

Building Resilient Societies in Africa for the Future: Conceptual Considerations and Possible Resilience Constituents

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Abstract

Predicting the future is usually a herculean task. But failing to plan for the future using scientific and reasonable prediction tools may guarantee failure of states and societies. African countries have been experiencing different challenges across sectors ranging from increasing development of informal settlements in urban centers, and youth unemployment to hunger, food insecurity, and prevalence of neglected tropical diseases. Many societies are vulnerable to various micro and macro scales shocks and stressors such as family disruptions, conflicts, climate variability, and technology-induced displacements. Such occurrences have been argued to be responsible for social disorganization and different forms of population movements. In this paper, we discuss these shocks and stressors and suggest the need for African countries to consider making resilience thinking central to the planning of their countries for the future. We argue that resilience should not be perceived as an alternative to development practice, but rather integral to development pursuit. We specifically focus on social resilience and socio-ecological resilience. Cognizant of the multidimensional nature of the concept of resilience, we do not intend for our ideas to be perceived as prescriptive. However, when particular attention is paid to resilience attributes like “stressors driving change,” “anticipatory learning,” and “social capital,” in attempting to answer the questions of resilience of what and resilience to what?, Africa will be on its way to building resilient societies.

Keywords: Africa, Resilience, Sustainable Development Goals, Development, Planning.

Introduction

Planning is central to the development agenda across space and scale. From local authorities to national governments, development programs are usually accompanied by forms of planning documents to guide the process and take stock of progress. A number of development plans have emerged across Africa and these primarily focus on economic development with specific targets. Some of these plans incorporate human development issues and, therefore, explicitly state human development index targets. While individual countries have enacted their own development plans, the African Union has formed a development agenda for the entire continent termed “Agenda 2063 – the Africa We Want.” The document contains seven aspirations of the African people. These are: “(1) a prosperous Africa based on inclusive growth and sustainable development, (2) an integrated continent, politically united and based on the ideals of Pan-Africanism and the vision of Africa’s Renaissance, (3) an Africa of good governance, democracy, respect for human rights, justice and the rule of law, (4) A peaceful and secure Africa, (5) an Africa with a strong cultural identity, common heritage, shared values and ethics, (6) an Africa whose development is people-driven, relying on the potential of African people, especially its women and youth, and caring for children, and (7) Africa as a strong, united and influential global player and partner” (African Union Commission, 2015, p.2). Each of these aspirations comes with its goals and targets. Some of the goals include: eradicating poverty in one generation, achieving best performing quality of life measures, attaining fully developed human capital, having consensus on the nature of the continental government and institutions, promoting human and moral values based on inclusion, as well as eliminating all forms of discrimination and violence, especially those against women and children. Each member country is expected to work towards the achievement of these aspirations, especially while emphasizing the need for an integrated continent.

A few national plans that used the United Nations Millennium Development Goals (MDGs) as their framework, measured successes using the targets of the MDGs. For instance, Ghana prides herself in being the first country in sub-Saharan Africa to have reduced poverty by half thereby meeting the first goal of the MDGs (UNCG and CSO Platform, 2017). Currently, a number of African countries have adopted the framework of the United Nations Sustainable Development Goals (SDGs) and their corresponding targets as the yardstick for progress in their countries. Uganda was one of the first countries in Africa to form its national development plan in accordance with the goals and targets of the SDGs. While adapting the SDGs to the Ugandan context, the government asserts that their development plan dubbed Uganda Vision 2040 reflects approximately 76% of the SDGs targets. The document states that “...Uganda is in a uniquely advantageous position to lead by example by adopting and localizing the SDGs, and implementing projects geared towards achievement of the SDGs, particularly those that fit within the current national development obligations...” (NPA, 2015, p.89). Apart from Uganda, other countries like Sierra Leone, Togo and Madagascar have engaged the United Nations Development Program team to conduct monitoring and evaluation of their implementation of the SDGs (UNDP, 2018). Tanzania has revamped its Tanzania Productive Social Safety Network program – designed to aid people (especially women and children) living below the poverty line to access food and healthcare services – to incorporate essential elements of the SDGs in order for them to achieve the goals of the Tanzania Development Vision 2025 (UN, 2017). Nigeria has adapted the SDGs and its implementation and monitoring is directly under the Office of the President manned by a Senior Special Assistant to the President on SDGs (OSSAP-SDGs and NBS, 2017). All over the continent, the SDGs have been adapted to the local context in various countries and the establishment of the Sustainable Development Goals Center for Africa, which is headquartered in Rwanda, is expected to expedite progress in achieving the targets of the SDGs.

A closer look at the challenges facing African nations illuminates the essence of having the UN goals and targets domesticated on the continent. In this paper, we discuss some of the major challenges facing African countries even as they plan to ensure development and suggest that resilience-thinking should be at the core of the planning of African societies. While we do not engage in much detail the theory and praxis of development and planning, we believe that any development agenda pursued with the Global Goals in mind would be able to fit resilience thinking at the center. A number of development theories are discussed to show that the idea of resilience is amenable to development practices of any form and resilience ought to be conceived as core component of development. We begin by discussing the broad ranging social problems, challenges, and shocks the continent is facing and continue to review theories of development. Then we proceed to discuss resilience theory and propose a framework to serve as a guide for incorporating resilience in development planning of African countries across scale. A few national plans that seem to suggest that resilience thinking is framing the national development agenda are discussed and we problematize the loose use of resilience and lack of operationalization in implementation plans. Please note that these plans are not meant to be representative of national development plans of all African countries. Finally, we stress the need for African nations not only to focus on current challenges, but to anticipate future stressors that may attempt to derail current and future development gains.

Problems, Stressors, and Challenges in African Countries

National aggregate data shows that African countries perform the worst in terms of all the global development indicators. While this might sound cliché, it is crucial to appreciate the enormous development tasks ahead for successful planning and implementation of programs. Each of the indices of the MDGs and SDGs when examined elucidates the current position of African countries and the urgent need to accelerate the development agenda. We do not intend to assess all the goals but to highlight a few ones with direct relevance for social welfare and well-being as a way of demonstrating the enormity of the challenge.

Firstly, the goal of “no poverty.” The debates surrounding the concept of poverty (e.g. that it is subjective and that it has to be context-specific) make it difficult to compare poverty levels across space. However, evidence show that there are millions of people who lack the basic necessities of life. While globally there is an estimated 800 million people who live on less than US\$1.25 a day, 415 million of them live in Africa (Chandy, 2015). In other words, more than half of the poor people on the planet live in Africa. Secondly, the SDGs goal of zero hunger aims at ending starvation, achieving food security, and improved nutrition. Data from 2016 shows that 25% of the 815 million undernourished global population live in Africa. In fact, the number of people undernourished in Africa increased from 200 million in 2015 to 224 million in 2016; this has been attributed to conflicts and impacts of climate change (FAO, 2017). Although the prevalence of undernourishment seem to have substantially reduced globally during the period of the MDGs, that is, between 2000 and 2015, some African countries experienced upward or inconsistent trend during the same period (Figure 1). Meanwhile, those that show a downward trend still have unacceptably high undernourishment rates (e.g. Chad). While Central African Republic, Guinea Bissau, Liberia, and Lesotho all at some point between 2000 and 2015 experienced reduction in percentage of the population whose food intake is insufficient to meet dietary energy requirements continuously, by the end of the MDGs these countries were seeing increase in prevalence of undernourishment (Figure 1).

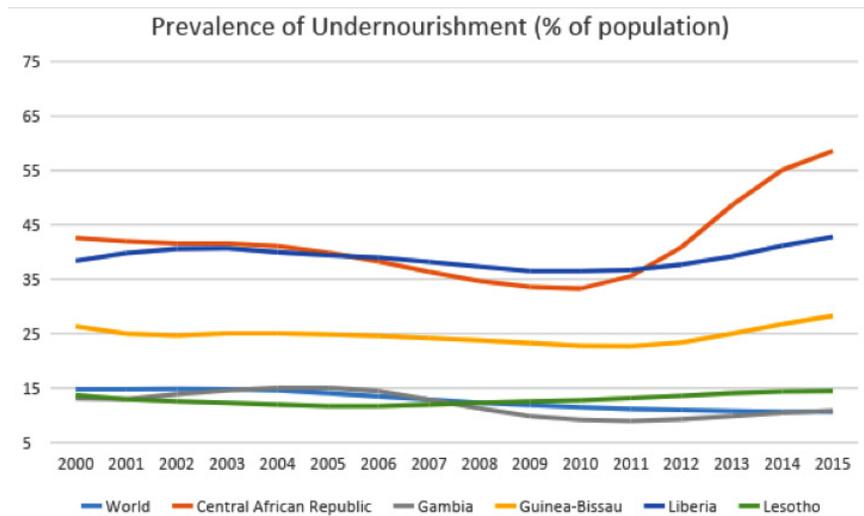


Figure 1. Prevalence of undernourishment as a percentage of the total population. (Data from World Bank)

Thirdly, the SDG of good health and well-being for all at all ages is expected to, among other targets, reduce child mortality rate, maternal mortality ratio, death due to non-communicable diseases, and achieve universal health care coverage. The world has achieved reducing child mortality. Globally, the under-five mortality rate decreased to 41 deaths per 1,000 live births in 2016 from 93 deaths per 1,000 live births in 1990 (UN IGME, 2017). Although under-five mortality has reduced substantially at the global scale, sub-Saharan Africa's child mortality rates are among the highest in the world. Children in sub-Saharan Africa are at a higher risk of dying before their fifth birthday in comparison to their peers in all other regions of the world apart from South Asia (See Figure 2). With regard to neonatal mortality, sub-Saharan Africa still has high rates. Out of the five countries that are responsible for half of all deaths to newborns, three of them are in Africa. The countries are Nigeria, the Democratic Republic of Congo, and Ethiopia (UN IGME, 2017). Non-communicable diseases (NCDs) are the leading causes of mortality globally. There are four main categories of NCDs according to the World Health Organization (WHO). These are: cardiovascular diseases like strokes and heart attack; chronic respiratory diseases such as asthma and chronic obstructive pulmonary disease; diabetes; and cancers. These diseases have four central amendable behavioral risk factors in common namely tobacco use, harmful use of alcohol, lack of or inadequate physical activity, and unhealthy diet. Of the estimated 56 million deaths in 2015, NCDs accounted for 70%. While this SDG sets out to reduce mortality due to NCDs, sadly, it has been projected that deaths due to NCDs is expected to increase by 17% globally and 27% in Africa over the next 10 years (WHO, 2017); and NCDs has been projected to become the leading cause of death by 2030 in Africa (Naik & Kaneda 2015). Meanwhile, the anticipated cumulative economic losses resulting from NCDs over a 15 year period given the status quo in low- and middle-income countries will be about US\$ 7 trillion (WHO, 2014); a testament to the inextricable link between the health of populations, their economies and the grave ramifications for poverty reduction.

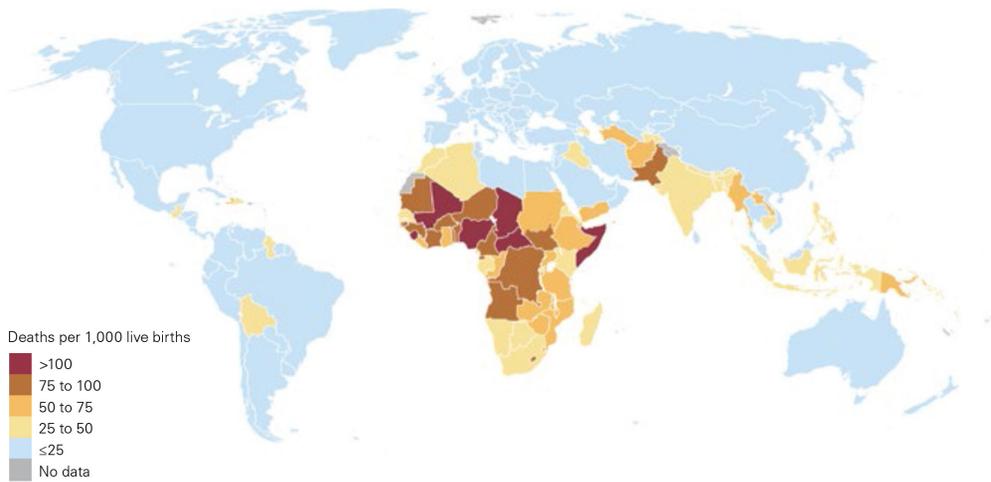


Figure 2. Child Mortality Rates by Country, 2016. (Adapted from UNICEF, 2017)

The fourth goal of the SDGs aims to ensure quality education for all and foster lifelong learning. The major targets of this goal include, but not limited to, equal access to all level of school irrespective of one’s sex (i.e. thereby ensuring gender equality in education, which is in consonance with SDG 5), achieving literacy and numeracy among substantial number of youth and adult populations, increase the supply of trained and qualified teachers, and expand scholarship availability to developing countries. A major challenge is that out of the 57 million children who have not enrolled in school, half of them live in Africa. While there is an increasing demand for education and schooling particularly due to increasing school-age population in Africa, one-fifth of children aged 6 to 11 are out of school (UIS, 2018). Meanwhile, approximately 60% of youth between the ages of 15 and 17 are out of school. And for those in school, partly due to poor school infrastructure and learning environment, assessment results show poor learning outcomes (UIS, 2015). Thus, poor school facilities and low quality of instruction are major challenges and barriers to successful learning. For example, while it is known that electricity ominously improves the learning environment, overwhelming majority of primary schools do not have electricity in Africa (see Figure 3).

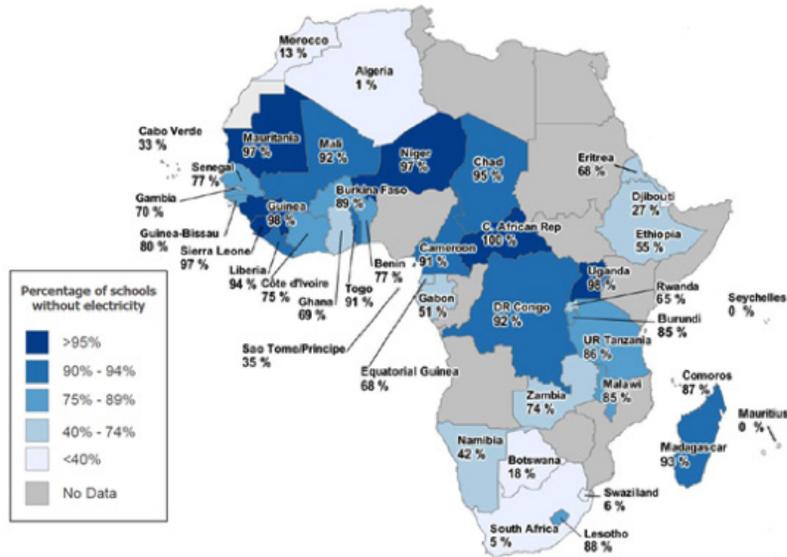


Figure 3. Percentage of primary schools without electricity in African Countries, 2015. (Adapted from UIS, 2015)

Also, teacher attrition rate remain a major challenge for quality education on the continent. For instance, teacher attrition rates from public primary education are over five percent from 2010 to 2012 for Ghana, Seychelles, Burkina Faso, and Congo.

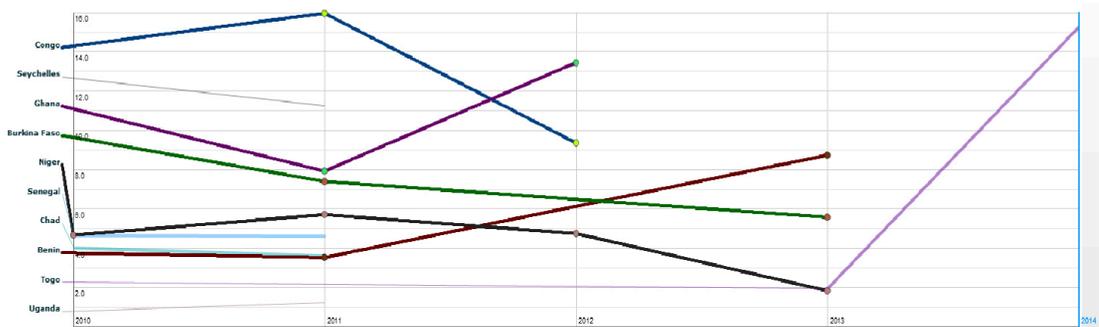


Figure 4. Percentage of teacher attrition rate from public primary school, both sexes 2010-2014. (Data from UNESCO Institute for Statistics)

Another challenge is the availability of textbooks. While in some instance, pupils do not have access to teaching materials, in other cases they have to share. We illustrate this phenomenon using data from UNESCO Institute for Statistics on access to mathematics textbook in primary school in six African countries (Figure 5). In Cameroon, for example, between 2010 and 2012, average number of pupils per mathematics textbook in primary school ranged from 12.0 to 13.9. The question is: how do these pupils share the material? And who takes time to determine a timetable for the sharing? We can safely speculate that such books stay in the school and the pupils gather around the book during class lessons; and to add insults to injury, some classrooms are overcrowded. In Tanzania, Central African Republic, and Malawi, average class in primary schools exceeds 70 pupils (UNESCO, 2016).

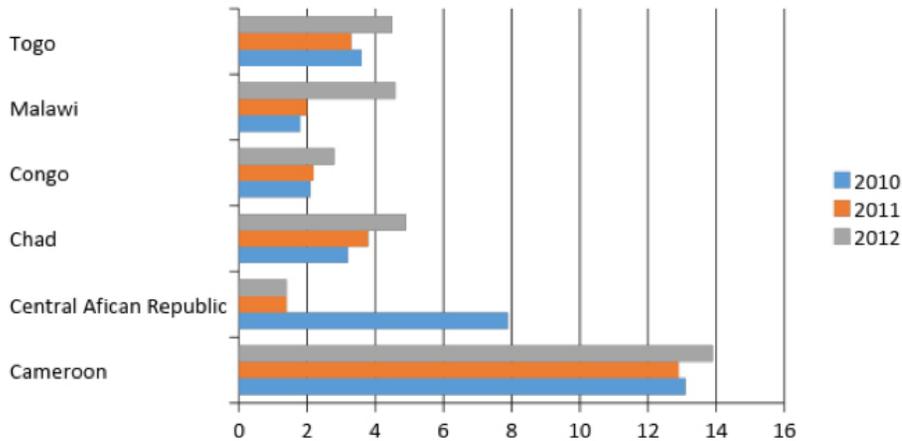


Figure 5. Average number of pupils per mathematics textbook in primary education. (Data from UNESCO Institute for Statistics)

Next, we show the challenges Africa faces in the area of water and sanitation. SDG 6 seeks to ensure access to water and sanitation for all. Among the targets of this goal are: promoting access to safe and affordable water for all, providing adequate sanitation facilities to end open defecation, and significantly increasing recycling and reuse. The lack of sufficient available water resources to meet the global demand for water usage affects about 40% of the world’s population; and unfortunately, water scarcity has been projected to increase. We use data from the WHO/UNICEF Joint Monitoring Program on water supply, hygiene, and sanitation to illustrate Africa’s challenge in selected countries (see Figure 6). Regarding access to drinking water, the vast majority of the populations of Africa do not have access to safely managed water service – that is, improved source located on premises, available when required, and void of microbiological and chemical contagion. From Figure 6, the percentage of the population in the selected countries with at least basic drinking water source – improved source within 30 minutes round trip collection time – illustrates the urgent need to accelerate the SDGs implementation; cognizant of the implications inadequate and unimproved water has on health outcomes such as infant mortality, child mortality, and diarrheal diseases. A large proportion of Africa’s population practice open defecation – that is, disposal of human excreta in fields, woodlands, bushes, open bodies of water, shores and other open spaces. From the selected countries in Figure 6, this ranged from six percent among the Ugandan population to 68% of the population of Chad. Another staggering statistics is with respect to hygiene. Countries such as Uganda, Chad, Angola, Benin, and Ethiopia all have over 60% of household with no hand washing facility. Africa’s challenge is to accelerate the building of adequate facilities as a way of meeting the targets of SDG 6 with ramification for other SDGs on good health, reduced inequalities, decent work, and good education.

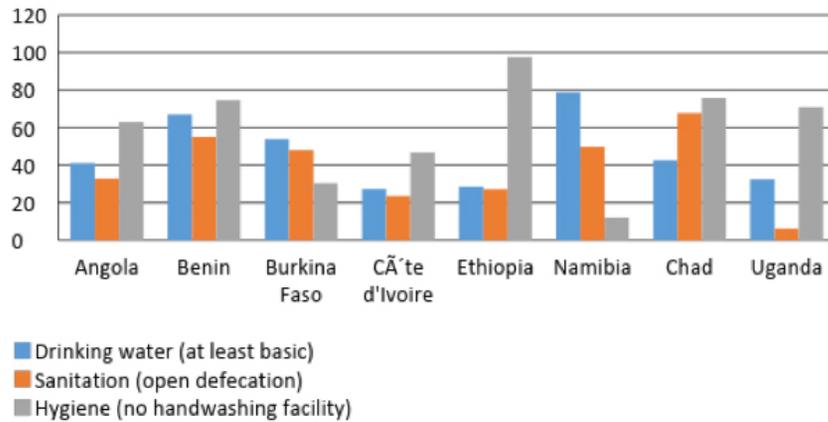


Figure 6. Percentage of population in selected African countries with certain level of water supply, sanitation, and hygiene

The SDG 11 addresses the need to make cities inclusive, safe, resilient, and sustainable. With half of the global population currently living in cities and over 820 million of them living in slums, this goal's targets include: ensuring sufficient and affordable housing and slum upgrading; constructing resilient building using local materials; reducing mortality due to natural disasters as well as protecting people affected by disasters; and ensuring sustainable urbanization and human settlements. Africa's rate of urbanization can be described as rapid. The rate of urbanization increased from 15% in 1960 to 40% in 2010. By 2020, the proportion of Ghana's urban population will be almost 60% while the percentage of Morocco's population living in urban areas is projected to be about 62%. Senegal's urban population is estimated to reach 45% by 2020 (Figure 7). The rapid rate of urbanization is associated with challenges that include the proliferation of slum settlements, closeness to traffic and industrial air pollution, and inadequate sanitation facilities. Sub-Saharan Africa has almost 200 million of its citizens living in slums and these slums lack basic services, infrastructure, and urban planning tenets (UN-Habitat, 2014). The big, popular, and growing slums in Africa are Kibera in Nairobi, Kenya and West Point, Monrovia in Liberia. Kibera is home to more than 2 million people; and the growth of informal settlements and slums have been attributed to, among other things, the housing deficits in most African cities (Bafana, 2016) as well as ineffective urban governance and urban poverty (UN-Habitat, 2014). Coupled with the rate of population growth the United Nations estimates that Africa needs more than 4 million housing units in a year; and more than 60% of the housing demand will be in the urban areas (Bafana, 2016). The housing deficit, which fuels slum settlement, in addition to the high percentage of unemployed youth is a major challenge for African governments. However, this can be perceived as an opportunity to enhance this vast human resource through skills development and entrepreneurship (UN-Habitat, 2014).

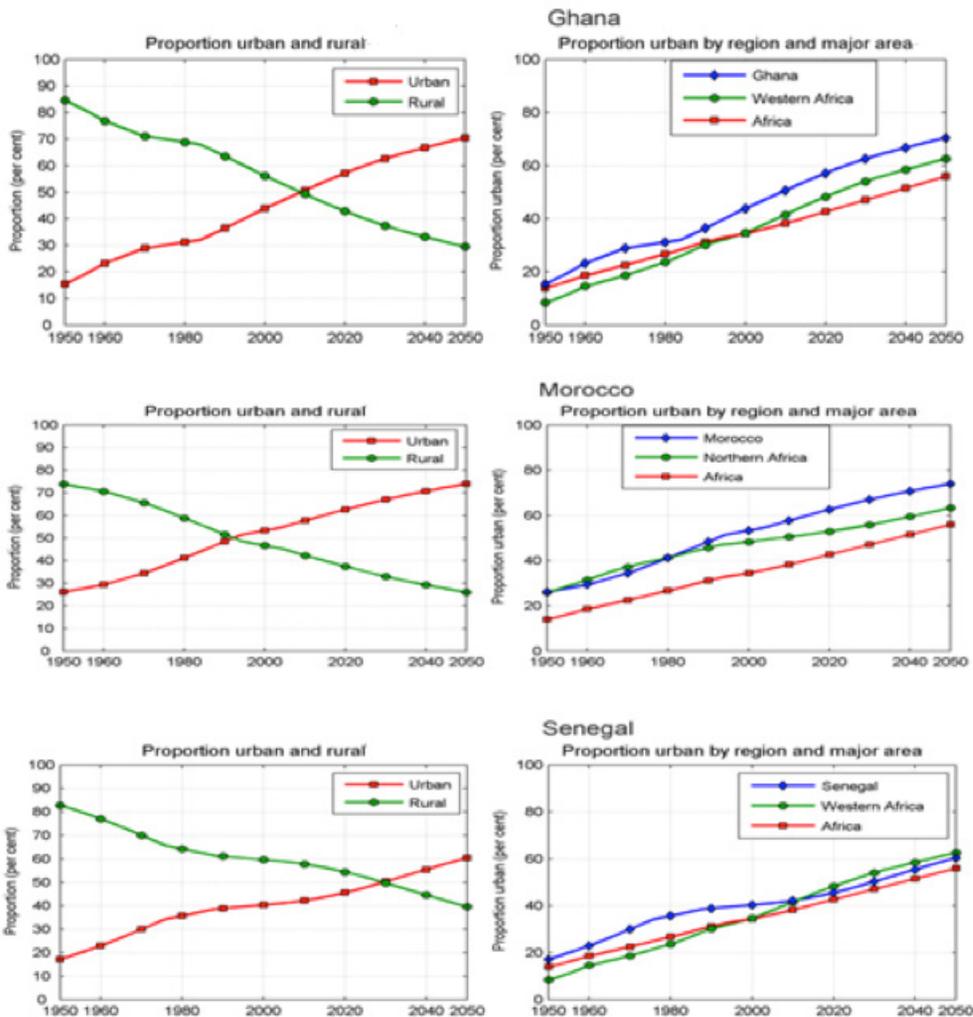


Figure 7. United Nations Population Division 2014 www.unpopulation.org

The leadership of the United Nations Human Settlement Program believes that Africa’s rate of urbanization is a tool for development. When asked whether urbanization brings benefits, Joan Clos, the Executive Director of the UN-HABITAT said, “Yes. In the way and pace that African societies are going, urbanization is a consequence of development and also the driving force for accelerating...[Africa’s] development” (Africa Renewal, 2016 p.10). With urbanization considered as vital engine of employment and the potential for high economic growth and development, when targets of SDG 11 are met, it will have tremendous reciprocal impact on SDGs 7, 8, and 9, which are on energy, economic growth, as well as infrastructure and industrialization. Now the challenge is: can Africa turn this seemingly adverse condition into a strong positive gain?

Lastly, we show the impact of climate change on Africa’s development. Key targets set by the United Nations to deal with the impact of climate change (SDG 13) include building up resilience to climate-induced hazards, enhance education on climate change mitigation and adaptation as well as building capacity for climate-related planning especially in the developing world. Climate change threatens economic, social, and environmental development of Africa. The projections on the impact of climate change on Africa demonstrate substantial challenges including increased

water scarcity, decreased crop yields with dire consequences for food security, and the diffusion of weather-sensitive sicknesses (IPCC, 2014). This shows that climate change influences all the earlier goals and targets of the SDGs discussed such as poverty reduction, elimination of hunger, reduction of mortality and promotion of health and well-being as well as provision of adequate water and sanitation. Some specific environmental challenges Africa is expected to face are in the areas of rising sea levels, air pollution, land degradation, and soil erosion (OSAA, 2018). Consequently, the Africa Union has developed a strategy on Climate Change, which identifies Africa's major vulnerabilities to impacts of climate change. Chiefly among these vulnerabilities are harm to agricultural sector due to droughts, increased expenses on energy supply due to inadequate rainfall for hydro-electric dams, and weak formal social safety nets. In 2010 and 2011, due to rainfall deficit, Uganda's losses and damage in the agricultural sector was estimated to be over US \$1.2 billion, which is equivalent to 7.5% of its gross domestic product (UN, 2014). Between 2008 and 2011, Kenya's losses due to drought were estimated at US \$12.1 billion. This further illustrates the connections among the various themes of the SDGs and how various sectors impact each other. Given these problems and challenges Africa faces, how are countries planning for development to achieve the targets of the SDGs and what role does resilience play in those plans? Next, because every country plans for development, we briefly discuss development theory and show how development intersects with resilience.

Development Theory and Resilience Thinking: Synergies and Contentions

The discourse of development suggests heterogeneity of understanding and praxis. However, conventionally, the term development has been used to describe steps taken to make everyone's life better through the provision of: enough nutritious food, safe and affordable place of abode, affordable health services, and social environment that promotes self-esteem and deference. The main contention is: there is no consensus on a universally accepted way by which these ideals may be achieved. The pursuit of development praxis through the prism of any form of development theory is a function and reflection of the political leanings of the advocates with regard to their philosophical orientation, disciplinary biases, and ideological inclinations. As Peet and Hartwick (2009, p.1) put it: "...development is subject to the material and cultural visions of different societies." The purpose of this section is not to brood over the historical antecedents and flaws in these theories but to show their commonalities and briefly illustrate how the basic principle of resilience is subtly central to them. Also, resilience theory should not be conceived as an alternative to development theory or praxis.

The conventional theories of development (e.g. classical and neoclassical economics, neoliberalism, and modernization) largely see development as economic growth propelled by capitalism (Van den Berg, 2016). The idea that wealth creation through the pursuit of economic growth agenda of modern industrial complex is achieved through assumptions of rationality, perfect knowledge, and individual inherent competitive nature; coupled with the enabling policies of comparative cost advantage, open markets, and international trade (Knight, Loayza, & Villanueva, 1993). The vital thrust here is that wealth is created through production – creation of goods and services for human consumption. Hence, production ultimately results in satisfaction of human needs – based on the assumption that rational consumers maximize consumption of commodities – achieved through efficiency in the allocation of resources (McCombie & Thirlwall, 2016). These development paradigms have been critiqued principally for the assumption of people being naturally self-serving and competitive. Given the evidence of human desire for cooperation, producing to meet the needs for all, and acting in accordance with recognized ideals, the assumption of human being inherently self-serving cannot be entire true (Peet & Hartwick, 2009). Additionally, the presupposition that humans are completely rational and, therefore, seek to maximize satisfaction

or profits or wealth is not supported. For example, Simon and Newell (1972) assert that humans have limited rationality and that being rational is dependent on individuals' ability to comprehend and decipher complicated challenges through information processing. Irrespective of the merits and demerits of assumptions and critiques, it is obvious that there is the desire to produce to meet human needs. The question is: are there stressors and shocks to the pursuit of economic growth and development? If so, then conventional development theories are not alternatives to resilience but a critical component.

We further illustrate that resilience is not at variance with development philosophy using latter development theories. For example, the critique of neoclassical theories by institutional economists gave birth to development paradigm like the new growth theory (Temple, 1999). The theory attempts to explain the economic shift from resource-dependent economy to a knowledge-based one. The basic postulate is that the process that results in higher rate of economic growth is driven by knowledge and improved technology. That is, people will experience better living standards with a steady progress in knowledge about how to produce better goods and services. Therefore, although it acknowledges the importance of taxes, savings, and investments for economic growth, the sustenance of growth cannot be achieved without substantial knowledge production to achieve new ways of creating goods and services. To achieve substantial knowledge creation, the theorists suggest, among other things, policies that focus on new knowledge creation in universities and laboratories, enhancing local knowledge base and expertise, and valuing innovation from workers as much as knowledge through scientific research (Peet & Hartwick, 2009). Elements of this theory is subject to shocks and stressors and, therefore, a discussion of resilience of knowledge production, indigenous knowledge generation, sustainability of research laboratories and universities are important for improving the well-being of people; a further illustration of the link between development and resilience.

The practice of *structuralist* development economics involves essential elements that are susceptible to shocks and stressors and require resilience thinking. Some of the elements of this paradigm include, but not limited to, mobilizing local and foreign resources – making local and international funds available for productive investments; creation of producer and consumer good usually through labor-intensive tactics as an industrialization strategy; the agricultural sector is conceived as the provider of food and raw material for industry; and the promotion of export-oriented economies that export raw materials and semi-manufactured good (Bresser-Pereira, 2012; Peet & Hartwick, 2009). None of these elements of the *structuralist* and neoliberal development agenda is free from potential shocks, especially in the light of the flawed assumptions undergirding them; thereby, requiring strategies to ensure that economies adopting such models remain resilient. For example, the assumptions that humans are self-centered, rational, freedom loving whose actions are harmonized by the free market – price systems and production are spontaneously determine by the forces of demand and supply – are defective. This is because, for instance, the state has been found to manipulate the market through policies and regulations.

Contemporary discourse of sustainable development is inextricably connected to the principles of resilience. By 1987, following the realization of the demerits of economic growth strategies rooted in modernization and neoliberalism, especially regarding its environmental ramifications, the United Nations proposed a different model of development quest: sustainable development – “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987). The two main concepts of this proposal are: (1) need – that priority should be given to the needs of the world's poor, and (2) the state of technology places limitation on the environment to meet today's and future needs. Consequently, it is suggested that sustainability should be the focus of all quest for social and economic development in both market-oriented and command leaning economies. Thus, while individual societies socially and culturally determine what their needs are and what constitutes their wants as well as adequate

standards of living, sustainable development dictates the need for the inculcation of values that promote consumption levels which are within ecological limits (WCED, 1987).

The link between resilience and sustainable development is found in the need for persistence in both concepts (Pisano, 2012). Sustainable development is about meeting today's and tomorrow's needs thereby illustrating persistence in ensuring the social, economic, and behavioral wellbeing of people. Resilience is also about persistence – ability to absorb shocks, maintain basic function, and bounce back. Consequently, the creation and maintenance of prosperous social and economic society is intricately linked to the continuance of the ecosystem that supports the creation of wealth needed to sustain the said prosperity (Folke, 2002).

Altogether, we have demonstrated that resilience theory is not in opposition to theories of development. Therefore, our recommendation for resilience to be central to development planning in Africa should be perceived as resilience being intrinsic to any successful development agenda with the goal of improving the wellbeing of people over a long period of time. Next, we discuss resilience theories and perspectives in more detail and suggest a general model for resilience thinking in planning for the future with resilience at the core.

Resilience Frameworks and Recommendations

As a multidimensional concept, resilience theory is used in multiple fields. It is applied in many academic disciplines such as Geography, Education, Environmental Biology, Zoology, Public Health, Environmental Engineering, Ecology, Social Work, and Economics to mention but a few. Resilience thinking applies to human and nature across scale: individuals, neighborhoods, businesses, nations, and regions. Each discipline defines it differently based on their scientific approaches to understanding human and natural phenomena. To cite a few, the UN-Habitat's City Resilience Profiling Program's (UNISDR) Sendai framework for disaster reduction especially in cities defines resilience as "the ability of human settlements to withstand and to recover quickly from any plausible hazards..." Deriving insights from complex adaptive systems to define resilience in the context of socio-ecological systems, Resilience Alliance (2010, p.5) defines resilience as "...the magnitude of change or disturbance that a system can experience without shifting into an alternate state that has different structural and functional properties and supplies different bundles of the ecosystem services that benefit people." At the individual scale, after synthesizing literature on individual resilience, Zolkoski and Bullock (2012, p.2296) define resilience as "... achieving positive outcomes despite challenging or threatening circumstances coping successfully with traumatic experiences, and avoiding negative paths linked with risks." Despite the different definitions from different perspectives, there are common threads. The common characteristics and thread in all conceptualization of resilience are that there is/are (1) stressors (disturbances) driving change, (2) ability to withstand stressors, (3) ability and time to recover (including learning), and (4) the nature of change. Therefore, irrespective of the sector of a country, resilience theory is applicable and amenable to planning principles.

We are by no means suggesting that resilience theory is sacrosanct. In fact, even within disciplines, the use and operationalization of the concept has been a subject of debate. Resilience theory, in the context of coupled people-environment interaction, has three interconnected physiognomies: (1) the amount of change the system can undergo and still retain the same controls on function and structure; (2) the degree to which the system is capable of self-organization; and (3) the ability to build and enhance the capability for learning and adaptation (Bamutaze 2015; Resilience Alliance 2010; Gallopin 2006; Adger, Hughes, Folke, Carpenter & Rockström, 2005; Folke et al. 2002). In the socio-ecological system, while it has been asserted that identifying the crucial features and qualities of the system that require maintaining and enhancing is at the heart of resilience (Walker, Salt & Reid, 2006), others suggest that identification of agents of change in the

system is most paramount (Resilience Alliance, 2010). Both of these interrelated ideas suggest that resilience thinking is very much synonymous with systems thinking; therefore, socio-ecological systems have three major characteristics: (1) social systems are indissolubly linked with ecological systems and any change in the ecological system affects the social system and vice versa; (2) socio-ecological systems have the potential to exist in “alternate stable state” – changes occurring are non-linear and unpredictable; and (3) the capacity to undergo changes due to stressors, which may or may not result in system regime change – a situation where a system has a different identity. Regarding a system’s capacity, while it has been suggested that resilience should be in the context of the time it takes for the system to bounce back to its original condition after a shock event, others have argued that the ability to bounce back is more important (Walker & Salt, 2006) and the contribution of social capital to recovery is central (Camp et al. 2015). Additionally, while there is a focus on bouncing back to original state as it goes through its life stage (illustrated by the adaptive cycles – stages of life of a system (Resilience Alliance, 2010)), others conceptualize it as the system getting to its tipping point and crossing into a different state (Walker & Meyers, 2004).

African countries may draw on the several available resilience frameworks and perspectives for specific sectors of their nations. Other resilience frameworks, apart from what we have discussed previously, that are inter-sectoral and may be used across scale include the Youth Resilience Framework, the Megacity Resilience Framework, the Dynamic Resilience Model, and the Resilience–Transition–Transformation Framework. The adoption of any framework should be dependent on the sector under consideration. In other words, different sectors may have to adopt different resilience frameworks. For example, the adoption of UNISDR’s Sendai Resilience Framework is premised on UN-HABITAT’s goal, which is to increase the resilience of cities to the impacts of natural and human-made crises. Consequently, for a more robust model of resilience, UN-HABITAT introduced ten essential elements that will make the framework amenable to quantitative assessment and city resilience profiling. Some of the elements are: evaluating the safety of schools and health facilities; investing in the kinds of infrastructure that reduce risk; ensuring disaster reduction programs are incorporated in school activities; and installing early warning systems.

Our core recommendations are premised on what we believe is fundamental to resilience thinking. Two key questions: resilience of what? And resilience to what? To attempt to answer these questions, we propose a simple resilience framework for achieving the SDGs (See Figure 8). The framework places resilience at the center of all the goals and recognizes the overlapping nature of these goals in a complex system. With African countries having domesticated the SDGs to suit their priority areas, the first question planners should ask is how to define resilience of those priority areas. Using Figure 8 to illustrate our proposal, the “resilience of what” question could be asked of all the SDGs. For example, if countries want to build resilience of poverty eradication programs, hunger eradication programs, maternal and adolescent reproductive health systems (SDGs 1-3) and so on, that will mark the beginning of centralizing resilience thinking in the development agenda.

The next question is resilience to what? From our perspective another primary question is: what are the shocks and stressors to the achievement of the targets in SDGs. This marks the beginning of understanding “stressors driving change.” In other words, what are the main perturbations responsible for changing the form and shape of a socio-ecological system? “Stressors driving change,” also referred to as driver of change, must be understood and assessed in context at different scales. Research has shown that “stressors driving change” in global northern socio-ecological systems differ to a large extent from those driving change on southern systems. While driver of change in northern system are mostly global in nature and include high buildup of pollutants, expansion of tourism, and diffusion of western popular culture on local populations, “stressors driving change” in the global south is generally local in nature. These include urbanization, high population growth rate, and land-use and land-cover change (Chapin III et al. 2004). “Stressors

driving change” of specific systems ought to be studied and understood as well. For example, in a study of the changes occurring in and around the Mekong river, which flow through five countries (China, Cambodia, Laos, Thailand, and Vietnam), the drivers of change were complex but discernible. The need for hydroelectric power had led China to build a number of dams in the Upper Mekong, and with plans to build more in the Lower Mekong, thereby altering ecosystems and impacting the livelihoods of people who depend on the river (Grumbine, Dore, & Xu, 2012). Overall, Grumbine, Dore and Xu (2012) found that major “stressors driving change,” which are creating impetus for the construction of dams included demographic changes, water and food security, new dam financiers, and desire for economic integration in the region.

Broadly, for the sake of conceptualization, countries should ask: what are the stressor to “no poverty” programs (SDG 1)? What are the shocks to ensuring inclusive and quality education (SDG 4)? What are the “stressors driving change” regarding access to water and sanitation for all (SDG 6)? What are the disturbances to peaceful and inclusive societies as well as strong institutions (SDG 16)? Such questions can be and should be asked of all the domesticated SDGs. If all these goals have stressors, then resilience thinking should be at the core of planning.

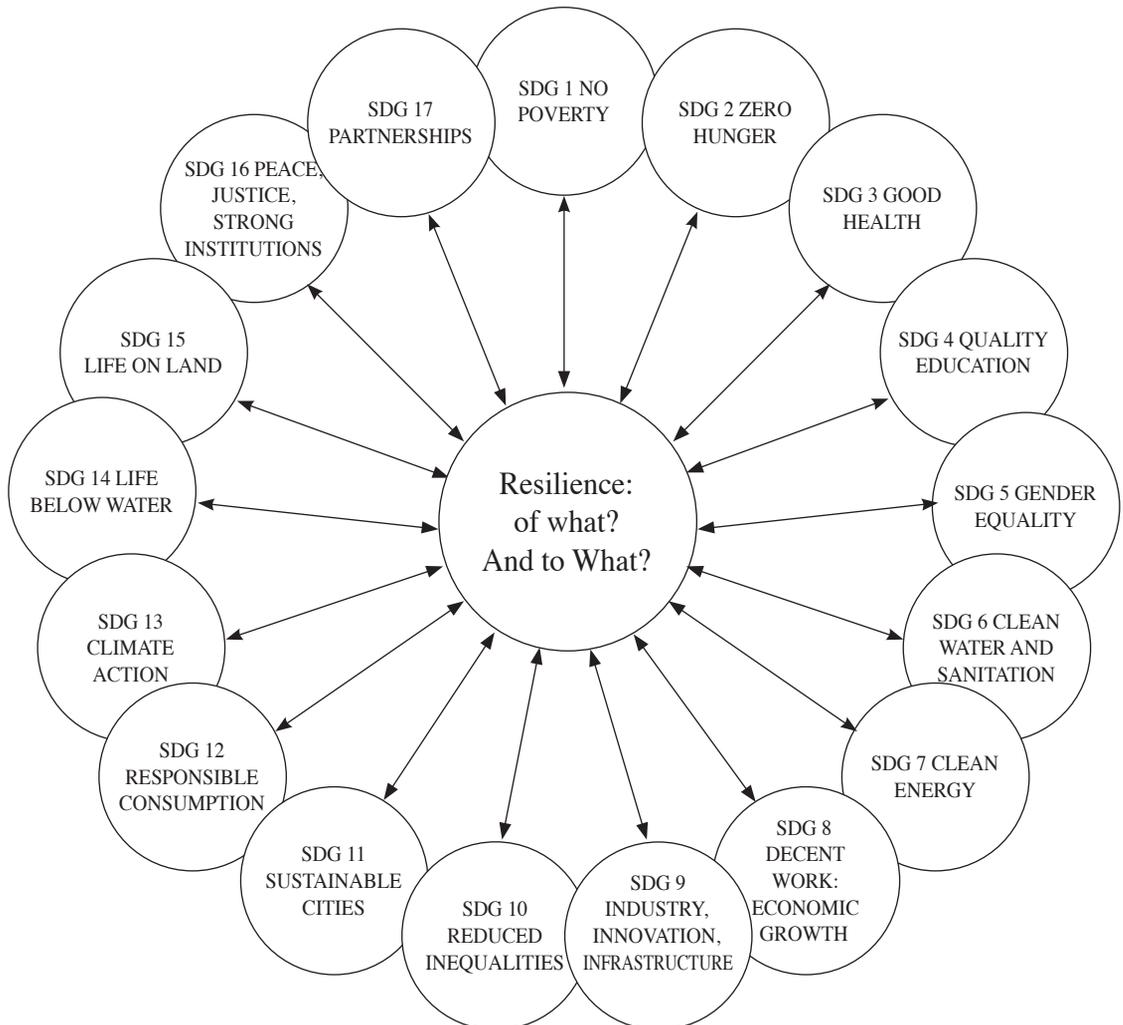


Figure 8. A proposed resilience thinking framework for the Sustainable Development Goals

More importantly, countries will have to ask questions about future stressors regarding future goals and achievements in the development arena. This is crucial because anticipating future stressors and predicting their nature with some degree of certainty enables accurate planning and preparation to deal with such shocks. Does Africa know the stressors of the future in the domesticated priority areas of the SDGs? Do African nations have the capacity to anticipate future stressors? For example, although we know the causes of non-communicable diseases and the fact that it is supposed to be the leading cause of mortality on the continent by 2030, do we know or can we reasonably anticipate the future trajectories of these diseases? Do African countries know the shocks to the current and future programs to combat these diseases and their new forms? What kinds of preparations are required for such disturbances? To further illustrate, a major target of SDG 3 is to reduce by a third premature death due to non-communicable diseases through prevention and treatment by 2030. While a laudable target and an achievable one, countries should ask what the real stressors for such programs are now and anticipate what they will be in 2030? Which of these “stressors driving change” are characterized by slow onset and which ones are embodied by much rapidity? Do African countries have the capacity to anticipate new diseases and the emerging causes of such diseases?

Anticipatory learning is critical in resilience thinking and fundamental to building resilient systems (Tschakert & Dietrich, 2010). Anticipatory learning is about forward-looking learning which focuses on capacity to foresee or predict shocks and stressors rather than being only reactionary. Other major elements of anticipatory learning are about strategies and actions required to prepare for unexpected distresses. That is, given the complexities in socio-ecological systems, planners, for example, require scorecards that will enable them to learn about the future before shocks occur. Such scorecards may be derived from a plethora of toolboxes on decision scenarios, future impact modeling, causal models, and time series analysis (Butz, 2002). Having toolboxes is as important as the process of acquiring them. Especially in the context of reasonably accurate prediction of the future with the aim of creating different outcomes with an altered socio-ecological system in the world, the process will have to be engaging and democratic. It is recommended that the process creatively conjoins discussions, and craves for forward-looking ideas as well as support knowledge acquisition (Ramos, 2006). The need for the process to be participatory in which people share and critically reflect on suggestions, and make decisions propelled the field, “Anticipatory Action Learning” (Stevenson, 2006). According Ramos (2006), ingredients of the coupled action-research and anticipatory learning essential for future studies not already discussed include, but not limited to, (1) exploring social change, (2) systems thinking and systems intervention viewpoints, and (3) social innovation through practical experimentation and implementation guided by abstract conceptualization.

Targets of SDG 4 on ensuring quality education include equal access to all level of school regardless of one’s sex, attaining literacy and numeracy among considerable number of youth and adult populations. Apart from identifying the stressors to these targets and the programs meant to achieve them, an important resilience thinking value worth considering is anticipatory learning. This may begin with a simple questions as: what kind of education is needed for Africa now, in 2063 and beyond? Such a question lends itself to systems thinking and would require looking beyond the educational sector to drawing linkages between and across sectors such as health, environment, industry, and agriculture. For example, what kind of education is needed to prepare entrepreneurs for 2050 and to supply labor for industries in 2063? Yes, literacy and numeracy are critical basics that are required but Africa cannot afford not to think beyond the basics. This conception is derived from anticipatory action learning. Kelleher (2005, p.85, 87) describes anticipatory action learning as a “process of co-creating the future” based on a “theory of participative human agency;” and the nucleus values to being successful in such endeavor include creativity, reflexivity, and systems thinking. African governments will have to be creative, reflective, and critical of their plans, as well as adopt a systems approach to planning and development.

An ingredient of societal resilience and socio-ecological resilience is social capital. Social capital theory is traced to two main founding fathers – Bourdieu and Coleman (Bourdieu, 1983; Coleman, 1990). Bourdieu define social capital as “the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance...” (Bourdieu, 1983, p. 248). That is, social capital is based on relationships that are called upon and used in time of need. Membership in a group acts as safety nets for each other as a result of mutual respect and trust cultivated. Coleman on the other hand perceived social capital as a resource that exists in the context of kinship relations and defined by its function. Specifically, Coleman (1990, p.302) define social capital as “...a variety of different entities having two characteristics in common: They all consist of some aspect of social structure, and they facilitate certain actions of individuals who are within the structure.” The social structure creates networks of people and social organizations with relationships characterized by effective and well-structured norms. Consequently, Coleman (1990) outlined types of social capital. These include: (1) relationships of mutual trust – where individuals confidently help others based on expected reciprocity; (2) authority relations – individual have power and rights of control over others; (3) information potential – ability to provide helpful information to members; (4) effective norms – prescribed norms that illicit certain behaviors from member for the good of the collective; and (5) approachable social organization – voluntary organization that undertake public good activities which benefit members of the public who may not necessarily be member of their organization. Both Bourdieu and Coleman’s conception of social capital differ regarding who receives the benefit. While Bourdieu idea shows that the benefit obtained goes to the individual, Coleman’s conception indicates that both the individual and the group benefits. These ideas are cross-scalar in nature and can be modified and applied various context.

Social capital and its constructs are relevant for the resilience of social systems. Resilience in the context of socio-ecological system is strongly related to the ability of the people in that system to collectively and effectively respond to stressors (Walker & Salt, 2006). This is partly due to the assertion that social interaction acts as fuel for collective action. Important social capital attributes that enhance the ability of societies to collectively handle disturbances include trust, reputation, strong networks, reciprocity, and good leadership. Research in different academic disciplines like Economics, Geography, Education, and Sociology has shown the importance of social capital to resilience and adaptation to stressors including climate change across scale, despite the wide-ranging definitions and measurements of social capital. While researching individual resilience among young migrants in an Accra slum, Tutu (2013) found that social capital – the material help received from social relations that enables them to withstand stressors – was a major predictor of resilience. In a study of social capital and community resilience in the context of disaster management, Aldrich and Meyer (2014) points to the essence of social infrastructure, especially social capital, in reducing disaster risk despite the overemphasis placed on physical infrastructure by planners. At the national scale, in planning, an important question on social capital posed by Adger (2003, p.391), in the context of climate change and disaster planning, may guide policy makers: “if government can provide physical... infrastructure to minimize the potential impacts of flood..., for example, will this infrastructure ever be sufficient for adaptation if its use does not resonate with social norms?” Adger (2003) contends that social capital is a “glue” for capacity to adapt, especially for unpredicted events, although the existence of the diverse forms of social capital (e.g. bonding, bridging, and linking) is vital at different times for distinct groups.

Africa, which is known for its communal spirit in various societies, should draw on social capital as part of resilience thinking in development planning across scale. Subsequently, given the problems and challenges Africa faces, how are countries planning for development to achieve the targets of the SDGs and what role does resilience play in those plans? We illustrate the deficiencies with development plans from four countries. This is not a generalized representation of African countries development plans.

Resilience in National Plans

As noted previously, a number of countries have adopted the United Nations SDGs and incorporated them into their national plans. The integration of the Global Goals into national development plans may seem to automatically transfer the SDGs on resilience into national plans. We illustrate how four of such plans mention resilience as a goal; and although they seem to suggest the importance of resilience, it does not appear to be the central theme. Also, apart from the fact that these goals and targets are simply wish lists, they do not show how resilience building will be operationalized. While we admit that some of the plans are general and do not include means of implementation, it is standard practice for plans to be specific in defining key goals and targets; and we find most of the plans reviewed not to explicitly provide operational definitions of resilience.

Uganda's second national development plan (Uganda Vision, 2040) document uses the word resilient/resilience about 44 times. The country has fully integrated the SDGs into the national development agenda and their sectoral development goals are premised on the SDGs. Therefore, the number of times resilience is used in the Uganda Vision 2040 document is a direct reflection of the use of resilience in the targets and goals of the SDGs by the United Nations. The problem is that ecological resilience is overemphasized and social resilience is almost non-existent; and when it is mentioned, it is linked to non-human ecosystem (including biodiversity) and climate change. Linking to climate change is prudent since countries consist of parts and, therefore, system-thinking approach is required in seeking solutions to challenges; however, relegating social resilience to the background leaves a gap in the system. The other mentions of resilience in the document, including in program intervention, are: creation of jobs that are resilient to economic fluctuations, building resilient infrastructure, community resilience to health disasters through enhancing disaster risk reduction, and resilience of water supply systems in rural areas. Another problem is that the type of resilience notion that may be employed for the various resilience-building, whether it is exclusively ecological or social, is not hinted. So although Uganda does well to articulate a clear vision for the country, without a comprehensive analysis of all the interventions, a cursory look at the national plan shows it fails to place resilience at the center of planning for all the SDGs.

The draft national development plan 11 of Botswana (April 2017-March 2023) explicitly incorporates the SDGs (MFDP, 2016). This plan seems to be a short term plan prepared by the Ministry of Finance and Economic Planning and aligns with the SDGs and Botswana's long term goal dubbed "Vision 2036". The priorities of the plan are built around these themes: ending poverty, social development, sustainable use of natural resources, diversifying the economy to ensure economic growth, consolidation of good governance, and effective monitoring and evaluation. Resilience/resilient is used 17 times in the document. The first use of the word in the document provides a great start and serves a gateway for resilience thinking to be at the core of the interventions to be ironed out. The document states that "...Once the Key Performance Indicators (KPIs) of Vision 2036 are available, they will be compared against the SDGs. The impetus will be to help build national resilience through greater employment and livelihoods, more equitable access to resources, better protection against economic and environmental shocks; and a much stronger ability to prepare for and deal with the consequences of natural disasters, especially as they are exacerbated by climate change." (p.24). However, subsequent use mainly reflects how it is used in the SDGs, and overly focused on ecological resilience (e.g. climate change, natural disasters); except for economic resilience to be achieved through economic diversification, employment creation, youth empowerment, and building resilience of rural communities. Clearly, resilience has been recognized as important but not operationalized or used as the central theme for across sector planning.

South Africa, through its national development commission has enacted a national development plan dubbed "National Development Plan -2030: Our future – make it work." Although it does not make reference to the sustainable development goals, its main objective are in consonance with the SDGs. Some of the overall objectives of the plan include but not limited to: economy and

employment, environmental sustainability and resilience, transformation of human settlement, health care for all, social protection, and improving education and innovation. Similar to the Ugandan and Botswanan plan, resilience/resilient is very prominent in this plan. It is mentioned 41 times including one of its vision statement as “we are resilient.” While it is slightly overly centered on ecological resilience (resilience to climate change impacts and other natural disasters), unlike the previous plans discussed, it specifically makes reference to Stockholm Resilience Center; thereby, hinting at socio-ecological resilience perspective as a guiding framework. As with other plans, resilience is drawn mainly for planning climate change effects even when the document refers to societal resilience. Specifically, when the document mentions societal resilience, it refers to building resilience of various sectors to climate change impacts. The document states that, “...This includes ensuring that all sectors of society are more resilient to the future impacts of climate-change by: decreasing poverty and inequality, creating employment, increasing levels of education and promoting skills development, improving health care, [and] maintaining the integrity of ecosystems and the many services that they provide” (p. 209). Furthermore, the document constricts spatial resilience to reduction of susceptibility to environmental degradation, resource scarcity, and climatic stressors. We opine that such thinking is grossly inadequate in addressing inter-sectoral problems and challenges if climate change in this context is perceived as the sole stressor necessitating resilience-building.

The Malawi Growth and Development Strategy III: Building a productive, Competitive, and Resilient Nation document was formulated by the government of Malawi as its development agenda from 2017 to 2022. The Key Priority Areas (KPAs) identified by the government are: agriculture, water development and climate change management; education and skills development; energy, industry and tourism development; transport and information, communication, and technology infrastructure; and health and population. As a signatory to the Global Goals, this plan maps KPAs to the SDGs and the African Union’s Agenda 2063. Resilience/resilient is mentioned 48 times, which include the number of times the SDGs mentions it. Similar to the other national plans discussed, the discussion of resilience in Malawi’s development plan primarily focuses on disaster risks, climate change, and non-human ecosystems. But most crucially for social resilience, in the context of livelihood risks, the plan makes reference to building resilience of individual, households, and community-level to shock in order to promote socio-economic development. Mention is also made about building resilient cities and nutrition program. While the plan unambiguously indicates key performance indicators for all the goals and set targets, it is void of a precise resilience framework. In fact, we deduce that the many use of resilience may be used as an English word rather than a concept requiring operationalization. For example, the monitoring and evaluation framework of the plan indicates resilience as an independent goal linked to SDGs one and ten. Therefore, the key performance indicators of this goal are limited to poverty reduction and improvement in human development index; a clear demonstration of how the planners generally think of resilience.

The four national plans discussed elucidates that resilience-thinking is not central to the plans but quite peripheral. Placing resilience thinking at the core of planning with emphasis on understanding “stressor driving change”, the essence of social capital, and anticipatory learning ought to be a priority for revised plans in these nations.

Conclusion

In this conceptual paper, we have suggested that, as African governments plan to ensure development, resilience thinking should be central to the planning of African societies. Africa is facing a wide range of problems and shocks. Majority of the poor people on the planet live in Africa. The continent is home to about 25% of the global population that are undernourished. These challenges and stressors Africa faces necessitates the question on how countries are planning to

attain the targets of the SDGs and what role resilience plays in those plans? We discussed four national plans that seem to suggest that resilience thinking is framing the national development schema. We have shown that these plans mainly use resilience loosely and fails to operationalize the concept or identify in detail the major resilience frameworks it expects to draw on. The four national plans discussed illustrates that resilience thinking is not central to the plans but quite marginal. Consequently, we proposed a resilience thinking framework that centralizes resilience for achieving the SDGs. The core of the framework are two questions pertinent for each goal and target: resilience of what? And resilience to what? Irrespective of how resilience is defined for a specific context, the common features and thread are (1) stressors responsible for changing a system, (2) ability to withstand shocks, (3) ability and time to recover (including learning), and (4) the nature of change. Therefore, we suggest the inclusion of these three resilience notions during planning: (1) “stressors driving change,” (2) anticipatory learning, and (3) social capital. We believe that effective planning with these variables in each sector will mark the beginning of ensuring resilient societies in Africa.

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