International Journal for Social Studie
Available at https://edupediapublications.org/journals

ISSN: 2455-3220
Volume 02 Issue 02
February 2016

Sustainable Health: The Bedrock for Sustainable African Development.

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Abstract.

Nations of the world are working towards attaining Sustainable Development by 2030, in line with the United Nations' 17 point Sustainable Development Goals agenda. However, continents have perpetually fallen short of similar time-scaled global targets. Development is most challenged in Africa and Africa is most in need of development. The effects of an exploding population of physiologically unfit and unhealthy Africans are utterly unimaginable. This research has sincerely evaluated and appraised the past decades of health care systems across the continent and proffered workable schemes for the future. So many health challenges still lie unattended in Africa, active planning and execution of a sustainable road map for the coming years is earnestly required. African leaders and policy makers must resolve to make perfectly thought out, concise and futuristic decisions; while sustainable Health must be seen as the primary base upon which every other legislation on Africa's development is built.

Keywords- Sustainable Development, Sustainable Health, Infectious diseases, Universal Coverage, Primary Healthcare, Health planning, Biomedical Research, Telemedicine

Introduction.

1.1 Definition of Development.

Development involves growth. As a matter of fact, development is an impossible occurrence without growth preceding it. For an entity to have developed, it must have experienced an appreciable level of growth, most likely in a consistent manner over a period of time. The Merriam-Webster Dictionary defines development as, 'The act or process of growing or causing something to grow or become larger or more advanced'. From this definition, certain facts will be highlighted, which will be extremely important in guiding our thought and understanding through the prosecution of this publication.

1.1.1 Fact 1: Development is a process- This means that development is not an act in isolation. It is an aggregation of procedures and it is continuous. It is also safe to infer that development might be an unending chase. This is because every stage of development opens an

avenue of possibilities for the attainment of greater success. There is always room for improvement and there are always better ways of doing things. For development to have been achieved or attained, it must have resulted from a number of consciously and carefully planned pre-occurrences, whose intended result(s) are expected from the inception. This simply means that development is for the prepared. More often than not, development does not come to those who do not expect or plan for it. It is not an event by chance.

1.1.2 Fact 2: Development is distinctive- This is a very important characteristic of development, in that development is measurable and noticeable. It must standout, be seen, felt, and understood for it to have any meaningful impact. Development is a clear departure from what used to be obtainable. It implies an improvement on the norm and a disparate change in status quo. Development is not just another way of doing things; it is a better way of doing things. People ordinarily shouldn't need much convincing to accept a developmental stride as it should be self-convincing, appealing, glaring and of enhanced value.

1.1.3 Fact 3: Development results from growth- All development results from growth, but not all growth leads to development. In essence, one can grow without actually developing. Growth is a function of time and is almost a certainty especially with animate beings, but it is impossible to develop without experiencing growth. Growth is a prerequisite for development; it is the essential foundation upon which development is achieved. This also makes it important that we do not confuse and celebrate growth as development. There must be periodic checks to evaluate ensuing levels of growth to make sure that they indeed lead to development, which is a more ideal celebratory goal.

1.1.4 Fact 4: Development has the ability to appreciate or depreciate- Development, is not on its own an absolute end. For it to be assured, certain measures must be put in place. It must be maintained at a certain level so as to retain relevance with time. A careless attitude towards development will certainly lead to a receding state. As much as development is an improvement on previous or current standards, it also possesses the ability to return to its former or an even worse state if conscious efforts are not put in place to maintain development at a working level. Ultimately, the best form of development is the sustainable form of development. Unless development is sustained, efforts and resources invested will be futile and breakthroughs will simply be temporary. This is an essential truth about development and sadly, this is a fact that most African nations are yet to realize and appreciate.

It is seemingly the nature of Africans to celebrate temporary milestones and live oblivious of the fact that development must be

sustained for the future to be assured. We must cultivate a futuristic approach to life by formulating and revising timed targets, visions and goals if we must denounce a life of territorial dependency, bordering on financial and material aids and appraisal of curative measures over preventive actions, especially in health. Development must be sustained in all aspects of personal, national and regional life; else we only live a life characterized by struggles to survive rather than an impactful, fulfilling and worthwhile life.

1.2 Aims:

This article aims to bring into our consciousness, the need for measures towards ensuring sustainable development and importantly, the role of sustainable health as the driving force for the advancement of every other aspect of sustainable development, especially in Africa. Healthcare demands remain dynamic and most epidemic challenges are geographically specific. As a result, it borders on specialists, policy makers and leaders of thought in Africa to take initiative and postulate roadmaps aimed at tackling emerging challenges with an approach dove-tailed for the African region. For too long, we have exhibited continental overdependence and reliance on developed economies and global organizations for as much as designing goals for our own future. There must be a conscious resolution to lead the drive for sustainable health in Africa by Africans.

CONCEPT OF SUSTAINABLE HEALTH AND SUSTAINABLE DEVELOPMENT.

2.1 Sustainable Health- Sustainable health entails a careful adoption of innovative strategies committed to improving lives of people, safe guarding individuals and community well-being. It involves providing preventive care systems adapted to the evolving health challenges of today and the future.

Essentially, sustainable health is the meeting place of critical thinking, holistic investigations, responsive planning and apt service delivery for current and future demands within the health field. It is the sufficiency of today and the planned assurance for tomorrow. Sustainable health is a huge challenge in Africa as a large percentage of the populace continues to battle with various diseases amidst a dwindling economy. Basic necessities such as education, clean water, balanced diets, clean sanitation and shelter remain an unaffordable luxury for most individuals and families. As a result, a large percentage of the active populations are not healthy enough to meet the demands of a changing economy. The incidence of chronic preventable infectious and non-communicable diseases continue to rise, creating a new matrix of health challenges for present and future generations, whilst longstanding challenges have not been conveniently dealt with. The reality is that healthcare workers, policy makers, governments and agencies face trying times as

never seen before and actions must commence now to fix the ills of the past and plan for a better future.

2.2 Sustainable Development- Sustainable development in its simplest terms means finding better ways of doing things, both for the present and the future. Since development is an enhanced way of doing things, sustainability brings an assurance of longevity such that ideas outlive the initiating generation and meet the needs of coming generations. It transcends all dimensions of human life from ecology, to equity and economy.

The World Commission on Environment and Development report of 1987 famously described sustainable development, as development that meets the needs of today without compromising the ability of the future. Hence there is just as much emphasis on improving today's capacity as there is on ensuring that tomorrow's competence isn't jeopardized.

No meaningful discussion can be held on Sustainable Development without critically incorporating and appreciating Sustainable Health as its bedrock. Governments must design care systems adaptable to the needs and financial capacity of the vast majority of Africans who are currently unable to pay for the health provisions on offer. Many rural dwellers cannot access health facilities which remain concentrated in urban areas. This in turn, is empowering communities to make their own healthcare decisions, formulating methods to meet their therapeutic needs.

Africa has performed poorly in relation to global bench marks over the years; most nations were unable to meet specifications of the Millennium Development Goals and still cannot meet World Health Organization standards in terms of financing, infrastructure, and universal provisions on healthcare delivery. A thorough performance appraisal of the past decades is necessary as strategic planning for the future is invaluable. The United Nations launched the Sustainable Development Goals, which countries must work towards achieving within the next 15 years. Highlighted among the 17 goals is the goal 'to ensure healthy lives and promote wellbeing for all at all ages'. This of course must be pursued along with other equally important goals for the United Nations targets to be met. Like previous benchmarks, Africa is most at risk of falling short in the achievement of the Sustainable Development Goals, but more importantly is in prime danger of the resultant effects. The reforms that regional governments undertake within the next decade will be crucial to determining health outcomes in the continent. Current challenges and possible reforms must be closely studied in perspective and consequences of today's decisions must be inferred such that there is an underlining priority to secure the future of generations to come.

ISSN: 2455-3220
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CURRENT HEALTH CHALLENGES.

Health systems across the region are generally in a crisis. From insufficient and inefficient working modules to poor and dilapidated infrastructure, the resultant effects on health indices are entirely worrisome. Africa has seen the life expectancy of its populations stunted by communicable and parasitical diseases that have mostly been stamped out in the developed world. Now, the continent also faces increasing rates of the non-communicable lifestyle diseases that have become the biggest killers in industrialized countries [2]. Many African countries, however, are still unable to provide basic sanitation, clean water and adequate nutrition to all of their citizens, let alone deal with the onset of these latest killers. These countries, beset by poor infrastructure, a shortage of skilled professionals and geographic and socio- economic inequalities, face an uphill struggle in delivering adequate healthcare. With outlays on treatment for the major communicable diseases likely to occupy a significant chunk of national health budgets for the foreseeable future, better preventive care will be crucial to keep spending in check and to improve health outcomes in the next decade [3]. Africa's healthcare challenges are heightened by the sheer diversity of the continent. Countries range from the resource-rich to the impoverished, from those with dynamic economies to those where conflict zones still simmer; they encompass large cities, remote villages and nomadic lands. Sharp discrepancies in the prevalence of illness and access to treatment exist, as well as differences in data collection, which complicates comparisons for policy-making planning. Take into cognizance the perilous state of the global economy and, in particular, the foreign aid and multilateral budgets on which African healthcare systems are heavily dependent, and the magnitude of the challenge becomes all the more apparent [4].

3.1 Maternal Mortality-

Struggles with high rate of maternal mortality continue to dominate health discussions in Africa. Women in most countries within the region, especially Sub-Saharan Africa lose their life as a result of preventable complications during pregnancy and child birth. In the era of the Millennium Development Goals, a number of countries succeeded in reducing to half their levels of maternal mortality since 1990, but couldn't meet the target of 3 quarters reduction by 2015.

Ghana's maternal mortality ratio reduced from about 500 deaths per 100,000 live births a decade ago to an estimated 350 deaths per 100,000 live births where it currently stands. This still stands far off the expected 145 deaths per 100,000 live births going by the United Nation's anticipated target [5]. Neighboring Nigeria's maternal mortality ratio is estimated at 820 deaths per 100,000 live births presently; however, the MGDs targeted an estimated ratio

ISSN: 2455-3220
Volume 02 Issue 02
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reduction to about 200 deaths per 100,000 live births. In a 2010 report, the WHO noted that overall progress towards meeting the Millennium Development Goals (MDGs) of a two-third reduction in maternal mortality had been less than impressive in Africa. Just six countries were deemed on track during the time specified, with 16 having made no progress at all; only 13 countries had maternal mortality rates of fewer than 550 deaths per 100,000 live births, while 31 countries had rates of 550 deaths or higher. Post-MDGs, many countries in the region still battle high maternal mortality ratios ranging from 550 to 1000 deaths per 100,000 live births. There is a huge shortage of skilled birth attendants in most countries with the percentage of these professionals ranging from 25 to 45 percent continent wide [6].

3.2 Under-five Child Deaths-

Africa is the largest contributor to under-five deaths, accounting for almost 90 percent of global cases. In 2008, an estimated 4.2 million children under the age of five died of treatable and preventable conditions. Nigeria, Africa's most populous country is the second largest contributor to under-five deaths worldwide. Daily, Nigeria loses 2,300 under-five year old children to diseases ranging from pneumonia to measles and malaria [7]. The same fate is suffered across the region, while factors such as the lack of access to portable drinking water, nutritional deficiencies and premature introduction of supplementary foods remain major risk factors.

3.3 Infectious Disease Burden-

The prevalence rate of preventable, treatable infectious diseases is worrisomely high. Diseases such as Malaria, HIV/AIDS, Tuberculosis, and Parasitic diseases pose huge limitations towards the development of health care services at the most basic level in Africa. The region accounts for about 86 percent of the global 247 million deaths resulting from malaria, and this predicament has a telling effect on the economy [8]. Available data suggests that malaria alone reduces economic growth in Africa by 1.3% and it is the major excuse employees give for absenteeism from work. Environments are in non-hygienic conditions, characterized by poor waste disposal mechanisms and the presence of stagnant water which supports the breeding of mosquitoes, while laboratory diagnosis, insecticide treated mosquito nets and anti-malaria treatment drugs remain largely inaccessible to most of the majorly peasant population. Insecticide treated net use regionally is put at 3.5% for adults and 1.8% for children under-five [2].

HIV/AIDS still remains the number one cause of disease infection and deaths globally and Africa accounts for 70% of global new infections. Generally, 66% of global HIV infection lies in

Africa with an estimated 26 million people living with the infection across the continent [9].The challenges of mother-to-child transmission, adequate prevention programs, and early detection measures are major bottlenecks for health practitioners in the region. Similarly, tuberculosis which is only second to HIV/AIDS as the greatest killer due to a single infectious agent is a huge threat to the achievement of sustainable health. Morocco, a country in the Northern region of Africa which due to historical and cultural reasons are typically less affected by communicable diseases, is uncharacteristically struggling with high rates of tuberculosis infections, with 25,000 new cases reported yearly. Over one million cases of tuberculosis were reported by the World Health Organization in Africa in the year 2005. The Region accounts for 25% of the global notified cases of tuberculosis. On average, 35% of tuberculosis cases in the Region are co-infected with HIV, and tuberculosis accounts for approximately 40% of deaths in people living with HIV/AIDS [10].

Parasitic infections including water borne diseases and food borne trematodiasis are helped by a lack of access to safe drinking water and sanitation. Less documented diseases typically identified as Neglected Tropical Diseases (NTDs) such as Guinea worm infection, Schistosomiasis, Dracunculiasis, Onchocerciasis, Lymphatic filariasis, Burulic ulcer, Leprosy and human African Trypanosomiasis affect an estimated one billion people globally, with Africa bearing more than half of the burden. Also, diseases with a capacity of becoming community epidemics are suffered by millions of people throughout the continent. The incidences of such diseases as Cholera, Influenza, Cerebrospinal meningitis, and viral hemorrhagic fevers are on the rise. Cholera cases ranging from 150,000 to 200,000 per year are reported in more than two-third of countries within the region. Significantly, the number of emerging new diseases originating from animals makes the animal-human relationship a critical source of diseases that portray public health implications, especially among countries with a high population of livestock nomads [11].

3.4 Non-Communicable Disease Burden-

As much as there are a high number of infectious disease cases in Africa, the region has been experiencing an accelerated increase in non-communicable diseases, adding to the already heavy burden of communicable diseases. The World Health Organization postulates that if necessary steps are not taken, non-communicable diseases will represent at least 50% of mortality in the African Region by 2020 and that these chronic diseases will overtake communicable diseases as the most common cause of death in Africa by 2030 [1]. It also predicts that a major increase in the number of deaths in Africa will come from cardiovascular and respiratory diseases, such as asthma and chronic obstructive pulmonary disease (COPD),

both of which are related to fuel-burning for cooking and smoking [1]. Major risk factors for chronic non-communicable diseases are related to individual lifestyles and non-changeable risk factors including genetic and ethnic considerations. Indeed, increased urbanization in many African countries, along with growing incomes and changing lifestyles, have led to a rise in the rate of chronic conditions such as diabetes, hypertension, obesity, cancer and respiratory diseases. These threaten to put considerable further strain on already overstretched healthcare systems. In North Africa, lifestyle diseases are already more prominent given comparably wealthier populations and the eradication of many communicable diseases. With affordable tobacco, higher rates of smoking and urban pollution are leading to an increase in lung cancer [2]. Most worrisomely, the interplay of these new "lifestyle conditions" with Africa's most debilitating communicable conditions has created an entirely new double-disease burden, which most healthcare workers have not seen before, and which current healthcare infrastructure is ill-prepared to manage [12]. Moreover, there is growing evidence that communicable diseases and chronic conditions often exacerbate each other. For example, patients with diabetes are three times as likely to contract tuberculosis; Burkitt's lymphoma is linked to malaria; and HIV patients on antiretroviral treatment are at a higher risk of developing diabetes and cancer.

Dealing with non-communicable diseases comes with a changed preventive dynamics. Models are focused on behavioral changes and promotion of healthy lifestyle practices rather than therapeutic agents. Attention to primary care, literacy and sensitization is of utmost value. As shocking as it may seem, most of the chronic disease burden in Africa are yet to be identified, partly because of global interest in communicable diseases. Industry specialists' claims that a probable 85% of diabetes cases in Sub-Saharan Africa go undiagnosed. Currently, just 12.1 million diabetes patients have been recorded, a number that is expected to almost double to 23.9 million adult cases by 2030 [14]. In reality, this number represents a greater amount of people suffering diabetes than currently have HIV. This lack of preparedness is compounded by a lack of data. The Harvard School of Public Health's Partnership for Cohort Research and Training (PaCT) program, which was launched in 2008, aims to conduct a cohort study in four African countries—Uganda, Nigeria, Tanzania and South Africa, following 500,000 participants over a ten-year period [2]. According to Shona Dalal, an investigator with the program, one of the main goals is to quantify better, and to understand the causes of the current chronic disease burden on the continent with the ultimate goal of informing disease prevention.

3.5 Poor Funding-

ISSN: 2455-3220
Volume 02 Issue 02
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Health systems, ministries and commissions are generally underfunded throughout the continent, with an over reliance on foreign aids and support to pursue set targets. The global economic crisis certainly means that such system of dependence on donor funding, drug and equipment supplies as well as influx of expatriates on the grounds of charitable service delivery cannot be sustained in the long run. Sub-Saharan Africa commands less than 1% of global health expenditure, however, going forward, there must be an encouraged generation of indigenous resources and ideas to meet emerging health needs in the region, and governments must resolve to be committed to the pursuance of collective agreements especially as it concerns local funding. In 2001, 53 African countries signed the Abuja declaration, pledging to devote 15% of their national budgets to health; more than a decade since the agreement, most nations remain far from that target [16]. Sadly, reports suggest that at least 7 countries have actually reduced their health expenditure over the past decade, with only Tanzania, Rwanda, Burkina Faso and Botswana albeit inconsistently, able to earmark between 15% and 18% of national budget for the health sector at some point in the last decade. Kenya, Nigeria, Togo, Cote D'Ivoire and the Democratic Republic of Congo have posted the worst budgetary allocations to the health sector since 2009, ranging from as low as 2% to 6% [16].

Standard insurance systems and universal health care coverage has also been a major challenge for most countries. A handful of countries, including Ghana, Rwanda and South Africa, have taken steps towards universal healthcare coverage. However even in countries or communities that currently offer a form of insurance scheme, many drugs and services are not included and must be covered by individuals (example is in the Nigerian National Health Insurance Scheme that covers just about 15% of drugs and services obtainable).

In North Africa, the legacy of the French colonial period left Morocco, Algeria and Tunisia with varying levels of national health insurance coverage. Tunisia's health system benefitted from the French colonial legacy of robust infrastructure for primary healthcare and a strong medical education system. The country has built on these foundations over the past 30 years, making particular efforts in developing the health workforce and rehabilitating facilities. Yet, by some estimates, as much as 50% of health expenditure is currently borne by individuals in Tunisia, although it boasts some of the highest health indicators in Africa [2]. It appears to have the edge in many respects. Unlike many of its Sub-Saharan counterparts, the country has no malaria and low rates of HIV/AIDS. It has a tuberculosis rate that is one-quarter that of Morocco, and a maternal mortality rate that is half that of Algeria. With life expectancy similar to those of Europe and

America at around 75 years for both men and women, the main burden of disease is chronic conditions such as cardiovascular and respiratory diseases. According to Stefano Lazzari, World Health Organization (WHO) representative for Tunisia, "Tunisia has the best health indicators across the board of all the countries in North Africa". The country boasts a large number of qualified specialists, strong public and private hospitals, good equipment and a high level of services. Nearly 90% of Tunisia's citizens have access to health insurance that provides a relatively high level of basic services [2]. Coverage is funded through employee contributions and government subsidized cover for those who are unemployed. Despite its clear advantages though, Tunisia's current health challenge is similar to that faced by many of its African neighbors; an inefficient distribution of services, which reflects and contributes to social inequalities in the country. Dr. Lazzari stress that "In the rich coastal areas, the services are comparable to those in Europe, whereas in the interior of Tunisia the number of specialists and doctors, the quality of equipment and the coverage of services are all much lower". Tunisia's private sector currently serves only around 20% of the country's population. Yet it gets the lion's share of investment and attracts a disproportionate number of available medical professionals. Bridging this gap in health provision will be a major challenge for Tunisia, as is the perennial challenge for the entire the African region; but is one that the country is better positioned than most of its neighbors to take on [2].

The reliance on user fees as a mechanism of finance is not sustainable. Across Africa, the result of fragmented insurance and health coverage has been a growth in private financing and private provision of health care, a category that encompasses the profit sector and nonprofit providers such as aid organizations and missionary hospitals. A McKinsey study from 2008 reported that in Ethiopia, Nigeria, Kenya and Uganda more than 40% of people in the bottom 20% income bracket received their healthcare from private, profit-driven providers. Private insurance schemes have also been growing in countries with larger affluent populations or industries capable of funding large worker plans, as private companies and multinationals take initiative to design health insurance systems for their employees in partnership with private healthcare providers [10].

3.6 Human Resource Challenges-

Africa endures more than 25% of the global disease burden, but ironically, it has only 3% of global health workforce. This is grossly inadequate to say the least and it portrays one of the most potent threats to the actualization of Sustainable Health and indeed Sustainable Development within the region. Fundamental issues of human resource for health, health technology, research, information systems and

service delivery have been left unattended in most countries. As a result, there is a weak capacity to provide universal health coverage and deal with emerging health challenges, especially in response to issues of public health importance. Poor working conditions and financial remuneration continue to contribute to the ever increasing surge of brain drain continent wide. This inadvertently aggravates health inequalities within nations, making it more difficult to develop comprehensive primary and community healthcare systems and capacity building. Nigeria currently has close to 72,000 medical doctors registered with the Medical and Dental Council; however, only about 27,000 of these are practicing within the country [3]. The same fate is suffered by most countries within the region, with poor training facilities, battle with quack service providers, substandard health facilities, deteriorating professional qualifications and political instability all accounting for current human resource challenges.

Countries bordering with conflict regions suffer from transient and acute influxes of patients, hence unavoidably aiding medical tourism in the destination country. During the Libya crisis of 2011, more than 300,000 medical refugees crossed the border into Tunisia for safety, doubling the number of daily patients in some medical centers. Similarly, vaccination programs in the Darfur region of Sudan repeatedly reports a convergence of patients from neighboring Chad, where there is no such scheme [8]. Additionally, distribution channels for medical equipment and pharmaceutical products remain fragmented, and shortages of medicines and supplies are common in many countries, presenting a bulk of logistic challenges; a distraction some health workers in the region will rather do without. One important consequence of these logistical issues is the growing problem of counterfeit medicines and medical devices. Studies have shown that in parts of Sub-Saharan Africa, substandard medicines can range from an estimated 20% in Ghana to 45% in Nigeria, and up to a high of 66% in Guinea [11]. Yet continued affordability of life-saving medicines is the dominant concern for most. With a few notable exceptions, such as South Africa's Aspen, a manufacturer and supplier of branded and generic medicines, there is little domestic pharmaceutical production on the continent, leaving many countries dependent on imports from Indian and Chinese generics companies.

North African countries have a key advantage because they already have a developed local manufacturing sector for generic drugs, often involving joint ventures between local firms and Indian or Chinese companies. Yet a general preference for branded drugs also indicates that the population needs to be educated to encourage usage of less popular, but equally effective locally produced drugs. For instance, given the shortage of vital medicines such as

insulin in some parts of Africa, most stakeholders agree that the continent will almost certainly need to develop its own manufacturing capability for such essential drugs and vaccines. Again going forward, this simply means that the region cannot continue to endure gross inadequacy of health infrastructure and in some parts total unavailability of human capital.

Another obstacle is a lack of pharmacy degree programs in many countries and a critical shortage of product development capabilities. Equally problematic is the lack of a stable viable pharmaceutical market, for which Africa's reliance on donor funding could be partly responsible. Donations in some African countries have had a negative effect, shutting out the local industry. A country like Zimbabwe had experienced this difficulty when a local manufacturing company for mosquito nets treated with anti-malarial solutions was pushed out of business because of large donations of nets from a multilateral agency that sourced its products outside the country [2]. Certainly, Sustainable Development cannot be achieved on this equation of aid importation. Local content must receive utmost encouragement to positively check the challenge of human capital flight, brain drain and insufficient human resource within the continent.

THE FUTURE OF SUSTAINABLE HEALTH IN AFRICA

The coming decades does not hold much reason for optimism in African healthcare systems. All the challenges identified are as daunting as they are dispiriting. Unless cognitive exacting measures are quickly put in place, the resultant effects of the maladministration and mismanagement of the health sector in Africa will be too destructive for the continent to deal with. In order to have any bit of assurance in achieving Sustainable Development continent wide, a systematic wholesale restructuring of the healthcare systems is necessary; putting into context public-private synergy, sustainable financing systems, indigenous drug development, and human specialization across all fields within the health sector.

Governments must as a matter of necessity engage in the following:

4.1 Technological Development-

The use of technology must be fully exploited in order to build robust sustainable health systems across the continent. With the coverage of mobile phone usage, health information can be more effectively passed across to a larger population. The current idea that people must come to healthcare, instead of healthcare coming to the people is by definition reactive, un-futuristic, and not sustainable. Plans that allow patients to speak directly with qualified physicians, simply by dialing dedicated service numbers are already widely used in other continents and should be applicable in Africa going forward. Mobile phone applications and services that help in improving awareness and

education are being developed in some parts of Africa, however, the penetration level of these services need to be improved upon. Also, the challenge of training less-educated community workers to use mobile technology will have to be tackled within the next decade. Health call centers, SMS updates and toll free message services for ascertaining drug authenticity, as is applied by the National Agency for Food and Drug Administration and Control (NAFDAC) in Nigeria should be developed further. Telemedicine is indeed the future of healthcare systems globally, as it allows remote healthcare workers to confer with specialists in tertiary medical facilities for the purpose of general enquires, diagnosis confirmation, investigation and agreement on therapeutic procedures. Chinese and Indian companies are some of the biggest investors in video-related health technology in Africa. With an appreciable number of Indian medical practitioners in the continent, they develop and maintain strong base with their parent institutions overseas. India-based doctors are already treating patients across Africa remotely in regional locations including Nigeria, Egypt, Mauritius and the Democratic Republic of Congo [15]. The African hospitals are linked to specialists facilities in India under the pan-African e-Network project; a joint venture between the Indian government and the African Union [15].

4.2 Health Planning-

A thorough review of the structural composition of health systems throughout Africa is urgently needed. From Primary to Secondary healthcare, governments must resolve to find workable policies for health administration geared towards attaining universal coverage in the next two decades. This evolution will of course require new strategies, and incorporation of not only health workers, but also those in the education sector, agriculture, transportation, environment and rural development. A better relationship has to be developed between government and the rural populace who already feel desolate as a result of years of neglect. For too long, health systems have been adapted for those who are in the urban societies with relatively strong financial capacity. Going forward, we need to develop models to treat people in remote rural settlements where more of the African populace resides. For instance, even if cheap insulin is made readily available in rural areas, but they still need to be refrigerated, the idea of universal coverage will most likely be defeated.

Primary healthcare in Africa must be strengthened for development to be sustainable. Truth is there will always be large discrepancies in patient to trained medical personnel ratio; hence task-shifting to lay healthcare workers is likely the only way to provide quality, basic care to majority of the population. Non-professional health extension workers can be trained at little expense to assist in HIV support treatment, use glucose-testing devices, weighing scale and

deliver prescribed medicines; freeing up specialized medical staff to perform more complicated procedures and reduce pressure on over-stretched public hospitals. This allows communities to own and lead the charge, as the trainees being indigenes of the community will be highly committed and are less likely to be poached by foreign healthcare systems. This model is already employed in Ethiopia using the Health Extension Program (HEP) which trained workers to provide basic health information and education in rural areas where none existed before [4]. The initiative has trained and developed over 38,000 health extension workers throughout the country and today, more than 85% of the population has access to primary healthcare.

Access to secondary healthcare provided by skilled professionals who do not have first contact with patients also has to be improved. In this regard, the place of the private sector will be a key priority, with significant proportion of the urban population treated by private hospitals that develop agreement with companies for employee sponsored health insurance plans. However, in the long run, the most effective way of assuring favorable quality healthcare will come through public private partnership between government and multi-laterals. This will essentially involve private partners and governments getting into timed agreement to commit funds to strengthen health infrastructure.

4.3 Preventive Measures as the Focus of Sustainable Health-

In order for health and development to be sustainable in Africa, there has to be a focal shift from disease treatment to preventive care as primary concern. The continuous need to build more and even bigger hospitals remain erroneously celebrated as developmental strides, when in truth we need to cultivate a conscious mannerism that makes diseases unacceptable, instead of accommodating them in larger spaces. This will ultimately reduce the expensive cost of hospital stays, and prolonged treatment periods, especially with lifestyle diseases which tend to be perennial. Importantly, for this to be achieved, ample investment must be committed to biomedical research, immunization campaigns for common childhood diseases such as measles, diphtheria and hepatitis, and the development of vaccines especially against long standing infectious tropical diseases such as Malaria and Tuberculosis. To deal with the increasing threat of non-communicable lifestyle diseases, governments and agencies must place premium on public awareness on the dangers of illicit lifestyles, so as to prevent the development of these chronic diseases in the first place. Campaigns on healthy nutrition, sanitation and sexual health education targeted at achieving positive behavioral changes will be vital to successfully tackle diseases such as diabetes, hypertension, HIV and other sexually transmitted diseases. However, for those who

already live with these conditions, better and focused education on how to manage their health should be seen as crucial rather than an overreliance on expensive treatment and overstretched facilities and health workers.

4.4 Sustainable Financing-

Buttressing on the introductory remarks of this publication, it is worth reemphasizing that the current scheme of heavy reliance on foreign donors and contributions, as well as user fees that place the greatest burden on the poorest members of the society is not sustainable. International donor funding characteristically tends to focus on single ailments, rather than a comprehensive multi-condition healthcare system that Africa requires. Also, these funding are gotten from foreign governments or organizations which are not exempt from global economic instability, and hence can only provide short-term respite. In tackling financial inadequacy, there must be a sincere commitment to standard national health budgetary requirements, as well as better and efficient tax collection mechanisms throughout the region in order to effectively finance national health insurance frameworks. For the poor and middle-class population (most of whom are unemployed and cannot have access to employment related insurance schemes), a potential solution will be to develop micro-insurance plans in partnership with non-governmental organizations taking the cost burden of treatment in registered hospitals and clinics, rather than having these organizations just pump monetary donations to governments, ministries or agencies. In reality, countries must indeed find ways of living with less funding from external sources and pull funds from various sources locally to address funding gaps.

4.5 Local Manufacturing and Supply-

The Economic Intelligence Unit postulates that by 2022, continued economic instability will lead to huge cuts in foreign aid budgets and leave many donor organizations overstretched, with the result that many of them are forced to pull out of Africa. In essence this provides a massive opportunity of self-reliance for African governments. Years of external funding have succeeded in allowing foreign systems set health agendas for African countries, rather than African countries setting idealistic goals for themselves. Hence the advantage in dwindling or absence of external funding lies in the mandatory need for African governments, policy makers, organizations and stakeholders to define their health priorities and develop health strategies for themselves by themselves.

Many African countries have immense natural resource base, hence the future presents a need to exploit the economic gains inherent in these resources, in developing local manufacturing industries for drugs and medical equipments. African economies will certainly benefit from a focus on local content development, and international companies will be attracted to help develop generic drugs locally, train medical

personnel, set up research and development facilities on the continent, and ultimately reduce product import and human emigration. It definitely won't be an easy transition, but if we must plan for the future, we must start now. Dr. Letlape of the African Medical Association notes that "If we are at 90% donor funding now, let's create a plan that in 2022, we will move to 50%".

While we focus on indigenous drug development, governments must also put policies in place that make supply networks less cumbersome and more efficient, so as to maintain regular treatment courses. The government can partner with established private companies whom already have well developed distribution structure in helping to provide logistic expertise and smooth distribution logjams. This mustn't necessarily be pharmaceuticals, but any multinational with proven efficient local distribution chain can be partnered to provide this service be it beverage or courier service companies. The keys here are efficiency, universality, promptness and sustainability.

CONCLUSION.

Sustainable Health is not negotiable in pursuance of Sustainable Development in Africa. Africa's population is growing exponentially in the present and will have an even greater growth rate in the future; meanwhile current standards of operation become less effective as the days go by. Like other continents globally, we must reassess our health structure, however, we must approach these with the highest sense of urgency and strategic planning. Possessing the lowest medical personnel to patient ratio as a region globally isn't an enviable position taking into consideration the burden of infectious diseases the continent currently deals with. Bigger danger lies in the rapidly increasing cases of non-communicable diseases occurring alongside these tropical communicable diseases, and by 2030, non-communicable diseases will overtake infectious diseases as the biggest killers in the continent.

The challenges that lie ahead are daunting and require all hands to be on deck. Collective efforts involving governments, health workers and non-governmental organizations are needed. Hard political decisions must be taken by governments to tackle the challenges of the next two decades. This will come in form of unprecedented financial investment to the health sector as well as cutting reliance of foreign donors. The gap between the haves and the have-nots will have to be streamlined and drastically reduced. A broader vision on strengthening public-private partnership will be required in order to achieve universal health coverage in the shortest possible time. Above all, rural education, astute preventive measures, sanitation and good nutrition will be invaluable

in realizing Sustainable Health and Development.

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