



Geography

Essay

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Sustainable Urban Development

reasons for changes in urban population

- Pull factor:
 - As manufacturing can be labour-intensive (such as making of garments in garment factories and leather products in tanneries) and often urban-

based, it offers potential for employment and higher wages, which would be a strong pull factor for the rural population to move to the city

- The growth of services such as more and better education, health care and shopping malls become powerful pull factors for the rural population who are attracted to these services
- Push factor:
 - With mechanisation / use of machinery in agriculture such as tractors and combine harvesters, there is less reliance on human labour which results in a decline in employment in this sector. This causes some of the rural population to seek employment in urban areas instead. (Counter urbanisation)

Explain how changes in urban population in may pose challenges in its progress towards sustainable urban development

- Environmental dimension:
 - generation of massive amounts of untreated and uncollected waste as the escalating urban growth rates and lack of finances as cities are unable to meet the exceeding demands of services such as waste collection and management
- Economic:
 - Lack of opportunities for formal sector employment as working age population is growing much faster than gainful employment opportunities causing many involved in informal sectors such as junk collectors and car cleaners leading to low or unstable incomes leading to poverty
- Social:
 - Health issues/ lack of access to education or healthcare services due to unsanitary living conditions caused by lack of waste collection service and infrastructure which makes the place a breeding ground for diseases such as cholera and dengue
 - And due to low incomes, children may not be able to access educational opportunities and healthcare services

For urban population loss:

- Urban population loss may result in loss of investments due to the decrease in working population, as businesses leave the city and no new investments are attracted in
 - This affects economic sustainability due to the loss of employment opportunities and rise in poverty levels due to the decline in income
- As a result of the decrease in middle and upper-class population, this may lead to a decline in tax base
 - This affects social sustainability as the reduction in government revenue may result in less investments in the availability of public services and amenities (e.g. healthcare, education), which could lead to more health problems and lower literacy rates.
- As businesses and people migrate out and no new investments come in, this may result in abandoned and derelict buildings
 - This affects social and environmental sustainability as buildings degenerate into a state of disrepair, causing pollution and attracting vandalism and pest infections.
 - Abandoned buildings are also not rent-worthy as they have inferior infrastructure, which requires significant capital to renovate.
- Reduced manpower for policing due to decline in police patrol may cause lower security levels, increasing crime rates due to reduced deterrence effect.
- Decline in population and its accompanying problems as mentioned above may contribute to a pervasive sense of decay, reducing community spirit

Problems associated with non-hazardous waste in urban areas

- Over generation of urban waste would lead to more waste filling up urban landfills, posing harm to the urban environment through soil and water contamination by leachate
- Lack of proper collection of urban waste Can lead to solid waste left around urban areas which can be an eyesore and tarnish image of the city affecting economy of city when investors are deterred by the waste seen in open areas

- Improper disposal of urban waste within the city can pose health threats to urban dweller when solid waste clogs drains, creating stagnant water for insect breeding and floods during rainy seasons resulting in vector borne diseases such as dengue and malaria to spread amongst the urban population
- Environmental effects of rapid urban growth
 - Eutrophication and water pollution might occur in the river if factories are built near those rivers as industrial effluent might be discharged into the Waters. If wastewater is not properly managed, polluting waters and harming aquatic life or agriculture farms might have fertiliser and chemicals washing into nearby water bodies
 - Damage to natural environment occurs when land is cleared for the expansion of urban areas as deforestation brings about effects on the environment such as loss of biodiversity and increased risk of flooding due to soil erosion
 - Regional climate change might occur if large amount of forest removed, increased in GHG as forests are carbon sinks and carbon dioxide is released into the air when trees are cut down, causing increases in temperatures
 - Unsustainable sand mining for construction materials from rivers and marine ecosystems can lead to a sand crisis. Results in significant environmental impacts, including coastal and river erosion, shrinking deltas, land-use changes, air pollution, salinization of coastal aquifers and groundwater reserves, threats to freshwater and marine fisheries and biodiversity

Challenges in cities in achieving SUD

- They may not have sufficient capacity to place the necessary infrastructure to meet the needs of the urban population. Hence demand for services such as housing and transport could exceed the services and resources of city authorities causing issues like slum and traffic congestion
- High urbanisation rates and rapid urban growth may place population at risk of environmental hazards as high rates of rural-urban migration and lack of available land space may result in poor to reside in environmentally vulnerable

areas such as steep slopes and more prone to environmental hazards such as landslides

- With more people in urban area, increase affluence, high rates of consumption of resources lead to higher generation of waste and this accumulation can cause environmental pollution and health issues to people
- It can also cause larger ecology footprint that goes beyond the biological capacity of the city and unsustainable in the long term
- They may prioritise income growth first and make decisions that compromise on environmental sustainability resulting in overconsumption underinvestment and depletion of resources

Explain tensions between sustainability and liveability

- While the concept of liveability seeks to utilise environmental resources for better living for urban dwellers, sustainable urban development on the converse tends to warn of the dangers of overuse and consumption of environmental resources. These concepts, much as they are closely related have certain intricate tensions.
- Liveability refers to the perspective of the individual and includes a subjective evaluation of the quality of the place, which can be seen as the quality of living in a place.
- Sustainability viewed it as a balance within economic, environmental, and capital interests, with due consideration for intergenerational demands.
- The pursuit of sustainability may come at a cost of liveability goals as the prioritisation of environmental sustainability may result in the need for people to change their lifestyle and habits.
 - For example, the implementation of an additional 5-cent charge to plastic bags at major supermarkets in Singapore will help reduce waste and usage of plastics. While this benefits the environment, it may come at the cost of liveability for some due to the higher cost incurred and the 'hassle' of bringing reusable bags.
 - For example, the adjustment of air-conditioners to 25 degree Celsius, while optimum for environmental sustainability, may not be considered as

a comfortable temperature for some people who are accustomed to cooler temperatures, say 22 degree Celsius.

- A more liveable society does not necessarily mean a more sustainable one, as the pursuit of liveability focuses on the immediate needs of the present, but may not consider its long term impacts on future generations.
 - Environmentally poor habits and practices such as driving cars, producing too much waste and consuming too much energy are generally not key focuses of liveability agendas.
 - For example, urban reimagining of London Docklands led to the improvements in businesses, residences and new parks to replace the previously abandoned warehouses from the declined docks. While this may help to improve the liveability of London Docklands, it would also result in higher consumption of energy and more burning of fossil fuels.
- Liveability as a policy agenda may therefore provide an opportunity to sidestep some hard behavioural choices, to the direct detriment of sustainable development. This would particularly be the case if liveability is achieved by means that are unsustainable.
 - For example, local environments can be cleaned with harmful chemicals, litter can be sent to landfill rather than recycled, and mobility can be improved through greater car ownership rather than through better public transport.

Management of waste

Describe how single-use plastic is part of everyday urban life

- Ordering takeaway food is a convenient option for many busy urban residents. Whether it is a burger, sushi or noodles, the food is typically placed in Plastic containers, and plastic utensils are provided for eating. These items are designed for single use and are frequently thrown away after a meal, adding to the plastic waste generated in urban areas
- Single-use plastic is part and parcel of grocery shopping in everyday urban life. In large supermarkets, many fruits and vegetables also come pre

packaged in plastic bags or containers. Additionally, most supermarket offer free plastic bags at the cashier, which are used to carry groceries home and thrown away after.

- Urban residents rely on various personal care and hygiene products that come packaged in single-use plastic, in their daily routines. Common items used in everyday urban life include shampoo and conditioner bottles , shower gel containers, toothpaste tubes, and plastic razors. These items are typically used and then disposed of, adding to the plastic waste stream in urban areas.

Explain the demand placed on natural environment due to plastic waste

- Plastic waste placed a lasting demand on the natural environment as it breaks down very slowly into microplastics, and they are pervasive in the environment, such as the oceans. These tiny particles when ingested by marine organisms can cause health issues and even death.
- Plastic waste places a significant demand on the natural environment because the improper disposal of plastic waste leads to pollution of both land and water environments.
- plastic that are littered or inadequately managed can end up in water environments causing water pollution
- Food waste, which accompanied the plastic food and beverages containers, would have contaminated the water in the canal. Hence it is not used to water the surrounding trees.
- When plastic waste is dumped in waterways, they can obstruct the natural flow of water by forming a barrier. As a result, the water cannot flow freely, leading to increased water levels and potentially causing flooding

Explain challenges faced by cities by meeting sustainable plastic management by circular economy

- Implementing and enforcing regulations related to plastic waste management can be challenging because repeat industrial offenders are not properly monitored on a regular basis by a central authority

- limited collection and recycling facilities , as well as the lack of a comprehensive waste management system
- significant demand for plastic products, leading to high levels of plastic consumption . The use of single-use plastic , such as plastic bags, cups, and food packaging, remains prevalent. Hence, addressing the target of reducing plastic consumption and shifting to environmental friendly products that are more sustainable can be difficult as it ensures compliance from manufacturing industries
- Adoption of advance technologies and sustainable plastic management practices crucial to reach SUD but such technologies requires large investments which CLLDs may not have. Some technologies such as alternative to traditional plastic are in early stages of development or have higher costs compared to conventional approaches

Explain why it may difficult to increase proportion of collected waste that is recycled in cities

- Underserved urban population could result to improper waste disposal if there is lack of access to proper waste collection facilities and sewage systems, leading to contamination of water supplies
- Government has other more pressing challenges to look into such as provision of housing clean water and sanitation than waste recycling
- Despite putting in efforts to minimise waste generation at the source and promoting recycling initiatives, cities may not have such a meticulous practice of waste sorting even though different types of waste are generated and people generally dispose their waste as a bundle
- Difficult to increase the proportion of waste recycling for certain types of solid waste

Explain challenges in managing non-hazardous waste in a city

- Requires a multi-pronged approach as no single waste management approach is suitable for managing all materials and waste streams in all circumstances
- A waste management hierarchy is needed which includes reducing waste generation, reusing, recycling, composting and incineration and dumping at

landfills

- Waste generation may be high due to rapid urbanisation and rapid population growth
- There is a mismanagement of waste segregation at a local level, which refers to sorting and separation of waste types to facilitate recycling and correct onward disposal
- Lack of understanding of importance of waste segregation in households compromising recycling efforts since recyclables are likely to be contaminated by other waste such as food waste
- High rates of waste disposal which ends up in landfills but it takes significant land space and may not be sustainable in the long run

Possible ways for businesses to better manage non-hazardous solid waste

- Better manage waste by recycling and eco-businesses can innovate and contribute to circular economy through recycling
- Upstream actions by producers have a vital role in addressing the problem of waste generation. They should minimise waste by extending life of products and materials through repair, refurbishment and recycling
- Reduce environmental related impacts in their supply chain by learning more about their suppliers facilities and work with them on training and improvements if needed
 - Ensure suppliers have wastewater and air emission treatment systems and be compliant with regulations and standards and suppliers do not meet the requirements should not be approved
- Brand names can be used to hold companies according for their items found polluting their environment

Impacts of mismanagement of non-hazardous solid waste

- The by-products of solid waste deposited in a landfill and waste incineration have adverse effects on the surrounding environment and humans living nearby

- **Organic waste in landfills decomposes anaerobically** (without oxygen), producing methane, a potent greenhouse gas that contributes to global warming. Methane can also pose explosion risks if it accumulates in enclosed spaces.
- As waste decomposes in landfills, it produces leachate, a liquid that can contaminate groundwater and surface water if not properly contained. This can affect drinking water supplies and harm aquatic ecosystems.
- Inefficient waste management practices can lead to the loss of valuable materials that could have been recycled or composted. This results in unnecessary consumption of raw materials and energy.
- Poorly managed waste in landfills can create unpleasant odours and unsightly conditions, impacting the quality of life for nearby residents, affecting local property value
- Waste incineration, while reducing the volume of waste, can release pollutants into the air, including toxic substances like dioxins leading to air quality issues and health problems in nearby communities

Limitations of landfills as a waste management strategy

- Leakage of toxic leachates resulting in contamination of both surface and groundwater posing environmental and health related
- infestations by rats and fermentation bacteria caused by exposure to air of refuse causing health risk and generate methane causing a fire haze
- Place pressure on available space limiting development of land for other purposes potentially limiting economic and social development

Liveability for elderly

Issues faced by elderly

- Face the issue of high cost of living associated with living in the city and may not be able to afford daily necessities or services required
- Have chronic diseases and hence would need additional medical attention and care to ensure good health and support to look after them

- Some have depression as cities are largely designed for the working population, making them feel excluded especially when they retire and many activities do not support lifestyle of the elderly
- Mobility issues as they suffer from poor health, a big problem especially when city not designed to be elderly friendly even in housing and transport
- Experience loneliness as they lack social interactions due to lack of social activities that cater to the elderly in the city and they may feel spatially excluded and segregated from most activities in the city
- They are illiterate and as cities become more developed, elderly of lower education may face discrimination when they search for employment opportunities

Ways to ensure well being of elderly

- Community programmes aimed to foster family ties to instil filial piety among community so that more people are involved in looking after the elderly rather than being heavily dependent on the city to do so
- Create more jobs that will allow elderly to be gainfully employed in their old age and help to address to address their social-economic well being as they can be interact with other but also be more financially independent
- Create community programmes or spaces for elderly to join and interact with other to reduce sense of loneliness and keep active

Management of slums

Deprivation faced by slum dwellers

- Lack of access to clean water supply
 - Instead of accessing it from their homes, they need to transport water using recycle containers
- More prone to diseases and infections by insects as stagnant water near shared water pipe is a breeding ground for mosquitoes such as dengue and malaria

- Living condition is dirty and unhygienic as huge piles of Un bagged waste dumped openly, emitting a foul smell and attract pests and rats as the waste may contain food waste causing rat infestation im slums and spread intracellular deadly diseases such as hantavirus

Challenges associated with provision of clean water

- making the decision on which need to prioritise in the face of competing needs from different groups of people as needs of poor could vary as some want water pipes for clean water while others want the provision of internet cables
- The uneven provision of access to clean water also implies the limited resources that a country has to provide all its residents with access to clean water and meet other needs.
- Another challenge is the difficulty in raising money to continuously supply clean water to lower income residents who are unable to pay for the water. In addition to the high cost of constructing infrastructure, the city needs to regularly maintain the water pipes.

Explain why the development of urban slums is less prevalent in countries at higher levels of development

- Lower rates of urban population growth in DCs, more gradual pace of urbanisation, less time pressure on providing adequate housing with basic amenities
- Stronger urban governance and ability of city governments to plan and provide affordable housing, ability to forecast population growth and demand for housing, setting aside land for housing with good amenities and linkages
- Higher levels of development and lower levels of urban poverty: infrastructure already developed, more resources to be able to afford good quality housing

Characteristics of slum

- Poorly constructed, unstable structures standing on wooden poles, flimsy corrugated zinc sheets that are not strongly held in place – mostly made of discarded materials including black plastic sheets, pieces of cloth

- Unsanitary living conditions as seen from the litter strewn around the slums that paved their walkways.
- Lacks access to basic amenities like water and electricity
- Relatively densely packed housing haphazardly built on slopes – slums looked very cramped, lacking in living space

For urban slums:

- Durable housing
- Sufficient living area
- Access to improved water
- Access to improved sanitation facilities
- Secure tenure

How slums causes Un sustainability in urban development

- **Economic unsustainability** – eye-sore to potential investors, negatively affect city's image as one that is poorly unplanned and unable to offer a good environment for not only its urban dwellers but possibly also for facilitating economic operations.
- **Social unsustainability** – lack of access to clean water as slum dwellers even need to draw filthy water from nearby dam. This, together with air pollution from trains, can negatively affect the health of the slum dwellers, causing them to fall ill easily as they fall prey to water-borne diseases such as cholera and dysentery, as well as long term chronic respiratory diseases such as lung cancer respectively. Unsanitary living conditions with litter/waste strewn along the alleys or walkways also reflects the high possibility of the slum area being a breeding ground for bacteria and the cramped living space facilitates the ease in spread of diseases.
- **Environmental unsustainability** – lack of proper waste disposal methods can lead to environmental unsustainability in terms of not only land pollution but also water pollution i.e. when water comes into contact with decomposed

wastes piled up, leaching process occurs and this will result in the contamination of water sources

Positive effects of slum dwellings

Social – slum dwellings could offer some form of shelter for the poor, offering a way for the city to cope with its housing shortages for its growing population.

Economic – slum dwellings can be a 'city attraction' for some tourists who may prefer the less travelled roads, and the railway passing by such slum dwellings can be an informal way in which the slum dwellers can earn a living from tourism.

Making low-income neighbourhoods sustainable

- Offer employment opportunities to youth in design and transforming public spaces and also aid them in developing their planning and leadership skills enabling them to transfer these skills in workforce, generating income
- community-based activity involving public participation gives people a sense of belonging and ownership. This may help to ensure that the neighbourhood is well-maintained. The transformed public spaces in the neighbourhoods can offer an avenue where self-help groups, families or friends can meet up to interact, promoting cohesion in the community.

Urban reimaging

Explain the subjective nature of live ability of cities

- Liveability is inherently subjective and influenced by multiple contextual factors.
 - It varies according to geography, time, and intended use or assessment purpose.
- Variation across places results in great subjectivity - Liveability differs across locations due to differences in cultural expectations, climate, infrastructure, and governance.
 - For example, access to clean public transport may be a priority in London, whereas access to informal housing and utilities may define liveability in parts of Nairobi.

- Liveability is also subjective because what is considered liveable evolves over time as urban conditions, technologies, and societal values change.
 - For instance, industrial Camden in the 1980s was assessed through employment and housing density, whereas by 2020, indicators may include cultural access, walkability, and sustainability. A previously liveable area may become unaffordable or congested over time, affecting its perceived quality.
- Different stakeholders assess liveability using different criteria based on their varied needs Urban planners may prioritise access to services and infrastructure; investors may focus on market stability and growth potential; residents may emphasise affordability and safety. In academic or policy contexts, liveability may be measured through indexes like the Global Liveability Index or UN-Habitat indicators, which may not reflect individual lived experiences.

Enhancement of live ability

- Real estate development of residential and commercial properties, attracting business to the area and fostering job creation and economic growth for resident
- Public or community spaces for interaction and recreational facilities to contribute to a positive and enriching living experience, improving quality of life, providing sense of community and opportunities for socialisation and recreation
- Clean waterways and more green spaces contribute to aesthetic appeal and healthier and sustainable living environment, fostering a sense of place and community

Reasons for urban reimagining

- Improve the negative image of City due to the negative economic effects of deindustrialisation
 - Closure of factories in cities due to high labour costs and issues of rise of labour unions, losing attractiveness as prime manufacturing locations

- Migrations of jobs to other areas as suburban and rural locations become more attractive to foreign firms and investors as factory locations for manufacturing is attractive due to the low labour costs and issues, weak labour unions and attractive incentives by government of those locations
- Replacement of jobs with technology
- As a result, these cities started to face deterioration of urban environment and associated negative socio-economic impacts
- Improve urban image in response to increased competition between cities for global investments
 - City become more interconnected due to improvements in transport and communication technologies, easier comparison between cities for investment work and play means increase need to improve attractiveness to foreign firms, investors and workers in order to stand out among other cities and drive economic development

impacts of UR on SUD

- Urban reimagining has possibly improved economic sustainability:
 - The decrease in unemployment shows that urban reimagining has likely increased the number of jobs available for locals in the area, and a higher rate of employment and improved wages would directly increase the amount of money circulating in the local economy, ensuring economic sustainability in the long run.
 - attracted more foreign investors and businesses to invest in the city, and with the increase in foreign direct investments (FDI),
- Urban reimagining has possibly improved social sustainability
 - increase in share of residents that are satisfied with the neighbourhood since reimagining happened.
- However, urban reimagining has also possibly had negative implications on socio economic sustainability:
 - increase in property tax, which has direct implications on home owners and home rentals, since the cost of housing is likely to have increased

rapidly. This would mean that homes are likely to become less affordable, reducing economic sustainability especially for the poorer residents of the city, and reducing therefore access to proper and safe housing in the long run.

- The increase in number of immigrants in redeveloped neighbourhoods may cause heightened social tensions between locals and new immigrants, especially if the new immigrants are of a higher socio-economic status relative to the locals in the same neighbourhood.