

Kenya Research Report 3 - Population, Health and Environment

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Introduction

In the vast African continent, the climate is harsh in many areas and may prevent development in many areas. However, the continent is home to 1.29 billion people (2018), which means that the population is capable of enduring hardships and growing in size, being able to develop beyond third world country status in the long run. Out of the 1.29 billion people, Kenya houses 54 million people of which only 3.1 million people worked in salaried jobs. It doesn't get as near to the other developing country in comparison in this section of the report, which is Nigeria with 211 million people and the United States with nearly 327 million people; the idea is to relate Kenya with a much smaller population and the capabilities to provide adequate health and environmental living standards which should technically be easier given the population is significantly smaller.

Population

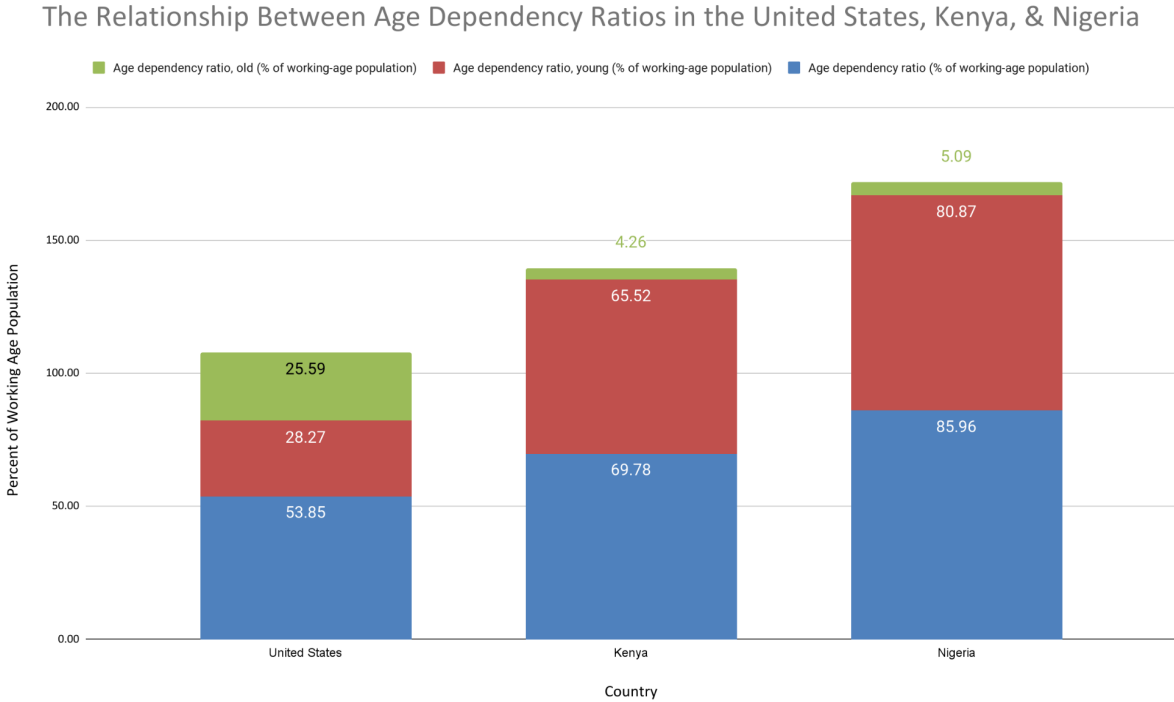
The developing countries of Kenya and Nigeria have demonstrated stable population growth rates over a period of 20 years, both showing an approximate 2.5% average growth, while the United States decreased, initially presenting a 1.1% growth rate in the first year of the dataset (the year 2000), following to an average of 0.73%, which is normal considering that population growth rates decrease over time in developed countries as the population becomes older and women schooling rates to increase, making it also common for developing countries to present higher population growth rates. Now, taking into account that Kenya has a significantly smaller population than Nigeria, it is probable that the infant mortality rate is still a very

significant factor as the population percentage growth rate should grow at a higher rate given absolute numbers. According to the dataset provided by the World Bank, it shows that Nigeria has higher infant mortality per 1000 than Kenya does, even though they both decreased for both countries, Kenya demonstrates only 32 dead out of 1000 in 2020 - with 59.9 in the year 2000, while Nigeria has 72.2 children dead per thousand, previously being 109.8 in the same period, which doesn't match with initial presumptions about the growth rates. They are both still further from the United States, having decreased infant mortality rate from 7.1 to 5.4 per thousand; the high mortality rates in Kenya and Nigeria explain the high birth rates in both countries, also explaining why they are yet to experience demographic transition and why the base of the pyramids have a high focus on young populations. Kenya and Nigeria demonstrate an expansive format for the population pyramids, indicative of high fertility rates and short life expectancy, while the United States shows a stationary model, common to developed countries.

The nation of Kenya, as mentioned in the previous Interim Report, has a migrant population of 551,000 people, being the second country with the largest refugee burden; Nigeria on the other hand, even if more developed than Kenya, has nearly no immigrants due to issues with a local terrorist group, Boko Haram. Placing Nigeria is not a viable option for migrating to, however, they have a huge quantity of internally displaced persons, more than 3.2 million people, causing malnutrition and health issues with diseases, not to mention the thousands of people that go missing amidst raids, 60% of which are infants. The United States in comparison, had 45 million immigrants accounted for in 2020 composing as much as 15% of the total population, however, given the first world country status and minimum wage way above the poverty gap, the migrants hardly suffer from malnutrition and diseases, it is more common for these to originate from drug-using problems than lack of opportunity. Migrations from Africa to

other continents, mainly Europe, Gulf countries, and the Americas suggest that the family would have resources to do so, either many or the means to get there; thus, Kenya has a trend of receiving migrant refugees, and Nigeria in having the population flee to other countries evading violence from extremist groups; the United States shows no sign of emigration, being exclusive to individuals returning home to their countries or Americans receiving job invites from multinationals overseas.

Figure 2.0: Age Dependency Ratio



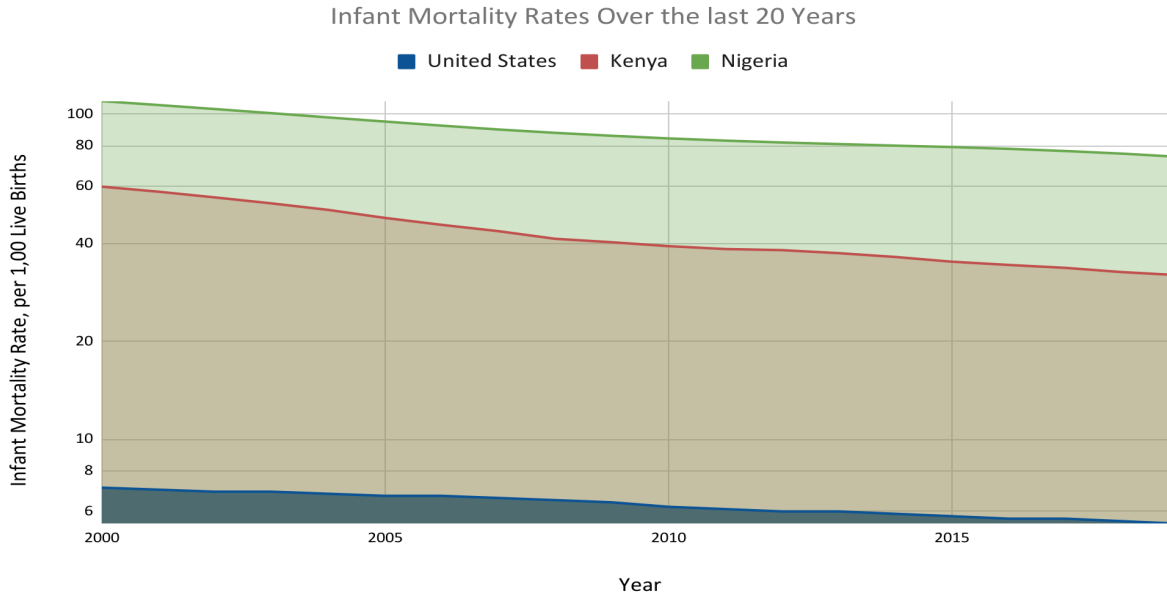
Kenya has seen great improvements in the age dependency ratio since 2000, lowering from 90.6% to 69.8% in 2020, meaning that Kenya has 70 dependents for every 100 working men. The ratio is mostly defined by the youth, which is accurate considering the population pyramid previously presented, composing as much as 86.2% and 65.5%, in 2000 and 2020 respectively, while for the elderly it remained around the 4% mark, which can be related to a

decrease in infant mortality rate and not many reaching 65 years old. Nigeria, on the other hand, total age dependency ratio remained in the range of 85% to 87% over the course of 20 years, meaning that they have greater economic instability and burden with its dependents, same applies to youth and elderly dependency ratio, proposing a very problematic trend of virtually none to little improvements overtime. The United States latest data (2020) is 53.85%, just below the global average of 54.36%, the more pertinent data, however, is the fact that in 2020 youth and elderly dependency ratios have nearly equal rates, contributing to the stationary model presented by the population pyramid because the US has achieved demographic transition, the data is very optimistic and ideal.

Kenya and the United States demonstrate the fact that on average women live 5 years longer than men showing exactly a 5-year gap in both expectancies. In Nigeria, they still live longer, but only on an average of 2 years longer, possibly indicating that living standards for women are harsher in Nigeria, relatively speaking. Both Kenya and Nigeria, increased total life expectancy by 15 and 9 years, 51.1 to 66.7 and 46.51 to 54.69, respectively. The United States, however, demonstrates a life expectancy of 81.4 years old; when looking at the population pyramids, it shows that Nigeria and Kenya have really low chances of even reaching 70 years of age, indicating harsh living conditions for the elderly in these two countries.

Maternal and Children's Health

Figure 3.0: Infant Mortality Ratios:



Children play a big role in defining a country's growth and development as they will eventually become adults with a great capacity for transforming the country economically and socially. The most disturbing of the countries in question is Nigeria, even with great improvement, reducing from 106.8 to 72.2 deaths per thousand¹, it still presents a higher death rate than Kenya did in the year 2000 - 57.8 DPK. In 2020, Kenya shows great improvements, reducing to 31.2 DPK, even if 5.78 times larger than the United States' DPK. The considerably higher infant mortality rate in Nigeria could be an influencing factor in causing Kenya and Nigeria to have similar population growth rates. The trend in all 3 countries is that female-born will have higher chances of living since their infant mortality rates are lower than males. All countries demonstrate a decreasing trend, indicating improvements in health qualities, since it happens all the same in the United States, they are most likely related to new techniques in

¹ Deaths per thousand will be referred to in the text as "DPK" in the future, as "K" standing for kilo, a derivative from the Greek language meaning "thousand".

performing births with medical assistance than actual improvements to the health systems of Nigeria and Kenya.

Problems with malnutrition in the United States, and developed countries in general, are scarce, with only 2.5% of children under 5 years old with poor nourishment, being very isolated cases, possible to be a result of jobless migrants, displacement from parents, or negligence due to substance abuse. Kenya can maintain steady improvements for childhood malnutrition in all categories, reducing the prevalence of undernourishment, underweight, stunting, and wasting, all data calculated according to “% of children under 5 years old”. The most worrying data are the prevalence of stunting, including both, males and females, summed up 40.6% of all children under 5 in 2000 with some improvements decreasing as far as 26.2% in 2014, and undernourishment decreased from 32.2% to 24.8%, 2001 and 2019 respectively. The data for Kenya, even if not close to the United States, yet optimistic if compared to Nigeria. In Nigeria, undernourishment increased from 2001 to 2019, rising from 8.9% to 14.6%, even if still below Kenya², Nigeria doesn't seem to demonstrate constant improvement; as well as for Kenya, stunting is also the most concerning data for Nigeria, 42.5% in 2003 and 31.5% in 2020 for both genders, with lower improvement rates than Kenya; severe wasting and undernourishment rates are higher than Kenya's, but the rates are still similar. It is possible to defer from the data, that: “Kenya's main problem is undernourishment, as it could have better rates than it does at the moment, simple social politics could improve children's living standards in an instant”.

When it comes to children's immunization, against measles and the DPT vaccine - diphtheria, pertussis, and tetanus - the United States and Kenya have virtually identical rates for both immunizations, with around 90% of children 12-23 months old. Nigeria, on the other hand,

² Positive outcome considering that the lower the % of children under 5 with prevalence of undernourishment, the better.

has very low immunization rates, for measles and DPT respectively, ranging from 33% and 29% to 54% and 57%, 2000 and 2019. This data is a major variable in defining Nigeria's increased infant mortality, as well as the slight improvement in the last 20 years.

On average, each American woman will give birth to 1.64 children, a Kenyan 3.37 and a Nigerian to 5.25 (2020). Higher fertility rates are commonly associated with high infant mortality rates, and if cross-checking with Figure 3.0, the data seems to check out. A lower fertility rate could be associated with the fact that the prevalence of female genitalia mutilation (FGM) is higher in Kenya than in Nigeria, that is, however, not entirely possible to be concluded since a lot of the data is lacking and it isn't enough evidence. The high infant mortality rates will also suggest elevated maternal mortality rates, a highly troubling index. Meanwhile, the United States performs at 12 deaths per 100,000 in 2000, Kenya demonstrates the ratio to be 59 times higher and Nigeria 100 times, at 708 deaths per 100,000 and 1200 respectively. Yet, the United States was the only one to demonstrate an increase in the maternal mortality, up to 19 deaths, according to the latest date (2017); meanwhile, Kenya and Nigeria fell in similar absolute quantities, Kenya to 342 and Nigeria 917 deaths per 100,000, the variation indicates a much lower decrease rate for Nigeria. There are no indicators - and considering the huge percentage of the population living in slums and poverty - there are no indications that women are widely able to gain/to select the timetable for their births in advance, also being indicative of the high mortality ratio.

Diseases and Prophylaxis

In this section of the report, the United States will barely be mentioned, as it will address the lack of various basic needs, such as water source aces, basic sanitation, open defecation, and

incidence of malaria and tuberculosis. Kenya's main issue in the matter is the lack of basic sanitation in rural areas, which is the main reason for the open defecation data being significantly higher in rural areas, and virtually none in urban mostly slum areas. Nigeria has major issues in all areas, offering the worst living standards and health quality out of all of them: only 21.7% of the population has access to clean water, 30.56% with basic sanitation and 18.66% are subjected to open defecation. The only thing that Kenya and Nigeria have in common when comparing datasets, is that for both the rates are higher in rural areas, rather than urban, a common feature.

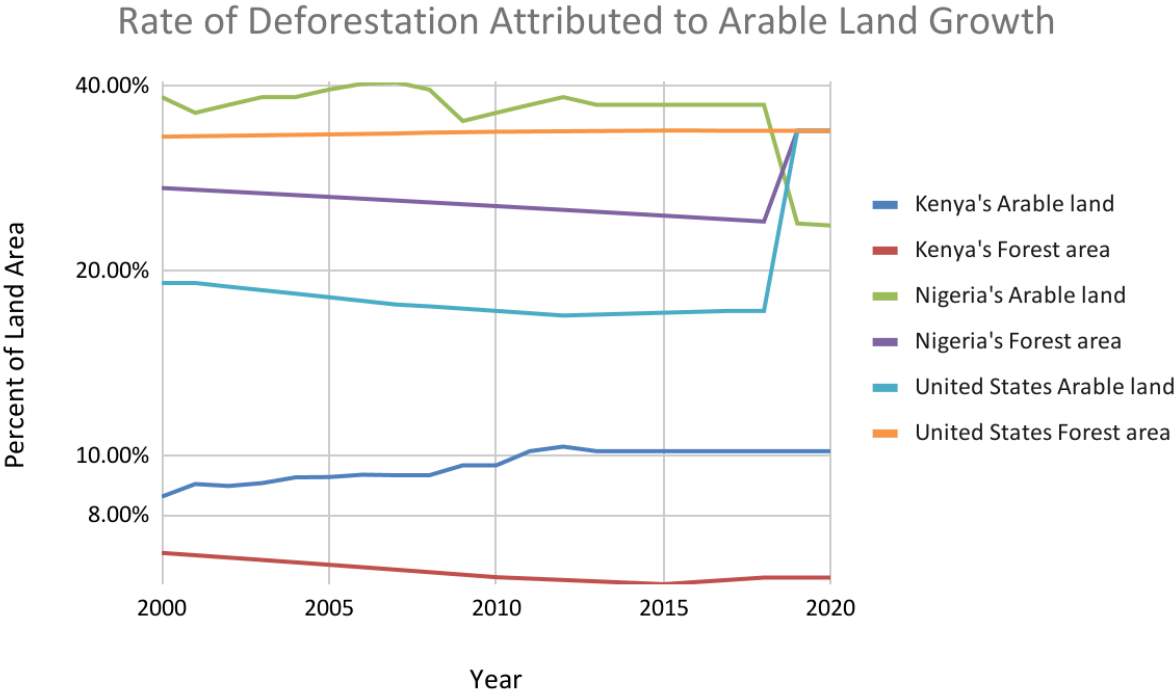
To fight against Malaria, Kenya has grown from 3% of the population under 5 in having insecticide bed nets in 2000, to 56.1% in 2015, eliminating the threat of malaria for most of the population under 5. Nigeria shows similar data, yet they've reached the same level as Kenya 3 years later, in 2018; the United States is affected by Malaria. Out of the 3 countries, Nigeria, Kenya, and the United States show the same rates of HIV prevalence, ranging from 0.4% to 1.3% of the total population in 2019, with no difference in quantities according to gender in the United States, Nigeria is much higher for women. Tuberculosis is non-epidemic for the United States in any case, being considered an eradicated disease, the same does not apply to Nigeria and Kenya. Nigeria maintained a detection rate of 219 cases per 100,000 people for 20 years in a row, even with an increase in detection rates, making the data seem a little dubious. Kenya's data shows that as case detection rates increase, so does the number of cases per 100,000, making it unlikely that the data would have remained constant over the given dataset; all else equal, Nigeria and Kenya have the same rates of treatment success rates, 88%, and 86%.

Environment

Kenya, located in the Greater Horn of Africa region, is highly vulnerable to climate change. With more than 80% of the country being arid or semi-arid land, there are many

infrastructure and developmental challenges ([NDC, 2016](#)). Climate hazards have caused great losses across different sectors of the country over the years, with droughts and floods being the main hazards. Kenya's infrastructure is poor, with impassable roads, poor telecommunications lines, and inaccessible regions that hamper the transportation of food for commercial purposes or relief aid. These hazards cause estimated economic losses of 3% of the Gross Domestic Product, making livelihoods and economic activities highly vulnerable to climatic fluctuations. Our population is especially vulnerable to climate change because the majority of them are living in low-lying rural areas prone to mass floods. ([Climate risk country profile kenya.PDF](#))

Figure 4.0: Deforestation

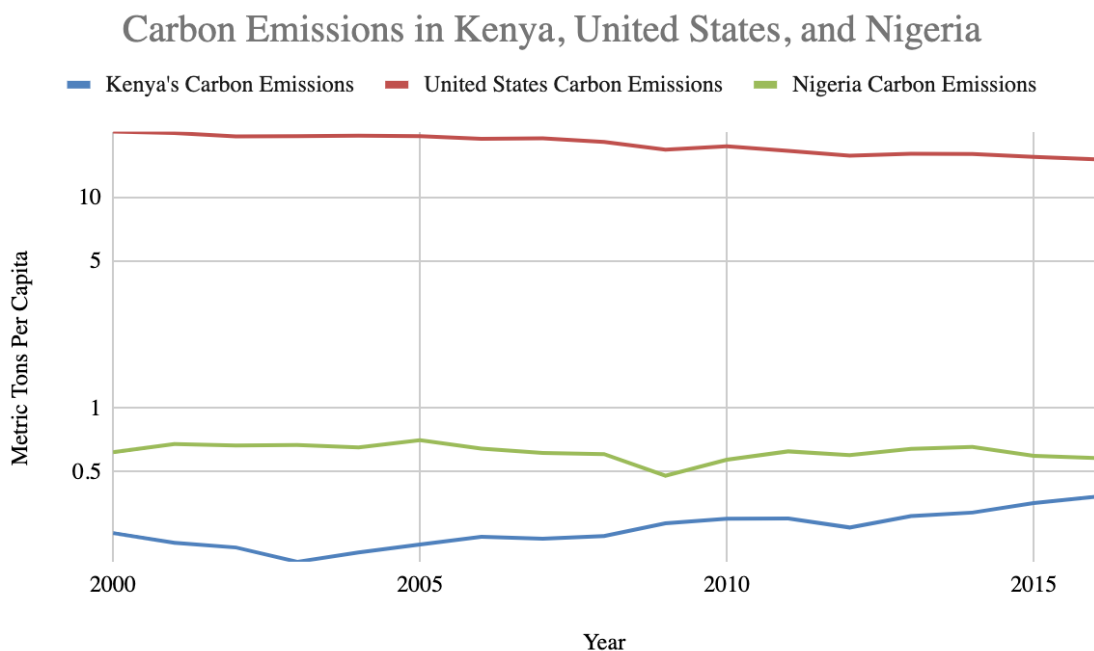


The amount of arable land has increased 1% over the last two decades and has stayed steady at 10% arable land area in Kenya in the past decade. The relationship between arable land and the forest area is quite obvious as arable land grew from 2000 to 2011, and forest area

decreased from the same. This is because to create more agriculturally suitable land for Kenya's growing population they cut down forests especially when topsoil is affected by mass flooding. In figure 4.0 you can see how the United States and Nigeria have much greater forest land areas. The rate of deforestation has increased slightly in the past 20 years to where Kenya is losing around 12,000 hectares of forest per year which is a lot given that Kenya's forests only make up 6% of the total land area.

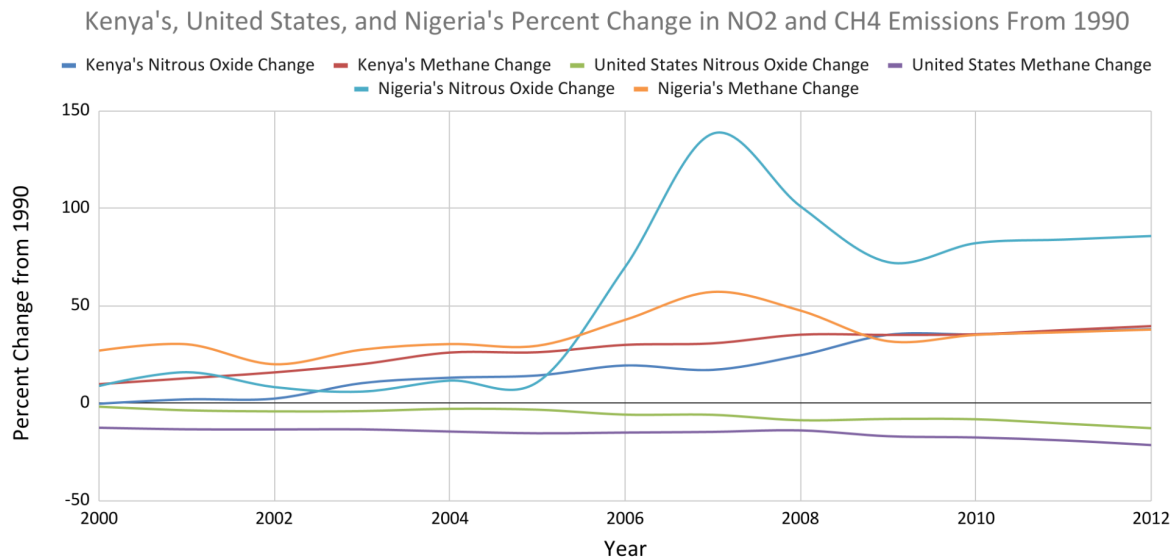
Kenya is experiencing many floods and droughts as extreme weather. The arid and semi-arid lands are more vulnerable to natural hazards, such as droughts, due to harsh weather conditions. The country's inland areas are largely arid, with two-thirds of the country receiving less than 500 mm of rainfall per year. This limits the potential for agriculture. Seasonal floods may affect various parts of the country, especially along the flood plains in the Lake Victoria basin and the Tana River. On average Kenya has to face 53 floods and 13 different droughts every year.

Figure 5.0: Carbon Emissions Per Capita



Carbon emissions in Kenya have increased more per capita than in Nigeria and the United States. This can be attributed to the increase in the production of fossil fuels. Furthermore, this can contribute to deforestation currently happening as well as public health as the air becomes less breathable. Carbon emissions are known to be harmful and have still risen by about 50%. This is more so exacerbated by the emissions of other harmful greenhouse gasses. Harmful emissions like carbon dioxide have increased significantly in the last decade which has contributed to the mean temperature of Kenya rising around .5 celsius. Looking above at figure 5.1 to see the significant increases in methane and nitrous oxide emissions from 1990-2012.

Figure 5.1: Methane and Nitrous Oxide Change in Emissions



Kenya has experienced a steady growth of these especially harmful emissions with Manufacturing producers and consumers are largely responsible. The high levels of emissions the fuel and oil industry are responsible for further explain the contributing factors to Kenya's deforestation, floods, and droughts. Kenya is experiencing many challenges that exacerbate the existing poverty and inequality. As Kenya's younger generation starts to grow into a larger population there will be more people that will need aid. Kenya is caught in the flywheel of

climate change as the rest of the world is as well, but Kenya is significantly affected by it along with other global southern countries.

Conclusion

Kenya is a great place to live when compared to Nigeria, you are offered longer life expectancy, fewer risks to your life, and can expect the nation to develop more abruptly when compared to Nigeria, especially because you won't be under the constant threat of a jihadist Islamic terrorist group. Also, the land isn't as threatened by disease and there is higher availability of basic needs. Climate is harsh on agriculture, no more than Nigeria, but it doesn't thrive in the Western hemisphere, as the United States leads as the largest food producer, on the other hand, it has a significantly lower gas emission, offering better air quality. Kenya is a nation in still early stages of development, which means it still has great growth potential, and development and the population is still very young, it is still to be transitioned, and for everything to change.

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