designed with consideration of environmental impact, inhabited by people dedicated towards minimization of required inputs of energy, water and food, and waste output of heat, air pollution and water pollution (BBC, 2014; Wikipedia, 2017). Sustainable communities have a strong sense of place. They have a vision that is embraced and actively promoted by all of the key sectors of society, including businesses, disadvantaged groups, environmentalists, civic associations, government agencies, and religious organizations. They are places that build on their assets and dare to be innovative. These communities value healthy ecosystems, use resources efficiently, and actively seek to retain and enhance a locally based economy (REC, n.d., STAR Communities, 2017). Sustainable community development is the ability to make development choices which respect the relationship between the three "E's"-economy, ecology, and equity (REC, n.d):

1. ***Economy*** - Economic activity should serve the common good, be self-renewing, and build local assets and self-reliance.
2. ***Ecology*** - Human are part of nature, nature has limits, and communities are responsible for protecting and building natural assets.
3. ***Equity*** - The opportunity for full participation in all activities, benefits, and decision-making of a society (REC, n.d).

Contemporary Forms of Sustainable Cities: Evaluation of Modern Urban Planning Approaches

The path to sustainability is different for every community – but the common elements are a healthy environment, a strong economy and the well-being of the people living in the community**.** When sustainability areas are addressed in tandem with each other, they have a powerful, positive effect on the quality of life and future of a community. By overlapping work in these areas, efficiencies emerge and better results are achieved. In this regard, the modern urban planning approaches focus on different forms of sustainable city concept such as inclusive city, safe city, resilient city etc. (AEGN, 2012; STAR Communities, 2017).

Sustainable City is Inclusive City

An inclusive city is one that values all people and their needs equally. It is one in which all residents—including the most marginalized of poor workers—have a representative voice in governance, planning, and budgeting processes, and have access to sustainable livelihoods, legal housing and affordable basic services such as water/sanitation and an electricity supply (Douglas, 2013). It is a city in which the processes of development include a wide variety of citizens and activities. These cities maintain their wealth and creative power by avoiding marginalization, which compromises the richness of interaction upon which cities depend (CFIU, n.d.). According to the United Nations Human Settlements Program, an Inclusive City promotes growth with equity**.** It is a place where everyone, regardless of their economic means, gender, race, ethnicity or religion, is enabled and empowered to fully participate in the social, economic and political opportunities that cities have to offer. It goes on to summarize that participatory planning and decision-making are at the heart of the Inclusive City (UK essays, 2016). To make sure that tomorrow's cities provide opportunities and better living conditions for all, it is essential to understand that the concept of inclusive cities involves a complex web of multiple spatial, social and economic factors (WB, 2015):

1. Spatial inclusion
2. Social inclusion
3. Economic inclusion

The spatial, social and economic dimensions of urban inclusion are tightly intertwined, and tend to reinforce each other. On a negative path, these factors interact to trap people into poverty and marginalization. Working in the opposite direction, they can lift people out of exclusion and improve lives (WB, 2015).

Sustainable Strategies to Make Cities Inclusive

If a city wishes to be inclusive and to ensure that its citizens benefit from the promises of urban life, it must first facilitate everyone's access to essential services (Frérot, 2017). The spatial concentration of poverty in deprived urban neighborhood requires a comprehensive approach following the principles of non-segregation and desegregation, upgrading the physical environment, strengthening the local economy, proactive education and training policies, and efficient, affordable urban transport (EU, 2016). Designing innovative, multi-dimensional interventions to create inclusive cities requires (WB, 2015):

- **Adopting multi-sector solutions for a multi-dimensional issue:** This implies combining spatial approaches (access to land, infrastructure, and housing) with social interventions (inclusion of the marginalized, community-driven development, investment in crime and violence prevention, citizen engagement,) and economic measures (jobs and opportunities for all, education and skill building, pro-poor economic strategies, access to credit and finance).
- **Combining 'preventive' and 'curative' solutions:** There is a need to combine preventive approaches that allow proactive planning for future growth with upgrading and other curative approaches.
- **Sequencing, prioritizing and scaling up investments**: While a multidimensional, integrated approach is recommended, it is not always possible to implement operations that target all aspects of inclusion at once. In some cases, interventions may need to be sequenced and scaled up or down based on context, priorities and needs.
- **Harnessing communities' potential as drivers of inclusion:** Local communities are in an ideal position to plan and prioritize their own needs. Based on the success of community-driven approaches, communities' participation in planning, implementing and sustaining the benefits of urban interventions is viewed as a key success factor.
- **Strengthening capacity at local level:** When it comes to building inclusive cities, higher levels of government and international agencies are only as effective as the local institutions they support. It is important to ensure that local governments have the political backing, devolved powers, necessary tools and sufficient resources to make urban inclusion a reality.
- **Fostering Partnerships:** A multi-dimensional approach calls for multi-partner interventions, internally and externally (WB, 2015).

Sustainable City is Safe City

The Safe City is a concept for returning security, safety and quality of life to today's complex cities through the use of technology, infrastructure, personnel and processes. A city must be free from all physical, social and mental traits. The environment must not generate an atmosphere that will encourage incidents that threaten local prosperity. Most importantly, dwellers must always be at the most safest, prosperous,

healthy and happy (Shamsuddin & Hussin, 2013). The Safe City concept can be applied to cities, towns, industrial parks, college campuses, or any other physical environment where people require a safe, comfortable environment (Magal, 2011; Shamsuddin & Hussin, 2013). Safe City is a new paradigm to fit modern cities and the rising cost of manpower; it combines the street patrolman's intuitive approach with state-of-the-art observation, communication and information management. Responsibility for city safety is shared between multiple agencies and safe city initiatives are about prevention (through better intelligence sharing) and risk mitigation (through better incident management) (Bannister, 2014; Magal. 2011).

Sustainable Strategies to Make Cities Safe

The safety aspect is a basic and essential need that must be applied in the planning of the urban environment where prevention from any crime from happening will make the city dwellers enjoy a better life and good health (Shamsuddin & Hussin, 2013). "Safe City" offers, with its single set of information-management tools, a multi-dimensional coverage for complex and multi-functional operational tasks, a diversity of integrated systems (video surveillance and video analytics, chemical control, emergency communications, public address and general alarm, media, etc.) and support for a sustainable expansion of the present and future services (Vitalij, Robnik & Alexey, 2012). In order to achieve a safer city planning, several aspects of safe city planning must be looked into:

i. Enhancing Natural Surveillance: A planning concept that maximizes visibility of people, public areas and building entrances, door and windows that look onto public area. It can be achieved by designing in the opportunity to see and be seen. The placement of land uses, amenity areas, people and their activities in such a way so they can be observed. Such as:

- Create a visual and physical relationship between the building and sidewalk and street;
- Design landscape with clear sight lines especially along pedestrian routes;
- Improve visibility with glazing and transparent building materials;
- Consider the proper application of building and site lighting;
- Avoid designing entrapment spots and isolated spaces.

ii. Improving Territorial Reinforcement: Utilizing landscape plantings to define property lines and distinguished public with private spaces. It can be designed into development to promote responsibility and a sense of shared ownership. The goal is to project the property owner's sphere of influence beyond what would they would normally considered private space.

iii. Natural Access Control: Design concept that denies access to crime targets. It is the physical guidance of people as they come and go through space by the use of real or symbolic features.

- Buildings, landscaping, ground affects, fencing, signage and lighting can be used to project a sense and a reality of access control.

- There should be clarity as to where users are allowed to go and where they are not with no credible excuses for wandering.
- Ensure entrances are well designed so they visually and physically stand out;
- Entrances should have line of sight from beginning to destination, be well illuminated with overlook by windows;
- Site and property entrance points should project a sense of control and encourage uses to access (Shamsuddin & Hussin, 2013).

Sustainable City is Resilient City

Resilience is the capacity of a community to anticipate, plan for, and mitigate the dangers—and seize the opportunities—associated with environmental and social change (Island Press, n.d.). A Resilient City is one that has developed capacities to help absorb future shocks and stresses to its social, economic, and technical systems and infrastructures so as to still be able to maintain essentially the same functions, structures, systems, and identity. "Resilience" as applied to ecosystems, or to integrated systems of people and the natural environment, has three defining characteristics:

- The amount of change the system can undergo and still retain the same controls on function and structure
- The degree to which the system is capable of self-organization
- The ability to build and increase the capacity for learning and adaptation (Resilient City, n.d.).

To survive and thrive in volatile times, cities—and their people—must mitigate crises and seize opportunities to shape the future they desire. They must be, in a word, resilient (Island Press, n.d.). The need for resilience is not limited to big cities. Unlike larger metropolitan areas, small towns and rural communities may have a greater need to proactively consider their resilience because of a comparative lack of financial and human resources necessary to address forward planning and provide emergency response. Regardless of community size, the location, concentration, and intensity of development play an integral role in resilience planning (Applegath, 2010; Urban Land Institute, 2015).

Sustainable Strategies to Make Cities Resilient

The following three strategies will be the most effective for building substantial additional resilience capacity into our communities and cities (Applegath, 2010):

Reduce the city's energy requirements: Our cities' growing demand for energy and especially fossil fuel energy contributes to the problem of global warming. The ability to develop viable and economically sound strategies for reducing the demand for energy will be crucial for building the capacity for resilience to the future impacts of our cities on our global environment. We will need to develop realistic strategies for reducing the current level of demand for energy through such key measures as:

- Reducing energy demand of existing urban fabric
- Reducing consumption of fossil fuels for transportation

Increase the capacity and effectiveness of key infrastructure systems: the key infrastructure systems are reaching or have reached the end of their serviceable life. Electrical power generation and transmission grids; potable water and waste water systems; and public transportation systems are all now at capacity or beyond capacity and service life. We must therefore begin to look for strategies for re-developing these important infrastructure systems. Some of the important re-development opportunities that now present themselves include:

- Electric Power Infrastructure Re-development
- Potable Water Supply Re-development

Develop strategies for re-localizing key functions

- **Re-localizing Food:** More conventional strategies for conserving and re-developing farmland that used to surround most cities will become important for developing an overall food re-localization strategy for our cities.
- **Re-localizing Manufacturing:** there is a great need to develop city planning and design strategies to re-industrialize our cities in economically effective and environmentally responsible ways (Applegath, 2010).

Conclusion

Cities have always been a combination of centers of opportunities and concentrations of social problems. This combination confronts cities with important challenges. Although urbanization has thrown up some of the world's greatest development challenges, but it also has tremendous opportunities for advancing sustainable development. The challenges cities face can be overcome in ways that allow them to continue to thrive and grow, while improving resource use and reducing pollution and poverty. The future we want includes cities of opportunities for all, with access to basic services, energy, housing, transportation and more. With sound, risk-informed planning and management, cities can become incubators for innovation and growth and drivers of sustainable development. To increase their capacities cities will need to adopt urban planning and building design strategies that allow them to increase their abilities to better respond and adapt to the economic, social, and physical stresses they will face as they confront the challenges of increasing energy scarcity, climate change, and population change. Through careful land use planning, wise investment in infrastructure, and smart building design, we can achieve a safe, resilient, inclusive and sustainable city for not only our betterment but also the future generation.

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