Beyond Covid-19: How Africa Can Embrace an Inclusive and Sustainable Development through an ICT-Driven Economy

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Abstract

The outbreak of the covid pandemic has negatively affected world economies since its inception. Most economies of the world have been hard hit especially by the lockdowns which were necessitated by the pandemic, this is especially terrible with developing countries in Africa. Most African countries have sought various ways to ameliorate the impact of the pandemic on their already ailing economies. This research thus proposes that for African economies to be cushioned from the negative effects of the covid pandemic and even launched into vibrant economies, there is need to embrace an ICT-Driven economy. By embracing an ICT-Driven economy, African countries would not only be able to rise from the present devastation and throes of the covid pandemic but will also be able to pull their economies into inclusive and sustainable economies.

Keywords: Covid; ICT-Driven; Economy; Africa; Pandemic; Inclusive; Sustainable; Development.

Introduction

With the outbreak of the coronavirus pandemic (covid-19), humans are saddled with one of the worst global health crises in history. This epidemic which was declared a Public Health Emergency of International Concern by the W.H.O on 30 January 2020 has since spread all over the world; and has particularly affected the health and social wellbeing of humankind. In correlation, this has negative impacts on the economies of the world and has forced different governments to seek ways to revive various degrees of economic recessions. Countries such as Germany have instituted bills enabling its workforce to be able to work from home through the aid of smart technologies. Some other countries like America are giving out palliatives to cushion the effect of covid-19 on their citizens who are locked down. Despite these efforts, the negative effects of the global economic recession as a result of covid-19 are still being felt around the world; and even more so, within the African continent, where the developing economies have now been further devastated by the pandemic.

Nevertheless, in order to revive Africa's already weak-economies and even launch them into vibrant-economies, there is a dire need for Africa to fully embrace the digitalization of its economies which is a facilitator as well as a factor for the development of African economies. This will give African countries the needed springboard to economically advance out of the covid-19 recession and develop faster and more sustainably than their present pace. This claim does not belie the fact that there are few African countries which are already making efforts to align some key sectors of their economies with the world of information and communications technology (ICT). Yet, this research purposefully argues that, for African countries to realize an inclusive and sustainable development beyond the covid-19 pandemic, there is need for governmental policies and strategies that will shift Africa's economic drive completely onto the world of ICT with which other forms of advanced technologies and human societal values could collaborate like nano technologies and the physical sciences. This ICT-driven economy should be interpreted as a non determinant of the human societal values of life but should be used to the advantage that they improve the human and environmental wellbeing of the society. Hence, by accepting the above claim for a full ICT-driven economy for Africa, the continent would not only be revamped out of the covid-19 pandemic but will also develop its economies to become stronger, more inclusive, and more sustainable.

In order to substantiate the claim being made, this research's methodology will be to analyze some specifically selected segments of the economies within Africa which have been negatively impacted and weakened by the covid-19 pandemic. This research will also identify few other economies where ICT has positively contributed to reviving in an inclusive way and then show how an adoption of ICT within those particular segments could efficiently resuscitate and bring about sustainability in those negatively impacted areas of the economy which could lead Africa to an inclusive socio-economic development.

ICT Solutions to Africa's Covid-19 Unemployment crisis

With the advent of covid-19 the employment rate of many African countries has been severely hit. The introduction of the lockdown and other stay-at-home measures to curb the spread of the virus has left more people jobless than those who have found new covid-19 induced jobs. The International Labour Organisation's modelled estimate suggests that as a result of covid-19, the size of the labour force (aged 15+) in SSA is approximately 430 million and in almost every country in the region, the combined rate of unemployment and underemployment exceeds 10%. The unemployment rate alone is near or higher than 20% in South Africa, Lesotho, Eswatini, Namibia, Gabon, Botswana and Sudan. [qtd in Naidoo 2020: 2]

This growing unemployment rate as a result of covid-19 has more negative effects on Africa as the world's youngest continent by demography. This is because an upsurge of the rate of unemployment also means an upsurge in the crime rate and other sociological problems.

Furthermore, according to a situation report on the impact of covid-19 to the African economy, the African Union estimates that "Nearly 20 million jobs, both in the formal and informal sectors, are threatened with destruction on the continent if the situation continues. The destruction of value chains, the lockdown of the population and the closing of restaurants, bars, retailers, informal commerce etc. would lead to a disruption in many informal activities" [African Union, 2020: 21]. This impending job loss as a result

of covid-19 will, unfortunately, only serve to exacerbate the already rising unemployment rate in most African countries and lead to other problems of social instability which are associated with gross unemployment. This will also affect governmental administrations and business enterprises in African countries and also around the world as offices are being closed down due to the lockdown. Civil servants, government workers, and company administrators will now find themselves sitting at home without any job or income and will only be left with sustaining themselves through their savings.

At this point we may want to ask: how can ICT help to cushion the high rates of unemployment as a result of the covid-19? Driven by a higher rate of youth unemployment, the introduction of an ICT-driven economy could be of immense benefit to Africa's unemployment rate because they serve as a means for some formal jobs on the labour market to be kept running even in the midst of the covid-19 induced lockdown. The work-from-home policy is already gaining ground around the world as more and more countries are making it possible for their workers to be able to attend to office needs from their homes.

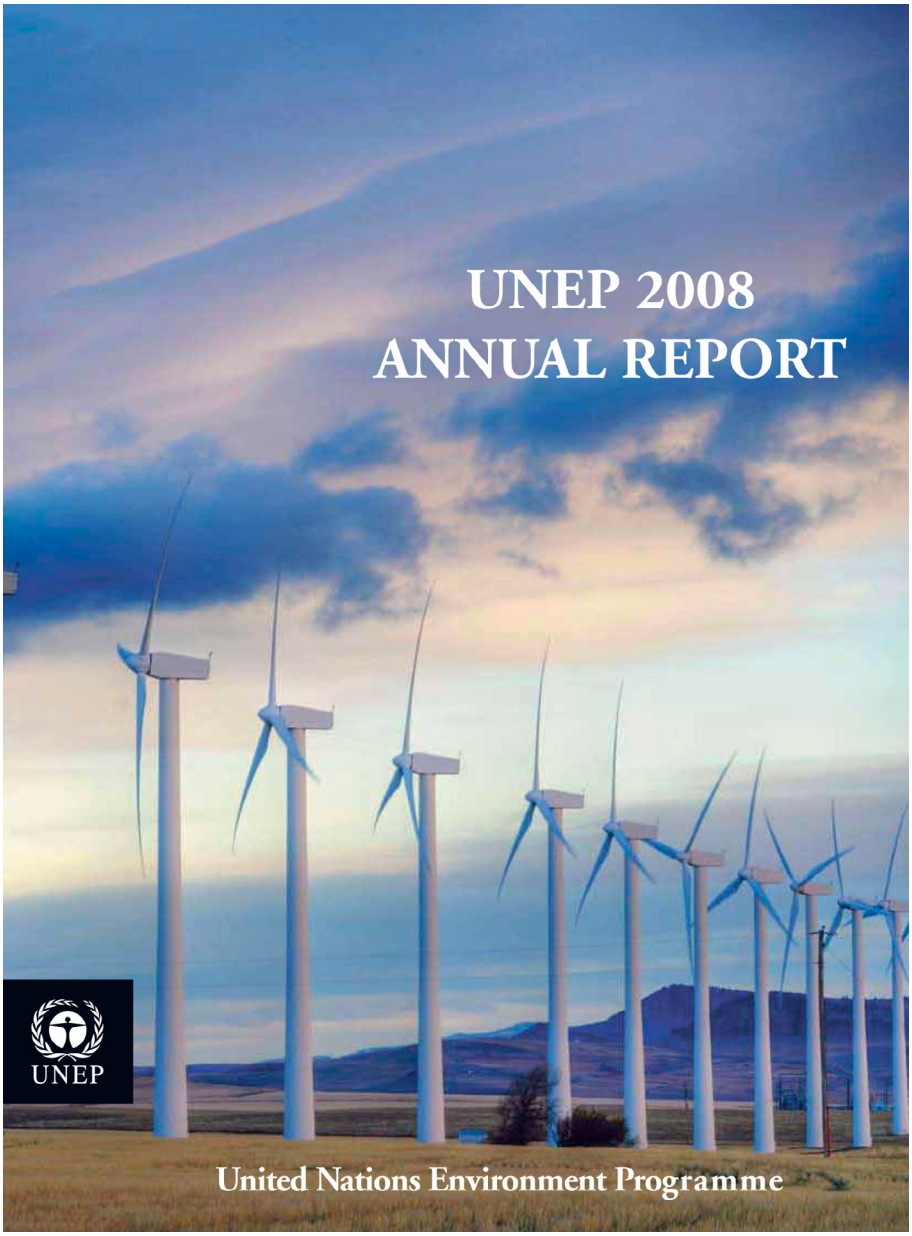
In a study done by the Workspace Innovation company Instant Group, it was found that in about ten countries around the world, including South-Africa, there is a rising trend of workers who have adopted the option of working from their homes with the aid of smart technologies (qtd in Pavlovska 2020: 1). Such ICT driven initiatives do not only keep the workers employed but are also of immense benefits to the environment in terms of climate change mitigations as there is less burning of fossil fuels for transportations as well as for keeping the offices running. Moreover, with the way covid-19 has influenced the labour market so far, ICT is now laden with a big role to play in reorganising the structures of future jobs. In doing this, the idea of a full-time job may become a thing of the past as people could now be able to work from home and within a smaller time frame in order to create more time for their families.

In addition, there is presently a rising trend as to the number of sustainable green and smart jobs being created around the world today. A 2008 United Nations Environmental Program (UNEP) report estimates that if the growing interest in smarter and eco-friendly energy alternatives keep on a positive growth trend, there will be around 20 million green-ICT jobs around the world by 2030; 2.1 million jobs in wind energy production, 6.3 million in solar photovoltaic and 12 million in biofuels-related agriculture and industry (UNEP 2008). These ICT related jobs could even be more beneficial to the African economies in adopting a greener socio-economic strategy for the mitigations of climate change which is another serious challenge facing African countries.

By adopting a fully digitalized economy there could be an explosion of smart related and sustainable green jobs across the continent such as in energy efficiency, transportation, smart agriculture, ICT based resource management, smart buildings constructions, and a lot of other smart/sustainable jobs on the green economic market which could be of benefit to an inclusive African economy.

According to the UNEP, "In emerging economies and developing countries, the gains are likely to be higher than in industrialised countries, because the former can leapfrog to green technology rather than replace obsolete resource intensive infrastructure. Brazil has already created just under three million green jobs, accounting for some 7 per cent of all formal employment" (UNEP 2008). Hence, it is important that African leaders enact policies that will transform the African economy into an ICT driven economy which can launch Africa out of the covid-19 induced recession and onto an inclusive and sustainable development.

Furthermore, with regards to the administrative shutdowns as a result of the covid-19 lockdown the United Nations Conference on Trade and Development (UNCTAD) recently rolled out an e-government platform which assists governmental offices and administrations to remain open and keep their businesses running online during covid-19. In a recent publication by UNCTAD it was revealed that during the first week of lockdown closures 182 businesses were created online in Benin republic (UNCTAD 2020: 2). Already, so many countries in Africa and all over the world are taking advantage of this inclusive and sustainable e-governmental service to keep their businesses running even in the midst of covid-19. With the aid of this platform normal office services can be offered by businesses and governmental workers from the comfort of their homes. Some other African countries such as Cameroon, Lesotho and Mali are already using the e-government platforms to enhance their businesses in different ways (UNCTAD 2020: 6). With the aid of such ICT enabled platforms different administrative services could be offered to people from the comfort of their homes. Such services like social security administration, handling of tax relief, post-crisis recovery of state aid through tax systems, processing trade operations, and other essential governmental services could be run from home. This e-government platform can be a sustainable solution for African governments to key in the many sectors of their economies which are losing huge amounts of workers as a result of the covid-19 induced lockdown. By keying into this online platform many African economies could also benefit from an inclusive development by means of using an online platform which cuts across almost all spheres of the governmental administrative and non-administrative systems.



ICT Solutions to Africa's Covid-19 Health crisis

One of the worst hit sectors of many economies of the world as a result of the covid-19 has been the health sector. Countries such as Italy and America have felt the heavy burden of covid-19 on their health systems and hospitals. The African economies have also not been left out in this crisis as the death rate is still on the rise.

Africa's previously poor health systems which have, in the past, been weakened by other diseases such as AIDS, tuberculosis, malaria, the recent Ebola and other factors such as poor governmental funding are really not in the best shape to withstand a pandemic like the covid-19. According to the African Union's report:

"The Covid-19 crisis will stretch the-already-poor health systems on the continent. The demand from covid-19 patients will overcrowd the health facilities and patients with high burden diseases like AIDS, TB and Malaria will lack access and/or adequate care and this can result into more morbidity and mortality. In addition, Covid-19 pandemic will ultimately create a shortage of medicines and health equipment."
[African Union 2020: 21]

In view of this, there is a dire need for a solution to Africa's health woes especially at this point when we are faced with a world health crisis. Hence, how can an ICT-driven economy benefit the health sector of the African economies during this covid-19 period as well as help beyond covid-19?

As we can see, since the outbreak of the pandemic the media in general has played an important role in the dissemination of health tips across Africa. Covid-19 related pieces of information which details out the means to curb the spread of the virus have been uploaded online for those who are unaware as well as those who are unsure of the details regarding the pandemic. Moreover, in a few places in Africa, some people are taking the step even further to be innovative through the use of ICT and produce different technological designs as solutions to combat the spread of the virus through different ways. Chatbots and different online risk self-assessment tools have been produced. For example, in Nigeria, "a company *Wellvis*, created the COVID-19 Triage Tool, a free online tool to help users self-assess their coronavirus risk category based on their symptoms and their exposure history. Depending on their answers, users will be offered remote medical advice or redirected to a nearby healthcare facility" (Harrisberg 2020: 1). Apart from that, social media like Facebook and WhatsApp are being engaged by different governments who have seen the need for ICT not just to fight off false rumours concerning the virus but also to help people detect health related problems concerning the virus. For example, "the South African government is using the popular WhatsApp chat service to

run an interactive chatbot which can answer common queries about COVID-19 myths, symptoms, and treatment. It has reached over 3.5 million users in five different languages since it was launched last month and is being rolled out globally" (Harrisberg 2020: 1).

Furthermore, the introduction of ICT into Africa's health sector would be of immense benefits now and even beyond covid-19. Although to do this, there is need for governmental infrastructural policies and strategies that would make it possible such as the provision of constant access to electricity and affordable internet. An ICT driven health sector will help in the easy dissemination and delivery of drugs and health kits to most rural places that are not easily accessible. For example, in Ghana, the pharmaceutical company NOVARTIS is partnering with the products delivery company ZIPLINE to deliver sickle-cell medicines to rural and not easily accessible populations in Ghana (Matchaba 2019: 1). Such ICT aided deliveries also help to save cost and are sustainable in the sense that there is more efficiency in less energy usage. Also, the use of ICT makes it possible for the prevalence of fake drugs and other counterfeit medical products to be limited within Africa's health sectors.

Consequently, there will be an improvement of health knowledge among medical workers and an immediate dissemination of health facts to save lives. This will be beneficial not only in the treatment of other diseases but also in the rapid spread of medical facts in case of another pandemic as was seen during the covid-19 spread. In supporting the need for an ICT-driven health sector the United Nations, just recently, recommended to African governments the steps to follow in order to embrace inclusive ICT-driven medical research in the midst of the covid-19 pandemic: "Support Collaboration between African engineering and medical universities and local manufacturers to innovate and build critical medical equipment, such as ventilators, including by supplying 3D printers" (United Nations 2020: 13). With the evolution of science and technology, there may also be the creation of technologically advanced X-ray machines, ventilators, health bots and AI medical assistants that could help doctors and nurses to carry out their jobs more efficiently. Indeed, just as Dr. Patrice Matchaba rightfully says "Nowhere is better positioned to benefit from the digital revolution in healthcare than Africa, where technology can help tackle the rising burden of disease and major obstacles in infrastructure and the environment" (Matchaba 2019: 1).

ICT Solutions to Africa's Covid-19 Education crisis

The education sector throughout the world has also not been left out during the covid-19 pandemic as schools and places of learning are all closed down to avoid the spread of the virus. Educational institutions in Africa also feel the effects of the epidemic as they are being forced to close down or have already been closed down. Millions of school children and students have been affected by this closure of schools in a continent where the educational system is still developing. According to the UNESCO as at the month of May, "Globally, school closures due to COVID-19 had affected 1.29 billion students in 186 countries, which is 73.8 percent of the world's student population and across the African continent, an estimated 297 million students have been affected by school closures as a result of the pandemic" (qtd in Kuwonu 2020: 1). With the closure of schools across Africa the quality of education for many African children and students may be jeopardised.

Nevertheless, even as educational institutions are being closed as a result of the pandemic, the learning pedagogy has not so much been affected as most educational systems around the world and even in Africa have already turned towards the use of ICT facilitated learning. The use of ICT facilitated learning has greatly helped schools in Africa to bypass the lockdown imposed as a result of covid-19. Countries such as Egypt, Ghana, Liberia, Nigeria, Morocco, Rwanda, South Africa, Zimbabwe and a host of other African countries have turned to online learning. "The University of Ghana, for example, has trained its lecturers on how to put together online classes, while negotiating with telecom companies to grant free internet data, usually capped at 5G, for the students" (Kuwonu 2020). This same strategy is already working in other learning institutions like Arrupe Jesuit university in Zimbabwe where with the aid of ICT and internet access, the semester classes as well as the end-of-semester exams were conducted successfully and more so, the first ever online academic graduation since the inception of the university was successfully done. In addition to that, "In Nigeria and Morocco, the governments have created online repositories with education materials for teachers and parents, while the Rwandan education board has set up a dedicated website to support learning and provide educational content, as well as assessment tests.

The website also enables teachers and parents to communicate" (Kuwonu 2020). Unfortunately, with the insufficient access to internet and ICT by every student in Africa, there seems to be a rising setback as not every student is able to benefit from this online learning. It is for this reason that there is a need for a governmental backup of ICT and internet policies which will give a favourable ground for more telecommunications dealers and internet service providers to come into Africa and invest in providing greater access to internet as well as ICT gadgets for more Africans to gain online access.

Fortunately, some of these ICT-related learning pedagogies which are being adopted are very beneficial to the future of the African educational system. For Africa to attain a sustainable and inclusive educational development beyond the covid-19 pandemic, there is a need to fully embrace the use of ICT in schools. The use of internet enhanced education is here to stay and it will help to revitalise education across Africa if fully supported. By totally embracing ICT and online learning, the process of education will gradually move out of the confines of a classroom and could be readily accessed by anybody, anywhere in the world. Massive Open Online Courses (MOOCs) and other internet-based courses have demonstrated the benefits of the internet in education. This will as well bring about other sustainable and inclusive benefits to Africa's economies like saving costs, saving energy and also a lot of environmental benefits which will be achieved by limiting the number of books being printed in exchange for more digital learning materials. Not only does ICT create an avenue for student centred learning, but it also enables students to acquire ICT skills to be able to move outside their learning spheres to explore other learning options.

Apart from the benefits it gives to the students, the use of ICT also enables teachers to view education from an entirely new pedagogical paradigm; such a paradigm which allows for students to explore and gain new skills in order to reach their academic limits. In a recent policy brief on the impact of Covid-19 in Africa, the United Nations recommends to African governments concerning the revamping of Africa's educational systems to "Strengthen energy infrastructure, internet access, and technology use in education, including by exploring reduced cost opportunities with mass media (especially radio) and mobile telecommunication providers to create or expand access to distance/

online learning platforms." (United Nations 2020: 19). However, for all these to be possible in Africa, there is need to have the appropriate governmental and societal policies and infrastructures to engage ICT and internet access with Africa's education systems.

ICT Solutions to Africa's Covid-19 Agricultural/ Food crisis

With the disruption of economic activities and the introduction of the covid-19 lockdown by different African governments, food and agricultural products are becoming scarce. This food crisis is chiefly being caused by a disruption in the agricultural supply chain business and the problem of logistics. Commercial activities through which the production, processing, transportation and distribution of foodstuffs to consumers were made possible, are now reduced drastically or even completely shut down in some places. As a result of these there is a rise in food insecurity.

Low-income earners who are more affected by the scarcity have to switch to a lower-nutrient diet as they can afford. This problem is made worse by the loss of jobs which increases the poverty rate and inability to purchase foodstuff. A recent survey conducted by the Human Science Resource Council in SouthAfrica, as at April, found out that due to the overwhelming compliance with the lockdown rules, "24 percent of respondents had no money for food. For people living in informal settlements, that number rises to 55 percent" (qtd in Pais, et al. 2020). Fortunately, some countries have designa-

ted food and agricultural products as essential services which gives room for the buying of foodstuffs by those in need. Yet, the problem lies more within the production and transportation of food than in the consumption. Loss of jobs has made it tough for an efficient production of food for everyone. The closure of borders has also made it difficult for the movement of food and agricultural products to places where they are needed. And all these problems are made worse as the lockdown extends.

Nevertheless, the presence of agro-based technologies and ICT can greatly help the African continent in finding a way out of the covid-19 induced food scarcity and ensuring food security as well as revamping Africa's agricultural sector beyond covid-19. With the aid of ICT, countries such as Uganda are finding ways to bridge the gap between buyers and sellers from the comfort of an internet enabled phone and an app named *The Market Garden app*:

> **"The Market Garden app lets the vendors safely sell and deliver fruits and vegetables to customers as restrictions to promote social distancing come into play. The app, which was launched in 2018, allows vendors to kaeep earning an income through the country's current two-week lockdown. Developed by the Institute for Social Transformation, a Ugandan charity, it reduces bustling crowds in market areas by allowing women to sell their goods from their homes through the app, and then motorcycle taxis deliver the goods to customers."** [Harrisberg 2020]

Such agro-technological apps will not only help to limit the spread of covid-19 but also make for an inclusive and sustainable development in the agricultural sector by limiting wastes. Also, in order to limit the infection of coronavirus through the exchange of money from one person to another, some mobile money platforms are being used in some parts of Africa like the M-Pesa in Kenya and Ecocash in Zimbabwe.

Going beyond covid-19, the introduction of e-agriculture into Africa's economy will be beneficial in bringing about an inclusive and sustainable development. Agricultural online stores are essential in keeping the food supply chain moving during and beyond the covid-19 period. A few African countries are already keying into this ICT driven agricultural supply for example in Kenya, the use of *FarmIT* an agro-tech service supports farmers with agronomic provisions, links them to the food markets and creates e-commerce opportunities. Also, in Zambia, *eMsika*, an online platform for wholesale and retail trade in Agricultural related products provides a platform for farmers to easily sell their products. In Nigeria, online e-agro platforms like *Chowberry* are not only helping to disseminate food and information to very remote parts of the country during the covid-19 lockdown but are also sustainable as they avoid food wastages. Other online based platforms like *Mkulima Young* in Tanzania and *G-Soko* market trading systems in Kenya are already helping in the efficient dissemination of agricultural products to consumers. These and other e-agricultural and e-commercial services are good reasons for the African governments to enact even better policies that attract more telecommunications investments into Africa in order to improve online based infrastructures that enable a comprehensive ICT driven economic development for Africa.

However, in the face of all these benefits that come with the implementation of an ICT based economy by the African governments there is still one major challenge which cannot be denied but needs to be addressed. With the ever-widening gap between the rich and the poor, there is no doubt that the embracing of an ICT driven economy in Africa could further worsen digital divides between the rich and the poor. Unfortunately, if this problem is not squarely looked into it could create more marginalisation of the poor in Africa. Hence, how will Africa be able to smoothly transition into an ICT driven economy in a way that the very poor of the society are not left out on the socio-economic margins?

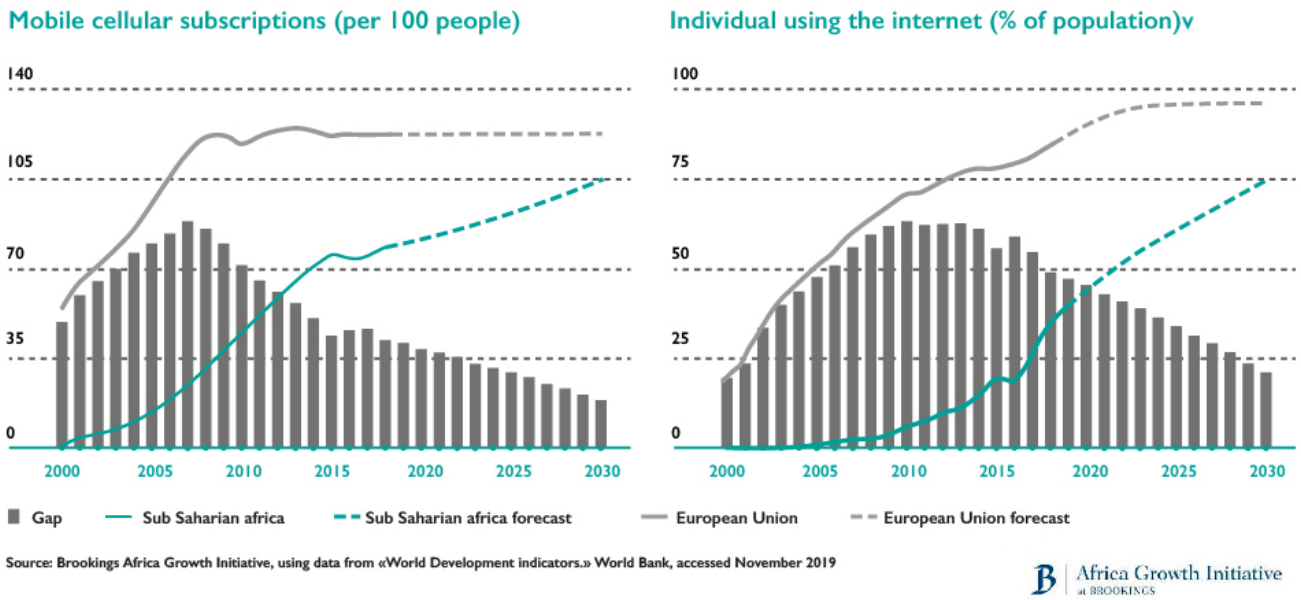
The main cause of Africa's digital divide is the poverty rate because of which many people are unable to afford ICT gadgets and an unlimited access to internet data. This creates a situation whereby the rich who are able to pay for these gadgets and internet services enjoy the benefits of an ICT-driven economy while the poor are left out on the socio-economic margins. This digital divide can be noticed in every sphere of a digitised economy. A good example can be seen more within the education sector where rich students are the only ones able to use advanced technological gadgets like laptops and be in the online classes while the very poor students are not even near to owning an internet enabled phone. Such uneven access to ICT and internet is a complex so-

cio-economic problem that can only be solved by governmental socio-economic policies; policies which would directly improve the livelihoods of citizens by working with the private sector and internet service providers who will boost their investments in Africa to make the internet more accessible and affordable for poorer communities. Also, the governments could set up more free hotspots and internet café's especially in rural areas with very low access to ICT and internet connectivity. This could facilitate inclusivity and boost more online accessibility in order to bridge the digital divide between urban and rural areas and between the rich and the poor.

Hopefully there is some progress being made to bridge this digital divide gap in Africa's mobile phone usage and internet accessibility as shown in the diagram below from *Foresight Africa*:

Closing the gap in mobile phone and internet access

In recent years, africa has began to close the gap in mobile phone and internet access. In 2018, compared to the European Union, the average gap in mobile phone access was only 44.6 mobile cell subscriptions per 100 peaople, down from a high of 92.8 in 2007. For internet access, the gap is also lessening. Alhough at a slower eate: The access gap in 2017 was 55.4 percentage points, down from a high of 63.8 in 2010. By 2030, given current trends, these gaps are projected to decrease to 19.4 and 21.8 for mobile phone and internet access, respectively.



Another step to bridging the digital divide is to promote digital literacy in order to create the awareness of ICT and internet familiarity as well as to teach people the skills needed to use these gadgets and online platforms. This is necessary because it should not be presumed that everyone is aware of how to use ICT gadgets for their various entrepreneurial activities. Hence, in order to further bridge the digital divide as well as help people to be able to navigate their ways with the ICT driven socio-economic situations, the African governments could also partner with more telecommunications companies to focus on ICT awareness campaigns, social supports and digital learning.

Conclusion

In conclusion, this research has analysed the socio-economic impacts of covid-19 on Africa. In the course of this analysis this research has highlighted specific sectors of the economies that have been greatly affected and weakened as a result of covid-19 and its consequent lockdowns across Africa. Due to this weakening of the African economies, the concern is raised within this research as to what will be the fate of Africa and its economies beyond covid-19. Hence, in what ways could Africa successfully recover from the socio-economic damages of covid-19 and even build up a better inclusive and sustainable economic development beyond covid-19? This research then proposes a viable solution that could significantly revive the African economies and even help them to grow stronger after the pandemic; a solution which lies in embracing an ICT driven economy for all of Africa. By fully transitioning onto an ICT driven economy which collaborates with a societal value for human life, Africa will be able to progress to, and ultimately achieve an inclusive and sustainable economic development. Nevertheless, unlike the economic system of capitalism which has only served to make the rich richer and the poor poorer, an ICT driven economy should not be allowed to follow the same mode of operation in Africa which by doing so would create a digital divide. Rather, to resolve this, there should be smart but humane governmental policies all across Africa which help to bridge the already existing digital divides. Policies which will attract more ICT investors into Africa to create a more widespread accessibility to ICT gadgets as well as internet connectivity for Africans and in doing so, will make for a full transitioning of Africa's economy into an inclusive and sustainable ICT driven economy.

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