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SDG 3 Landscape in Low and Middle Income Countries (LMIC) and Implementation Challenges

Lanskap SDG 3 di Negara-negara Berpendapatan Rendah dan Pertengahan (LMIC) dan Cabaran Pelaksanaannya

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ABSTRACT

The Seventeen Sustainable Development Goals (SDGs) presents opportunities for inclusive and resilient development pursuits. This article assessed SDG 3 landscape in the context of Low and Middle Income Countries (LMIC). SDG 3 focus on healthy lives and inclusive well-being, it has 13 targets. Health settings in LMIC are donor influence, in which cardinal issues are often ignored, concentrating on donor's priorities, a situation befitting who paid the piper dictate the tune dictum. The paper explored SDG 3 related issues and implementation challenges that looms over the LMIC, by analysing the SDG 3 components' strength, opportunities, and threats focusing on Sub-Sahara Africa (SSA). The study utilised desk literature survey approach, using defined key search terms to searched databases, applying diverse combinations covering diseases, research and policy themes, from which 235 papers were retrieved and checked for further review. The challenges confronting SDGs implementation in SSA are numerous; for example, 89% of the SSA are at risk of developing malaria; in 2014, 57.3 million children were stunted; progress was overshadowed by population growth and 40% lives in abject poverty, with 23% of under-nutrition status. These gaps highlight poor governance, an implementation challenge that need to be address. SDG 3 implementation strength lies with policy makers and bureaucrats, while its weakness depicts logistical, accountability and coordination deficits that requires stakeholders' rapport through collaborations. Successful implementation of the SDG 3 calls for trans-disciplinary collaborations and coordination in the shape of Public Private Partnership (PPPs), for inform policies that transform theory into action.

Keywords: Seventeen Sustainable Development Goals (SDGs); Low and Middle Income Countries (LMIC); Public Private Partnership (PPPs); policy makers; bureaucrats

ABSTRAK

Tujuh belas matlamat pembangunan lestari (SDGs) menunjukkan peluang kepada usaha pembangunan yang berdaya saing dan inklusif. Artikel ini melihat lanskap SDG 3 dalam konteks Negara Pendapatan Rendah dan Menengah (LMIC). Fokus SDG 3 ini menumpukan kepada elemen kehidupan yang sihat dan sejahtera secara menyeluruh yang mempunyai 13 sasaran. Pengaturan kesihatan di LMIC antara pengaruh penderma di mana isu kardinal sering diabaikan disebabkan hanya memberi penumpuan kepada penderma untuk menentukan tune dictum. Kajian ini melihat isu dan cabaran pelaksanaan SDG 3 berkaitan LMIC dengan menganalisis tiga komponen SDG 3 iaitu kekuatan, peluang dan ancaman yang memfokuskan kepada Sub-Shahara Afrika (SSA). Kajian ini juga menggunakan pendekatan tinjauan kajian lepas dengan mencari terma kata kunci dengan mengaplikasi pelbagai kombinasi data yang terdiri daripada jenis penyakit, kajian dan tema polisi dimana sebanyak 235 kertas kajian disemak semula untuk kajian pada masa akan datang. Cabaran pelaksanaan SDG dalam SSA adalah pelbagai misalnya sebanyak 89% SSA berisiko kepada pembangunan malaria pada 2014, 57.3 juta kanak-kanak menunjukkan peningkatan populasi dan 40% tinggal di bawah paras kemiskinan dan sebanyak 23% di bawah status nutrisi. Jurang kemiskinan antara kerajaan dan cabaran pelaksanaannya perlu ditekankan. Pelaksanaan kekuataan SDG 3 bergantung kepada pembuat dasar dan birokrat manakala kelemahannya menunujukkan defisit logistik, akauntabiliti dan penyelarasan memerlukan hubungan kerjasama dari pihak berkepentingan. Oleh itu, kejayaan pelaksanaan 3DG yang dipanggil sebagai kerjasama dan penyelarasan trans-disiplin dalam bentuk hubungan kerjasama awam swasta untuk menunjukkan dasar yang mengubah teori menjadi tindakan.

Kata kunci: Tujuh belas matlamat pembangunan lestari (SDGs); negara berpendapatan rendah dan pertengahan, hubungan kerjasama awam swasta; pembuat keputusan; birokrat

INTRODUCTION

Sustainable Development Goals number 3 (SDG 3) stipulations have drawn attention of analysts to the weaknesses of health care systems in low and middle income countries (LMICs) (Mills 2014). As such, this article highlights the SDG 3 landscape and some of the key implementation challenges confronting LMICs focusing on Sub-Sahara African region.

Africa, a home to about 1 Billion People, is the second largest continent with 52 countries and incredible opportunities as well as challenges (Johns 2002: 2). Forty eight of the African countries made up the Sub-Saharan Africa region (SSA), with each of the countries having its unique political system, resources, political will, and agriculture as the main source of income (Fanzo 2012; Abubakar et al. 2018). Health sector in SSA is confronted with enormous challenges of emerging and re-emerging diseases, inadequate health system due to poor infrastructure and acute shortage of skilled manpower (University of Botswana 2017). Notwithstanding, recently mortality rates among mothers and children have dropped down (Salomon et al. 2013). For example, children mortality rate has improved from 1.6% in the 1990s, to 4.1% from 2000 to 2015 (UNIGME 2015; Khandke 2017; UNECA, 2015). Despite this progress, about half of the global mortality rate caused by communicable diseases such as tuberculosis, malaria and HIV/AIDS occurred in SSA (WHO 2013; Salomon et al. 2013; Bhutta et al. 2010; UNECA 2015).

SSA countries strive to strengthen their health system to meet the Sustainable Development Goals (SDGs) combined (HSRC 2017). Through research and health information system development; knowledge management and health workers' capacity building (Sambo LG 2010; SDGC/A 2017). SDGs are 17 holistic and ambitious development agenda, forecasted to achieve more than the MDGs. However, achieving SDGs in SSA has its opportunities and challenges that needs expansive and complex solutions (SDGC/A 2017). A lot need to be done to ensure healthy lives and inclusive well-being for all ages is realised as stipulated in SDG 3 (UNAIDS 2016).

SDG 3 consist 13 targets and 26 indicators, it covers communicable and non-communicable diseases; reproductive, mental, child and maternal health, accessibility to affordable quality medicine and vaccines, Universal Health Coverage (UHC), health Research and Development (R&D), sustainable health financing etc., (Sustainable Development 2017). Implementing the SDG 3 in SSA requires functional health system across the region at country levels. For example, government as a matter of political issues, may opt to continue in the areas they performed well, instead of areas in dire needs (UN 2015d). Also, Bhattacharya, et al. (2016) suggest that Bangladesh should address areas of the MDGs' weakness as a means of achieving SDGs.

The main objectives of this paper was to explored SDG 3 landscape and implementation challenges such as governance, healthcare financing, health research capacity, human resources impediments confronting health systems in Sub-Sahara African region.

METHODOLOGY

The study utilised desk literature survey approach, using defined key search terms to searched databases, applying diverse combinations covering diseases, research and policy themes, region and countries of interest; from which 235 papers were retrieved and checked for inclusion. In accordance to the sections of the articles, papers consulted includes those that discussed health research (n=50), health care funding (n=33), communicable diseases (n=21), reproductive health issues (n=31), non-communicable diseases (n=26), human resources (n=21), governance (n=25), poverty (n=12) and nutrition (n=16) authored on SSA.

Electronic search for literature was conducted using database for articles in PubMed, MEDLINE, EMBASE and development partners' websites. We identified articles that reflect SDG 3 landscape and implementation challenges using search terms like SDG 3 landscape, targets and indicators; health system landscape; donor influence in health System; SDG 3 implementation issues; challenges confronting SDGs; and SDG 3 governance all in SSA. Our search criteria involved no language restriction and limited to articles published in January 2000 to May 2017.

This paper was arranged in three sections. Section 1 introduced Africa, SSA features, synopsis of the SDGs in the context of SDG 3, including the

main objectives of the study. Section 2 outlines the SDG 3 landscape in the SSA, using some of the targets as headings to guide the empirical narratives. Section 3 shed lights on the on the SDG implementation challenges along with recommendations.

SDG 3 LANDSCAPE IN SSA

Sub-Saharan African health system is confronted with several challenges that includes the never ending problems of infectious diseases and little or zero access to health care services by people living in rural settlements (University of Botswana 2017; WHO 2013). Other reported health issues are 49% of birth delivery attended by un-skilled persons between the years 2000 to 2014; inadequate health facilities, hard to reach rural location, strong financial obstacles and lack of trust in the formal health system (WHO 2014). Also, as an instance, burden of HIV within six years on annual bases among people aged 15-49 per 100 stands un-change at 3.7% in Guinea-Bissau, 3.5% in Nigeria and 3.2% in Ivory-Coast. Average life expectancy is 59.2 years in SSA, for example in Nigeria is 52.8 years and 51.6 years in Ivory-Coast (World Bank 2015a). Additionally, Mozambique is hit by mortality rates among females aged 25-29, rise in road traffic injuries in Democratic Republic of Congo, violence and conflicts in South-Sudan, Somalia and Lesotho, all impacted health outcomes (World Bank 2013).

Notable progress was achieved in reducing under five children mortality, maternal mortality and HIV/AIDS related deaths by 43 SSA countries within the year 2010 – 2013 (UNECA 2015). Notwithstanding this feat of progress, the SSA region lagged behind other region of the globe in terms of achieving MDGs, an issue in demand of improved health system to achieve SDGs agenda (WHO 2014). Recent past devastating Ebola Disease outbreak that killed over 28,000 people in Liberia, Guinea and Sierra-Leone, 2.1 million new HIV infections that occurred in 2013 and the lowest global figures of children sleeping under mosquito nets in Nigeria, are example of the need for health system strengthening in SSA (UNECA 2015; UN 2015).

Achieving global health agenda in SSA region as outlined in SDG 3 rely on strengthened health system (WHO 2014). The Thirteen targets and 26 indicators of SDG 3 strives to enhanced life expectancy, reduce common killers connected to child and maternal mortality; improved access to portable water and hygiene, ending the endemic of malaria, HIV/AIDS and TB; reduce road traffic accident by half; and prevent drugs and substance abuse by 2030. Also, SDG 3 ensures reproductive health services accessibility, achieve universal health coverage; reduce deaths due to hazardous chemicals and pollution; support medicine and vaccines research and development; support recruitment, training and retention of health workforce in developing countries (UN 2017).

The SDG 3 landscape is presented in proportion below under the following themes as headings; HIV/AIDS, Malaria, tuberculosis, reproductive Health, maternal health, child health, communicable diseases, non-communicable diseases, nutrition, and poverty.

HIV/AIDS

Sub-Saharan African region is devastated by HIV/AIDS prevalence responsible for 66% of the global burden (Matee et al. 2009). AIDS is the leading cause of adolescent's deaths in the region (UNDP 2017). 2.1 million HIV incidence occurred in 2013, a 38% lower cases in comparison to the incidence of 2001. Toward the end of 2014, about 13.6 million people accessed antiretroviral therapy in SSA. The feat was attained through infected person support, and health workers training in collaboration between government, international donors, private sector and local communities (Welle 2017).

In SSA 5.6% of women aged 15-49 are living with HIV in comparison to 3.9% of men of the same age. Also, 71% of adolescent's women and 29% of adolescent's men were also diagnosed positive (Palais 2016). Progress were made in reducing HIV infection among children in SSA by 76% between 2009 and 2014 in South-Africa., 72% in Tanzania, 69% each in Uganda and Mozambique, 65% Ethiopia, 64% in Namibia, 27% each in Cameroon and Democratic republic of Congo, 26% Ivory-Coast, 25% Angola, 19% Chad and 15% in Nigeria (Palais 2016). In Kenya about 1.5 million (6%) lives with HIV in recent years, while in Uganda approximately 7% of the population were infected with the virus (Welle 2017). SDG 3 is committed to ending this menace and that of other communicable diseases (UNDP 2017).

MALARIA

Malaria is the most common tropical disease, subjecting half of the world population to risk of being infected. Although, treatable and preventable condition, but still cause a significant amount of morbidity and mortality (WHO 2016b). SSA accounts for 89% global burden of malaria cases, with 235 incidence rate per 1000 at risk population (RSG 2015). Efforts of reducing malaria burden globally, have seen a cut of 62% in malaria deaths between the year 2000 and 2015, however, 429,000 victims lost their lives to malaria in 2015, majority of them children (UN 2017).

Despite improved healthcare delivery services in several SSA countries, notably from 1990 to 2011. Yet, several people in the region are still victims of malaria deaths (MSDG, 2016). The incidence is significantly higher in West Africa with 73 mortality rates per 1000,000 at risk population. For example in Nigeria 107 deaths occurred; in Sierra Leone 109, 105 in Guinea and 131 in Niger (UNDPHDI 2015).

Insecticides Treated Nets (ITNs) are central to malaria prevention techniques. In 2015 53% of at risk population slept under ITNs as against the 30% in 2010. Indoor Residual Spray (IRS) and insecticides used in at risk areas, protects about 49 million people (WHO 2016a; WHO 2016b). Also, malaria in pregnancy constitute risk to mothers, foetus and the new-born. The proportion of pregnant women who received malaria preventive therapy in SSA increases over time, but the coverage levels is still below national targets (WHO 2016b). Pressing issues such as poor health system, poverty, natural disasters, substandard drugs etc., pose a challenge to malaria control efforts (WHO 2016e).

Workers at different field of development only function, when they are fit and well for the job. This feat reflects the importance of SDG 3 implementation as cardinal to achieving the 2030 agenda (MSDG 2016).

TUBERCULOSIS

Tuberculosis was one of the deadliest and most life threatening diseases in the 90s, but at the tune of the millennium its tragic effect was reduce by 46%. Over time prevalence rate of tuberculosis have reduce by 41%, and death rate by 45%, also TB-related mortality has reduced by 36% (MSDG 2016).

Cases of Tuberculosis remains an issue of substantial concerns in SSA countries like Guinea-Bissau with 369 cases per 100,000 of at risk population, 322 in Nigeria, 310 in Sierra Leone, and 308 in Liberia respectively. Between 1990 and 2013, tuberculosis death rates was reduced by 45% and new cases by 41% (World Bank 2014).

Additionally, countries in SSA are poorly staffed, the ratio of the physicians in the region, is on the average of 1.9 per 10,000 people. Public sector health expenditure is higher in West African than other SSA countries (UNDP-HDI 2015).

REPRODUCTIVE HEALTH

Population growth in the SSA region from 1990 to1995 declined from 2.7% to 2.6% in the years 2000 to 2010. West African population growth was 2.3 times higher than the global average between 2010 and 2015, thus; 7.6% in Niger, 6.9% in Mali and 6% in Nigeria respectively. Fertility rates among adolescents in the region is 114 births per 1000 women of reproductive age (15-49). Niger Republic has a higher adolescent's fertility with 203 births, follow by Mali with 175.4, 141.7 Guinea and 135.5 in Cote d'Ivoire. Therefore, population growth in the region is a major concern; with reduction in death rates and increase in birth rates, coupled with food insecurity, ailing health and poor education system. Succinctly, the sharpest world population growth is expected to happen in Nigeria by the year 2050. Nigeria has a projectile population growth of approximately 389 million in 2015 (World Bank 2015a).

MATERNAL HEALTH

Sub-Saharan Africa has the highest ratio of maternal mortality rates with 546 deaths per 100,000 live births in 2015, against the global average of 216 deaths (WHO 2015c; WHO 2016c). Achieving SDG 3.1 targets of reducing maternal mortality in SSA, where most of the tragic incidence occurs, could be achieved through good nutrition and qualitative health services (WHO 2016c).

Proportionately, maternal mortality rates is 14 times higher in SSA than in the developed region, despite the increase in antenatal care attendance from 65% in the 1990s to 83% in 2012, only few mothers received the recommended health care needed during pregnancy. Utilization of contraceptives was in decline in the 2000s, nevertheless, the needed family planning services in SSA is scaling

up, exceeding the demand due to the rapid pace it assumes (UNDP 2017).

CHILD HEALTH

Mortality rate of children under the age of five is higher in SSA with an average of 86.9 deaths per 1,000 live births. For example, 126.4 children dies in Sierra Leone, 112.5 in Nigeria, 100 in Ivory Coast, 118 in Mali and 124 in Guinea Bissau. While, 17,000 deaths of children noted in the 1990s had reduced of recent; from the year 2000 to 2015 about 15.6 million deaths were averted due to measles vaccine. Despite the efforts, 4 out of every 5 deaths of children under 5 years occurs in SSA. Children born by poor family are twice likely to die before the age of 5 in comparison with those delivered by the wealthy family. Also, children of educated mothers with minimum of primary education are likely to enjoy more life span than those born by illiterate mothers (World Bank 2015a).

There is however, a decline in child mortality in the SSA region due to reduction in the cause such as respiratory infection by 22%, diarrheal diseases by 34%, and malnutrition by 17%. Despite this progress, mortality rate among children and mothers dominate the region health system in a sustain passion (Murray 2013).

COMMUNICABLE DISEASES

Communicable Diseases (CD) is one of the causes of morbidity and death in SSA for many reasons, such as social inequity, poor health systems, in-adequate budgets and poor governance. Other factors responsible includes vector infestation, demographic factors, human migration and displacement. Despite the progress made in economic growth, technology, sanitation and medical knowledge, the burden of CD remain static in SSA. 72% of the CD cases are attributed to poverty, interactions between animals, people and eco-system (Mboera et al. 2014).

Prevalence of CDs among the neglected, poor and marginalized population in SSA attract funding and expertise to address it. Several CDs are related to environmental issues, influenced by social determinant, resources accessibility, decision making and coping ability (Mboera et al. 2014).

NON-COMMUNICABLE DISEASES (NCDS)

Non-communicable diseases (NCDs) like diabetes, cancer and cardiac diseases are among the killer diseases in SSA (Tapela 2017). NCDs are projected to cause around 3.9 million deaths by 2020 in SSA. NCDs presents an impediment to growth in SSA countries by affecting socially and economically disadvantage groups, resulting in their premature death. Dealing with NCDs required competence human resource to detect, protect and treat the NCDs through evidence based practice (Meeme 2015).

Poor dietary pattern and lack of exercise caused obesity that end up in NCDs, therefore, to prevent NCDs, ill cultural practice should be discarded (University of Bostwana 2017). Lack of NCDS data in SSA countries make the WHO assumed that only one in five SSA countries possessed the necessary data to guide cancer prevention plan (Tapela 2017). Data is used to identify patients in need of more caring and vice versa.

NUTRITION

SSA is the second region of the globe with the highest burden of hunger, affecting roughly 239 million people. Food security breaks a vicious cycle of poverty, hunger and malnutrition; it also ensures good nutrition and health, improve maternal and child health (Fanz 2012). 28% of children in SSA are underweight due to poor socio-economic status, food inflation, poor health seeking behaviour etc., (UNICEF 2017). Reducing the burden of infectious diseases could also have a profound impact on food security and nutrition (FAO 2017).

Nutrition statistics of the SSA countries is alarming. For example, in Nigeria 36.4% are stunned, Liberia 42%, Niger 43%, Benin 44.7%, Sierra Leone 45% and Mali 39% (UNDPHDI 2015). Prevalence rates in West African region of the SSA is relatively lower except in Liberia with 32.5%, Guinea-Bissau 22% and Sierra Leone 22.7% respectively (World Bank 2014).

About 1 in every 3 stunted children lived in SSA, while 2 in 4 lived in Asia in 2016. Stunted growth are linked to poor nutrition in the first 2 years of a child's life; a situation that caused impaired cognitive ability, reduced school hours and performance (UNICEF 2017). Malnutrition crisis remains a challenge to researchers and policymakers, due to its uniqueness (SciDev 2017b).

POVERTY

According to the 2013 Gallup World report, ten countries with high number of people living in extreme poverty are in SSA. In 2010, 414 million lives in extreme poverty in SSA; extreme poverty means living on not more than $1.25/day; according to World Bank, 48.5% of the SSA people lives on this amount accounts (Packtor 2017).

However, the level of extreme poverty in SSA has dropped from 56% to 43%, from 1990-2012; annual economic growth averaged at 5% annually; disease prevalence dropped by over 50% (SDGC/A 2017). Despite the improve circumstance, 75% of the global poorest countries are in Africa, this includes Zimbabwe, Liberia and Ethiopia (World Bank Group 2016). The Central African Republic ranked the poorest in the world with a GDP per capita of $656 in 2016 (Packtor 2017).

SDG 3 IMPLEMENTATION CHALLENGES IN SSA

Sub-Saharan Africa is a contextual region with several sustainable development goal indices as well as their implementation challenges (DFAT 2017). Implementation of the SDGs in SSA needs political will and disciplinary collaborations to address the challenges of health crises (Sablich 2017; The Conversation 2015). The challenges are complex and numerous in both SSA countries and around the world (Sablich 2017).

The challenges include poor national health systems across the region, brain drain, services fragmentation, management burdens and lack of fund (Pfeiffer et al. 2008). The SDG 3 implementation challenges for SSA lies within the countries' health care systems' ability to function effectively and/or in partnership with sectors outside the traditional health care system, such as the social and environmental issues responsible for the emerging and re-emerging diseases and health disorders. The following under-listed headings denotes overview of SDG 3 implementation challenges.

GOVERNANCE

Health system governance means implementation of health services (Lewis & Petterson 2009). Health system in SSA region is marred by poor health facilities, mismanagement and corruption (Mooketsane & Phirinyane 2015), an impediment to achieving SDG 3. SDG 3 implementation governance rely on national government commitment, partnership, investment and funding (Bernstein 2015; ECOSOC 2014), leadership and long-term strategic plan (WHO 2014). Indeed, successful implementation of the SDG 3 is leadership bound (Zuma 2015).

Therefore, leadership equipped with needed resources are central to effective health system management (Curry et al. 2012). Effective health system governance is a product of sound leadership, a concept that ensures health services delivery. For example, Ethiopia through health system governance scale up health extension workers capacity, reduce malaria incidences and infant death rates; Ghana achieved an improved feat in maternal mortality; Liberia accomplished a post war universal healthcare package; Rwanda recorded a tremendous success in infant death reduction (Curry et al. 2012). However, health system governance in several of the SSA countries is confronted with confounded challenges of extreme poverty, food insecurity, poor health system, inadequate resources (human, machine and money). Also, lack of public confidence in public authority further complicate health system governance in most of SSA countries (SDGC/A 2017).

Moreover, issues of governance implementation challenges lie in the stand-alone traditional means of operating government Ministries Department and Agencies (MDAs). MDAs need to operate interdependently, going beyond traditional approach of independent operations. SDGs implementation right from inceptions encourage trans-disciplinary collaborations in planning and implementation processes (SDGC/A 2017). SDGs interconnects the pillars (social, economic, environmental) of sustainable development and roles of the state and non-state actors in achieving it.

The SDGs encourage countries to embrace synergies across sectors that naturally denote benefits through partnerships between MDAs and stakeholders. Leadership is required from government to ameliorate social norms and cultural discourse around SDG 3 targets and indicators toward mitigating the implementation challenges for the success of the 2030 agenda (Sachs 2015).

Government of a nation is solemnly responsible for health services deliver to its citizens. Therefore, SDG 3 implementation, required improve and influential national and regional governance in line

with global development stipulations reflective of partnership between public and private sectors.

HUMAN RESOURCES

Challenges of inadequate human resources for health are escalated by brain drain syndrome; man-made and natural disasters; and inadequate financing (World Bank 2012). Human resources for health is essential for SDG 3 implementation, it calls for health workforce capacity development for effective service delivery. Proliferation of NGOs in SSA due to high burdens of HIV contribute to the 'brain drain' from the public sectors, creating successive and excessive human resources shortage through luring of nurses, doctors and other health professional to where salary, benefits and other incentives are better and encouraging (Farmer 2006).

In SSA countries, health professionals who implement medical and health services across all cadres are in short supply, health literacy was inadequate; this apparent health system gaps present an obstacle to SDG 3 implementation (Hanlon et al. 2014).

Improved health workforce reflects recruitment, training and redeployment of personnel, motivation and incentives, leadership and political will (SciDev 2017a).

HEALTHCARE FINANCING

Funding is cardinal to achieving effective and functional health system. Funding is vital to achieving the Universal Health Coverage (UHC) (UN 2012). In SSA, about 40% of healthcare funding is Out-of-Pocket (OOPs), a regressive means of funding health services (James 2005; WHO 2014). Concentration of health service delivery points in the urban centres is an impediment to the success of the 2030 health development targets, like UHC (Chopra et al. 2009). Healthcare financing in SSA is characterised by gaps in public investment, weak health financing policies and management, poor resource utilization, excessive OOPs and inadequate to near zero social protection of vulnerable members of the society (WHO 2014). Also, high disease burden profile, morbidity and mortality rates, attract foreign aid health system to SSA; with its resultant consequential over reliability on donor financing, which pose a serious challenge to health project sustainability (Collins et al. 2013). Additionally, issues of extreme poverty, social inequality, food insecurity, disregard of areas of dire need by health donors further confounds health system financing challenges in SSA.

To ensure health system funding sustainability, African countries through the African Union (AU), during the 2001 Abuja declaration, agreed to dedicate 15% of their annual budget to health, a feat attained by only six countries - Botswana, Madagascar, Rwanda, Togo, and Zambia (WHO 2014), but the quality of the funding in these countries is difficult to ascertain due to poor data quality (Ezeh 2017). These are partly attributed to reliance on foreign aid, which made the region the highest in the globe with double digits at 10.5% (World Bank 2012), while other region received only 1% of their healthcare funding from external sources (Musango et al. 2013). For example, in 2008, about 20.7% of the healthcare funding in SSA countries emerged from the external sources; 51% reliability in Ghana, 41% in Nigeria, and 25% in South Africa. Accra Agenda for Action and Paris declaration, provides guidance for the reception and donation of external finances by SSA countries (Burke & Sridhar 2013).

According to the World Bank (2015c), SSA countries are confronted with increase per capita healthcare expenses. For example in Ghana and Ethiopia healthcare cost per head grew by more than 195% from 2003 to 2013, despite UHC reforms put forward by these countries (Li et al. 2016), while in Nigeria, the mechanism of healthcare expenditure allocation is not clear (Burke & Sridhar 2013). Summarily, there is need for health and health related sector investment in SSA region thus; assessment of health funding needs, monitoring, evaluation and accountability framework (WHO 2014), as a panacea to growing health financing challenges.

TECHNOLOGICAL

Technological application play a critical role in SDG implementation, by eliminating several paper work, and human involvement. Technology enhance information dissemination across networks, resource sharing, status update and multiple participation. Above all, technology provides data sharing and communication platform among implementing partners. It also provide an avenue for online interaction and web based engagements. Technological constraint in SSA pose diverse

challenges, thus demographic data, reliable health system procurement and accountability mechanism among others. Gaps in distribution of accurate and routine information on the causes of maternal deaths constitute a hindrance to implementation, interventions, tracking and interpretation of the needed data (Say et al. 2014).

Information and communications technology (ICT) and network connectivity remains underdeveloped in the SSA region. The trend contributes to the indwelling weak healthcare systems. Also, most of the national Health Management Information Systems (HMIS) are unable to present accurate, real-time data needed for planning and delivery of SDG 3. Technology-based approaches to healthcare are required in the SSA regions, with which to improve decision-making, accountability mechanism, diagnostics and development services. Moreover, research and development centres lack the technological capacity to effectively conduct accurate disease diagnostic services, generates evidence base practice, advance science, build robust research capacity among others (Collins et al. 2013).

The needed demographic data for achieving several of the SDG 3 targets in SSA remains scarce; known as "scandal of invisibility". Only few SSA countries possess a comprehensive system of Civil Registration and Vital Statistics (CRVS). Technological investment in form of improve data availability is required to monitor SDG 3 implementation progress. Inclusiveness attributes of SDGs is technology base, therefore, qualitative information dissemination is at the centre of 2030 agenda implementation, and vice versa.

HEALTH RESEARCH

Health research is crucial to SDG 3 implementation. Health research outcome provides the needed health system information, for efficient, accurate and effective implementation of health SDG. Actions that guide health services implementation include: policy and strategic plan, functional ICT, human resources for research, and collaboration (EDCTP 2014).

Health research findings are transformed into information and knowledge, which in turn guides health system development, policy reform, ethical oversight, funding mechanism, monitoring tools and framework that transform theory into practice (Kebede et al. 2014). These feats are not without challenges thus, inadequate trained personnel, facilities and network of practice communities etc. Health research outcome direct the application of knowledge management to address challenges, improve program implementation, guide health resource allocation, identify priority areas in consideration of know-do-gap phenomenon (Kebede et al. 2014).

African health systems is still suffering from inadequate health research capacity (SCIDEV 2017). Mbondji et al. (2014) reported that almost two-thirds of institutions studied have the focus of their research objectives toward national level, which means that research are geared towards national health issues, disregarding sub-national issues. Moreover, leadership and coordination at the national level is lacking, given that only one fifth of countries have a functional national health research management body, this reflect under-development of health research systems (Kebede et al. 2014).

Three important barriers to conducting health research in SSA are identified highlighting coordination gaps, thus; lack of coordinating network, collaborations and poor communication network between researchers and institutes (Mbondji et al. 2014).

Most countries of SSA have low status of publications (Horton 2000), with South Africa as the 29th of the 193 countries that produces 97.5% of the most cited peer review paper (King 2004). Not much is known about the papers published among the countries in SSA. Also, collaboration among researchers in SSA countries in comparison to developed countries like the USA and UK (Chuang et al. 2011).

Communication between researchers and policymakers encourage the use of evidence base findings (Innvaer et al. 2002.). Regional networks of researchers can play a critical role of supporting appropriate national research priority setting (AHPSR 2007). Development of research network helps in collecting, sharing, accessing and use of information and data, to address the challenges research conduct within and/or outside the country (Kebede et al. 2014).

ENVIRONMENTAL ISSUES

SSA region suffers from challenging environmental issues, thus bush clearance, soil erosion, desert encroachment, land degradation, and vector infestation. Clearly, this environmental issues need

to be examine critically and integrated into SDG implementation strategy. Mitigating these problems, have been confounded by failure to understand the nature of the problems and possible remedies.

Formulating environmental protection strategy by countries in SSA region is dropping against all development indices, due to the consequential effect of inappropriate policy, political instability, and poor economic management among others. Concerned have been that the growing environmental challenges compromise the prospects of implementing.

It is apparent that environmental problems in SSA are complex in the sense that development approach adopted did not adequately improve average living standard. Also, the region abundant resources are over explored and under-utilized; most relevant environmental changes knowledge remains inadequate. It is on record that environmental situation of SSA countries is in dire limbo and almost retuning to the drawing room of wallowing in to environmental hazards (Mabogunje 1998).

CONCLUSION

Various pros and cons of the SDG 3 were highlighted in relation to Sub-Saharan African countries. Therefore, successful implementation of SDG 3 in the SSA regions hinges strongly on quality of health governance. As, such, achieving 2030 health targets need break through policy formulation and implementation, increased financing, improved technology and accountability mechanism at all levels of development, through collaboration, because implementing SDGs is not a one sector task, but a multi-stakeholder approach. Therefore, SSA countries need to formulate strategies that ensure trans-disciplinary collaboration between the trios of the governance sectors (public, private and civil society), for effective implementation of the SDG 3 agenda. Additionally, SSA region's inordinate health related challenges, are in need of better health system, equipped with trained health professionals, to vouch for the persistent trend of brain drain syndrome, among others to confer solution to the challenges confronting the SDG 3 implementation. Other in need interventions for successful implementation of the SDG 3 are sustained funding; sincere political will and government commitment.

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