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Nigerians crying for availability of electricity and water: a key driver to life coping measures for deepening stay at home inclusion to slow covid-19 spread

Abstract

The COVID-19 pandemic is a tethering on the edge of a make or mar moment in the history of the world as it is chiefly a crisis for health and a tragedy for humanity, but it also poses economic consequences that is far-reaching. In emerging countries like Nigeria, it has already disrupted the livelihoods of millions of individuals, with uneven impact among poor and vulnerable households and small and informal industries and the disruption pace is expected to accelerate the crisis in the coming weeks. No nation or community is exempt; in oil-rich countries such as Nigeria, the challenges of COVID-19 is exacerbated by falling price in crude. The COVID-19 (SARS-CoV-2) pandemic has raised sundry questions for sectors including water and energy around the world. While workers provide services in a geographic areas, operational and systematic concerns and understandings apply across national borders. This paper draw attention to the importance of electricity and water, sanitation and hygiene in Nigeria especially in areas such as slums, given that many Nigerians live in overcrowded and deprived areas facing major socioeconomic impediments, to these efforts, the important contribution to handwashing is to help reduce disease spread and also highlight the significance of water as an industry that is so critical to the well-being of societies, economies, and the environment and key for the current health crisis. The water and electricity sector should be proactive in doing its part to address COVID-19 pandemic and the ramifications of its spread. As the continent's leaders take decisive action in the formal, informal and development sectors to save human lives and shield trades, households and geographic economies from the pandemic consequence. Therefore, the responsibility is up to all governments and their development partners to improve health care services and other measures that are critical by providing near constant electricity and water supply for its citizenry to help contribute immensely to social distancing, deepening stay at home, in order to slow the spread of COVID-19 both in the short and long run and teaching of public health that is based on systematic evidence to decrease the distress and apprehension caused by distorted and misinformation through social media. In particular, Nigerian government should act swiftly and decisively to provide robust support and not just the rhetoric of stimulus announced by the Central Bank of Nigeria for significant national public health and health care programs, development of medical countermeasure, domestic preparedness programs and response instruments and global cooperationto reduce the virus impacts. Prompt action now is needed to avoid worst case health and economic consequences.

Keywords: COVID -19, electricity, access to water,community engagement, Nigeria

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Introduction

Human activities on earth are responsible for many calamities across the globe because they tend to alter the natural environment particularly as the world entered the twenty-first century with increasingneed for inclusiveness in economy, particularly with respects to growth and each collapse of structure carries with it tremendous effects that cannot be forgotten in a hurry such as the economic costs of COVID-19outbreak**,** is chiefly a crisis for health and a tragedy for humanitystretching governments capacity across the world, and African governments face greater challenges, the effect has far-reaching economic consequences which include loss of human lives and livelihoods, national economies, stock markets, dwindlinghousehold revenue due to people inability to work as a results of sickness and lockdowns, economic wastages in terms of properties, income, increased crises among stakeholders, loss of trust, dignity as well as the collapse of the oil price and environmental devastation. Therefore, the coronavirus pandemic has caused an unprecedented global economic crisis and huge disruption on poor households, small and informal businesses which has demonstrated how much modern societies depend on electricitywhich has become an indispensable feature for the achievement of economic growth and development, affecting every sphere of a nation's economy[1–3] and dealing with the unprecedented public health emergency is the immediate priority as the pandemic places more pressure on all aspects of the nation's economy and the society, this burden will be predominantly painful. As the disease spreads, particularly in Africa and portions of Asia with more than 2954222 cases of COVID-19 worldwide, it has been reported with nearly 202597 deaths. The caseload and death are

steadily increasing through community transmission. The numeral of Africa cases is still relatively low, when compared to other regions, reaching 5,300 cases in 47 African nations as of March 31 and 22239 confirmed cases and 881 deaths as of April 28th2020[4,5] (see Figure 1 below).While in Nigeria, 1095 cases of COVID-19 have been confirmed with 32 reported deaths and 208 discharged as at 25th April, 2020 and 1337 confirmed cases and 40 deaths as of April 28th2020 and still growing geometrically(see Figure 2 below). Meaning that approximately 3 out of each 100 that confirmed positive to the virus infection has died since the first case was reported on February 28. Similarly, the confirmed cases of COVID-19 in Nigeria between 27th February2020 and 8th May 2020 as obtained from the Nigeria Centre for Disease Control (NCDC). Before fitting any time series model to the data, the plot of the confirmed cases and new cases were plotted, and the figure obtained was provided in Figures 1&2.

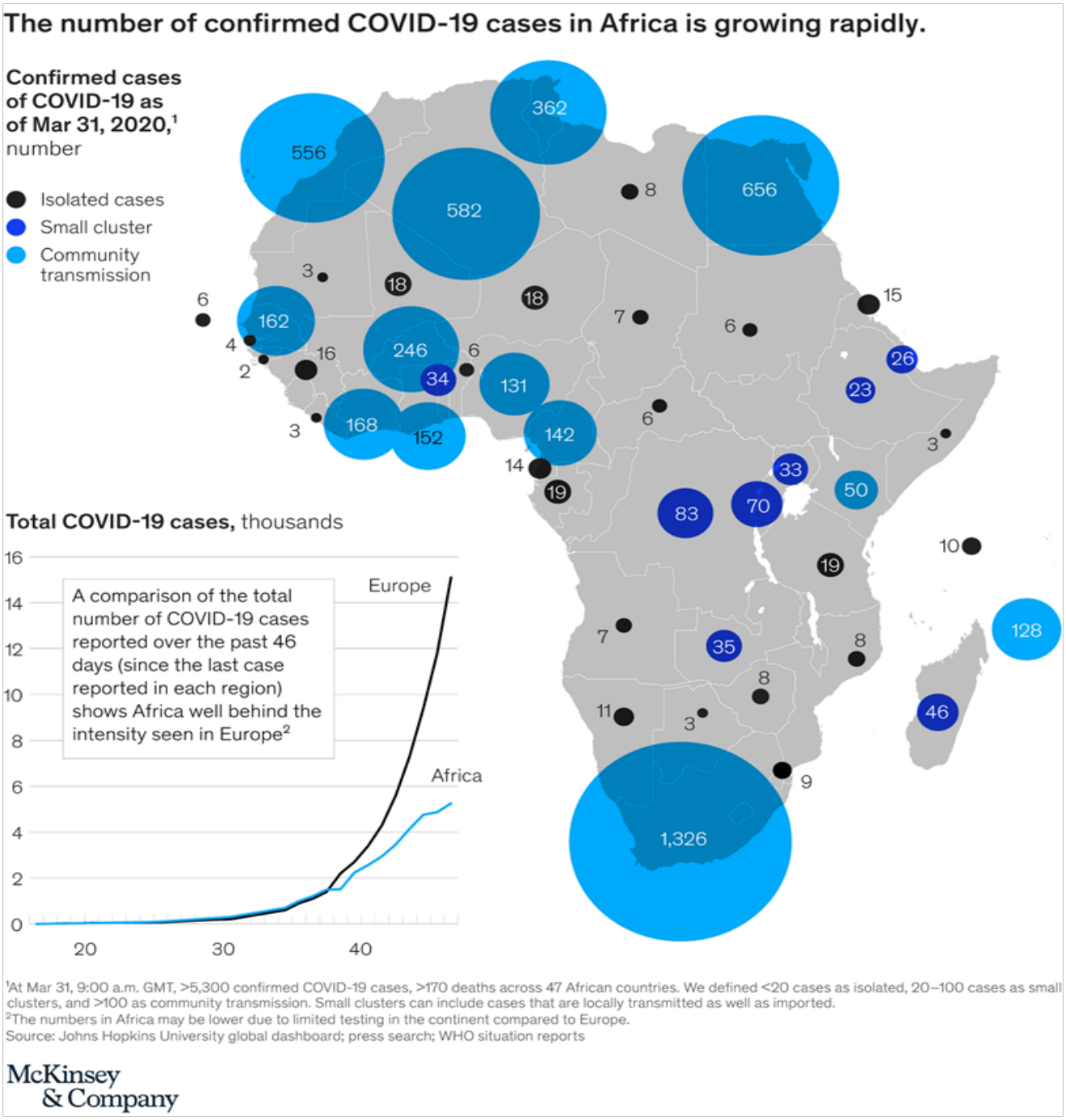

Figure 1 Nigeria COVID-19 Real Time Dashboard as at 25th April, 2020.
Adapted from: https://www.mckinsey.com

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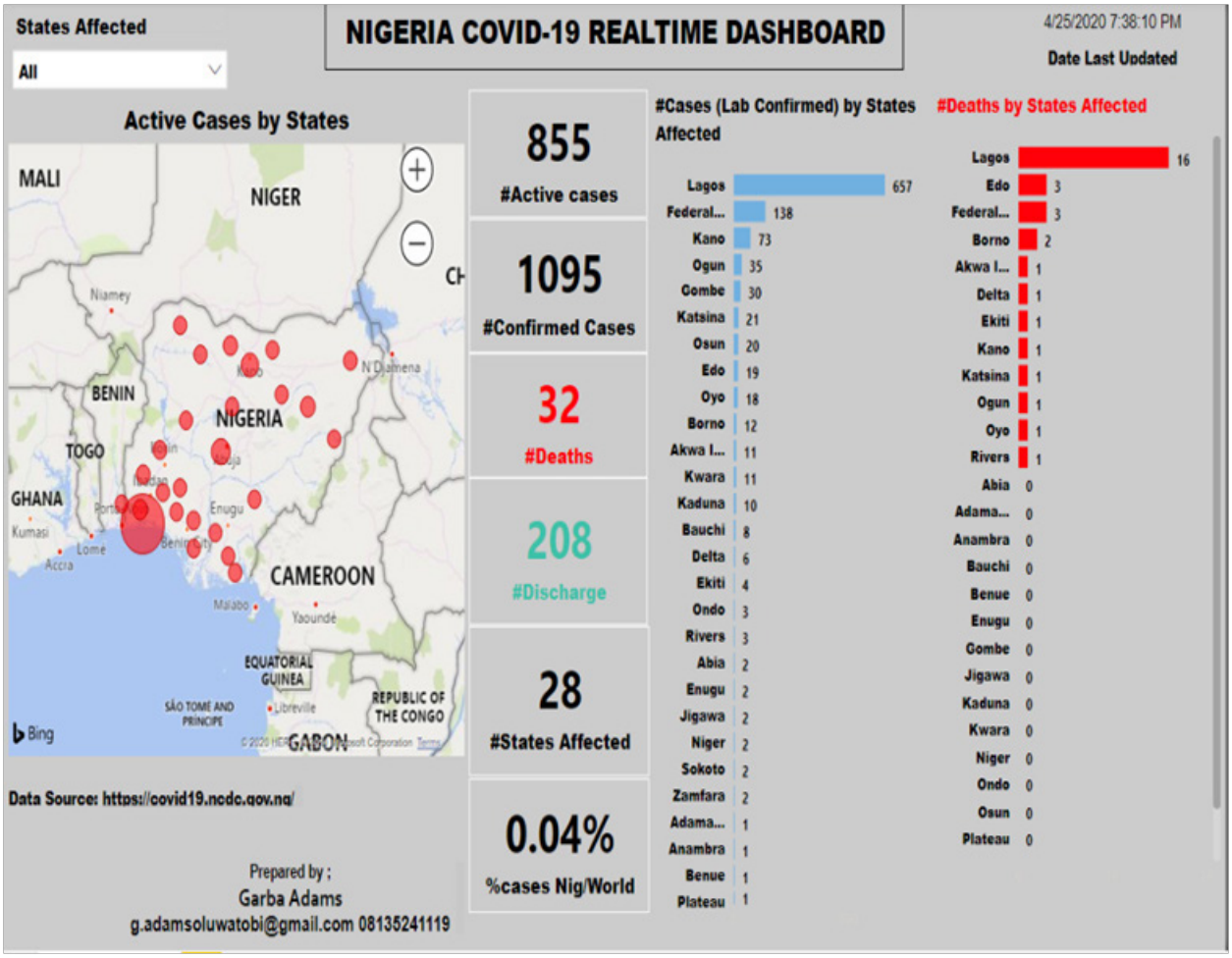

Figure 2 Nigeria COVID-19 Real Time Dashboard as at 25th April, 2020.

Adapted from: Nigeria COVID-19 Real Time Dashboard.

Even though the transmission rate in Africa at the moment seems to be much slower than in Europe, the pandemic across the continent may be heavily burdened if restraint measures do not demonstrate effective. Moreover, the social distancing and home confinement measures being taken in many countries continue to rely on a significant assumption: that the populations have reliable access to affordable power to live and communicate continually with public services and to each other remotely. The fact is that in the global south, 840 million people predominantly live without electricity access and hundreds of millions more only have access to very limited or unreliable power supply. Most of these people, principally women, live within crowded cities or rural areas. "Sheltering in place" may not be possible in such areas for a long period as energy is needed to cook and store food or keep the homes cool.

Data on confirmed cases of the virus were plotted to determine the trend in the reported confirmed cases and Figures 3&4 showed that there an upwards trend in the confirmed cases of COVID-19.Perhaps a more important known facts surrounding the current pandemic is that fundamentally COVID-19 has shifted the way human mobility is managed, asmillions of people are encouraged to embark on social distancingto curb humantohuman transmission, reducing morbidity and mortality, compulsory isolation, border closures,quarantine, visa restrictions, mandatory closure of nonessential workplaces, public institutions and home confinement related issues leading to canceling or postponement of conferences, meetingsand bans onlarge gatherings,institutions across the world are restricting travel,resorting to teleconference to do their jobs, reducing nonessential use of public transport,schools closure and e-commerce platforms to purchase their shopping, and video streaming platforms to have entertainment as a measure to delay the spread of transmission. A dependable energy supply strengthens all of these activities, as well as the power supplies that power the electronics most people take for granted for example refrigerators, washing machines, phones, light bulbs and laptops etc. to boost online training, mobile phone engagement, and peer-to-peer education. In most countries, energy is the back-bone for oxygen operation, ventilators and additional medical instruments in the hospitals treating the rising sick patients' numbers. In such a stressful and rapidly changing environment, energy also guarantees the timely communication of vital information amid national governments and citizens, among doctors and patients in circulating

guidance on how COVID-19 patients can be manage, which must be distributed to healthcare workers urgently through the shape of online training and workshops, mobile engagement, and peer-to-peer learning. But without near constant Electricity in Nigeria, all sources of communication, as well as social media to deal with distorted and misinformation to prevent fuelling fear will be made difficult.

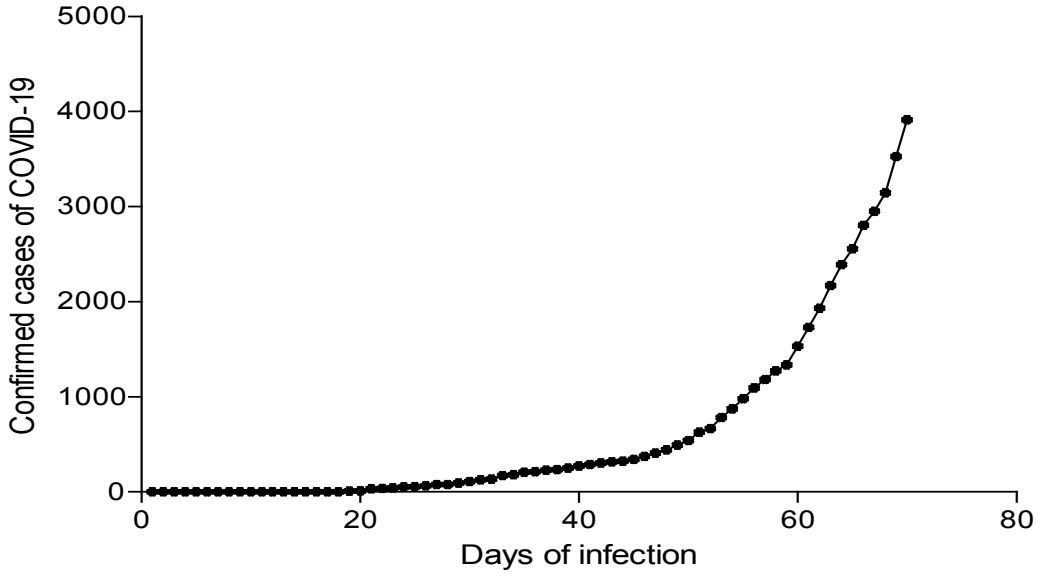

Figure 3 Line graph showing confirmed cases of COVID-19 in Nigeria between 27th February 2020 and 8th May 2020.

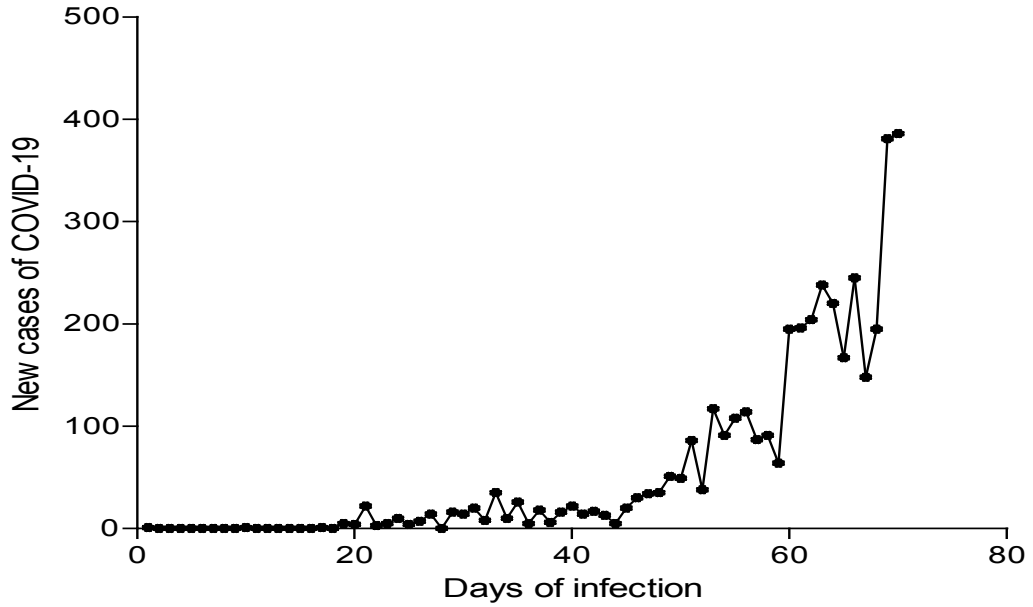

Figure 4 Line graph showing new cases of COVID-19 in Nigeria between 27th February 2020 and 8th May 2020.

Adapted from: Samson et al.[24] (In print).

Electricity is importantfor providing optimal patients care, maintenance of important clinical services, and ongoing support to infected patients in the community to diminish disruption of society, public services, and the economy during a continued pandemic. Similarly, doctor's ability and emergency responders to treat infected patients is also founded on the assumption that hospitals, medical instruments and drugs are functioning at full capacity with access to sufficient, stable and reliable power supply. It is projected that about 28% of health care facilities have access to consistent power supply. As cases of COVID-19 increases, we risk making these

hospitals, primary health clinics, and front-line medical services impossible while trying to treat patients in serious situations with electronic equipment that is energy dependent. And even if there is a cure, the shortage of a cold chain and refrigeration will translate into rural areas and vulnerable populations would not have access to vaccines. These services shouldn't be taken lightly as small increase in the energy contributions sectormay help cut premature deaths. While, prompt deployment speed for treatment is important in the presence of pandemic.Off-grid decentralized renewable energy can proffer solution to this challenge for numerous communities that are vulnerable. These power supply solutions sources not only provide people with the healthcare they need at present, but can also serve as investment into the future of clean sustainable energy in these countries. But, the efforts of the international communities to contain COVID-19 can be hindered, while deadly explosion of caseload continues across several parts of the global south with little or no electricity access. As a consequence, inadequate access to electricity has the likelihood to increase human disaster and remarkably slow the worldwide recovery.Notably, energy importance in the social-economic and industrial development of any economy cannot be emphasized. Reason being that electricity plays an important role inthe economic, socialandindustrialgrowth of every nation.[2,6] Bergasse[7] submits that the increased provision and consumption of energy resources is largely related to sustainable economic growth and economic development. This view has been substantiated by Kayode[8] who argue that energy is crucial to every sphere of human activities and increases economic productivity. Meanwhile, hundreds of millions of humans in the global south are deprived of access toelectricity**,** makingmore people susceptible to disease and other risks thereby, making lockdowns difficult.

Yet, the most illiterate Nigerian population seems to be entirely naive to the new COVID-19virus. Based on the narrow conventional conceptualization of literacy, about 40 percent of the total population figure of Nigeria are illiterates. But in actuality, many products of tertiary institutions today in Nigeria are also illiterates because they have little or no environmental sanitation and hygiene loaded education. In other words, no space for hygiene practice in their training programs. This leads to a low level of hygiene practice in this era of COVID-19 pandemic even as the country population figures go up geometrically. In addition, the United Nations warns that above half of the world's population lack access to safely managed sanitation and that long years of inadequate water supply put Nigerians at risk of coronavirus infection, because good hygiene practice, including proper handwashing with soap and water, is the front line of protection when associated to coronavirus and many other diseases, as washing your hands with water alone is not enough to stop the spread of COVID-19 and diarrhea.[9]Washing hand with soap and water or *using* alcohol for 30−60 seconds ought to be done in accordance to the known directions called "My 5 moments for hand hygiene" to get rid of dirt and to have clean looking hands (My 5 moments for hand hygiene, 2020) since it provide a significant added barrier to the spread of COVID-19 as well as the general transmission of infectious diseases.[10] Hitherto three quarters of households in emerging countries lack access to safe water supply to wash their hands using soap and water, adequate sanitation and lack good hygiene practices which makes functioning and frequent handwashing with water and soap challenges at homes, schools and public spaces that are crowded like markets, places of worship, and train or bus stations, before, during food preparation and after meal and using the toilet or changing children diaper, and after animals touching; which according to Raimi et al.,[11]Olalekan et al.,[12]and Raimi et al.,[13] can belinkedtowater-borne diseases in the Niger Delta areas with significant consequences.While, around 100 million Nigerians continuously lack basic sanitation facilities and 63 million likewise could not have access to potable drinking water and about 80% of all diseases globally are linked to water that are unsafe including poor environmental hygiene. Many diseases that are infectious originate from living organisms, such for example bacteria, viruses, or parasitic worms, and the disease is spread by the transmission of these organisms from one individual's body to another or through intermediate hosts Olalekan et al.[14]

Hence, wrong handling, operations and the lack of sanitary measures makes the environment susceptible to the introduction of pathogens and diseases that leads to direct and significative losses and even unfeasibility of hygiene practice. Although they continue to be heavily linked to povertyand one third of healthcare facilities in emerging countries do not have potable access to water on site, making hand hygiene extremely difficult to practice by health care practitioners and its important ought to be done in five moments, as well as before wearing personal protective equipment's (PPE) and after getting rid of it, the minute gloves are change, after contact with each COVID-19 patient with suspected or confirmed infection or their waste, after each contact with any respiratory secretions, before meal, and after making use of the toilet.[15]Despite the robust evidence supporting the handwashing health benefits with soap, the practiced of handwashing remains low, predominantly in emerging countries. Studies, shows that extraordinary times, practiced handwashing is infrequently, particularly at unusual times when pathogens can be transmitted.[16,17] As more information is available on the media describing handwashing promotion strategies, challenges to improving hand washing behavior and whether these strategies improve hand washing practice or health outcomes particularly, among emergency affected populations.Thus far, realising the public health and economic significance of water and sanitation must make available an added catalyst for better investment. Despite sufficient evidence to suggest that improved water supply and sanitation are important for clear direct and indirect economic and health benefits in the coronavirus crisis and beyond, increasing investment returns on water and sanitation could be high, with a universal average profit margin of 5.5 for sanitation improvement and 2.0 for improvement in drinking water, if you consider the economic benefits.[18,19] That is why water investment a "win-win", in relations to improving the quality of human well-being, generating economic growth and assisting to reduce carbon. Therefore, the safe water provision, sanitation, and hygienic conditions are vital to human health protection throughout all possible outbreaks of infectious disease, as well as the outbreak of COVID-19. Guaranteeing decent and WASH consistently applied practices in communities, homes, schools, marketplaces, and health care facilities will aid in the prevention of the transmission of COVID-19 virus from human-to-human.[15]More specific significant information about WASH and COVID-19 virus is summarized beneath.

i. Regular and appropriate hand hygiene is of utmost significant measures using to prevent COVID-19 infection. WASH professionals need to work on more recurrent and regular hand hygiene practice to improve facilities and use proven habit re-modification techniques. WHO direction on COVID-19 outbreak on potable water and sanitation services applies to safe management as additional actions are required. Decontamination will enable a swift COVID-19 virus die-off.

ii. Several co-benefits can be achieved through safe and sound sanitation services, water quality and practicing of good hygiene.

Remarkably, the world human population is over eight (8) billion, even assuming the carrying capacity of our planet is two billion. About 90 percent of this figure is in Africa and other emerging world. This will lead to increased stress and strain on human society and in the future competition will improve for less resources to survive. This situation will only further cripple our humanity. This is an urgent time to create innovative and effective solutions to our global challenges. But also disturbing, is the spatial economy circulation of Nigeria's showing noticeable differences amongst the north and south. The southern region is considered to have high density of population, besides this is where most of the nation's cities and bigger towns are clustered showing a significant population concentration including agricultural activities in the northern part of the country. What is predominantly outstanding is how swiftly the poverty rates rises far from the coast since the rates of poverty in the coastal states are typically below 40 percent, more than 70 percent in several parts of north central Nigeria and predominantly in the far north as countless Nigerians suffer so much problems on a variety of poverty problems in the country (see Figure 5 below). Considering these facts, the United Nations report that people are multidimensionally poor when they are poor in many respects including education, with more than 13 million Nigerian children of school age not in school and above 23 million unemployed Nigerians while the majority of working class are underpaid,health data on morbidity from hospitals indicates that over 70% of people going to hospitals for medical treatment are down with malaria, typhoid and other food and water-borne diseases, access to potable water, nutrition, electricity, their assets, among other indices.Unfortunately, there are only two industries in Nigeria right now: the government and schools. It is an aberration that the government is the largest employer of labour and cannot even absorb everyone; it is a sign that its economic programs are not working as many factories have closed down because of the economy. Many people have lost their jobs and worse, many young ones have less hope of being employed. On the other hand, schools are training and bringing out graduates in their thousandyearly, bringing us to the point where we have all these graduates who are dressed up and nowhere to go.Overall, 2.7 billion humans (about a quarter of the global population) and in Nigeria 70% of population live in poverty which is expected to cost below $1/day and the number have since increased.[2] To date, the International Labour Organization (ILO) and International Food Policy Research Institute (IFPRI) have suggested that between 9 and 35 million people will live in poverty (at the higher World Bank poverty line of US$ 3.20 per day) in emerging countries by 2020. Majority of who living in middle-income emerging countries and that approximately 30 surveys household mostly from the global south demonstrate a worldwide slowdown of GDP of 1 percentage point would lead to poverty increase (at the lower World Bank poverty line of US$1.90 per day) among 14 - 22 million people. In contrast, the majority (two-thirds) are rural inhabitants.

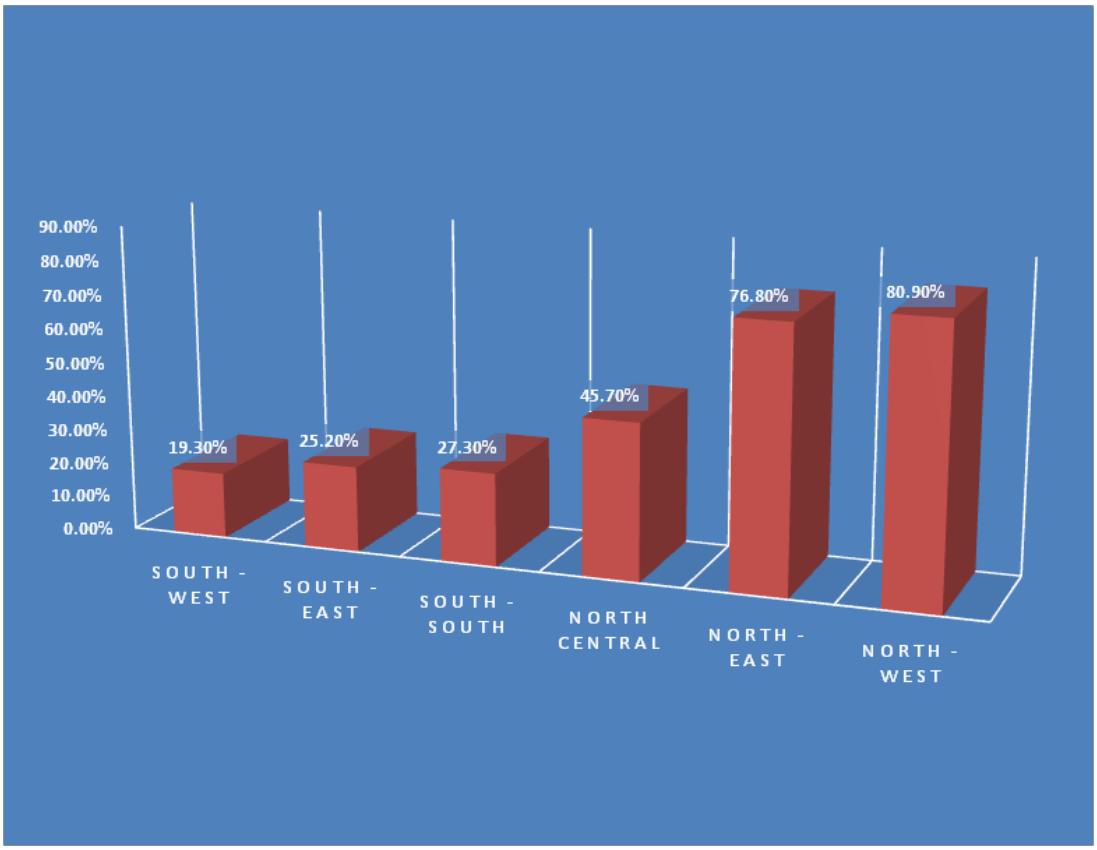

Figure 5 United Nations Global Multidimensional Poverty Index for Nigeria on Poverty Rates.

Adapted from Olalekan et al.[25]

Compared with neighbors, water performance scores in Nigeria's are remarkably of poorer quality, as more live without water access at household that is bacterial free besides when needed is obtainable, sanitation facilities and some cannot be considered to exercise basic hygiene. In 2008, a reports by World Health Organization/UNICEF and Demographic and Health Survey (DHS), set a standard for countries of the world to measure improvement in the direction of the sustainable development goals (SDGs) for potable water, sanitation, and hygiene representing 5 percent of the entire population having a private tap access and public stand post only had 8 percent. Conversely, approximately 12 percent of the population has access to one of these modalities in Africa's resource-rich countries, and in Africa's middle-income countries are above 60 percent only have piped water access (www.circleofblue.org/2017). So far, the utmost significant of water sources include boreholes and wells, which supply 63 percent of Nigerian's. Nevertheless, up to four Nigerians remain dependent on surface water, without access to any improved alternative, which could likely have led to discouraging grassroots promotion of hand washing with soap and water, as the coronavirus crisis sheds new light on how vulnerable the world is."One of the reasons for investing in water and sanitation is that these services are perceived primarily as a social and in some cases environmental issue, rather than an economic and public health one, like energy." Relatively, significant measures of containment such as washing of hand are being encouraged without proper infrastructure to supply water to various homes. Particularly worrying is a decrease in access to clean (83.8%) and potable water (93%), health facilities (83.9%), food (71.4%), decent accommodation (69.6%) and electricity (53.5%). In general poverty has worsen (73.2%) (see Figures6–8 below). Hitherto, unless systems of sanitation blend with the diverse group of users, the universal water and sanitation declaration is a human right and will remain elusive.[20] As development priorities such as hygiene, sanitation and water supply can decrease burden of diseases and global child mortality.[21,22]

Meanwhile, the factors contributing to electricity theft in Nigeria vary across social, political and economic issues. To discuss these factors, respondents' reactions to several questions are analysed and results presented on Figure 7 above. The results from the analysis showed that (66.8%) respondents are unemployed (73.8%) high level of poverty, (84.6%) price of Gasoline and Diesel, (71.2%) response of electricity official to address electricity faults, (73.2%) frequency of power outage and (84.6%) shows electricity price. The frequency of power outages as a major factor contributing to electricity challenge in Nigeria,this observed result indicting the price of electricity and price of alternative like gasoline and diesel is similar to other results observed in other studies. This result is similar to the findings of Depuru et al.,[23] and Nielsen[24] where it was reported that economic system with weak institutions and electricity instability tend to have higher rate of electricity theft. In the same vein, respondent's opinion also favours unemployment and high level of poverty as a major factor with (66.8%) indicating unemployment and (73.8%) high level of poverty as a factor contributing to electricity theft. Further analysis reveals that sampled respondents (71.2%) note that addressing electricity faults by electricity official is poor, thereby contributing to epileptic electricity supply in Nigeria.

In addition,scholars on Nigeria's electricity crisishas identifythe supply side variables such as: inadequate power generation capacity, vandalism, lack of capital for investment, ineffective regulation, dwindling foreign direct investment, problems in the power sector before the reforms, insufficient transmission and distribution facilities, ageing power plants, poor maintenance,[25,26] as the key causal factors in the unending grossly inadequate and poor-quality electricity supply. However, the enormity of the economic, social and environmental effects of failed efforts to end the crisis by working through the said variables, calls not only for a better understanding of the key causal factors in the crisis, but also for a rethink of the policy strategies.[27] Driven by the inadequate powersupply, relentless outage of electricity**,** low capacity generation, non-technical losses and high technical losses characterizing theenergysector and citizens continue to suffer from epileptic power supply. The frequent power outages have been seen to be dependent on the low generating capacity relative to the installed capacity. The study shows that consumption of electricity is not only remarkable but contributes immensely to social distancing, deepening stay at home to slow the spread of COVID 19 both in the short and long run.

In this regard, the Figure 8 are significant in many ways. For examples, the absence of decent accommodation is a measure of poverty. Equally, poverty gives rise to a situation where people cannot afford adequate food. This is also true of the lack of or inadequate access to medical services. Related to this is the lack of clean water, which compounds health problems with the attendant effects on productivity, especially in this current pandemic of COVID-19. As one billion people currently living in slums in poor countries lack the most basic necessities, such as toilets, handwashing facilities, space and access to medical care. They will be at the epicentre of the coronavirus disaster. Also, as the global COVID-19 pandemic escalates and tightens its grip, the need for affordable housing at scale is more urgent than ever, not only for this emergency but also for preventing future pandemics from tearing through poor urban communities and to resuscitate economies decimated by the disease.Equally, as water is at the heart of sustainable development and has proven to enhance social wellbeing improvements, affecting billions of lives. The services of water resources and variety that is offered, underpin reduction in poverty, economic development and environmental sustainability.The UNDP (2006) reported that only about 24% of the rural population and half of the urban population, especiallyin the Niger Delta have access to potable water. This agrees with the findings of a poverty baseline survey conducted by the Bayelsa State Micro Credit Administration Agency, which revealed that only an infinitesimal proportion of the rural populace have access to potable water (see Figures 5&6 above). However, on the supply of potable water, respondents were of the opinion that the supply of potable water has not improved, thereby making it's clear that a global response that requires staying at home, handwashing with soap and water and social distancing simply will be difficult to practice for those people currently living in inadequate shelter. At present only one in five slum residents in urban Africa have access to clean and safe water, this is also true of the provision of health facilities, which respondents insist has not improved in all the three states and with increasing COVID-19 caseloads, many health care systems will be stretched beyond capacity and knowing fully well that one of the global worst health care structures may well be found in Nigeria and the ratio of doctor-patient is about 1:1000.[2]This agrees with the earlier findings on limited access to social amenities noted above in the discourse on poverty.Today there is a deficit of 50 million houses in Africa and 70 million in South Asia and 300 million new homes will be needed by 2030. Affordable housing is one of humanity's greatest challenges and has long been side-lined but is the most comprehensive and sustainable humanitarian response

we have in the face of the recent pandemic and future public health catastrophes. Investing in the widespread construction of decent, affordable housing needs to be a top priority now more than ever as it is a foundational part of any post-corona economic recovery plan. It's clear that investing in affordable housing solutions delivers on many fronts including for healthcare, pandemic protection and prosperity. Creating an asset that futureproofs and builds in resilience ahead of unanticipated crisis could hold the key to solving and preventing both crises and will buffer families living in the global south against such shocks.

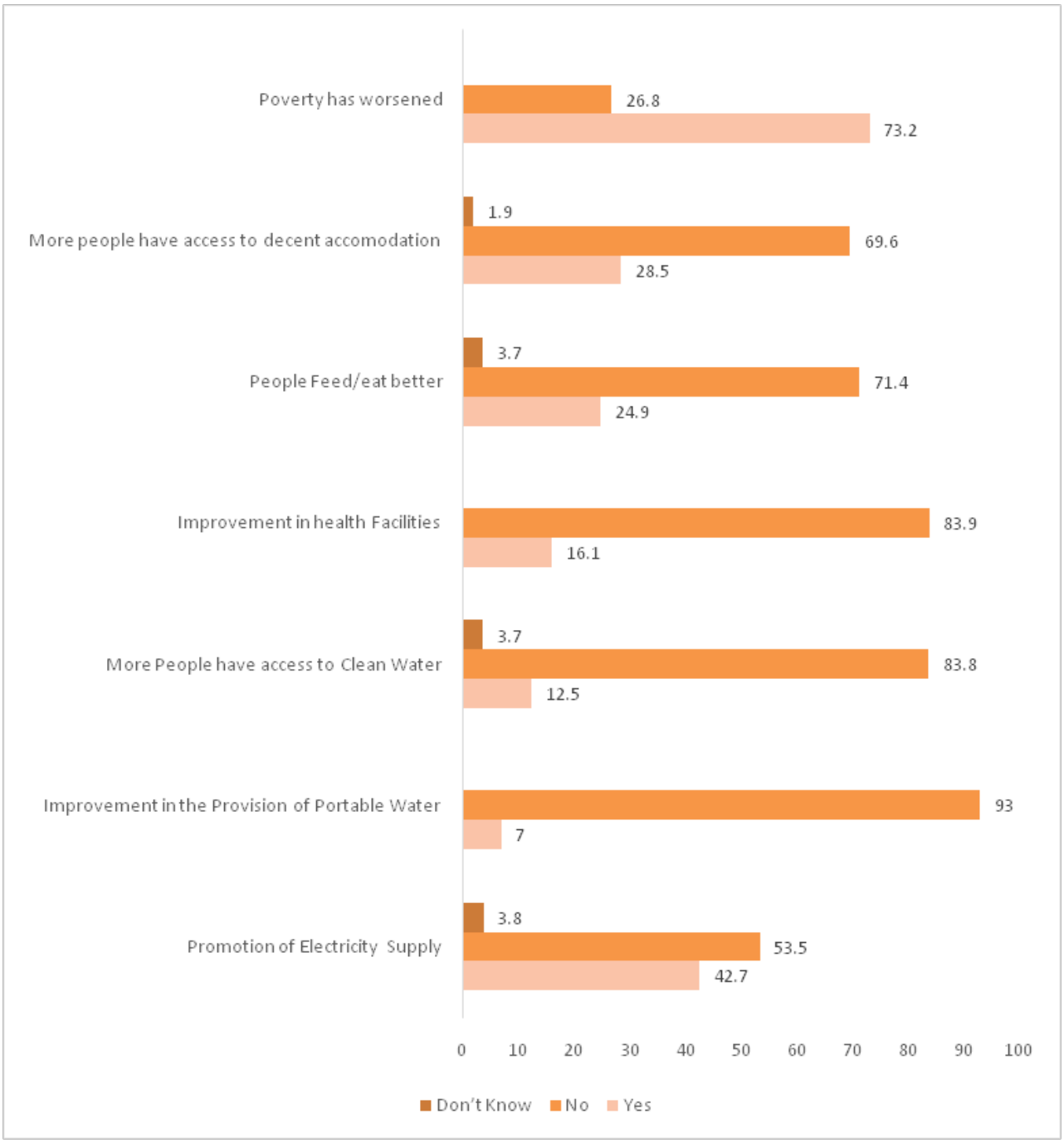

Figure 6 Impact on Infrastructural Development.

Source: Field Survey (2019)

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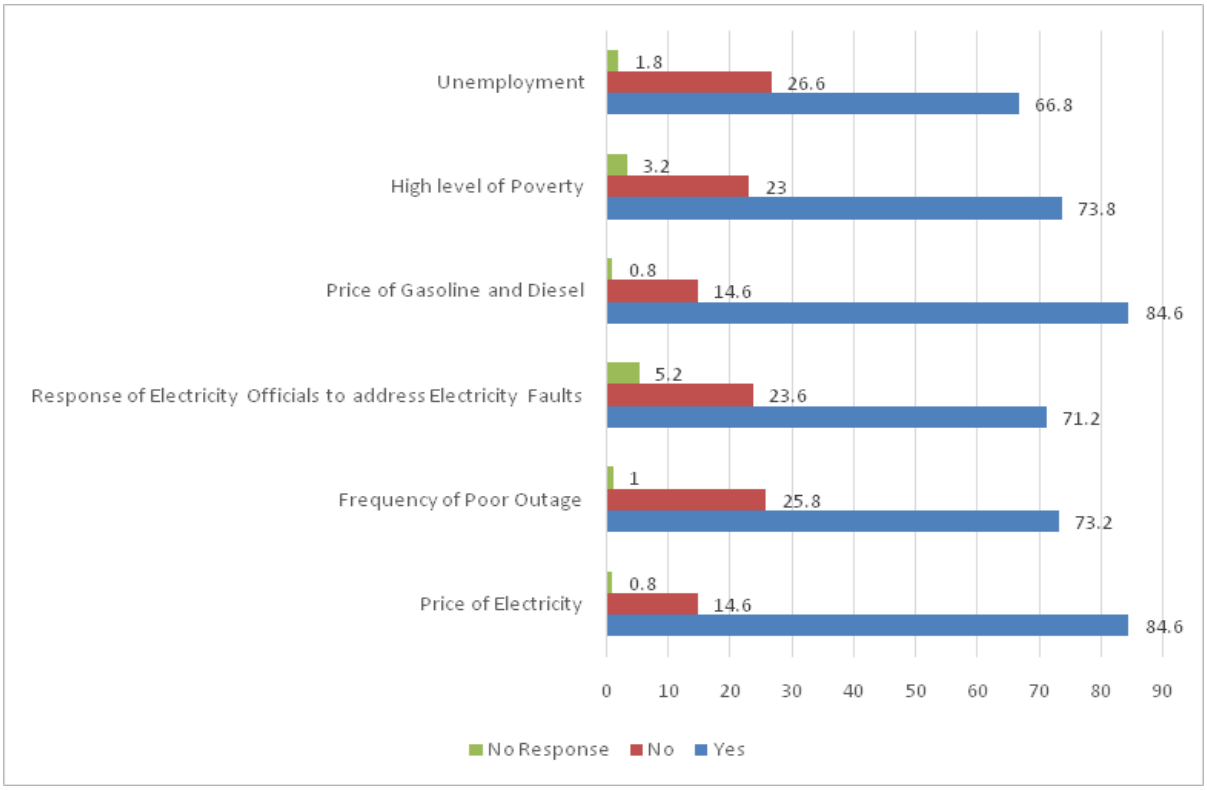

Figure 7 Factors contributing to electricity theft in Nigeria.
Source: Field Survey (2019)

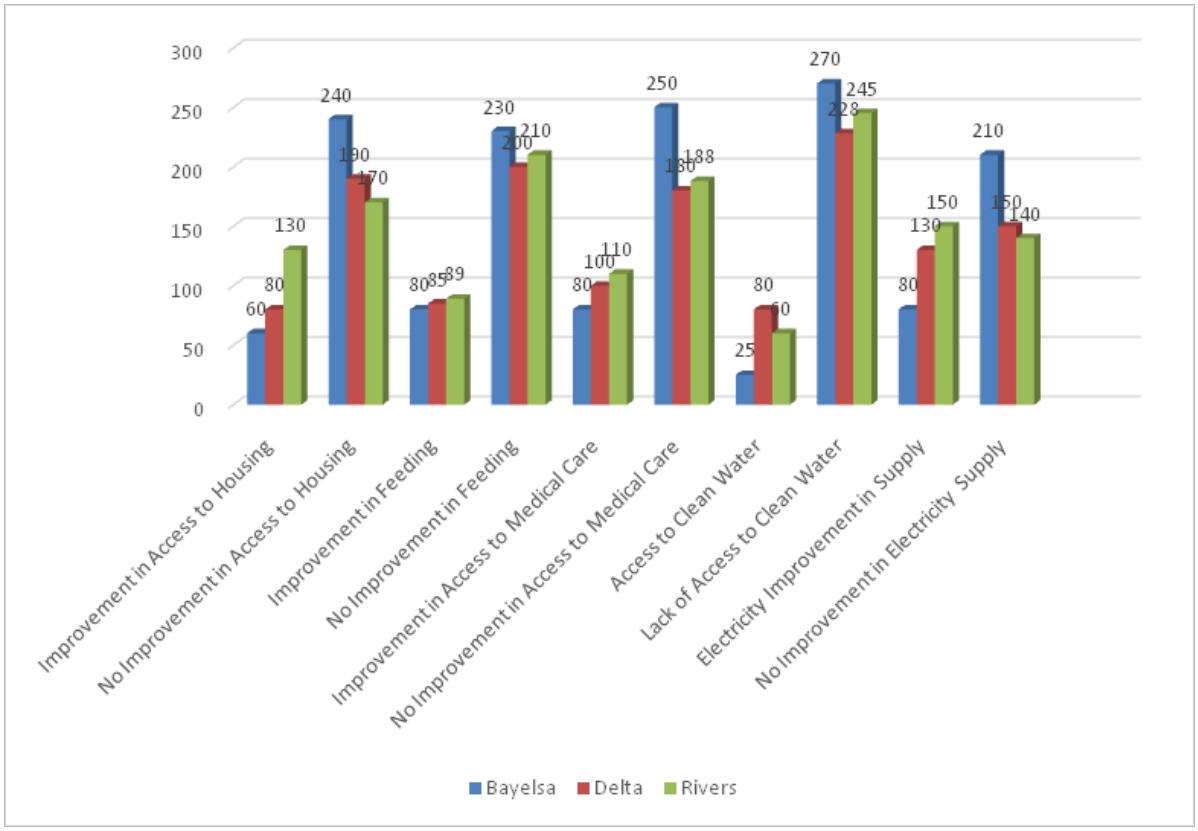

Figure 8 Poverty Reduction in Core Niger Delta.
Source: Field Survey (2018)

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So far, modern society is witnessing an increase dependence on computer technology for daily life activities, whose increasingly usage of energy in the shape of electricity, then where supply of power is heavily reliant on wind and solar. In such a community, energy safety is the bedrock of social distance, affluence and stability, nevertheless ensuring such security involves governments action and development partners.[28] The challenges COVID-19 possess reminds us that the role of power supply is crucial to our lives. It's likewise provides an overview of how this process will improve and advance in the years to come. As governments respond to the economic repercussions from the global economic disruption caused by the coronavirus, the main challenge of our time must not be forgotten: transitions into clean energy, given the economy size, more may perhaps be done to influence capital markets domestically, and the possibility of building on the mutual benefit of public-private partnerships. In addition, Nigeria's infrastructure challenges of poor water put Nigerians at greater risk from coronavirus, yetsignificant,are notdiscouraginggiven the power of the domestic economy. Despite the fact that current policy measures advise the government to take these issues seriously, much remains to be done and efforts must be made to maintain growth. At least half of this likely impact is based on the progresses made in the energy sector, which could have per capita growth rate despite social distance. As governments worldwide and Nigeria rhetorics of stimulus and intervention plans announced by the Central Bank of Nigeria with determination to pawn economic disasters from the crisis. These inducement packages provide an outstanding opportunity to determine the important role of constructing a protected and sustainable energy future that does not get missing amongst the flurry of instant priorities. However, what number of businesses and households in Nigeria have actually received money one month after the announcement? Predictably, many businesses will not recover from the lockdown and many workers tenuously holding on to their jobs may never go back to work. The ripples of these developments will be felt in the nooks and crannies of every region in Nigeria.

For many economies who have engaged in a number of confinement actions to respond to the coronavirus and for which data are existing, demand for power supply has dropped by about 15%, mainly due to the result of industrial closure and commercial halting activities. Some economies, like Spain and California, have one of the highest generation shares of wind and solar power rates globally. If the demand for power supply declines rapidly while meteorological conditions remain constant, the proportion of renewable energy sources such as wind and solar may be higher than usual. Likewise, the current drop in the demand for electricity has quickly fast-track some energy systems a decade into the future, swiftly giving them levels of wind and solar power that they would otherwise not have had in decades given added renewable energy capacity investment. This is a significant time for our comprehension of clean energy systems, as well as the specific operational constraints that policy makers and regulators require to address and guarantee electricity availability. Additionally, system operators have devised strategies to address these challenges, nonetheless unprecedented developments throughout global pandemics like lockdowns of entire countries are provoking novel tests for already fragile country such as Nigeria. For instance, the sudden slowdown in industrial and commercial activity across the country has reduced the demand for power supply, nonetheless it is also affecting household's ability to work from homes.All things being equal, large-scale energy consumers like industries may be able to regulate their usage to support system balancing, nevertheless this choice is hardly available today. This reflects the reason for decision makers to prudently assess the adequacy of natural resources below extreme situations as they are today. Currently, the most significant energy response strategies for COVID-19 emergency is summarized beneath:

I. Prioritize electricity to strengthen COVID-19 treatment isolation centre and first responders: Front-line medical services will need to respond to the pandemic crises throughout and ultimately disseminate and administer therapeutics without harm and once identified, antibiotics need uninterrupted cold chains. These health care facilities require to be prioritized particularly in Nigeria that lack access to consistent electricity.

II. Sustaining Low-income Consumers: There is need to provide proper solutions for low-income families and communities that currently being operated by off-grid solutions (mini grids or solar home systems) or grid connections, which most likely will be unable to pay utility energy bills and stand the risk of being disconnected. A crucial step needs to be considered which is, working with project developers and also ensure a commitment to provide energy at low or no cost, suspend payment of bill for one month rather than disconnect these homes during this crisis. Moreover, governments must take strict consumer protection measures and work with donors and investors to raise and cover costs to prevent off-grid developers and government utilities from entering the market.

III. Trebled reliable,sustainable, andrenewableproduction of energy in preparation for a more sustainable economic recovery: Countries must use affordable energy sources to support economic recovery after the outbreak of the coronavirus pandemic. This may perhaps permit nations to develop and create economic systems to guarantee equal access to sustainable energy and aid the global economy adapt to the trajectory in tandem with the Paris Climate Agreement and Sustainable Development Goals. At this unusual time, the global community must coordinate its efforts, collaborate with policy-makers in high risk countries and seek immediate solutions to ensure access to sustainable energy options durig this pandemic and beyond. Access to electricity saves lives by sustaining populations that are vulnerable and keeping the ventilators in action.

Summary

Coronaviruses, a family of single-stranded coated with RNA viruses. SARS-CoV-2 is 82% similar to SARS-CoV. It has round or elliptic and often pleomorphic form and a diameter of approximately 60-140 nm. The enveloped virus is considered to be less stable in the milieu than most enteric viruses and transmission occurs via inhalation, fomite and hand contamination with exposure to the nasal and pharyngeal mucus membranes, but much less likely via direct ingestion. Continued viral excretion can have significant public health consequences if it is accountable for virus spread to other individuals or to the milieu. Sars-CoV 2 seems to be very sensitive to temperature, resistant to pH, and sensitive to disinfectants. With severe measures being taken by government and institutions to deal with the pandemic, in order to reduce susceptibility to COVID-19 which put large population at risk, particularly ageing people besides those with pre-

existing health conditions, there is the need for collective action and drive as COVID-19 has shown how interconnected the world really is. This is because every human society depends to a large extent on the natural resources that are within its immediate milieu. Thus, resources utilisation and related consumption system of a society are very critical factors that influence individual resilience. Since society is a people-centered system, people in each community must collectively interact to address exogenous variables. These variables are those circumstances that affect people's livelihoods and where human must work to use suitable measures of institutional planning and arrangement to improve their living conditions and strengthen the country preparation on sanitation plans with the objectives of rebranding Nigerians into totally community-driven, sanitised, healthy cities and liveable towns. Collaboration requires reflection and mutually responding to our current problem because the first conditions to be meet for sustainable development. As such, the Government of Nigeria must be swift and decisive to fully support key national public health, including health care promotion, medical countermeasures development, international preparedness programs and response mechanisms with global partnerships. Policies such as public information and education campaigns will help to reduce the virusimpact**,** however electricity and water access is necessary and there is need for prompt national and international response action to avoid worst case health and economic consequences. Nigerians must take rapid measures to protect themselves from COVID19 by strengthening homeconfinement foras much as possible,restrainingpublic contacts, and constant wearing of protective N95 masks when needed especially in public.

Conclusion

The onset of the crisis demonstrates how vulnerable and interconnected the world is to coronavirus crisis and the key to achieving inadequate drinking water and inadequate access to electricity, which are contributing to the coronavirus pandemic response. It also highlights some key future understandings about electricity, and what regulators require to do to guarantee that tomorrow's systems continue to be reliable even after it has been transformed by the development of clean energy technologies.[2,29–33]Governments focus on instant public health emergencies, yet they must ensure they keep vigilant on electricity security and protect important assets during market's turbulence**.** In these unprecedented periods, we can do without many things, nonetheless we cannot manage without electricity, potable water and food. Decision makers require to put it in mind as to how electricity systems are maintained, regulated and operated. Due to the many applications of digital technologies in electronic systems, the coronavirus predicament reminds us of the indispensable role of skilled personnel. Network maintenance and repair are labour intensive and must be performed on site by staff and engineers.In many nations, governments have exempt network maintenance teams from lockdowns and organizations must guarantee that their staffs are safe when performing their important tasks, priority and support should also be given to health-care professionals on the frontline. All governments agencies, local organizations and development partners as well as NGOs must as a matter of duty take urgent action totreat, tackle and prevent the spread of such diseases outbreak.As the pandemic outbreak advances, balanced, coherent, and reliable public health information, that is science basedisimportant or else what is being experienced today would be a child's play in the next 20 years or thereabouts, if the government did not strike a balance between the available natural resources and human population.As schools in both urban and rural areas have large numbers including health centres and houses lacking access to adequate sanitary facilities such as latrines and sanitary facilities. It is believed that if the residents of the communities are mindful of the risks and threat associated with waterborne related diseases and sanitation, they will be better prepared both technically and morally to reduced diseases spread.The key lesson to be learned from the current crisis is to ensure that the electricity and water systems have sufficient resources not only for physical assets, but also human capital. Readiness and response to health security threats such as COVID-19 is essential to the safety and wellbeing of Nigerians. Emergency preparedness have greatly contributed to building national capabilities and capacities to deal with health emergencies. Addressing this crisis will drive macroeconomic growth, stimulate job creation and deepening financial sector, mitigate climate change, and enable billions of people to escape the vicious cycle of poverty. There is therefore need to build systems and expertise must be continued and boistered, aimed at reducing illness and death in the time to come. As well as a safe and sanitary home with running water, clean energy and enough space is the future frontline defence against pandemics. As improvement in the direction to the attainment of most sustainable development goals need major energy improvement and water management across the world.

Consent

All authors declare that 'written informed consent was obtained from the participants.

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Conflicts of interest

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