

Sustainable Urban Development and Livability

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ABSTRACT

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Sustainable cities are central to achieving all 17 Sustainable Development Goals (SDG). By 2050 cities will contain approximately 70% of the world's population and produce 85 per cent of global economic output. Policy and investment decisions made today will have a deep and long-lasting impact, based on the concentration of people and economic activities, and the long-term nature of urban systems and infrastructure.

Urban development should proceed in a well-planned, integrated, and inclusive manner, with city governments working together with businesses, civil society organizations, academia, and individuals, and with national governments, as well as the authorities in neighbouring urban towns and rural areas, and peer cities around the world. A robust “science of cities” can give urban policymakers around the world access to a body of knowledge and good practices.

Urban decision makers should take the central tenet of the 2030 Agenda to heart and ensure that no one is left behind in their cities and towns. That means prioritizing pro-poor development and access to decent jobs; high-quality public services, health care and education; sustainable transport; and safe and attractive public spaces for all, regardless of gender, age, ability, and ethnicity.

Governments, businesses, civil society organizations and individuals can use a range of policy, economic and communications tools to promote sustainable consumption and production patterns in cities, encourage densified habitat and decouple growth from environmental degradation.

Innovative governments, a committed private sector and an active citizenry can overcome inequalities and create livable cities in both developing and developed countries. livable cities offer high-quality services and increase “naturbanity”, a close connection between people and nature, to enhance human health and well-being, protect biodiversity, and strengthen climate resilience, which is particularly important for vulnerable populations in coastal cities and those in informal settlements.

Keywords: Livable, Sustainable, Cities, Biodiversity, Climate, Resilience

Introduction

By 2030, 60% of the world's population close to 5 billion people will live in cities, and by 2050 that proportion will be nearly 70%. By 2050, if trends continue, as many as 3 billion urban dwellers will live in informal settlements, or slums. That same year, cities will produce 85% of global economic output. Projections show that 1 billion urban residents will be living in low-elevation coastal zones and are therefore at risk of flooding and natural hazards related to climate change. If current trends continue, at least 15%

of the new urban population added between now and then will be living with some kind of disability.

The challenges are vast and multifaceted. Urban policy decisions have extraordinarily far-reaching impacts in poverty alleviation and reduction of inequalities, and in ensuring access to energy, transportation, waste management, food supply, water and sanitation, education, health care and others, not just for urban populations but also for the surrounding rural areas. For example, focus on inequality,

pollution, urban sprawl and resource use, greenhouse gas emissions and climate change are the key indicators towards successful path to achieving the 2030 Agenda will run through sustainable cities.

Methodology: This study was performed by reviewing the available published literatures, case studies, and different government and non-government organizations information from reports and official websites. Scientific literatures were collected through electronic means from the database of Science Direct, Springer, Research Gate, and Google Scholar but not in a systematic manner. From a large number of studies, this study compiles and presents the data and information which are relevant to meet the study goals.

1. Challenges for the Sustainable Urbanisation

1.1. Inequality: Cities are not immune to the severe income disparities and extreme inequalities that plague the world at large. There is often a wide income gulf between rich and poor, sometimes even within the radius of a few miles and between well-established residents and the recent migrants and urban poor who provide low-cost services. In addition, urban areas are often supported by surrounding rural areas that suffer from high rates of poverty. And the vulnerability of people living in informal settlements, often in exposed areas with inadequate infrastructure and low-quality housing, is exacerbated by climate change and the associated rising sea levels, flooding, landslides, heat stress, water scarcity and other threats. Persons with disabilities face difficult barriers to an active life in many cities around the world when the public transport, public buildings and commercial centers are not made accessible to them.

1.2. Pollution: Around 90% of people living in cities breathe air that fails to meet WHO standards (10 micrograms of particulate matter per cubic meter), and in low- and middle-income countries 97% of cities with more than 100,000 people fail to meet the standards. Cities are also producing solid waste at increasing rates, and in 2016, cities produced 2 billion tons of solid waste. The rates are projected to continue to rise, and, unless trends change, by 2050 the solid waste generated annually will increase by 70%. Globally, only 65 per cent of the urban population has

access to municipal waste management (MWM).

1.3. Urban sprawl and resource use: In the developing world the land occupied by cities will triple by 2050, signaling a move towards the sprawl that already characterizes cities in developed countries. In many cases, that urbanization is proceeding organically, without planning, and with urban centers concentrating in coastal areas, residents live with a high risk of flooding, mudslides, and other disasters.

If development continues in the business-as-usual model, by 2050 the cities of the world will consume 90 billion tons per year of raw materials such as sand, gravel, iron ore, coal, and wood. Urban growth often involves destroying natural habitats and green space, with the resulting loss of biodiversity. Even accommodating more people in high-rise housing increases environmental and infrastructure stress, and recent studies show that low-rise, high-density housing may be more effective and sustainable. And while cities cover only 2% of the Earth's surface, their “water footprint”—the area covered by the sources of their water—accounts for 41% of the Earth's land surface.

1.4. Greenhouse gas emissions and climate change: Cities are responsible for 70% of the global greenhouse gas emissions from burning fossil fuels. In some cases, particularly in developing countries that are rapidly urbanizing, with the associated rise in income, city dwellers contribute more to greenhouse gas emissions per capita than their rural counterparts. Developing world and developed world cities contribute similar levels of greenhouse gas per capita, while rural dwellers in developing countries contribute much lower levels. On the contrary, in developed countries, urbanites often contribute much lower levels of CO₂ than rural inhabitants in the same country.

In addition, cities have elevated temperatures compared with rural areas, a phenomenon known as the “urban heat island”. In a recent systematic review of scientific articles from January 2000 to May 2016, urban growth was found to have a large impact on local temperatures, in some cases by up to 5°C, and climate

change exacerbated the impact. Higher temperatures increase the risk of heat-related mortality.

Levers for transformation

A 2030 Agenda city will be a livable city with a flourishing economic base with decent jobs for all and a compact footprint with mixed land use, including residential, commercial, educational, and green public spaces. That city will leave no one behind and will be accessible to all, including women, youth, persons with disabilities and other vulnerable populations. Decision makers in the public and private sectors will move their cities towards achieving the 2030 Agenda using the levers of transformation for urban planning and land use, high-quality infrastructure and public services, transport systems and digital connectivity, as well as inclusive and participatory decision-making.

2. Solutions or the suggested framework

2.1 Good Governance

Sustainable cities will not arise organically, or by allowing business to proceed as usual or according to the directives of the market. Rather, urban development should proceed in a well-planned, evidence-based, integrated, and inclusive manner, with city governments working together with businesses, civil society organizations, and individuals, and with national governments, and the authorities in neighboring rural areas. In addition, city governments can learn from, and act in concert with, peer cities within their countries and around the world to increase the impact of their policies. Successful urban governance is inclusive and participatory, considering the priorities and values of all stakeholders and reflecting the unique character and history of a city's community. Promoting active decentralization or subsidiarity devolving responsibility to the lowest or least centralized level of governance that makes sense is important for effective policymaking, service provision and budgeting. Today, scholars recognize that there are many models of cities that is, various "urban fabrics" shaped in part by the ways their citizens live and move around, whether by walking, transit, or automobile and that the policymakers and other stakeholders closest to the ground are often best equipped to plan for a city's future.

Effective urban, and rural governance also serves to secure land and property rights, a critical issue, as

currently less than 30% of the global population has documentary land rights. Studies show that people and the private sector invest more in land when they feel secure about access to land. Individual and collective land rights are important for the improved resilience of indigenous peoples, women, and other vulnerable groups.

2.2. Economy and finance

Integrally tied to questions of governance are the policy and business decisions that direct economic activity, build infrastructure, provide services, and drive innovation in urban areas and their surroundings. Massive infrastructure investment is needed over the coming decades, and investment decisions made now will shape the sustainability of the urban landscape for decades to come. Those investments, in buildings, transport, information and communication technology will spur economic growth and job creation, as well as enhance the quality of life for urban citizens.

The Climate Economy Report by the Global Commission on the Economy and Climate found that more compact and connected urban development, built around mass public transport, can create cities that are more economically dynamic and healthier and that have lower emissions, and could reduce urban infrastructure capital requirements by more than \$3 trillion over the next 15 years.

The economic activity of cities needs to revolve around pro-poor development and access to decent jobs for all, with special attention to access for women, youth, persons with disabilities and other vulnerable groups. Government and the private sector need to invest in sustainable and technology-enabled industries and livelihoods that will help decouple growth from environmental damage.

2.3. Public participation:

In a city the degradation of the environmental commons is not an abstract phenomenon. People see it in the loss of green space and sense it in the polluted air. Left-behind populations live and struggle in slums sometimes a few feet away from wealthy communities and bustling commercial districts. Refugee tensions are a risk, as migrants escaping conflict and desperate situations seek opportunities in urban areas, placing

strain on the resources and infrastructure of the host cities. And when cities are not equipped to absorb the newcomers, the resulting rootlessness and anomie within the migrating populations can undermine their social development. But with an appreciation of the problems can come a communal spirit and a commitment to action. The unavoidable reality of environmental strain, pollution, and waste challenges, for instance, can spur citizen campaigns and social engagement. Many will follow initial first adopters, especially because the population of urban settings often skews younger, better educated and more environmentally conscious. City dwellers learn by observing and building on one another, breaking from old, unsustainable lifestyle choices, and pioneering new behaviors.

2.4. Science and technology

Cities are hubs of innovation and creativity, with their concentration of universities and research institutions, large commercial centers, infrastructure, and multiple outlets for social and cultural exchange. The trends are self-reinforcing, as highly educated individuals from rural and suburban areas are drawn to relocate to well-resourced cities, seeking professional opportunities and social and cultural enrichment. Recent studies have found that multinational corporations are investing the bulk of their research and development (R&D) funds in institutions based in global cities in developed and developing countries and establishing their regional headquarters in those same urban areas.

In developed and developing countries, technology is changing the way people live, with communication and digital connectivity making it possible for people work and interact online without leaving their homes. Commerce has been transformed, and online shopping for everything from groceries to medical prescriptions will continue to grow in a steep upward trend in all regions in the world, according to a recent study, with most of the growth occurring in densely populated urban areas. Policymakers and other stakeholders need to plan in a nimble and responsive way to take full advantage of the role that technology will play in the development of sustainable cities. In some cases, that means acknowledging that some of the value added of cities – the economies of scale in providing services – will

become less significant as technology enables remote and virtual service provision. For those countries – notably small island developing States and landlocked developing countries – that are far away from global market centers, the new emphasis on e-commerce is requiring significant investment in logistics and transport services. Since 2016, the United Nations Conference on Trade and Development (UNCTAD) has conducted 17 Rapid eTrade Readiness Assessments to help least developed countries identify barriers to take advantage from e-commerce and the digital economy development. They underline the significant need for more assistance to those countries to ensure more inclusive outcomes from digitalization.

Smart cities, where technology is leveraged to improve the lives of urban citizens and help municipal governments provide services more effectively, are growing in all regions of the world. With access to a wealth of data, city planners and policymakers can cut down on traffic congestion and accidents, increase nature-based solutions to adapt for climate change, address pollution and other health and safety risks, reduce CO2 emissions, consider the logistical needs of a circular economy and design commercial areas that better meet the needs of consumers and business owners.

In addition to the science and innovation emerging from cities, effective urban development also benefits from a robust and comprehensive science about cities. Cities can learn from each other, and it is important that local and national governments, universities, research institutions, civil society organizations and businesses support a strengthened trans disciplinary, multifaceted urban science. The “science of cities” can be bolstered by investing in education and training of well-qualified urban planners and other professionals ready to address the multiple challenges of urbanization. An expert panel convened by Nature Sustainability found that cities of all sizes and locations would benefit from enhanced science-policy connections at the city level that bring together experts from all relevant disciplines. The panel called for cross-regional collaboration, the development of urban observatories, and a strengthened link between multilateral organizations and cities.

2.5. Integrated pathways to transformation

To be effective and sustainable, interventions in governance, economy, behavior, and technology should happen in an integrated and mutually reinforcing manner, with the municipal government holding the reins and working in close partnership with the national government, private business, academia, civil society, citizen groups and international organizations.

Governments and their partners will work towards creating livable cities, where people live free from poverty, free from the burden of inequality, including gender inequality, and free to pursue decent livelihoods with a guarantee of the essential social services needed to ensure the well-being of each citizen. Creating a livable city means strengthening climate resilience and addressing air pollution, especially for vulnerable populations in coastal cities and other urban areas. A livable city is also one that fulfills the less tangible needs of its citizens, the need for connection to the heritage and character of a place, the need for links to nature and the surrounding rural areas that provide so many of the resources and services that enable urban life and the need for community cohesion and social ties.

As they move along the transformation pathway to livable cities, governments and their partners must work towards fully decoupling growth from environmental degradation and from the inequality that plagues so many cities today. Urban decision makers should take the central tenet of the 2030 Agenda to heart and ensure that no one is left behind in their cities and towns. That means prioritizing pro-poor development and access to decent jobs, effective public services, quality health care, education, safe drinking water and sanitation services, nutritious food, reliable transportation, and safe and attractive public spaces for all regardless of gender, age, ability, and ethnicity. Urban planning should be carried out in an inclusive manner, with particular attention paid to the needs of those living in informal settlements, refugees, and persons with disabilities. The nature of urban planning will vary according to the size and circumstances of individual cities, with secondary cities facing challenges related to their relative lack of resources.

2.6. Future city growth

Cities can create opportunities for employment, poverty alleviation and growth, and they are hubs of research and development (R&D), with concentrations of academic, scientific, and private sector institutions that drive innovation. The sheer number of people living in cities means that there is the potential for efficiency and large-scale progress. On the other hand, there is also the risk of locking in unsustainable infrastructure and urban designs that will affect large populations for generations to come. Buildings constructed now as well as urban systems like water, transport, energy, and others need to contribute to carbon-neutral cities if the world is to achieve the targets contained in the Paris Agreement. By 2030, the world is projected to have 43 megacities (i.e., cities with more than 10 million people). Nine of the 10 new megacities that will be added between now and then will be in the developing world. However, most urban dwellers of the future will not live in well-resourced mega cities but rather in secondary cities and other areas without well-defined boundaries and without adequate infrastructure. Although, generally, larger cities are well-resourced and economically powerful than their smaller counterparts, recent studies have shown that size is not destiny. A World Bank report on competitive cities found that several secondary cities were beating many larger cities in terms of job growth, productivity, and foreign direct investment (FDI). There are regional variations. In developed countries, local governments, businesses, civil society organizations, and individuals can use a range of policy, economic and communications tools to promote sustainable consumption and production patterns. Well-planned land use, effective urban public transport systems including active mobility (walking and biking), rapid scale-up of renewable energy and energy efficiency, and promotion of sustainable and technology-enabled businesses and jobs will all be important. Eliminating poverty in all its dimensions remains a top priority in developing countries, and decision makers in the Global South will also seek opportunities to follow a new, transformed development path that avoids the “grow now and clean up later” approach that characterized so much of the North's urban development.

3. Potential strategies of sustainable urban development and livability

It is assumed that all these environmental consequences are short-term. So, it is high time to make a proper strategy for long-term benefit, as well as sustainable urban development and livability. Similarly, to protect this globe, the home of human beings, united effort of the countries should be imperative (Somani et al., 2020).

Therefore, some possible strategies are proposed for global environmental sustainability (Figure 1).

Figure 1: Proposed strategies of sustainable environmental management.



3.1. Sustainable industrialization: Industrialization is crucial for economic growth; however, it's time to think about sustainability. For sustainable industrialization, it is essential to shift to less energy-intensive industries, use of cleaner fuels and technologies, and strong energy efficient policies (Pan, 2016). Moreover, industries should be built in some specific zones, keeping in mind that waste from one industry can be used as raw materials of the other (Hysa et al., 2020). After a certain period, industrial zones should have been shut down in a circular way to reduce emission without hampering the national economy. Again, industries especially readymade garments (RMG) and others where a huge number of people work, proper distance and hygienic environment should maintain to reduce the spread of any infectious communicable disease.

3.2. Use of green and public transport: To reduce

emissions, it is necessary to encourage people to use public transport, rather private vehicles. Besides, people should encourage to use bicycle in a short distance, and public bike sharing (PBS) system should be available for mass usage, which is not only environment friendly but also beneficial for health.

3.3. Use of renewable energy: Use of renewable energy can lower the demand of fossil fuels like coal, oil, and natural gas, which can play an important role in reducing the GHGs emissions (Ellabban et al., 2014; CCAC, 2019). To maintain the daily needs and global economic growth, it is not possible to cut-off energy demand like a pandemic situation. Hence, use of renewable energy sources like solar, wind, hydropower, geothermal heat, and biomass can meet the energy demand and reduces the GHGs emission (Ellabban et al., 2014).

3.4. Wastewater treatment and reuse: To control the challenges of water pollution, both industrial and municipal wastewater should be properly treated before discharge. Besides, reuse of treated wastewater in non-production processes like toilet flushing and road cleaning can reduce the burden of excess water withdrawal.

3.5. Waste recycling and reuse: To reduce the burden of wastes and environmental pollution, both industrial and municipal wastes should be recycled and reused. Hence, circular economy or circularity systems should implement in the production process to minimize the use of raw material and waste generation (Hysa et al., 2020). Moreover, hazardous, and infectious medical waste should be properly managed by following the guidelines (WHO, 2020c). It is now clear that majority of the people (especially in developing countries) have a lack of knowledge regarding waste segregation and disposal issues (Rahman et al., 2020). So, government should implement extensive awareness campaign through different mass media, regarding the proper waste segregation, handling and disposal methods.

3.6. Ecological restoration and ecotourism: For ecological restoration, tourist spots should periodically shutdown after a certain period. Moreover, ecotourism practice should be strengthened to promote sustainable livelihoods, cultural

preservation, and biodiversity conservation (Islam and Bhuiyan, 2018).

3.7. Behavioral change in daily life: To reduce the carbon footprint and global carbon emission, it is necessary to change the mindset in our daily life and optimum consumption of resources like; avoid processed and take locally grown food, make compost from food waste, switch off or unplug electronic devices when not used, and use a bicycle instead of a car for shorter distances.

3.8. International cooperation

To meet the sustainable environmental goals and protection of global environmental resources, such as the global climate and biological diversity, combined international effort is essential (ICIMOD, 2020). Hence, responsible international authority like United Nations Environment Programme (UN Environment) should take effective role to prepare time-oriented policies, arrange international conventions, and coordination of global leaders for proper implementation.

Directly or indirectly, the pandemic is affecting human life and the global economy, which is ultimately affecting the environment and climate. It reminds us how we have neglected the environmental components and enforced human induced climate change.

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