



Examining the Impact of Urbanization on Environmental Sustainability in Monrovia, Liberia

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APPROVAL SHEET

We attest to having read the thesis submitted by **CEPHAS M.M.D FLANZAMATON** titled “**Examining the Impact of Urbanization on Environmental Sustainability in Monrovia, Liberia.** In addition, we are of the view that it fulfils all of the requirements, both in terms of its breadth and its level of quality, to be a thesis for the Master of Science degree.

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DECLARATION

I hereby declare that all information, documents, analysis and results in this thesis have been collected and presented according to the academic rules and ethical guidelines of Institute of Graduate Studies, Near East University. I also declare that as required by these rules and conduct, I have fully cited and referenced information and data that are not original to this study.

Cephas M.M.D Flanzamaton

15/6/2022

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First and foremost, I ascend into the heavens with my gratitude to Jehovah God for being merciful and forgiving of my shortcomings, as well as for bestowing his grace upon me. I say to you that you alone deserve all of the credit and gratitude for getting me this far.

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➤ *Dedication:*

I dedicate this academic achievement to you, Mom (Mrs. Abigail Beatrice Collins Garmondeh). I feel incredibly fortunate to have you as my mother. When I think of all the wonderful experiences I've shared with you, I realize that a lifetime isn't long enough to commemorate those great moments. The thing that keeps coming up is how you've been there for me as a friend, confidant, protector, and mentor throughout my life; thank you, little girl!

ABSTRACT

This study has been conducted in Monrovia to determine the impact of urbanisation on environmental sustainability in the city. There were 400 survey participants, who took part in the survey. Many issues are related to the urbanisation of the topographical separations as they mostly contain ecological scarcity, the disposal of the water and issues related to pollution in Monrovia. There has been an increase in poverty due to the heavy population living in the urban areas of Monrovia. Inflation is rising day by day which is because of the low purchasing power of the people of Monrovia. Along with inflation, the issue related to unemployment is also faced by Monrovia. All these issues were faced by Monrovia after the internal migration of the population from the rural to the urban areas. Thus, the government of Liberia, was not prepared to face such an issue and thus conditions worsen after the civil war. All these problems summed up to create urbanisation. And because of this urbanisation, the slums in Monrovia were set up along with the casual settlements and the unintended growth. The findings reveal that the lack of drainage is the cause of groundwater pollution in the community in Monrovia. Hence, lack of drainage is the cause of pollution in the community. Flooding often occurs in the community within one to two weeks. Therefore, restricting urban migration to already overpopulated areas will help mitigate the impacts of urbanisation from the community perspective in Monrovia.

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CHAPTER ONE INTRODUCTION

➤ *Background*

Liberia was established by the unregulated American slaves as the portion of a system evolved by the American Colonisation Society to make a society in West Africa for the free manumitted slaves and the free blacks. Although, the first deportation of 20,000 unregulated slaves took place in the year 1821. The previous slaves were established in Cape Mesurado. The names such as Montserrado/Monrovia and Liberia were invented by the American colonisation society in the year 1824. The current economic conditions of Liberia are mostly dependent on Monrovia, and there are great differences between Monrovia and other portions of Liberia concerning wealth, substructure, and potential for contribution to the political procedure (Kepe, 2021). Although Liberia is very rich in terms of natural resources, rubber was previously the backbone of the economy of Liberia. The widespread forest of Liberia was also previously supporting the economy of the country. Moreover, rubber and Timber endure the country's major exports, while foreign investments are growing to favour the mining zone. Liberia had the country's 1st democratic transmission of power in over 70 years (Pee, and Pan, 2021). At that moment George Weah was elected as the president of Liberia 2017. The current government has planned many things for prosperity and evolution and to encourage the economic growth of Liberia. But unfortunately, the challenges of extensive wretched high inflation and poverty have made economic growth a challenging task. Although, the outcome of the urbanisation has been seen in various urban cities across the country since the early 1990s (Bairoch, 2018).

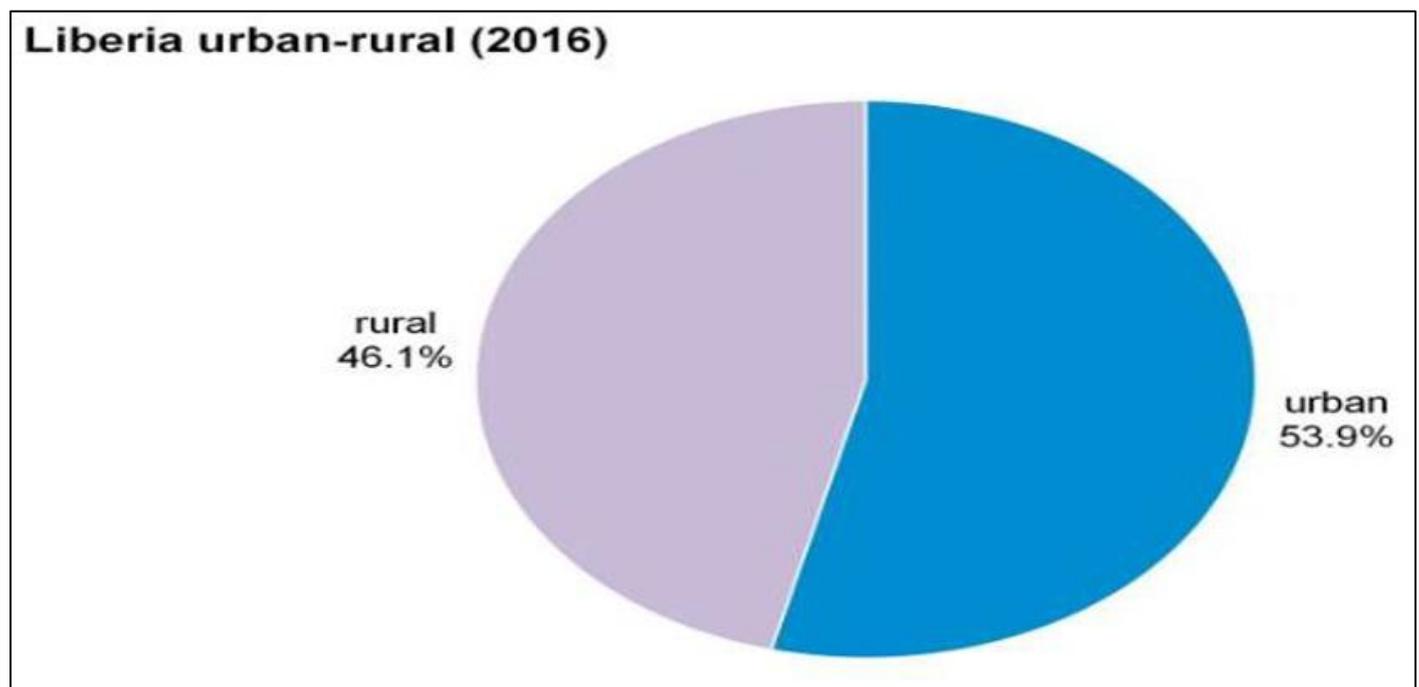


Fig 1 People of Liberia

Source: <https://www.britannica.com/place/Liberia/People>

Approximately 50.7 percent of people of Monrovia, Liberia now live in big cities which have directly added to the augmented production of waste. Moreover, the consequence of urbanisation in Monrovia, Liberia is a foremost contributing aspect to the progressively bad environmental situations in the different urban areas in Monrovia, Liberia. Furthermore, the country of Liberia is simply distributed into almost 15 counties such as; Nimba, Montserrado, Lofa, Bong and Grand Bassa are those countries that are the most populated among all 15 divided countries of Liberia. Although, approximately 3 million people are living in those countries. While Gbarpolu, Rivergee, Rivercess, Bomi, and Grand Kru are those countries that have the least population. But still, they are having around 100,000 people or more (Krawczyk, 2018). Urbanisation made a huge impact on the environmental sustainability in Monrovia, Liberia. The effects of urbanisation on these geographic separations contain environmental deprivation, waste disposal and pollution issues. The country of Liberia, like many other countries in the globe, is also faced with the challenge of increased poverty due to the heavy population in urban areas. Inflation is increasing day by day due to the low purchasing power of the residents of Monrovia, Liberia. Similarly, other issues like unemployment and other related challenges are faced by Monrovia, Liberia. This all has become a challenge after the internal migration of the peoples from the rural areas to the urban areas of Monrovia, Liberia. The government of Liberia was not preparing for the upcoming situation and all became messy while internal migration took place after a civil war (Kelly, 2017). The greater Monrovia is the capital of Liberia. Although, as a development zone for the urban development system. It is encompassed by the towns of Monrovia and Paynesville. Cooperatively, all these particular local government establishments structure Monrovia, Liberia an urban area of Liberia. It was significant to participants that the approach

developed to incorporate an urban typology, identifying the significance of the twelve local government establishments that encompass the development zone Greater Monrovia’s urban settlement design is the same as various cities of Africa and displays the movement where an uneven emphasis is placed on primates cities. Commonly the capitals and those geographically deliberately situated, appealing the important substructure and resource investment. As compared to the metropolitan cities, smaller cities and rural areas of Liberia are lacking fundamental facilities and social amenities. As a consequence of the civil war in Liberia, many people have done internal migration (Blair, 2019). But the weak migration arrangements of Liberia have caused quick and unintended urbanisation which has not been obstinately overcome as the main urban evolution arrangement since Liberia’s reappearance to normality. This unintentional urbanisation in Monrovia, Liberia has become the reason behind the spread of slums, casual settlements and unintended growth, more specifically in Monrovia. It subsequent disinvestment of resources, substructure and human volume within the internal and other urban zones throughout the rest of the Country. These casual settlements are growing with inadequate slum progression initiatives proceeding (Bhagat, 2018).

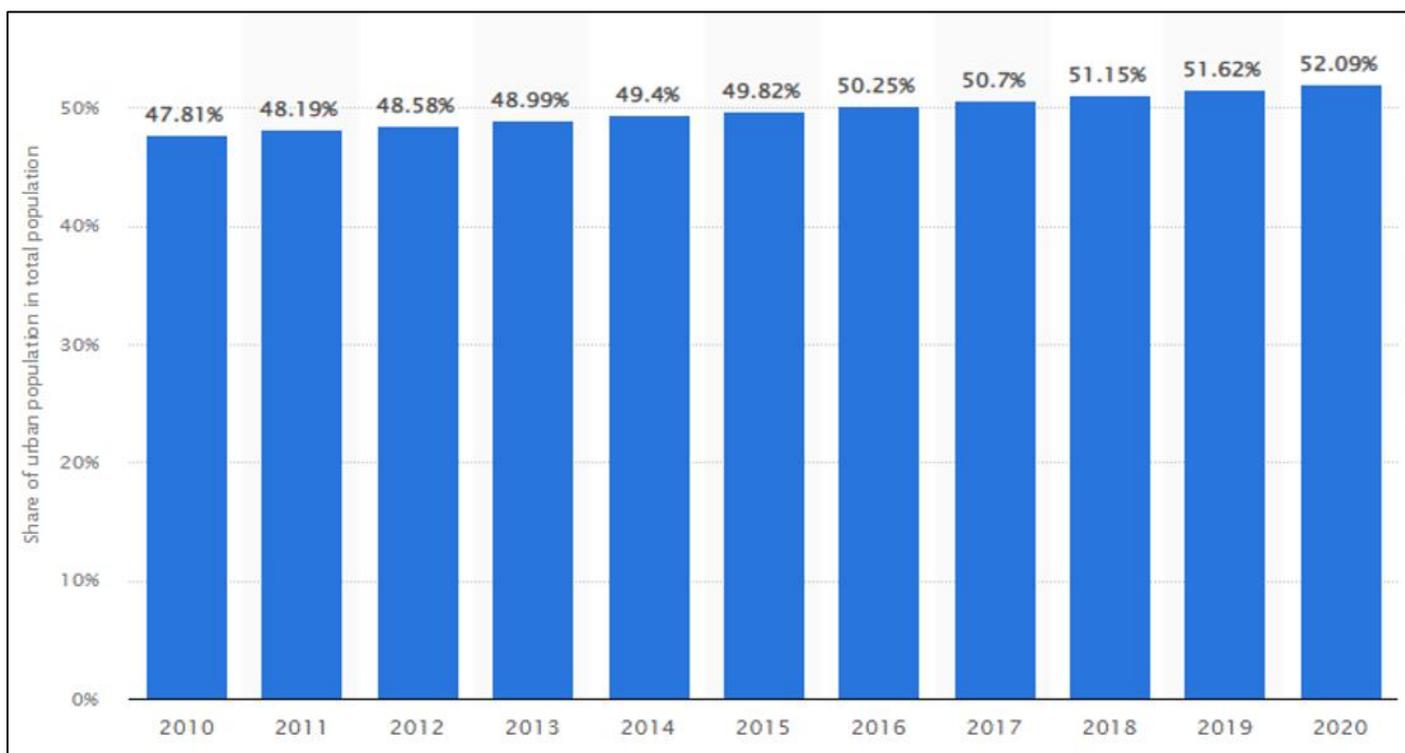


Fig 2 Urbanisation in Liberia

Source: <https://www.statista.com/statistics/455869/urbanisation-in-liberia>

Many of the people in Monrovia, Liberia are living under the poverty line. Approximately 64 per cent of people are there living on less than Euro 0.88 per day. Many people cannot afford the basic needs of life in Liberia. Urbanisation is the basic reason behind all this situation because the government of Liberia have not planned any urbanisation but unfortunately due to the civil war it happens without any planning. Moreover, the local establishments of Liberia do not have the required funding to accomplish the substructure and to convey the fundamental urban facilities. The civil war was the motivation behind the internal migration of the peoples of Liberia from the rural areas to the urban areas, specifically Monrovia, the capital city of Liberia (Sander, et al 2017). The urbanisation in Monrovia, Liberia is much higher than in other low-income cities. Although, approximately 4.5 million individuals with urban population progress proportionally to per cent. According to the UN population forecasts for 2019 around 51.6 per cent of Liberia's population which means almost 2.8 million people are residents of urban areas. Moreover, Monrovia as the capital city of Liberia has approximately 40 per cent of the nation's population. Monrovia, Liberia is also the most compactly populated urban zone of Liberia with a population of 1,514 residents per square mile. The civil war crisis has implored Monrovia's population to approximately 1.5 million extending the previously obsolete and poorly accomplished convenience facilities and substructure facilities which was initially planned for a facility delivery volume of almost 250,000 peoples (Birch, 2021).

Despite the high urban density, residents are unwilling to return to the rural zones of Liberia where the scarcity is more predominant in accumulation to less economic prospects. Most of the people have seen their future growth in Monrovia, Liberia.

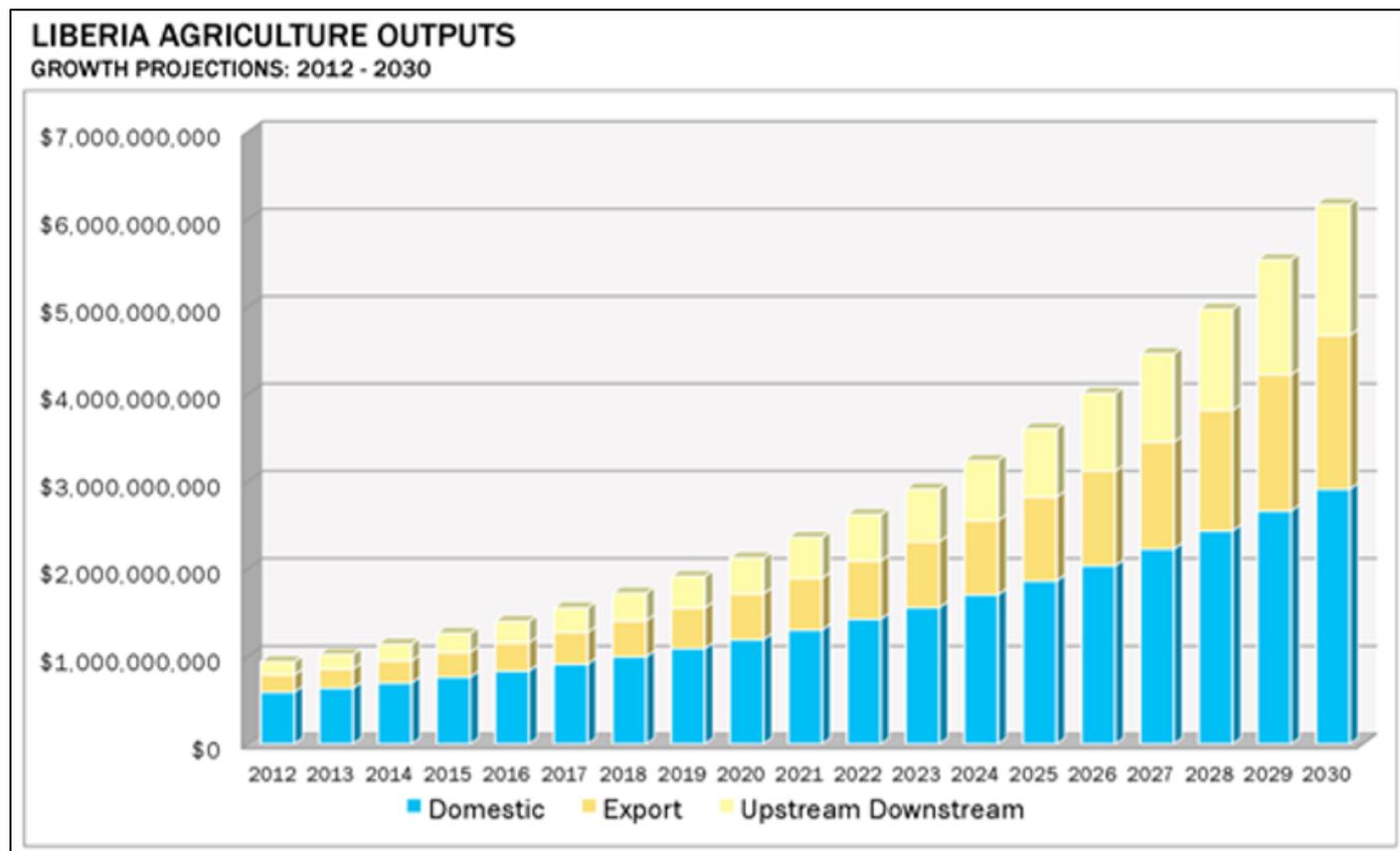


Fig 3 Environmental Challenges in Liberia

Source:<https://www.scirp.org/journal/paperinformation.aspx?paperid=113985>

➤ *This is a Graph of Liberia Agriculture Outputs*

The ocean area in the urban area of Liberia provides them with almost 65 per cent of their protein needs but still according to the WHO only 1 out of 4 people of Liberia has access to pure drinking water and approximately 58 per cent of people of Liberia are living within 40 miles of the coast. As the pollution has increased in Monrovia, Liberia after the urbanisation after the civil war. Environmental sustainability has become the basic need of the residents of Monrovia, Liberia. People around the world have the right to live in a welcoming environment where their health of people could be saved by the welcoming environment, not in a place where people are dying because of pollution and poverty (Zhao, and Zhang, 2018). Furthermore, environmental sustainability is now one of the most usual sayings in the discussion about climate change around the globe. The significance of environmental sustainability could significantly influence the fight against climate disasters around the world. Due to unplanned urbanisation, the issue like; differences among the residents, extensive poverty in the country, unemployment, increased corruption, insufficient contact to the basic facilities by the residents (e.g. supply of pure drinking water, electricity, infrastructure) can arise in a country like as Liberia where unplanned urbanisation creates many challenges for the government of Liberia and also for the society. Conversely, in Monrovia, Liberia many of the residents do not know what type of practical steps they have to take to get back the environmental sustainability. Although, environmental sustainability circumstances that the rates of non-renewable resource reduction, renewable resource harvest and pollution adjustment can be certainly sustained open-endedly (Brunn, et al 2020).

For Liberia, sustainable growth problems are even more emotional, rising the vulnerability to changed discontent and probably interior conflict. Attaining sustainable improvement objectives is important to make sure safety, permanent peace, and developed life quality for the peoples of Liberia. The people who are part of the civil war in Liberia including the educated people of Liberia have destroyed the infrastructure of Liberia and the government institutions (Kepe, 2021). The government had put all their efforts into the fight with the people during the civil war in Liberia. Due to the civil war, Liberia has lost their resources. Now in this competitive world, Liberia is suffering from many of the challenges which took place after the civil war. As many peoples have migrated towards the urban areas of Liberia, especially towards Monrovia, Liberia the challenges of the government of Liberia has increased which was to provide them with the basic facilities like pure drinking water, electricity, appropriate dumping areas of wastage, unemployment, etc. (Cox, et al 2018).

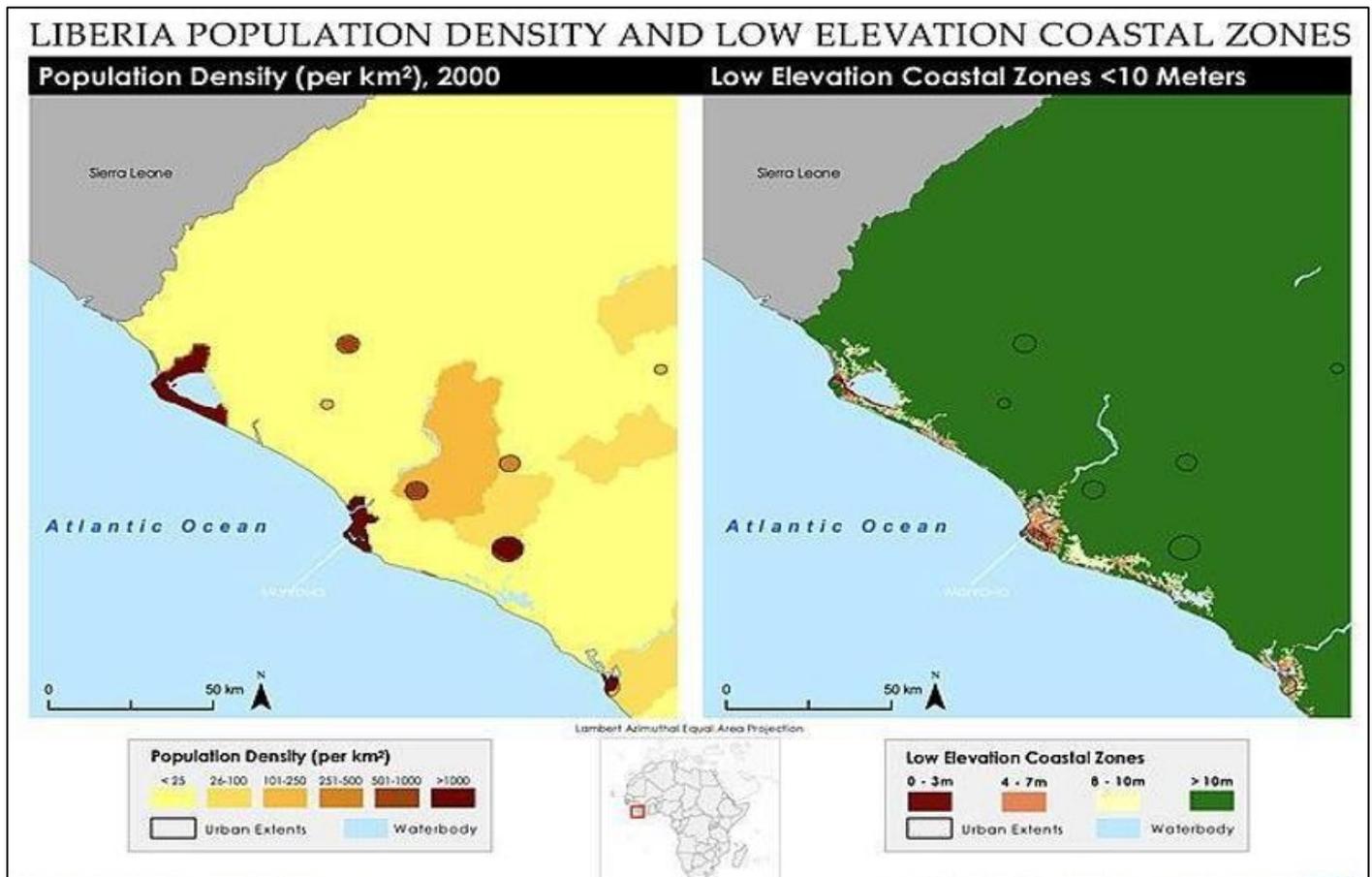


Fig 4 Overview of Environmental Issues in Liberia

Source: https://www.wikiwand.com/en/Environmental_issues_in_Liberia

➤ *Problem Statement*

Environmental sustainability has now become a basic need of Monrovia, Liberia. Because Monrovia, Liberia is becoming the most populated area in the world. Liberia is challenging a lot of problems, big stages of corruption, joblessness, widespread poverty, inequality, insufficient access to services (for example food security and electrical energy, and entirely-season roads), sanitation, and water. These specific challenges are making an influence the growth of Liberia. The problem of this specific dissertation is that the urbanisation in Liberia is far more than in other low-income countries in the world and this is directly impacting the environmental sustainability of Monrovia, Liberia. The heavy population in the urban area rather than in rural areas generates issues such as the issue of solid waste management and the issue of shortage of drinking water (David, et al 2020).

➤ *Research Aims*

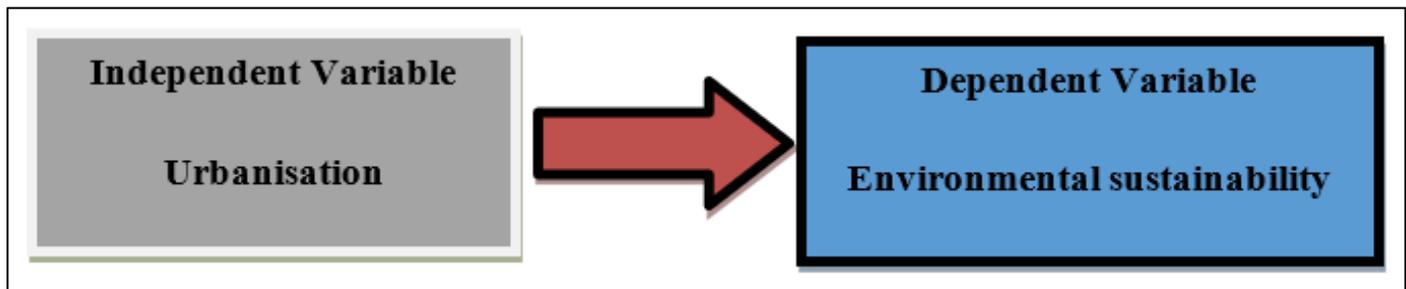
The main aim of the study is to examine the impact of urbanisation on environmental sustainability in Monrovia, Liberia. During the world war, many people have done the internal migration to the urban area of Monrovia, Liberia from the rural area and this has made an influenced the environmental sustainability of Monrovia, Liberia (Enaruvbe, et al 2019).

➤ *Research Objectives*

- To identify the measures taken by the government to prosper environmental sustainability.
- To assess the scope of urbanisation in Monrovia, Liberia.
- To identify the barriers and issues of environmental sustainability.

➤ *Research Questions*

- What are the measures taken by the government to prosper environmental sustainability?
- What is the scope of urbanisation in Monrovia, Liberia?
- What are the barriers and issues of environmental sustainability?

➤ *Conceptual Framework*➤ *Hypothesis*

Urbanisation harms environmental sustainability in Monrovia, Liberia.

➤ *Definition of key terms*

Following are the definitions of the key term of this specific dissertation (Gustafsson, etal 2019):

➤ *Impact*

The term impact can be defined as the action or force of one element onto the other. The impact can be the action of anything on any other element. It displays the situation and helps in measuring the situation (Linnell and Caparos, 2020).

➤ *Urbanisation*

The term urbanisation can be described as the procedure by which urban areas of the country grow. The advanced and higher number of the residents come to live in the city areas of the country. Moreover, it is the procedure through which a large number of residents become enduringly focused in comparatively small areas by making the cities (Olatunji, and Charles, 2020).

➤ *Environmental Sustainability*

The term environmental sustainability can be defined as the well-being of individuals is thoroughly associated with the health of the environment. Although, around the globe, approximately 24 per cent of passing can be outlined back to preventable environmental influences. People around the globe require fresh air to inhale, pure freshwater to drink, and places with welcoming environmental conditions. If all the basic needs are being fulfilled by the government of the country then the residents can claim that they are living in a sustainable environment (Quak, 2019).

➤ *Significance of the Study*

In this study the impact of urbanisation on environmental sustainability in Monrovia, Liberia has been identified. This study is significant for the Government of Liberia. Through this study the government and the administrative department of Monrovia, Liberia can analyse how to overcome the barriers and issues of environmental sustainability with the huge ratio of urbanisation. During World War 2 many of the people of Monrovia, Liberia had internally migrated from rural areas to urban areas. This became the reason behind the unsustainable environment of Monrovia, Liberia. Although, with the help of this specific study the government could examine the motivation behind urbanisation. This study is far more significant for the Government of Liberia as they can set the policies and find ways to face the challenge of urbanisation in Monrovia, Liberia (Rajkumar, and Elangovan, 2020).

➤ *Structure of Study Chapter #1*

In this chapter of the introduction the background of the study, problem statement aims and objective of the study and research question has been examined.

➤ *Chapter # 2*

In this chapter of the literature review the past paper about urbanisation and environmental sustainability in Monrovia, Liberia has been examined by a researcher.

➤ *Chapter # 3*

In this chapter on research methodology, it has been identified that the quantitative method has been selected as a methodology of this dissertation by a researcher. A deductive research approach has been selected to undertake this dissertation and positivism as a research philosophy. A survey questionnaire has been distributed to 100 people of Monrovia, Liberia.

➤ *Chapter # 4*

In this chapter of the result and discussion, the result of this dissertation has been interpreted by a researcher. The discussion on the desired result has been intended in this chapter.

➤ *Chapter # 5*

In this chapter of the conclusion, all the dissertation has been concluded by a researcher.

CHAPTER TWO LITERATURE REVIEW

A. *Challenges of Urbanisation*

➤ *Houses Challenges*

Bartlett, (2019) argued that housing is one of the most acute challenges facing developing countries. Of all the problems confronting the urban poor, none is more severe than finding quality housing. The United Nations (UN) report, for instance, has estimated that Nigeria's population would hit 289 million by the year 2050. One key area which will require serious attention is the largely inadequate housing. This is particularly true given the fact that a rapidly growing population invariably put enormous pressure or demands for shelter and other basic utilities and services. In most cities in the developing countries such as Lagos, Port Harcourt, Ibadan, Kaduna, Kano, Abuja in Nigeria, Sao Paulo, Rio de Janeiro, Aracaju in Brazil, Cairo in Egypt, Abidjan in Cote d'Ivoire, Nairobi and Kisumu in Kenya most of the apartment houses and homes built for rental privately or sale are made for the higher and middle classes since lower-salary housing is not beneficial to attract much investment. The consequent result is that many people crowded into existing urban slums, massively congested. This is because the poorest city dwellers, lack the resources to rent or build, and most of them are left homeless, residing under bridges or indoor ways, unused construction materials. According to (Bhagat, 2018), "In all, the total shantytown residents, slum dwellers, and homeless account for over half the population of the third world cities". No wonder, the United Nations (UN) reports estimated that 100 million people worldwide were homeless. This is not an exaggeration. In the less developed countries of the world like Cairo, several hundreds of thousands of people with no place to stay, live in the cemetery. While about one-third of the populations in Sao Paulo and Manila live in squatter clearings and other forms of spontaneous shelter. Sanitary conditions among these persons are especially challenging.

➤ *Poverty and Urbanisation*

World Bank (1996) states poverty as lack of shelter, being sick, food shortage and not being capable to realize a doctor, not consuming entrées to school and not knowing how to study. Birch (2021) states to poverty is a lack of knowledge above elementary needs of eating. Poverty is as well having panic for the future, the country being jobless and to be hopeless. Nigeria is among the states operating to attain the eight Millennium Development goals (MDGs) by 2015. It is not amazing for Nigeria's president to announce in live transmission in mid-July of 2013, that Nigeria cannot attain any of the Millennium Development goals by 2015. The next Millennium Development goal is to eliminate the dangerous hunger and poverty. Over 70 million Nigerians live in poverty.

➤ *Air Pollution*

Almazán, et al (2019) noted that air pollution has its side effect. Air pollution is a major problem coming mostly from cars, buses trucks, industries, etc. It has been reported that living in some developing countries like Mexico and China is equivalent to smoking 40 sticks of cigarettes a day. Urbanisation and Unemployment one of the main costs of the quick procedure of urbanisation have been the growth provided by job searchers in together the new (formal) and customary (informal) areas of the economy of urban. Migration of Rural-urban has an important effect on joblessness stages of the destination towns. The urban unemployment between 1998 and 1999, rose from 5.5 percent to 6.5 per cent, a rate more advanced than the state unemployment which boomed from 3.9 per cent to 4.7 per cent through the same time.

➤ *Environmental Challenges*

Olorunnisola, (2019) noted that indiscriminate urban growth in developing countries is confronted by severe risk pollution, housing shortages, inadequate sanitation and unsafe water supplies, unemployment, violence, traffic congestion, high cost of living, the disintegration of joint family, overcrowding, rural depopulation, increased demand for goods and services, increase demand for social amenities, poverty, illegal discharge of industrial waste, massive emissions of toxic gases from automobiles and factories. According to Cox et al., (2018): urbanisation has developed many features of human situations of living. During a similar period, however, issues of environment finding from urbanisation (for example air pollution, environmental deterioration and global warming) have harmfully affected the comfort and quality of urban living. The population of urbanis predicted to range 5 billion by 2030, and land exteriors would be seriously changed as big numbers of people transfer into metropolitan regions. Urbanisation has become the main reason for environmental issues. The alteration from non-urban to urban usages could find in CCs in urban regions, and land surface temperature (LST). Though, cities everywhere in the world, even in the industrialized world, are faced with environmental problems; however, those in the developing world are much more serious.

➤ *Climate Change and Urbanisation*

Activities of Man relating to where he exists, workings and his society from placeto place, eating also as the use of skills, all impact emissions of warmth within a city. Assaid by (David et al., 2020), Nigeria is facing world level warming at a degree greater than the world level indicate temperatures. In Nigeria, the indicated boost in heat from 1971 to 2008 is 1.78 0C, related to the world level mean a boost in temperature of 0.74 0C since helpful world level temperature amount began in 1860.

➤ *Urban Unrest and Riots*

Besides Qing, (2018), considering the space of problems challenging urban regions in advancing states, sometimes the multiple disadvantages such as decaying infrastructure and housing, unemployment, and poverty may fuel violence in the form of organized

protests, demonstrations, and political unrest, and rioting. According to (Enaruvbe et al., 2019), big towns have become focused and intensified languages of social issues that impact society as a total. Examples of such protests and demonstrations across urban centres include the one that toppled president Hussein Mubarak of Egypt, Muammar Gaddafi of Libya, President Ali Abdulsalami and Tiananmen Square in Beijing, China in 1989 where about 3,000 activists and students campaigning against corruption and calling for political reforms were killed in a military crackdown during the protest. The violent acts and damage can arise from severe social and financial reasons that are just necessary at the start of a local occasion to spark pretests.

➤ *Food Insecurity and Urbanisation*

The great rate of rural-urban (RU) migration in advancing states threatens the security of food in together rural areas and urban centres. A great number of persons engaged in activities of agriculture in rural regions have wild activities of agriculture as they travel to the urban centres to search for careers in industrial and treating companies and some into comfortable practices (Liang, et al 2019).

➤ *Rise of Urbanisation*

According to Castells et al., (2020), urbanisation will continue for a long time to come. It may slow down, but it certainly doesn't show signs of stopping. In 1985, 45 percent of the total population remained in cities. Researchers estimate that by 2025, 60 percent of the total population will live in cities. The main goal of urban planning is to make all the benefits and conveniences available to the general population, while not having a large detrimental effect on society and the climate. Supported development. It is based on the principle of advanced design of urban areas, and not their development immediately and thoughtlessly. With the development of the city, it is necessary to provide a satisfactory basis for helping the population. Homes should be strategically located close to public authorities. This may work for a viable device of large administrations. Likewise, (While, and Whitehead, 2013) suggested that open doors can be made in provincial regions to reduce pressure on urban communities. This also leads to an improvement in the quality of life of the country's population as a whole. Part of the cities of South Canara, the state of Karnataka, served as a model for this. They have a performance car and the appropriate structure and power. The co-agents were created to give workers monetary guidance. The people of the province were encouraged to take part in household chores and business activities such as making pickles, hard work, desserts and snacks. With the emergence of companies supplying essential goods, the demonstration of these goods has also become easier. It is a productive method of curbing urbanisation, opening doors for people in cities. This slows down the migration. At the moment, the organisation of urban communities for SD, mainly in the social structures of the third world, is a serious test for humanity. Limiting the population explosion is another important issue of the third millennium. This set of necessary elements will allow us to draw a conclusion about what the future of humanity and our planet will be like can move in the right direction.

Whereas, Jain and Korzhenevych (2020) believed that the city is a model of human civilisation and the focus of financial aspects, political and social activities. It has to do with civilisation and human progress. In ancient times, man began to acquire convenient networks; with the improvement of industry and business, urban areas emerged and urban progress began to spread. As a matter of fact, around that time, the size of the city was small, since the surrounding field framed a small unit, they were usually cramped. The true significance of the city is the result of the development of industry and commerce. Milan, Venice and Paris in the thirteenth century were centers of great business and exchange. After the industrial revolution, urbanisation accelerated its development. As ranchers flocked to the new modern community, the city took an exceptional turn of events.

According to Spiekermann et al., (2013), Hangzhou, for instance is going through several formative periods. It has many famous noteworthy and social destinations and a long history. At present, Hangzhou has developed into a popular global city and the financial center of the Yangtze River Delta. In any case, in ancient times it was just a shallow bay. The people of the past opened the canal, built a protective dam, dug the West Lake, dug the watersheds, reconstructed the Qiantang River, and promoted maritime transport. Under the Southern Song Dynasty, the economy prospered like never before: handicraft enterprises sprang up, the market flourished, and the population grew rapidly. Around the same time, Hangzhou became the greatest city in the world. After the Opium Wars, Hangzhou took a disproportionate turn of events and modernized the street in the face of mistreatment of Western gunboat strategy. During the mid-twentieth century, industrialisation and modernisation in Hangzhou was also staggering.

➤ *Consequences of Urbanisation*

Dame, et al (2019) said that the necessity to comprehend and forecast environmental reactions to anthropogenic trouble and land-usage alteration has never been better. Community responses and population to anthropogenic trouble are generally counted in positions of density, demography and diversity, with the last broadly observed as the gold average. Yet researchers frequently report the difference in demographic parameters overall places or centuries that shows hard to clarify directly by variables of the environment. This trouble can arise, in portion, for the reason that researchers rarely capture species connections that could outline procedures of the population overall on a wide series of temporal and spatial scales. A technical comprehension of the biological and evolutionary consequences of anthropogenic alteration needs research on the causes and results of species connections.

➤ *Congestion*

Dahlstedt, (2017) claimed that with many persons affecting from rural regions, a lot of urbanized towns are beginning to realize an overfilling problem. Main towns for example Hong Kong and New York are traded by main congestion factors. Overpopulation

is donating to dangerous traffic, pollution, the depletion of resources, and joblessness among lots other problems. These offerings a series of other unwanted side impacts that affect the parking sector as a total. At its main, "parking solutions" assist mitigate congestion, assist parking benefit possessors create income from possessed property, and motivate developed mobility by new solutions of mobility.

➤ *Inadequate Housing and Development of Slums*

Sreeramareddy, (2018) believed that in advancing states, a third of urban populations live in poor slums and resident settlements. Slums are urban regions that are deeply inhabited and have sub-standard housing by most poor living situations, making many issues. The government of Nigeria for example only gives housing to older administration persons (senior civil servants, judges, politicians) that are generally on the administration staff. The other inhabitants are probable to fend for themselves, and while they could not give the price of private housing, they fail back to outskirts by the city to make resident buildings for them themselves. Poverty, Poor Sanitation (PS), Spread of Diseases and Health while persons change in their statistics to a specific place, there would be a burden on supplies of food and distribution of food in such region. Whereas, Bodo, (2019) opined that in the rural regions in advancing states, the popular inhabitants are subsistence agriculturalists that have no challenges of food, therefore rather generally have food in extra for supply to the market. But, as people endure to transfer from their communities (origin place) to the towns, they tend to use bought food in the place of their possess crops and this creates them weaker to alterations in prices of food. While they could not give the food price in the town, expired food for survival or they settle on rotten and then to whole shortage of food supply (FS); and lastly in hopeless misery and poverty within the town. A condition that routs their hope of a healthier life, finding what can be called "suffering in paradise". Likewise, Cao, et al (2017) stated that the satire of this condition is that more force is riding on rural persons to create food for the increasing amount of urban persons, therefore the agriculturalists that were within the rural regions are currently in the town also demanding somebody to create food that would take to them. In the big-run, food shortage and big price of presented food (highly imported foods) develops the reality of the city.

➤ *Unemployment and Flooding*

Ebekozien, et al (2021) stated that Urban Crime and other Vices One of the key urbanisation consequences in emerging is joblessness. A lot of the rural persons that transferred in seek occupations in the towns end up on the roads. Most eras out of frustration, they began trivial stealing as grabbing bags from unknown losses and can even develop their skills to highway and robbers the bank. The males involved in sex commercialisation assist them to fend for their relatives. The gender commercial is general in the towns of both the advanced and advancing states. In Nigeria, for example, prostitutes can be placed big in towns like Abuja, Port Harcourt and Lagos places where highly the rich populations of the visits of state. Moreover, Antwi, et al (2021) noted that natural disasters in the method of flash floods are most general in Bamenda. Provide the boomed price at which sides are being covered, modern houses built and brook channels one-sided and decreased in size span, overflowing currently structures highest on the natural dangers list in Bamenda. There are many 48.8km of tarred secondary and primary roads within Bamenda. In the new previous, floods have gotten away souls marks, broken buildings and roads and overall other economic properties price have been decreased to stand zero in the shine by an eye.

Whereas, besides Wanget al (2019), the landslide is fast being one of the main problems of the environment within Bamenda that come as a find of the fast urbanisation. Landslide is realized to happen in the mood of the season rainy i.e. among July and September months by rain changing between 340 mm and 450 mm. Landslide within Bamenda is thus pro-poked by fast urban improvement finding from the advanced use of sharper grades changed by cutting walkway like regions and re-issuing resources in to give sites of structure. Heavy streams have the trend to soak and remove big rock crowds at times finding in the whole burial or crushing of a whole unit of housing. In addition, said that land expropriations have become one of the high contentious problems within China. Each year local administrations take land from an average of 4 million persons. Each year ten of 1000s of complaints are activated by grievances of farmers above the reward paid as an element of required achievements. About 65 percent of all stated rural disputes are reasoned by conflicts above land demands, and merely a handful of such conflicts entice international and national attention of media.

➤ *Urbanisation and Sustainability*

Guan, et al (2018) noted that significant theory and experiential signs are favoring the opinion that urbanisation is important to the growth of the economy. While for farmed and subsistence financial prudence, it is more creative for persons to be discrete overall the productive countryside, sector and facilities support urban grouping. The urban collection gives service enterprises and industrial opportunities of economic for better specialisation and big-scale brands, by lesser transport and prices of transactions. The urban economists of language, collection services distribution (for example of big facilities), similar (for example of people and jobs) and education (e.g. regarding more creative working ways). The urban locations advantages for post-manufacturing brands and the economy of information are less touchable than those for economies of industry; therefore contain benefits of face-to-face communication that communications of electronic have not achieved to change. Liewkse, Wahab, (2018) argued that in current years, fast urbanisation has become identical to advancing states. Between 1950 and 2000, the urbanisation stage in advancing states over becoming doubled from 18 percent to 40 per cent, by the level probable to top 50 per cent by 2020 and 64 per cent by 2050. It is correct that, in a change of situations, advanced states have qualified upper levels of urbanisation related to advancing states. But, modern research meant that the fast urbanisation of the complete population within advancing states has become a risk to sustainable improvement. Such as in 2010, although the advancing and advanced states had urbanisation stages of regarding 46 per

cent and 78 per cent correspondingly, their consistent urban population (UP) was 2.6 billion and 96 million, the importance the fast-growing of UP in advancing states. Kimengsi, (2017) also suggested this development would endure, with more than 90 per cent of world level population growth planned to happen in urban regions of advancing states over the next 4 periods. Unluckily, the risk of fast urbanisation to the sustainable growth of urban regions is progressively becoming assured and tangible within Africa, where urban development is pervasive. Until newly population of Africa was mostly rural, but, with a regular yearly urbanisation degree of 3.3 per cent, Africa is currently the globe's fastest urbanizing area. Official United Nations data show that the urban population of Africa boomed from 33 million to 288 million between the time of 1950 and 2000, and now outdoes that of advanced areas like North America. Future forecasts are even more alarming as 1.3 billion persons are estimated in urban Africa by 2050.

Besides Vandamme, (2018), the query of whether urbanisation encourages sustainable growth remains 1 of the stormily discussed topics of growth in demographic and literature on urban planning particularly in Africa. But, some researchers have claimed that urbanisation within Africa could donate to sustainable development (SD) through developed standards of living, conservation of ecosystems and poverty reduction, even with limited indication. As said by (David et al., 2020) urbanisation could favour poverty reduction, environmental management and economic growth although at various stages based on the institutional and infrastructural efficacy. Bibri, (2019) said that the urbanisation procedure in Africa and other advancing states has been connected to the addition of commercial skills, financial know-how, professional expertise and particular study within urban regions that spur modern technologies and innovations and find sustainable usage of resources. In a lot of cases, through urbanisation, a group of various human resources in urban areas goes towns into peaks of human making categorized by costs of low production and big profits that explain into big levels of income and improved value of the life of the inhabitants. In Ghana, such as, it is valued that the amount of UP in Accra capital town and Kumasi (the next biggest town) living under the poverty line (the US \$1) is 10.8 per cent related to 39.2 stages in rural Ghana. This, as said by (Birch, 2021), is a sign that inhabitants of urbanized areas make comparatively greater income related to their rural complement in advancing states containing Africa.

Antwi, (2021) said that the urbanisation of Africa is categorized as modernisation, as it guides helpful changes in social behaviours, lifestyle, rules and relatives in a lot of urban regions. Providing the collection of persons of changed cultural and social roots, urban Africa has supposed a configuration of socio-political and has become managers of social alteration and civilisation. Frequently periods, there is a retreat of outdated and cruel socio-cultural performances from the urban centres within Africa as inhabitants become alert to their situation through the procedure of urbanisation and modernisation. Such as, when extreme cultural performances, women genital damage, wife witchcraft and swapping camps are generally within a lot of rural regions in African states for example Namibia and Ghana; these performances are almost absent within the urban regions. Whereas, Anarfi, et al (2020) pointed out that the big and fast urbanisation happening in China has faster the growth of the national financial therefore has as well seriously changed regional situations. Urbanisation has raised a severe of issues within China, for example, damage to arable water, land and habitat fragmentation, energy lack, and PM2.5 pollution. These issues are unsuited for sustainable growth. In urban agglomerations of China, where water pollution, air pollution, mountain damage, soil pollution, and refined land infringement happen broadly, the interrelationships between urbanisation and Eco situations are irregular. Li, (2017) noted that the urban collections, which are focused on urbanized regions, are the most advanced forms of spatially combined towns. Collections of China urban signify a developed level of urbanisation and industrialisation. They comprise 45 per cent of the state's UP, donate 50 per cent of its GDP, characterize 65 percent of all external capital assets within China, and inhabit 9 per cent of its land region, therefore significantly favouring growth within China. The government of China knows that urban collections are significant for financial growth and urbanisation; consequently, it respects urban collections as the central regions for growing urbanisation and has strategic 19 urban groups of various kinds and levels. But, urban groups have become very delicate environmentally because of lacking attention of to the Eco environment in past fast urbanisation. This can impact the sustainable development (SD) of China and urbanisation in the upcoming.

➤ *Approaches to Sustainable Development (SD)*

Scholar, (2020) argued that with just 10 years gone to attain the Sustainable Development Goals, leaders of the world at the Sustainable Development Goals Summit in September 2019 known as a Decade of Action and transfer for sustainable growth, and enhance national implementation, pledged to mobilize financing and institutions of strengthen to attain the Goals by the mark date of 2030, leave-taking no one behind. In addition, The United Nations Secretary-General as per Gill, et al (2019) knew all regions of society to mobilize for a period of the action 3 stages: local action embedding the needed transitions in the institutions, policies, budgets and regulatory frameworks of administrations, towns and local authorities; world level action to secure greater leadership, more resources and smarter solutions for the GDP; and person act, containing by civil society, youth, unions, the private sector, the media, academia and other shareholders, to make an overpowering effort pushing for the necessary alterations. Likewise, Gill, et al (2019) reported that ecosystems give a series of facilities that are of essential significance to human well-being, livelihoods, survival, and health. Interest in ecosystem services in both the research and policy communities has grown rapidly. In 1997, the value of global ecosystem services was valued to be about US\$ 33 tons each year (in 1995 \$US), a number, more importantly, greater than world level gross local brand Sustainable Development Goals at the stage. This certainly basic overestimate of the welfare advantages of natural centre, and some other primary research moved a big surge in attention to this issue. In 2005, the idea of services of ecosystem increased larger attention when the UNs launched its Millennium Ecosystem Assessment. The Millennium Ecosystem Assessment was a 4-year, 1300-researcher study for politicians. Between 2007 and 2010, a second world level creativity was undertaken by the United Nations Environment Programmer, called the Economics of Ecosystems and Biodiversity.

CHAPTER THREE

RESEARCH METHODOLOGY

➤ *Research Approach*

The deductive research approach is being used because the deductive research approach means intellectual from the specific to the wide-ranging. Although, if a fundamental association or tie appears to be oblique by a precise theory or case instance, its strength is true in many cases. Moreover, a deductive design might be trying to understand if this association or tie did get on extra overall conditions. Deduction starts with a predictable design which is verified contrary to explanations, while initiation starts with explanations and pursues to discover a design in them (Fuchs, and Malone, 2021). The research approach is simply an idea and process which contains the phases of comprehensive expectations to complete means of information gathering, examination, and clarification. The research approach consequently, centred on the nature of the problem of research being addressed.

➤ *Research Philosophy*

The positivist research philosophy is used because it is a method that opinions the globe as obtainable around coming up to be pragmatic and examined by the researcher. Although, as a philosophy of the research, positivism observes the opinion that only accurate understanding added through reflection with measurement is reliable. In positivism research, the character of the researcher is imperfect in information gathering and explanation in an impartial means (Woiceshyn, and Daellenbach, 2018). Research philosophy contracts with the foundation, progress and nature of the understanding. During the research to select accurate research, philosophy has more significance for a researcher. Because a research philosophy is a certainty about the methods in which information about an occurrence should be gathered, examined and utilised. Consequently, the awareness of understanding conception may seem to be philosophical, a researcher was engaged in understanding the conception as a portion of the implementation of the dissertation. A researcher would gather primary and secondary information and take part in the examination of information to respond to the questions of the research and that response marked the conception of a new understanding.

➤ *Research Methodology*

The quantitative research method was used to undertake this dissertation, which highlights objective capacities and the numerical, mathematical, or statistical examination of information gathered by the questionnaires, or through working former numerical information utilising computational practices. In the dissertation, the research methodology is the particular process or methods which are utilised to find, choose, procedure, and examine data about the specific topic of this dissertation. Although, the dissertation research methodology portion permits the reader of the dissertation to judgmentally appraise a research's complete reliability and viability (Ryan, 2018).

➤ *Data Collection*

The dissertation utilises the primary data collection procedure because primary information is commonly gathered through the source where the information is initially created and is observed as the finest type of information in research (Martins, et al 2018). The primary data collection procedure is a firsthand data gathering process to undertake a dissertation on a particular dissertation topic.

➤ *Research Instrument*

The survey questionnaire tool was used to undertake the research. The questionnaire is the major tool for gathering information in survey research. Essentially, survey questionnaires are a bunch of consistent questions, frequently entitled matters, and that trail a static structure orderly to gather the information of a person about one or more than one topic (Denis, 2018). This instrument has two sections, the first section has five questions and the second (2nd) has fifteen (15) questions. The instrument was constructed by David, V.E., Wenchao, J., Johna, Y. and Mmerekib, D.-2019.

➤ *Population*

To undertake this dissertation, the selection of government representatives, teachers and students was as a population of respondent for this research.

➤ *Sampling*

The number of samples was 400 to undertake this dissertation. I conducted the survey with the locals in Monrovia, Liberia.

➤ *Analysis of Data*

The SPSS software to analyse the numerical data to undertake this dissertation. Because it is a petite Numerical Bundle of data for the Social Sciences. And the SPSS utilised by several types of researchers for multifaceted numerical data analysis. Moreover, SPSS is utilised by many researchers as it is the more appropriate software to analyse the data in accurate form. Many research organisations utilise SPSS to analyse the information of survey questionnaires and mine text information so that the organisation can acquire the maximum out of their research (Fuchs, and Malone, 2021). Data analysis is defined as a procedure of cleaning, converting, and demonstrating the information to realise valuable data to undertake the research. The purpose of Data Analysis is to extract useful information from data and compel the conclusion established upon the data analysis.

➤ *Ethical Considerations*

The ethical principles like privacy, confidentiality and voluntary participation of the respondents was considered to undertake this dissertation/research. Although, the consideration of ethics while doing the dissertation is most significant. Ethical consideration is an assortment of moralities and principles which must be followed while doing human dealings. It simply ensures that no individual action in such a means directly or indirectly is damaging to the community or a participant. Ethical consideration exhorts persons and companies from treating cruel behaviour. Following are the ethical considerations that were followed by a researcher to undertake this dissertation (Woiceshyn, and Daellenbach, 2018).

➤ *Informed Consent*

Informed consent has been considered as an ethical consideration while undertaking the dissertation. In considering the informed consent as an ethical consideration, It was ensure that the all contributors were having specified and suitable info about the dissertation in understandable means and without any type of pressure or unsuitable encouragement. Moreover, the provided information was included: the process of the dissertation, the determinations behind the dissertation, possibilities in undertaking the research and expected assistance, substitute processes, and a declaration which was proposing the contributor the chance to inquire any questions and to do withdraw at any time from the dissertation (Ryan, 2018).

➤ *Confidentiality*

Specific research contributors and set favourites concerning secrecy must be appreciated and contributor necessities regarding the private nature of info and private information must be valued, and it was. The research took care of the confidentiality of the participants of the research. Although, in planning the dissertation, it was considered whether private information is to be considered, as well as conversations with contributors (Maida, et al 2022).

➤ *Conflict and Interest*

Conflict and interest have been considered while undertaking the dissertation. Although, the individuality of the research was very clear, and any encounters of concern or prejudice were avoided during the research. A clash of concern rises where a commitment of the researcher to the funder to conduct the dissertation self-reliantly is probable to cooperate, or may seem to be negotiated (Martins, et al 2018).

CHAPTER FOUR RESULTS

➤ *Frequencies of Questions Demographic Questions*

- *Q1: Gender*

Table 1 Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	307	76.8	76.8	76.8
	Female	93	23.3	23.3	100.0
Total		400	100.0	100.0	

As per the table above, it is apparent that most of the respondents were males because the percentage of males were higher than the females.

- *Q2: Age*

Table 2 Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-30	23	5.8	5.8	5.8
	31-40	76	19.0	19.0	24.8
	41-50	169	42.3	42.3	67.0
	51-60	105	26.3	26.3	93.3
	Above 60	27	6.8	6.8	100.0
	Total	400	100.0	100.0	

As per the table above, it is apparent that most of the respondents were between 40 and 50 years of their age.

- *Q3: Occupation*

Table 3 Occupation

			Frequency	Percent	Valid Percent	Cumulative Percent
Valid	B.	Formal sector	184	46.0	46.0	46.0
	C.	Contractors	216	54.0	54.0	100.0
	Total		400	100.0	100.0	

As per the table above, it is apparent that most of the respondents were belonging to the contractor's sector.

- *Q4: Are you currently working from home?*

Table 4 Are you currently working from home?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	56	14.0	14.0	14.0
	No	344	86.0	86.0	100.0
	Total	400	100.0	100.0	

As per the table above, it is apparent that most of the respondents were not working from home.

- *Q5: What is your Education*

Table 5 What is your Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A. Doctorate	113	28.3	28.3	28.3
	B. Masters	143	35.8	35.8	64.0
	C. High School	83	20.8	20.8	84.8
	N/A	61	15.3	15.3	100.0
	Total	400	100.0	100.0	

As per the table above, it is apparent that most of the respondents were master-leveleducated.

- Q6:What is your Household Size?

Table 6 What is your Household Size?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A. 0-3	153	38.3	38.3	38.3
	B. 4-5	47	11.8	11.8	50.0
	C. Above 5	200	50.0	50.0	100.0
	Total	400	100.0	100.0	

As per the table above, it is apparent that most of the respondents were three members oftheir family.

- Q7: What is your Monthly Income in the Liberian Dollars?

Table 7 What is your Monthly Income in the Liberian Dollars?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A. Less than 5000	21	5.3	5.3	5.3
	B. 5000-25000	169	42.3	42.3	47.5
	C.26000-50000	173	43.3	43.3	90.8
	D.51000-100000	37	9.3	9.3	100.0
	Total	400	100.0	100.0	

As per the table above, it is apparent that most of the respondents were earning 26000 to50000 Liberian Dollars.

➤ Survey Questions

- What was the foremost reason for your migration from rural Liberia toMonrovia?

Table 8 What was the foremost reason for your migration from rural Liberia toMonrovia?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A. To seek employment	208	52.0	52.0	52.0
	B. To access basic social services	98	24.5	24.5	76.5
	C. To acquire quality education	48	12.0	12.0	88.5
	D. To establish	46	11.5	11.5	100.0
	Total	400	100.0	100.0	

As per the table above, it is apparent that most of the respondents migrated for seekingemployment in Monrovia.

- How crowed or populated is the area where you reside/stay?

Table 9 How crowed or populated is the area where you reside/stay?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A. Not Populated	213	53.3	53.3	53.3
	B. Little Populated	176	44.0	44.0	97.3
	C. Very populated	4	1.0	1.0	98.3
	D. Over-populated	7	1.8	1.8	100.0
	Total	400	100.0	100.0	

As per the table above, it is apparent that most of the respondents belonged to areas thatwere not populated.

- How would you describe your area of residence in terms of landcharacteristics?

Table 10 How would you describe your area of residence in terms of landcharacteristics?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A. Dry Land	127	31.8	31.8	31.8
	B. Backfilled wetland Area	40	10.0	10.0	41.8
	C. City Center	6	1.5	1.5	43.3
	D. Suburb area	227	56.8	56.8	100.0
	Total	400	100.0	100.0	

As per the table above, it is apparent that most of the respondents were belonging to suburban areas.

- *What is your current resident classification?*

Table 11 What is your current resident classification?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A. Private owned	44	11.0	11.0	11.0
	B. Rented/leased land	19	4.8	4.8	15.8
	C. Government land	244	61.0	61.0	76.8
	D. Squatter right	93	23.3	23.3	100.0
	Total	400	100.0	100.0	

As per the table above, it is apparent that most of the respondents were living on government land.

- *What are the major challenges you faced in your community because of its structure?*

Table 12 What are the major challenges you faced in your community because of its structure?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A. Inadequate supply of drinking water	76	19.0	19.0	19.0
	B. Air Pollution	233	58.3	58.3	77.3
	C. Rapid Spread of diseases	19	4.8	4.8	82.0
	D. Inadequate access to basic social services	72	18.0	18.0	100.0
	Total	400	100.0	100.0	

As per the table above, it is apparent that most of the respondents were facing air pollution in their community.

- *How do you rate your understanding of urbanisation?*

Table 13 How do you rate your understanding of urbanisation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A. Limited Knowledge	113	28.3	28.3	28.3
	B. Very limited Knowledge	97	24.3	24.3	52.5
	C. Good Knowledge	133	33.3	33.3	85.8
	D. Excellent Knowledge	57	14.3	14.3	100.0
	Total	400	100.0	100.0	

As per the table above, it is apparent that most of the respondents were having sufficient knowledge of urbanisation.

- *What are the major ongoing anthropogenic activities in your community as a result of urbanisation?*

Table 14 What are the major ongoing anthropogenic activities in your community as a result of urbanisation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	a. Littering	223	55.8	55.8	55.8
	b. Housing Construction	123	30.8	30.8	86.6
	c. Agriculture/Fishing/hunting	54	13.5	13.5	100.0
	Total	400	100.0	100.0	

As per the table above, it is apparent that most of the respondents were involved in the activities of community Littering.

- *What do you think are some of the leading impacts of these anthropogenic activities in your community?*

Table 15 What do you think are some of the leading impacts of these anthropogenic activities in your community?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A. Flooding	187	46.8	46.8	46.8
	B. Ground water pollution	1	.3	.3	47.0
	C. Changes in local drainage patterns	120	30.0	30.0	77.0
	D. Influx of surface water and sediments	92	23.0	23.0	100.0
	Total	400	100.0	100.0	

As per the table above, it is apparent that most of the respondents opined that floodinghighly affects the community.

- *What do you think is the primary cause(s) of ground water pollution inyour community?*

Table 16 What do you think is the primary cause(s) of ground water pollution inyour community?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	a. Lack of drainage pattern	307	76.8	76.8	76.8
	b. Littering	93	23.3	23.3	100.0
	Total	400	100.0	100.0	

As per the table above, it is apparent that most of the respondents said that lack ofdrainage is the cause of groundwater pollution in the community.

- *What do you think is the primary cause of the flooding in yourcommunity?*

Table 17 What do you think is the primary cause of the flooding in yourcommunity?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	a. Lack of drainage	57	14.3	14.3	14.3
	b. Littering of the wetland	41	10.3	10.3	24.5
	c. Construction in the wetland	45	11.3	11.3	35.8
	d. Drainage blockage	257	64.3	64.3	100.0
	Total	400	100.0	100.0	

As per the table above, it is apparent that most of the respondents said that lack ofdrainage is the cause of pollution in the community.

- *Does Flooding occur in your community?*

Table 18 Does Flooding occur in your community?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	a. Yes	69	17.3	17.3	17.3
	b. No	264	66.0	66.3	83.7
	Total	398	99.5	100.0	
Total		400	100.0		

As per the table above, it is apparent that most of the respondents said that floodingoften occurs in the community.

- *To what extent does the flooding occur?*

Table 19 To what extent does the flooding occur?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	c. High (1 month)	44	11.0	11.0	11.0
	d. Medium (2-3 weeks)	333	83.3	83.3	94.3
	e. Low (less than 1 week)	23	5.8	5.8	100.0
	Total	400	100.0	100.0	

As per the table above, it is apparent that most of the respondents said that floodingoften occurs in the community within two to three weeks.

- *What is the role of the community in managing some of these practices ofthe impacts of urbanisation?*

Table 20 What is the role of the community in managing some of these practices ofthe impacts of urbanisation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	a. completely involved	130	32.5	32.5	32.5
	b. Partially involved	110	27.5	27.5	60.0
	c. Not involved	26	6.5	6.5	66.5
	d. Lack Interest	134	33.5	33.5	100.0
	Total	400	100.0	100.0	

As per the table above, it is apparent that most of the respondents said that the community is completely and partially involved in managing these practices.

- *How willing are you to promote environmental sustainability in your community?*

Table 21 How willing are you to promote environmental sustainability in your community?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	7	1.8	1.8	1.8
	a. Not willing	51	12.8	12.8	14.5
	b. Partially willing	144	36.0	36.0	50.5
	c. Completely willing	134	33.5	33.5	84.0
	e. A limited idea on sustainability	64	16.0	16.0	100.0
	Total	400	100.0	100.0	

As per the table above, it is apparent that most of the respondents said that they were completely willing to manage these practices.

- *What can be done to mitigate the impacts of urbanisation from the community perspective?*

Table 22 What can be done to mitigate the impacts of urbanisation from the community perspective?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	6	1.5	1.5	1.5
	a. Community Awareness	40	10.0	10.0	11.5
	b. Request the government to develop and enforce policy actions	123	30.8	30.8	42.3
	c. Restrict urban migration to already overpopulated areas	156	39.0	39.0	81.3
	d. All the above	75	18.8	18.8	100.0
	Total	400	100.0	100.0	

As per the table above, it is apparent that most of the respondents said that restricting urban migration to already overpopulated areas will help mitigate the impacts of urbanisation from the community perspective. It is apparent from the data analysis that almost 76 percent of the data was valid and reliable.

CHAPTER FIVE DISCUSSION ON FINDINGS

The findings from the survey conducted in Monrovia indicate that an important role is played by urbanisation in environmental sustainability. Most of the respondents agreed that one key area which will require serious attention is the largely inadequate housing in Liberia. This is particularly true given the fact that a rapidly growing population invariably puts enormous pressure or demands for shelter and other basic utilities and services in the country. While the study by (David, et al 2020) also confirmed that in most cities in the developing countries such as Lagos, Port Harcourt, Ibadan, Kaduna, Kano, Abuja in Nigeria, Sao Paulo, Rio de Janeiro, Aracaju in Brazil, Cairo in Egypt, Abidjan in Cote d'Ivoire, Nairobi and Kisumu in Kenya most of the apartment houses and homes built for rental privately or sale are made for the higher and middle classes, since lower-salary housing is not beneficial to attract much investment (Bhagat, 2018). Likewise, the respondents in the survey conducted in Monrovia depicted the idea that the consequent result is that many people crowded into existing urban slums, massively congested. This is because the poorest city dwellers in Monrovia, lack the resources to rent or build, and most of them are left homeless, residing under bridges or indoor ways, unused construction materials. Similarly, the majority of the respondents in the survey conducted in Monrovia agreed that the total shantytown residents, slum dwellers, and homeless account for over half the population of the third world cities like Monrovia. No wonder, the United Nations (UN) reports estimated that 100 million people worldwide were homeless. Whereas, Birch (2021) gave another perspective stating poverty is also having a panic for the future, the country being jobless and to be hopeless. Nigeria is among the states operating to attain the eight Millennium Development goals (MDGs) by 2015. It was not amazing for Nigeria's president to announce in live transmission in mid-July of 2013, that Nigeria cannot attain any of the Millennium Development goals by 2015. The next Millennium Development goal is to eliminate the dangerous poverty and hunger.

Furthermore, the findings from the majority of the respondents in the survey conducted in Monrovia revealed that the local government of Monrovia is taking serious steps to implement sustainable urban development. As the urbanisation in Monrovia has developed many features of human situations of living. The issues of environment arising from urbanisation (for instance air pollution, environmental deterioration and global warming) have harmfully affected the comfort and quality of urban living in Monrovia. The population of urban areas is predicted to range from 5 billion by 2030. Moreover, urbanisation has become the main reason for environmental issues in Monrovia as per the most of survey respondents. The alteration from non-urban to urban usages could be found in CCs in urban regions, and land surface temperature (LST). Though, cities everywhere in the world, even in the industrialized world, are experienced environmental issues; however, those in the developing world are much more serious. Similarly, Enaruvbe et al., (2019) found that big towns have become dense and intensified languages of social issues that impact society as a total. Examples of such protests and demonstrations across urban centres include the ones that toppled president Hussein Mubarak of Egypt, Muammar Gaddafi of Libya, President Ali Abdulsalami and Tiananmen Square in Beijing, China in 1989 where about 3,000 activists and students campaigned against corruption. The violent acts and damage can arise from severe social and financial reasons that just need the start of a local occasion to spark protests. In addition, the majority of the respondents in the survey conducted in Monrovia reveal that community responses and population to anthropogenic trouble are generally counted in positions of density, demography and diversity, with the last broadly observed as the gold average. Yet past studies by Almazán, et al (2019) and Cox et al., (2018) frequently reported the difference in demographic parameters. This problem can arise, in part, for the reason that researchers rarely capture species connections that could outline procedures of the population overall on a wide series of temporal and spatial scales.

The findings from survey responses indicate that the primary cause(s) of groundwater pollution in Monrovia is a lack of drainage patterns. On the other hand, (David et al., 2020) were of the view that in advancing states, a third of urban populations live in poor slums and resident settlements. Slums are urban regions that are deeply inhabited and have sub-standard housing by most poor living situations, making many problems. The government of Nigeria for example only gives housing to older administration persons (senior civil servants, judges, politicians) that are generally on the administration staff. The other inhabitants are probable to fend for themselves, and while they could not give the price of private housing, they fall back to outskirts by the city to make resident buildings for themselves. Poverty, Poor Sanitation (PS), Spread of Diseases and Health while persons change in their statistics to a particular area, there would be a burden on supplies of food and distribution of food in such region. The majority of the respondents in the survey conducted in Monrovia supported the idea that in the rural regions in advancing states, the popularity of inhabitants is subsistence agriculturalists that have no challenges of food, therefore rather generally have food in extra for supply to the market. But, as people endure to transfer from their communities to the towns, they tend to use bought food in place of their possess crops and this creates them weaker to alterations in prices of food. Natural disasters in the form of flash floods are most general in Bamenda. Provide the boomed cost at which sides are being covered, modern houses built and brook channels one-sided and decreased in size span, overflowing currently structures highest on the natural dangers list in Bamenda. There are many 48.8km of tarred secondary and primary roads within Bamenda (Almazán, et al., 2019).

In current years, fast urbanisation has become identical to advancing states. Between 1950 and 2000, the urbanisation stage in advancing states over becoming doubled from 18 percent to 40 per cent, by the level probable to top 50 per cent by 2020 and 64 per cent by 2050. It is correct that, in a change of situations, advanced states have qualified upper levels of urbanisation related to advancing states. But, modern research by Dahlstedt, (2017), Sreeramareddy, (2018) and Bodo, (2019) confirmed that the fast urbanisation of the complete population within advancing states has become a risk to sustainable improvement. Such as in 2010,

although the advancing and advanced states had urbanisation stages of regarding 46 per cent and 78 per cent correspondingly, their consistent urban population (UP) was 2.6 billion and 96 million, the importance the fast-growing of UP in advancing states. This development would endure, with more than 90 per cent of world level population growth planned to happen in urban regions of advancing states over the next 4 periods. Unluckily, the risk of fast urbanisation to the sustainable growth of urban regions is progressively becoming assured and tangible within Africa, where urban development is pervasive. Cao, et al (2017) confirmed that until a new population of Africa was mostly rural, but, with a regular yearly urbanisation degree of 3.3 per cent, Africa is currently the globe's fastest urbanizing area. Official United Nations data show that the urban population of Africa boomed from 33 million to 288 million between the time of 1950 and 2000, and now outdoes that of advanced areas like North America. Future forecasts are even more alarming as 1.3 billion persons are estimated in urban Africa by 2050.

Moreover, the majority of the respondents in the survey conducted in Monrovia indicated that the urbanisation procedure in Monrovia has been connected to the addition of commercial skills, financial know-how, professional expertise and particular study within urban areas that spur modern technologies and innovations and find sustainable use of resources. In a lot of cases, through urbanisation, a group of various human resources in urban areas goes towns into peaks of human making categorized by costs of low production and big profits that explain into big levels of income and improved value of the life of the inhabitants. In Ghana, such as, it is valued that the amount of UP in Accra capital town and Kumasi (the next biggest town) living under the poverty line (the US \$1) is 10.8 per cent related to 39.2 stages in rural Ghana. This is a sign that inhabitants of urbanized areas make comparatively greater income related to their rural complement in advancing states containing Africa (Bhagat, 2018).

The findings of the study by Jain et al., (2020) indicated that in October 2002, the metropolitan government, in line with the idea of building another paradise, made change to the state units of Hangzhou. The idea behind the choice is to integrate the two rural-level urban communities of Xiaoshan and Yuhang into the metropolitan area. Hangzhou has expanded from 688 square kilometers to 3,168 square kilometers, while its area has increased several times than before, and the population has increased to 3,730,000 people. The position of the population has risen from thirteenth to sixth place. Hangzhou has grown into a major city after Shanghai in the Yangtze River Delta. The findings of the study by Zhou et al., (2022) also suggested that the founding of the Xiaoshan and Yuhang districts led to the shift of the city center from the West Lake to the Yangtze River. From now on, "West Lake Time" has changed to "Yangtze River Time", which opens an important door and greatly improves the radiation performance of Hangzhou. After the founding of Yuhang and Xiaoshan districts, as evidenced by the main goal of building another city and another paradise, Hangzhou developed an urban construction project, the idea of which is "expanding the city, traveling west, and abusing the Yangtze River."

Meanwhile, the findings from the majority of the respondents in the survey conducted in Monrovia revealed that urbanisation raises the standard of living of people, improves their quality of life and contributes to the further improvement of human society. Urbanisation accelerates the ordering of the way of life of urban communities. Besides Spiekermann et al. (2013), Shaoxing rice wine is one type of this culture. In the old days, this was considered praise and reflected the reasoning of the Confucian school. It is currently registered as a celebratory wine variety. At some celebrations, companions and family members give it to each other. As the city expands, they contribute to the way of life and also contribute to monetary development. Shenzhen is an exemplary city of money circulation. After Deng Xiaoping, the late Chinese pioneer, announced the approach of transformation and opening up. Shenzhen has evolved from a small fishing town to an advanced global huge city that made Shenzhen famous for its speed (Wu et al., 2014). Since the founding of the Special Economic Zones, Shenzhen has experienced rapid and stable financial development. The country's gross domestic product, social retail operations, and all imports and merchandise in China achieved the highest results. The absolute result in Shenzhen is the same as the half result of the average area. Shenzhen is one of the financially best urban areas in the central region of China.

CHAPTER SIX CONCLUSION AND RECOMMENDATION

A. Conclusion

From the results of survey conducted in Monrovia, it can be assumed that certain goals of harming the climate through urbanisation lie in the regulatory and governing organisations of Monrovia, Liberia. The disillusionment of the administration in the current urban areas has led to the development of random settlements and slums in which people live and work in a dysfunctional way. Due consideration should be given to the requirement to work on urban practices that improve resource utilisation in Monrovia. The results of survey conducted in Monrovia suggest that the critical attention should be given to reducing the age of solid waste at sources through binding principles and guiding impulses for cost and valuation, as well as education and deliberate sequencing in Monrovia. If the necessary measures are not taken to prevent infection and work for personal satisfaction through the provision of additional amenities, the existence of Liberian metropolises like Monrovia may become even more hopeless, fraught with health risks and the most terrible dispersion. Thus, the government has an obligation to do everything possible to prevent the climate by taking possible measures, and in addition, the organizers must also be guided by these prospects when organizing and protecting the climate.

The results of survey conducted in Monrovia reveal that many issues are related to the urbanisation of the topographical separations as they mostly contain ecological scarcity, the disposal of the water and issues related to pollution in Monrovia. There has been an increase in poverty due to the heavy population living in the urban areas. Inflation is rising day by day which is because of the low purchasing power of the people of Monrovia. Along with inflation, the issue related to unemployment is also faced by Monrovia. These all issues were faced by Monrovia after the internal migration of the population from the rural to the urban areas. Thus, the government of Monrovia was not prepared to face such an issue and thus conditions worsen after the civil war. These all problems summed up to create urbanisation. And because of this urbanisation, the slums were set up along with the casual settlements and the unintended growth. Later on, the lack of investment resources and the increase in the human volume worsen the situation as there was no proper food system available for the people. Unemployment and urbanisation were other factors faced by Monrovia, Liberia. With time, the slum progressions are increasing. Most of the people living in Monrovia are living under the poverty line. They do not have that much money to spend on their families. About 64 percent of the people are having an income that is less than even €0.88 per day and therefore, they are unable to fulfil their basic needs. This can explain the overall condition of Monrovia. And the main reason for this urbanisation is the lack of government planning to face unforeseen events or catastrophes. Significant theory and experiential signs is favoring the opinion that urbanisation is important to the growth of the economy of Monrovia. While for farmed and subsistence financial prudence, it is more creative for persons to be discrete overall the productive countryside, sector and facilities support urban grouping.

The results of survey conducted in Monrovia suggest that the urban areas gives service enterprises and industrial opportunities of economic for better specialisation and big-scale brands, by lesser transport and prices of transactions. The query of whether urbanisation encourages sustainable growth remains one of the stormily discussed topics of growth in demographic and literature on urban planning particularly in Monrovia. But, some researchers have claimed that urbanisation within Africa could donate to SD through developed standards of living, conservation of ecosystems and poverty reduction, even with limited indication. Urbanisation in Monrovia could favour poverty reduction, environmental management and economic growth although at various stages based on the institutional and infrastructural efficacy.

It is concluded that urbanisation has a number of consequences, both negative and positive for Monrovia. They affect the social and environmental spheres. Due to the high standard of living in cities, competition for facilities is intensifying, which has led to a number of negative consequences. Many people, including farmers who move to cities in search of a better life, end up as temporary workers due to a lack of proper education in Monrovia. This leads to one of the most serious problems of urbanisation - the growth of slums. Slums are densely populated urban areas with standard housing and very poor living conditions. As a result, several problems arise. In addition, during urbanisation, the water cycle in Monrovia, Liberia changes as urban areas receive more precipitation than the surrounding regions. Due to the discharge of wastewater from enterprises into water bodies, water is polluted, which can provoke episodes of pandemics. Habitat destruction. To make the region urbanized, a ton of forests are being destroyed. Usually these regions were the habitat of many birds and creatures.

The results of survey conducted in Monrovia revealed that slums are usually located on the waterfront and are not owned by slum dwellers in Monrovia. They can be removed at any time by landowners. Crowding and lack of sterilisation are fundamental problems. This exacerbates outbreaks of infections. Utilities such as water, electricity and sewerage are also scarce. Unemployment. Since the number of people who want to get a profession exceeds the number of available vacancies, unemployment is an inevitable problem. Crime - living conditions in the slums make it difficult to maintain peace and law. Surveillance of the ghetto is not vital to the regulators. Unemployment and poverty force people to oppose social exercises. Slums become a favorable place for criminal activity. Due to factors such as the clearing of previously overgrown land, an increase in homes, condominiums, and skyscraper-like businesses, temperatures are rising sharply. Factories and cars are images of urbanisation in Monrovia. Due to harmful emissions of gases and smoke from production lines and vehicles, atmospheric air is polluted. Tide studies show high levels of suspended particulate matter in the air, especially in urban areas, which increases sensitivity and breathing problems, which in turn poses a

huge health risk.

B. Recommendations / Implications

➤ *Littering Prevention by The City Government of Monrovia, Liberia (the Monrovia City Corporation-MCC)*

Garbage can cause a variety of problems, ranging from environmental impact to disruption to the well-being and lifestyle of the area. It is very important to maintain the integrity of the neighborhood and promote the best qualities now and people in the future.

The City Government of Monrovia, Liberia (the Monrovia City Corporation-MCC) **should make sure the trash is secure.** Paper, cans and other light waste can be easily carried and distributed to inappropriate places for waste and reuse.

The City Government of Monrovia, Liberia (the Monrovia City Corporation-MCC) **should educate all its citizens.** Education is an important tool to help reduce waste. Encourage others to stop packing trash cans. The wind can easily rip off the top of an overloaded canister and scatter debris all over the area. Post news on local bulletin boards about the impact of litter and how to reduce litter.

➤ *Housing Construction by the City Government of Monrovia, Liberia (the Monrovia City Corporation-MCC)*

The City Government of Monrovia, Liberia (the Monrovia City Corporation-MCC) **minimize the waste.** Development supplies a lot of waste, period. There is no way around this, but the government can and should look for ways to limit the waste it delivers. Increasing the efficiency of the tasks, improving the utilisation of provisions and materials, and choosing items and methods that reduce waste are all incredible ways to reduce waste for each of the businesses. Every single part really adds up.

The City Government of Monrovia, Liberia (the Monrovia City Corporation-MCC) **should adopt industrial recycling.** Learn about reusing warehouse space specifically designed for business growth, such as the EPA's Industrial Recycling Program. This program aims to reuse development and destruction garbage in other in-place development applications.

➤ *Ground water pollution by The City Government of Monrovia, Liberia (the Monrovia City Corporation-MCC)*

The City Government of Monrovia, Liberia (the Monrovia City Corporation-MCC) **reduce chemical use.** Use less synthetic compounds around the house and yard and try to dispose of them properly - do not throw them on the ground.

The City Government of Monrovia, Liberia (the Monrovia City Corporation-MCC) **manage waste.** Properly dispose of potentially harmful substances such as unused synthetic materials, medicines, paints, engine oil, and other substances. Numerous groups of people have family groups or hazardous waste destinations.

The City Government of Monrovia, Liberia (the Monrovia City Corporation-MCC) **should not let it run.** The administration of draining system should stop the water when the citizens brush the teeth or shave, and don't let it run while they are sitting to let it cool down. Keep a pitcher of cold water in the refrigerator, all things considered.

The City Government of Monrovia, Liberia should fix the drip. In fact, inspect all the faucets, fixtures, latrines, and faucets in the home for breakage and fix them immediately or implement water-saving models.

➤ *Recommendations According to Findings Promoting urban agriculture in Monrovia, Liberia*

The results of survey conducted in Monrovia suggest that by preserving agricultural land in urban areas, the City Government of Monrovia, Liberia (the Monrovia City Corporation-MCC) can shorten supply chains and the amount of CO₂ emitted when transporting food from rural to urban areas. Producing and selling more fresh food within the city itself can reduce the environmental impact of food distribution, increase opportunities for inclusive local supply chains and improve access to nutritious foods, for example through farmers' markets.

➤ *Encouraging Healthy Diets in Monrovia, Liberia*

The results of survey conducted in Monrovia suggest that lifestyles and dietary patterns are strongly influenced by the types of food available and their affordability. In cities where there is a large choice of fast food and convenience options, available food is often energy-dense and highly processed. This is a growing trend. National governments and city administrations in Monrovia, Liberia face the problem of having to deal with undernutrition, but also with the health effects of obesity which is increasing at an alarming rate.

➤ *Reducing and Managing Food Waste in Monrovia, Liberia*

The results of survey conducted in Monrovia suggest that people in urban areas like Monrovia, and Liberia consume up to 70 per cent of the global food supply, but much of it is thrown away. Although the causes of food waste vary from one region in the world to another, generally poor food planning, inadequate packaging, improper storage and cultural practices are all contributing to the problem (Ebekozien, et al 2021). In addition, food waste that is not recycled or re-used is filling up the landfills. There, it decomposes

and generates methane, a greenhouse gas that is more harmful to the planet than CO₂. This scenario is not just a waste of food but also a waste of energy, money and natural resources such as land and water that is used to produce and process the food.

➤ *Boosting Green Spaces for Healthier Environments and Improved Lifestyles in Monrovia, Liberia*

The results of survey conducted in Monrovia reveal that urban areas of Monrovia, Liberia continues to expand, and the green spaces are disappearing. More than just for aesthetic appeal, trees and green areas are essential for improving air quality, mitigating urban temperatures, encouraging physical activity and improving overall health. Air pollution, rising local temperatures and sedentary lifestyles can increase the probability of cardiovascular and respiratory diseases, and obesity and fuel the spread of new pathogens. Food systems need to be planned and managed together with the green environment, to curb pollution, and encourage healthy diets and physical activity.

➤ *Reconnecting cities with Surrounding Rural Areas in Monrovia, Liberia*

The results of survey conducted in Monrovia suggest that cities and urban areas do not function in isolation from rural areas. They are highly dependent on the rural regions surrounding them. Cities rely heavily on the neighbouring rural areas for food, labour force, water supply and food waste disposal.

➤ *Recommendation for Future Research Work*

The researcher only did the survey and did not conduct an interview. Conducting interviews would have helped in developing more opinions and thoughts. Future researchers can conduct a study by taking interviews as a qualitative method along with conducting a good number of surveys. This study was limited to Monrovia only, however, it should be conducted in other regions and cities of Liberia to know the impact on the macro-level. As environmental sustainability is a basic need of all other cities in Liberia. Liberia is facing many challenges, including inequality, widespread poverty, unemployment, high levels of corruption, inadequate access to services (e.g. water and sanitation, electricity, and all-season roads), and food security. These specific challenges are making an influence the growth of Liberia.

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APPENDIX: SURVEY QUESTIONNAIRE

EXAMINING THE IMPACT OF URBANISATION ON ENVIRONMENTAL SUSTAINABILITY IN MONROVIA, LIBERIA.

Informed Consent Form

Dear Ms./ Mr./Mrs.

My name is Cephaz M. M. D. Flanzamaton; I am a Master's student at the Near East University in the Turkish Republic of Northern Cyprus. As part of my (final) Master's study in Environmental Education and Management, I am required to conduct a research project (THESIS), titled: "**Examining the Impact of Urbanisation on Environmental Sustainability in Monrovia, Liberia.**"

As one of my research tools, this document contains twenty six (26) closed-ended questions that were specifically formulated to contribute to my master's thesis. Even further, your responses to these questions are very important for my research.

Please note however that all the information provided during this survey will be kept confidential as no part of it will be traced back to you. The research is strictly academic! if you agreed to be part of this study, please check "Yes" or "No" if you choose to decline.

Yes No

Thank you very much for your time. Sincerely yours,

Cephaz M. M. D. Flanzamaton

➤ *Questionnaire on Examining the Impact of Urbanisation on Environmental Sustainability in Monrovia, Liberia*

Gender: _____ M _____ F Year of Birth:

- **Instructions:** This questionnaire is designed to gather information on how urbanisation has affected environmental sustainability from the period covering.

Read each statement and circle which best shows how you feel.

SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree, SA = Strongly Agree

➤ *Bio-DATA INFORMATION:*

- *What is your age?*

- ✓ Less than 20 years
- ✓ 21-30 years
- ✓ 31-40 years
- ✓ 41-50 years
- ✓ Above 50

- *What is your gender?*

- ✓ Male B. Female

- *What is your level of Education?*

- ✓ Doctorate
- ✓ Masters
- ✓ High School
- ✓ N/A

- *What is your occupation?*

- ✓ Informal sector
- ✓ Formal sector
- ✓ Contractors
- ✓ Others

- *What is your household size?*

- ✓ 0-3
- ✓ 4-5
- ✓ Above 5

- *What is your monthly Income in the Liberian Dollars?*

- ✓ Less than 5000
- ✓ 5000-25000 C.26000-50000 D.51000-100000
- ✓ Above 100000
- ✓ N/A

SECTION II: RESEARCH DATA INFORMATION➤ *Research Questionnaire*

- *What was the foremost reason for your migration from rural Liberia to Monrovia?*

- ✓ To seek employment
- ✓ To access basic social services
- ✓ To acquire quality education
- ✓ To establish
- ✓ All the above

- *How crowded or populated is the area where you reside/stay?*

- ✓ Not Populated
- ✓ Little Populated
- ✓ Very populated
- ✓ Over-populated

- *How would you describe your area of residence in terms of land characteristics?*

- ✓ Dry Land
- ✓ Backfilled wetland Area
- ✓ City Center
- ✓ Suburb area

- *What is your current resident classification?*

- ✓ Private owned
- ✓ Rented/leased land
- ✓ Government land
- ✓ Squatter right

- *What are the major challenges you faced in your community because of its structure?*

- ✓ Inadequate supply of drinking water
- ✓ Air Pollution
- ✓ Rapid Spread of diseases
- ✓ Inadequate access to basic social services

- *How do you rate your understanding of urbanisation?*

- ✓ Limited Knowledge
- ✓ Very limited Knowledge
- ✓ Good Knowledge
- ✓ Excellent Knowledge

- *What are the major ongoing anthropogenic activities in your community as a result of urbanisation?*

- ✓ Littering
- ✓ Housing Construction
- ✓ Agriculture/ Fishing/hunting
- ✓ All the above

- *What do you think are some of the leading impacts of these anthropogenic activities in your community?*

- ✓ Flooding
- ✓ Ground water pollution
- ✓ Changes in local drainage patterns
- ✓ Influx of surface water and sediments
- ✓ Others (please specify):

• *What do you think is the primary cause(s) of groundwater pollution in your community?*

- ✓ Lack of drainage pattern
- ✓ Littering
- ✓ Drainage blockage
- ✓ Construction in the wetland
- ✓ Agricultural activities

• *What do you think is the primary cause of the flooding in your community?*

- ✓ Lack of drainage
- ✓ Littering of the wetland
- ✓ Construction in the wetland
- ✓ Drainage blockage
- ✓ Agricultural activities

• *Does Flooding occur in your community?*

- ✓ Yes
- ✓ No

• *To what extent does the flooding occur?*

- ✓ Severe (2 months)
- ✓ High (1 month)
- ✓ Medium (2-3 weeks)
- ✓ Low (less than 1 week)

• *What is the role of the community in managing some of these practices of the impacts of urbanisation?*

- ✓ Completely involved
- ✓ Partially involved
- ✓ Not involved
- ✓ Lack Interest

• *How willing are you to promote environmental sustainability in your community?*

- ✓ Not willing
- ✓ Partially willing
- ✓ Completely willing
- ✓ A limited idea on sustainability

• *What can be done to mitigate the impacts of urbanisation from the community perspective?*

- ✓ Community Awareness
- ✓ Request the government to develop and enforce policy actions
- ✓ Restrict urban migration to already overpopulated areas
- ✓ All the above



NAER EAST UNIVERSITY SCIENTIFIC RESEARCH ETHICS COMMITTEE

09.03.2022

Dear Cephas M M D Flanzamaton

Your application titled “**Examining The Impact Of Urbanisation On Environmental Sustainability In Monrovia, Liberia.**” with the application number NEU/ES/2022/804 has been evaluated by the Scientific Research Ethics Committee and granted approval. You can start your research on the condition that you will abide by the information provided in your application form.

Assoc. Prof. Dr. Direnç Kanol

Rapporteur of the Scientific Research Ethics Committee

A handwritten signature in cursive script, reading "Direnç Kanol". The signature is written in a dark ink and is positioned below the printed name.

Note: If you need to provide an official letter to an institution with the signature of the Head of NEU Scientific Research Ethics Committee, please apply to the secretariat of the ethics committee by showing this document.

Dear Mr. Cephas M.M.D Flanzamaton,

I hereby grant your application to adapt and use my questionnaire for your MSc datacollection.

Please note that this approval is solely for academic purpose only.

Best wishes,

C. Ezeah, PhD

Email: cezeah2@gmail.com