CHAPTER 1: Overview of Issues, Scope and Dimensions in Human Settlements Science

Abstract

The chapter seeks to explore and discuss various aspects of human settlements by revealing some of the elements that help shape them when faced with changing cultural needs in trying to solve some of the urban challenges caused by increased urbanisation such as the sprawling of cities, increased traffic congestion and increased pollution in the urban sphere. The background of the argument emanates from the observation that human settlements have continuously evolved, hence the need for effective planning to promote sustainable development of present and future cities. The study engaged a desktop review of literature and results indicate that planners and various interested stakeholders can use city designing studio and the studying or urban and regional morphometrics to positively influence city growth to reduce crime. It is concluded that disasters have become an unavoidable part of most human settlements. It is recommended that planners be able to utilise city designing skills to influence the rate of crime in cities and the rate of climatic changes and disaster occurrences in cities. The study also recommends a well-defined disaster risk management framework that can be used as a yardstick. Local solutions can be crafted to avoid and reduce the impacts of disasters on the environment and human lives.

INTRODUCTION

Human settlements have continuously evolved over the years and have changed to accommodate the ever-changing needs and cultural aspects of people. Urban and regional challenges caused by increased urbanisation and climatic changes have resulted in problems such as traffic congestion, pollution, global warming and the clearing up of urban green spaces in favour of settlement areas. This has prompted planners to be more innovative in dealing with these challenges. It is imperative to increase the study of urban and regional morphometrics, climatic-shifts trends and the advantages of learning and improving skills in city studio designing to formulate designs that appreciate nature and reduce some of the current city challenges such as traffic congestion and pollution. This chapter aims at appreciating various

aspects that human settlements endure such as issues to do with climate changes, crime and transport logistics issues, among others.

URBAN AND REGIONAL MORPHOMETRICS

Defined as a branch that deals with the systematic understanding and measurements of the urban form, urban morphometrics aims at defining the constituent urban elements (Dibble *et al*., 2015; Dibble, 2016). Urban morphometrics can be used by planners and other interested stakeholders to better understand city and regional forms and the character of cities and towns hence the need to understand the branch of "systematics". Systematics refers to the ability to group and organise the external world to classify together objects/organisms that are similar. This in turn helps in urban and regional designing.

TRANSFORMING CITY STUDIO

Cities have evolved and most of them compete to be attractive and become creative places that represent secure investments with the green vision (Lehmann, 2010). As a result, cities have thrived to be innovative in solving urban challenges such as traffic congestion, increased rate of urbanisation in cities, the increased consumption of green spaces and the formation of squatter camps.

TRANSPORT AND CITY LOGISTICS

Defined as the means of freight distribution in urban areas, city logistics involves the engagement of various strategies aimed at improving efficiency while mitigating externalities such as emissions and congestion (Rodrigue and Dablanc, 2020). Freight distribution involves the delivery and collection of goods in urban areas and improvement in city logistics through transportation methods, waste and returns, the handling and storage of goods, management of inventory and home delivery services (Baxter, 2021). Crainic *et al*. (2009) also regard city logistics as movement and consolidation of loads of several customers in the same environmentally-friendly vehicles. As a result, transport inefficiencies and costs are reduced and transport efficiency maximised.

Urban freight has become a vital part of urban planning and due to challenges that currently characterise most urban landscapes such as congestion, environment and energy conservation. Various city logistics can be utilised in solving these problems, including the use of advanced information systems, cooperative freight transport systems,

load factor controls and the use of underground freight transport systems (Taniguchi and Van Der Heijden, 2000). Advanced transport systems involve rationalisation of existing logistic operations, while cooperative freight transport systems deal with the reduction in the number of trucks used for collecting or delivering several goods. Underground freight transport systems deal with the formulation of innovative transport solutions for urban freight transport challenges (*ibid.*).

Reliable delivery services are required to support the urban economy from the local planners' and transport operator's sides. As such, it is expected that vehicles making deliveries should impose a few environmental and social impacts (Allen *et al*., 2010). Two European cities, Amsterdam and Copenhagen, introduced the certification system for freight carriers who deliver or collect goods in city centres in the year 1998. Copenhagen allowed vehicles with a certificate/green sticker to use public loading/unloading terminals in the inner city in what was referred to as the 'controlling load factor'. The certificate could be issued only to vehicles with a load factor greater than 60% and on vehicles less than eight years old (Taniguchi and Van Der, 2000). Pollution levels in the two cities were reduced, with cleaner urban spaces. Zimbabwe recently banned the importation of cars older than 10 years to reduce the levels of pollution on the road.

Most of the early applications in city logistics were done in Japan and Western Europe as these cities were constrained mainly by the lack of available land up to the 21st century. The consideration of urban freight distribution within the planning profession remained limited (Rodrigue and Dablanc, 2020). It has also been noted that urban planning usually concentrates on activities that involve mainly the public sector such as public transit and land zoning, while freight distribution is regarded as a predominantly private sector endeavour associated with externalities (*ibid.*).

CRIME, PLACE AND SPACE

The study notes that design plays an important role in influencing the crime rate of an area. A place encompasses three elements, including a location that defines a position in place, material form representing a physical presence and meaning and value. Space is defined as anything with an area and volume, alternatively referred to as absolute space but does have cultural meaning (Vilalta, 2013). Vilalta (*ibid.*) also

notes that place matters in crime analysis, especially when relationships between correlates are conditional upon the place. Important to note also is that as cities grow, transport efficiency ought to be improved (Rodrigue and Dablanc, 2020) through the introduction of environmental-friendly vehicles (Crainic *et al*., 2009) and the use of underground freight transport systems (Taniguchi and Van Der Heijden, 2000). In Copenhagen, only goods with a green sticker are allowed into the city centre (*ibid.*). Such measures cut on pollution, congestion and underground transport tunnels are utilised.

In Zimbabwe's gated communities such as the Borrowdale Brooke, in the low-density suburb of Harare, stricter measures are employed as people cannot enter or leave the neighbourhood without well-defined intentions. Due to such strict measures, guarded gated communities can be deemed safer than unprotected areas such as Mbare and Mufakose, high-density residential areas.

CLIMATE AND HUMAN HABITAT

Climate change has become a normal part of humans since for years as it has come to be characterised by various forms from natural disasters such as volcanic eruptions and earthquakes, to human-induced actions that have at times resulted in negative effects such as global warming and pollution. While natural causes may not be controlled by humans, human-induced factors can be controlled (Nwankwoala, 2015). Some of these human-induced factors include deforestation, emission of greenhouse gases and densification, among other factors (*ibid.*) and these all affect people's health and the way they live.

TOWARDS A FRAMEWORK FOR SUSTAINABLE DISASTER RISK MANAGEMENT

Both natural and man-made disasters have become a norm. Countries must, therefore, formulate measures aimed at risk reduction and the impacts on people and move towards a well-defined framework for disaster risk management. The Great East Japan earthquake and tsunami showed that both the developed and the developing countries are vulnerable to disasters (ISDR, 2015). There is need for countries to prepare for disaster possibilities at international, regional or local levels to prevent loss of lives.

METHODOLOGY

The study made use of the desktop review of literature by appreciating selected cases from the international, regional and national scenes. This was meant to appreciate developments from the international, regional and local levels. It aimed at appreciating the various facets of human settlements and how they get affected by various aspects such as climate changes, transport need changes and how city studio designing can be manipulated to produce sustainable present-day cities and cities of the future.

DISCUSSION

Human settlements continuously evolved as evidenced by changing culture and people's needs. Apart from having the same characteristics as shown by main and local roads to constitute urban blocks, settlements have not had the same footprint across space as they have been characterised by various urban and regional forms. These have been characterised by differences in culture and the existence of different building materials. As cities grow, challenges caused by urbanisation, such as the increase in traffic demand, the increase for settlement areas have been experienced. As a result, it becomes profitable for planners to have an appreciation of city studio to design settlements that have fewer transport challenges whilst promoting sustainable development through the increased appreciation of nature by the creation of green spaces and walkways to reduce traffic in the city centres.

Strategies to revitalise city centres include the creation of zero-carbon cities that are denser and more agriculture-oriented (Lehmann, 2010). In this regard, it becomes possible to accommodate more people on a limited space of land (probably through the construction of high-rise flats). Such developments reduce the sprawling of cities and traffic congestion problems as walkways and pathways are promoted instead. City studio can also be tempered to boost the economic activities of an area as evidenced by the construction of a casino in downtown Springfield in the USA (Alpay *et al*., 2018). The redesigning of downtown Lubbock in Texas in the US has shown that public opinion matters as consultations were conducted before embarking on the redesigning of the downtown area (Elliot and Driskill, 2016). In this regard, the public voice is heard and resistance to change by the public is reduced.

It becomes critical for planners to understand that no single solution is universal as countries come up with home-grown solutions aimed at greening their cities to promote sustainable development. The chapter also notes that criminal acts in neighbourhoods can either be promoted or avoided by a city's design and zoning. Studies have shown that burglary incidents are more prevalent in clustered settlements (Rengert and Wasilchick, 1998), while a study in Chicago revealed that crime was more concentrated in areas dominated by liquor stores and taverns (Block and Block, 1995). This shows that city designing plays a pivotal role in influencing the crime rate of an area.

The chapter also notes the impact that climate change has had on human habitation and provides an appreciation that some of the causes of climate change are not only natural, but man-made as well. In this regard, people must mind their actions (such as deforestation and the creation of greenhouse gases) to reduce the negative impacts that may result from climatic changes. Because of the increased occurrence of natural and man-made) disasters on the earth's surface, man ought to formulate a well-defined framework towards sustainable disaster risk management. This would, in turn, enhance the level of a country's preparedness towards known and unforeseen disasters reducing the loss of lives and property.

CONCLUSION

It is concluded that planning plays a pivotal role in shaping human settlements, hence the need for planners to appreciate and acquire city studio skills and appreciate and study various urban forms and the role of culture in forming sustainable settlements that suit the needs of the local people. The study recommends that:

- Designers must know that the way they design places and spaces can influence the crime rate of an area, therefore, they must have the skills necessary to effectively zone land uses in such a manner that reduces crime rates in human habitats.
- Humans must mind their actions as it has the potential to influence climate change, which may, in turn, harm people's livelihoods and their health.
- Planners and interested stakeholders must appreciate transport and city logistics to cut on congestion and pollution of the urban sphere because as cities grow, the transport demands of urban areas also increase.

- Both developed and the developing countries must have a framework for sustainable disaster risk management. In this regard, the preparation and creation of safety nets helps in reducing the impacts of these disasters on people and the environment.