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Introduction to the special issue on Africa's futures

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Special Editor

The story of Africa's future continues to be an unfolding one. As Gatune (2010) points out the story is more like a rollercoaster following short term economic results. When growth is good, the story's future is rosy but when the growth topples, which tends to happens so often especially when commodity cycles dip, the prospects tend to be seen as poor. Not enough attention is given to capture the deeper drivers of Africa and really capture where Africa is heading without being distracted by the many stories of despair that Africa seems to spawn. These stories of desperation tend to loom large and largely shape the story of Africa's future, perhaps a testimony of the power of the old colonial narrative of the dark continent. The recent good performance of African economies has seen a flurry of good stories. Even the Economist magazine which in 2001 had declared Africa "a hopeless continent" changed its forecast and in 2011 and declared Africa "a rising continent" in 2011, a complete reversal (Adewumi, 2011).

For sure Africa remains a place beset by many challenges of underdevelopment. The majority of the world's poor now live in Africa. Malnutrition and resulting stunting of growth is killing the intellectual potential of many children, crippling their future prospects even before they start the race into knowledge based economies of the future where brain power will be the key asset. Challenges are being compounded by new trends in particular climate change. To get an understanding of the trends driving Africa the first article, produced the the Institute of Security Studies (ISS), looks at Africa trends to 2035. The trends provide some hope but also a cause for concern. Though Africa continues to rise economy wise the number of poor people continues to grow. In 2035 there could be as many as 170 million more extremely poor Africans than in 2016. Tepid economic growth is not keeping up with fast demographic growth. So the challenge of providing employment for a fast growing youth population is perhaps the most daunting challenge facing Africa. The youth bulge is a double edged sword, with right investments especially in skills and unlocking economic opportunities through investment in infrastructure, transformation of economies through increased value addition and greater integration of economies to improve markets among other policies. Failure to adequately address this can have disastrous consequences. North Africa is still grappling with the turmoil of an unfinished revolution, the Arab Spring, a revolt of the millennials due to lack of economic opportunities among other reasons as discussed in the article by Nisreen and Gatune.

The future of Africa will depend very much on how it will be able to transform its economies to create the needed opportunities for its youths. This will in turn very much depend on the ability to transform agriculture and use this as the engine for powering overall economic transformation. This is a topic of a recent report by the African Centre for Economic Transformation (ACET, 2017). This is also the theme of the article by Bumni Ajillore that looks at the future of Agricultural Research and Innovation (ARI) system in Africa. He makes that strong case that the future of agriculture depends on the ability of ARI systems to bring the needed innovations to upgrade agriculture to various stakeholders. The article points to six key drivers of the future of the ARI system which were then used to build scenarios for the future agricultural research and innovation in Africa. The most desirable scenario points out that the key will be getting the needed political will to commit budgets and also building a critical mass of futurist within the ARI system.

Governance has been the perennial challenge of Africa. Probably the most basic and intractable challenge. Though there is still a democracy deficit, trends show improvements and indeed point that Africa is relatively more democratic than could be expected given its generally low levels of GDP per capita. However some recent gains in democracy have been reversed as countries have revised constitutions to create life presidencies. Neo-patrimonial systems even in the democracies remain dominant where democratic elections are really vehicles for capture of power by ethnic coalitions and state bureaucracies, then are used to keep others at bay. This then brings to question what should be the future of governance. This is a topic that is discussed in the article by Otto Kroesen who rightly questions what modernization should mean for Africa. Should it follow the western model or a should Africa find a way to reorganize the traditional systems based on clan loyalties and patrimonial system so that they can be "modernized". He argues that the modern universalist state seen in Europe is the result of significant bloodshed through several revolutions, the most famous being the French Revolution, and two world wars. And even after all this we are witnessing a return to ethnic based systems, a testimony that the universalist state misses something, the connectedness that comes with traditional systems They argue that the universalist state may not be the way forward for Africa and call for a new kind of "ethnic" coalition based in entrepreneurship akin to trade guilds that were key to giving birth to modern societies in medieval Europe. They argue if this spirit of belongingness, identity and self-affirmation is located in the economic sphere (and not in the sphere of politics!) by cooperative networks and entrepreneurial "tribes" an equilibrium may be found between the heritage of the past and the challenges of the future. The issue of governance and the future of Africa is also the subject of the article by Ricardo-Raymond Schung that looks at the future of human trafficking in Sub Saharan Africa (SSA). It places the driver of human trafficking as perceptions that are largely shaped as much by economic and social conditions as by the underlying narrative (e.g. "I am because I want to be like them"). Leadership plays a key role in creating conditions shaping the future. African leadership has failed to create the right conditions and a narrative and are accused of selling "used futures"–one that may have succeeded elsewhere e.g. Europe but does not fit into the local context of Sub-Saharan Africa. For example, the pan-African vision is a leader-induced, shared vision on paper, but it is not the shared vision of the people. He proposes that a narrative based on Ubuntu philosophy of inclusiveness which supports the bottom-up, community-driven change that truly puts people first. Essentially the worldview moves from people being connected based on political and economic ideologies that may result in a used future – to one where communities and solidarity become the glue of society based on cultural values and the acceptance of one another. Embracing Ubuntu is thus seen as the key to a better future that provides opportunities for all.

One might accuse this issue of falling in the same folly as many that consider Africa as one monolith, failing to appreciate the huge diversity across the continent. This is partly true. There is not enough space to capture the whole diversity and Africa was largely the unit of analysis in this issue. Though Africa is heterogeneous one can also argue that that there are many things that tie Africa as one and indeed one can argue that the fortunes of African countries are intertwined. So until the challenges of Congo are resolved, the great lakes region will continue to be in turmoil. Fortunes of East Africa are very much tied to Kenya's performance. Indeed the common ties play a much bigger role in shaping the futures of Africa than the heterogeneity we see. All the same studies at a country or regional level can give insights into the future and provide insights in upcoming challenges that are yet to manifest at a more aggregated level, the so called weak signals. For instance the article by Roux and Viljoen that looks at the problem of aging in South Africa is a good example. Though Africa's focus is the youth bulge, we could miss a new challenge that is looming, that is that of aging. People are living longer and by 2035 and going ahead there will be a significant cohort of people over age 65 and South Africa will be one of the first countries to have to deal with the challenge. Using the CLA approach, the article shows that clearly countries are ill equipped to

cope with old stereotypes about old people (as rigid and unable and unwilling to learn) and their role (as passive receiver of help) are very strong. They point to the need of changing the narrative about older people and equipping them properly and thus unleash a generation of "Silver Surfers" which can actually add to the dynamism of Africa. The article on the future of North Africa also points to prospects of a region that is traditionally seen as not part of Africa but more tied to the Middle East. While North Africa and Middle East share a common Arab heritage the region also shares strong historical connections with the Rest of Africa. Both parts have shaped each others trajectory stretching back to ancient Egypt and the Middle age's Trans-Sahara trade. Therefore a reading of the Future of North Africa is very pertinent to understanding the future of the rest of Africa. Indeed the Arab Spring points to good lessons as SSA grapples with the challenge of a growing youth bulge. More importantly the common challenge of food security is pointing to new areas of building new bridges for collaboration as North Africa can transfer expertise in irrigation in return for access to abundant land in SSA. North Africa's institutional innovations in addressing issue of urbanization also provides useful lessons and new areas of collaboration in shaping better futures.

As pointed out the Africa trends tend to show significant rises and drops, very promising trends can be followed by significant reversals. This is a reflection of Africa's exposure to shocks and also a testimony of its inability to cope with shocks. Traditional shocks of political upheavals, commodity prices crashes are now being compounded by climate change induced shocks that are making droughts incidences more frequent and more severe. The future of Africa will very much depend on how well it copes with shocks. A better future requires that resilience to shocks be at the centre of long term planning especially in achieving SDGs. This is the thrust of the article by Raymond Tutu and Janice Busingye. They point however this is not the case. Though many development plans make reference to resilience the concept is not well captured in the plans. They call for rethinking of the concept of development and centralize resilience thinking in making development plans.

The world is that the cusp of a new revolution, The 4th Industrial Revolution (4IR), revolution that promises to have more impact than other revolutions. For Africa as X. N. Iraki argues this presents an opportunity to leapfrog development for this will require use of intelligence and anyone can think! This is a provocative thought, however 4IR will require more than skills but also infrastructure (internet and electricity), good governance to attract investment and vibrant innovation systems as pointed in a recent report by ACET for the Africa Development Bank (ACET, 2018). All the same it does represent an opportunity for Africa to fashion a very different future. However not all is rosy about 4IR, as the article by Van vurren points, the new technologies will come with challenges and also compound old challenges. They show that Africa is not free from information warfare that will be conducted in cyberspace and indeed terrorism is already a challenge. The potential of cyberspace is real especially if societies remain fragmented as the new media provides new ways or organizing and coordinating. There is potential for states to use information warfare on citizens eroding many rights. Information technologies by creating new sources of power are reshaping the trajectory of political development away from political and democratic models of the West. The potential challenge of these new platforms calls for further strengthening collaboration and common understanding.

In the last article Clifford Campbell explores the link between African and her diaspora in shaping Africa's future. It points that the current post-colonial Africa with a pan-Africanist agenda is largely a product of the America's diaspora imagination whose ideas of pan-Africa shaped much of the thought of the founding fathers. The potential for a diaspora playing a significant role is huge and indeed the Africa Union has recognized the diaspora as a bona fide constituency. While the old diaspora that left Africa during slavery remains a force in shaping thought, it is the new diaspora that has more recently might make a bigger mark going forward. These tend toward highly educated individuals and indeed some of the most highly educated groups in the West. This group is already a

significant contributor to development through remittances but the huge potential is brain circulation though returning experts and more crucially through use of 4th industrial technology tools that will facilitate flow of knowledge and ideas.

In conclusion while this issue may not have delved into the full range of drivers of Africa futures and thus paint the full range of potential future of Africa, it does provide interesting snapshots that point to various futures. It also makes use of many futures tools thus pointing to the many ways that the futures of Africa can be explored. We thus hope that the issue will stimulate researchers and practitioners to develop more articles and further deepen our understanding of Africa and more crucially point to levers for steering Africa to better futures.

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References

ACET (2018). The Future of Work in Africa: The Impact of The Fourth Industrial Revolution on Job Creation and Skill Development in Africa. The Africa Centre for Economic Transformation (ACET). Accra Ghana

ACET (2017). *"African Transformation Report II – Agriculture Powering Africa's Economic Transformation"*

Adewumi, F. (2011). How The Economist changed its tune on Africa. How We Made It In Africa. Published on 11 DECEMBER 2011 https://www.howwemadeitinafrica.com/how-the-economist-changed-its-tune-on-africa/14001/

Gatune, J. (2010). Envisioning Africa's Future: A Story of Changing Perceptions. Issues in Brief. No. 13. The Frederick S. Pardee Center for the Study of the Longer-Range Futures.

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ARTICLE
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Using Futures Studies Methodologies to Explore the Economic Participation of the Older Cohorts of South Africa's Population Towards 2030

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Abstract

The South African population is ageing in an interesting manner. The median age was 26 in 2015, but the proportionate share of older cohorts is increasing rapidly. The older cohorts face numerous challenges around economic participation. This article highlights the research findings of a statistical analysis of the population's demographic profile, a causal layered analysis to deepen the understanding of the problem, and the generation of a set of scenarios to imagine the plausible futures of economic participation by people aged 55 and older toward 2030. Findings indicate that planners who presently focus most of their efforts on the youth may be surprised by the exponential increase in the numbers of older people. The article further describes the use of the four causal layered analysis levels (litany, systems, worldviews and myths/metaphors) to give structure to and enable richer comparisons between the different scenarios in a set.

Keywords: Ageing, Ageism, South Africa, Economic participation, Demography, Causal Layered Analysis, Scenarios.

Introduction

Ageing is a global phenomenon. Across the world, planners and policy makers are advised to design systems and practices to unlock the potential benefits of the ageing trend (Guest, 2014; Schwab – WEF, 2012). Demographic ageing refers to processes such as decreasing mortality and increasing life expectancy that result in larger portions of older people in a population (Yenilmez, 2015). Older people usually consume more than what they produce and become economically dependent after their retirement from work. However, if older

people stay healthy and economically active for as long as possible, their national economies could benefit from a longevity dividend - the combined benefit arising from social, health and economic bonuses accruing from prolonged economic activity (Olshansky et al., 2007). The UN Commission on Social Development recommended that governments

> *... redouble their efforts to integrate older persons into the mainstream ..., particularly by improving working conditions for older workers, dismantling employer barriers to hiring and retaining older workers, promoting employability and providing better care services. (UN, 2006, p.679)*

The more developed nations have enjoyed the opportunity of adapting to the ageing of their populations over prolonged periods of time and during stages of substantial socio-economic development. Many less developed nations do not have that prospect. Their still-growing populations are ageing faster from a wider base and under conditions of economic difficulty and social structure inefficiencies. The rapid pace of ageing may be one of the greatest institutional challenges that planners in developing countries will face in the near future (Harper, 2010; Mason & Lee, 2004; Matsukura, Ogawa, & Clark, 2007).

In Africa, with its young population and numerous critical challenges, ageing is not high on the agendas of planners and policy makers; there is an entrenched view that older people should be cared for by their extended families (Apt, 2005). In terms of economic opportunities, the main focus seems to be on creating jobs for the youth in order to realise a potential demographic dividend.

In South Africa, people over the age of 60 have significantly lower labour force participation rates than their peers in other parts of the world, (Haldenwang, 2011). South Africa's efforts to support active ageing are aiming for alignment with the 2002 Madrid International Plan of Action on Ageing (DSD, 2008). Initiatives such as the Institute of Ageing in Africa and the South African Older Persons Forum focus on the health and social integration of older people. Gaps exist for research on the barriers to and the enablers of economic participation of the older cohorts of the South African population. To this end, the objective of the study was to describe the current status and to imagine plausible future development paths of economic participation by the older cohorts of the (still demographically young) South African population.

Research methodology

The research commenced with a focused environmental scan of recently published and pertinent articles in public domain media as well as a statistical enquiry into the ageing paths and the demographic characteristics of the older cohorts of the population. The environmental scan and statistical analysis were followed by a causal layered analysis (CLA); following Inayatullah (2015) the latter attempted to uncover the worldviews, myths and metaphors underlying the used future. The outputs from the environmental scan were used to populate the CLA; this first draft was evaluated and enriched by inputs from the focus group.

A focus group of people from diverse backgrounds was established to participate in various phases of the research; their inputs were particularly vital during the causal layered analysis, the issues analysis, and the generation of the scenarios.

Issues that influence the future economic participation of people aged 55 and older were initially identified through the environmental scan. The focus group shared their views on the issues identified through the environmental scan and added to the list. As suggested by Hines and Bishop (2006), the interrelationships between the issues were investigated through an impact analysis. The impact analysis delivered critical, active, reactive and buffering factors (Kosov & Gaβner, 2008), that were considered during the generation of the scenarios.

The outputs of the statistical analysis, the CLA and the issues analysis were used as inputs into the scenario generation process. These inputs guided the identification of key uncertainties and the conversations around plausible future scenarios. Participants in the scenario generation process gave prominence to the interactions between the factors and applied the CLA structure of litany, systems, worldviews and myths/metaphors to tell the story of each scenario.

Statistical analysis: Ageing paths and demographic profile of the older cohorts of the South African population

The aim of the statistical analysis was twofold - to generate a profile of the older cohorts of the South African population that illuminates the driving forces influencing current and future demographic processes, and to provide insights into the future economic participation of these cohorts.

Demographic structure of the population

A comparison of the 1950, 2017, 2030 and 2100 population pyramids illustrates the profound changes that the South African population is, and will continue to be, undergoing (See Figure 1). The 1950 pyramid illustrates a small population, with steep staggered age cohorts and small numbers of people aged 55 and older. The 2017 pyramid bears clear evidence of a youth bulge with the older cohorts showing an increase in numbers, with the 2030 pyramid illustrating the further development of these processes. The classic features of an ageing population are portrayed by the 2100 pyramid; increasing numbers of people in the older cohorts and smaller and decreasing numbers in the younger cohorts.

For the purposes of this research, the demographic processes in the top parts of the pyramids (above the dotted lines in Figure 1) were particularly interesting.

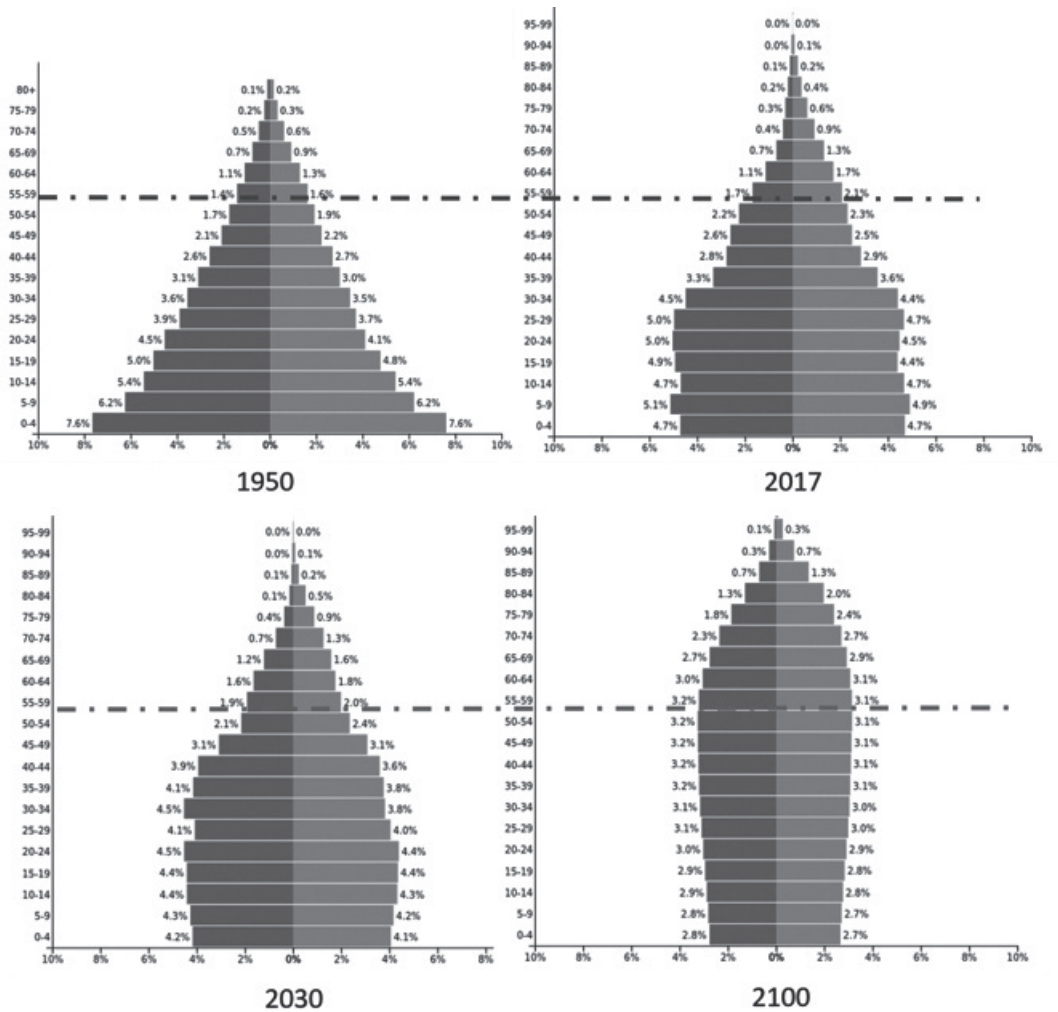

Figure 1. South Africa population pyramids: 1950, 2017, 2030 and 2100. Source: Own compilation from https://www.populationpyramid.net/south-africa/

Population age

The median age of a population and the relative proportion of people older than 65 are indicators of that population's age (PRB, 2013). Figure 2 illustrates that the median age of the South African population is higher than that of the rest of Africa, but lower than that of the world. Half of the South African population was younger/older than 26 in 2015; this is projected to increase to 29 in 2030, 36.5 in 2060 and 42 in 2090.

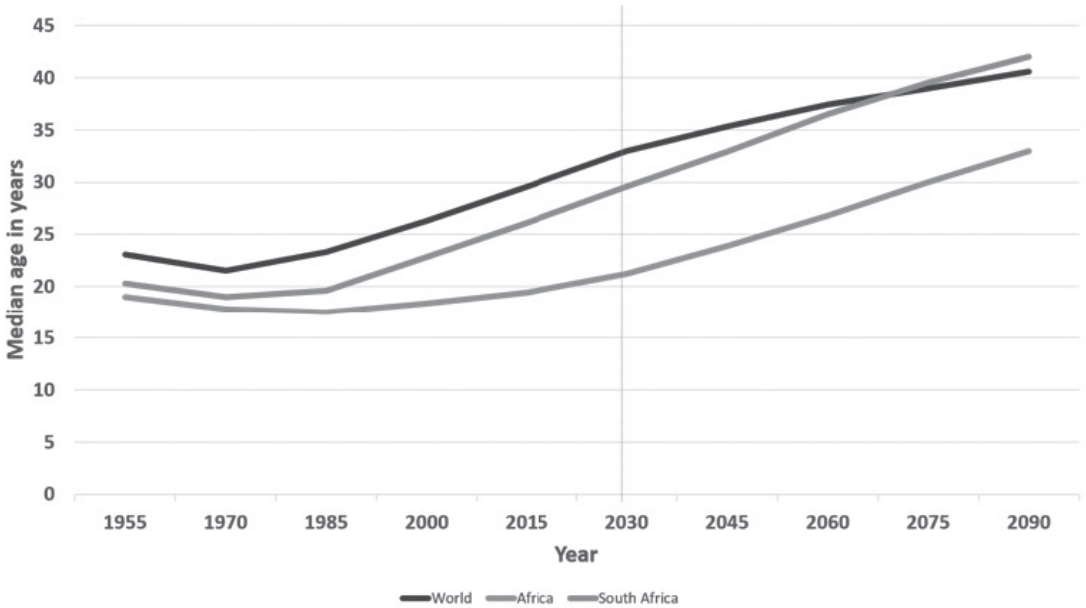

Figure 2. Median age of population, 1955-2090. Source: Own compilation from United Nations, 2017 Revision of World Population Prospects

The United Nations Population Division categorises a population as:

- Young, if less than 4% of the population is older than 65;
- Of intermediate age, if between 4% and 7% of the population is older than 65; and
- Old, if more than 7% of the population is older than 65 (Haldenwang, 2011).

People aged 65 and older made up 5.34% of the population in 2011, projected to increase to 6.1% in 2019 and 10.5% in 2030, as illustrated in Figure 3. This analysis indicates that (irrespective of the low median age illustrated in Figure 2) the population is not young anymore. It has been of intermediate age since 1996 and is progressing towards being an old population well before 2030.

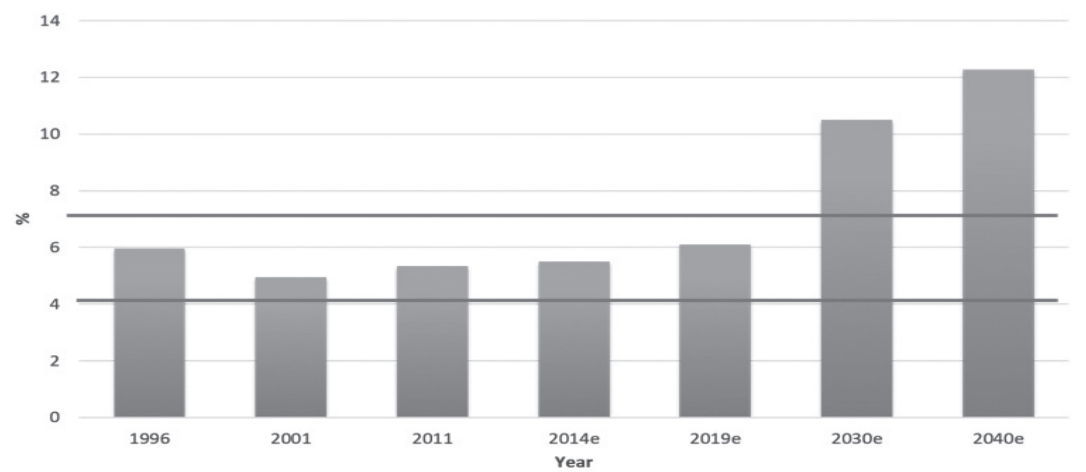

Figure 3. Percentage share of people aged 65+ in South African population. Source: Own compilation from SA Census 1996, 2001, 2011, StatsSA mid-year population estimates, StatsSA 2015-2019 projections and Haldenwang IFR 2011 population projections

Number of people in the older cohorts of the population

Figure 4 illustrates the significant increase in the number of people aged 55-74, from 1.1 million in 1950, to 3.64 million in 2000, to projected levels of 7.39 million in 2030 and 12.88 million in 2050. The number of people aged 75 and older are projected to increase from 0.77 million in 2010 to 1.57 million in 2030 and 2.88 million in 2050.

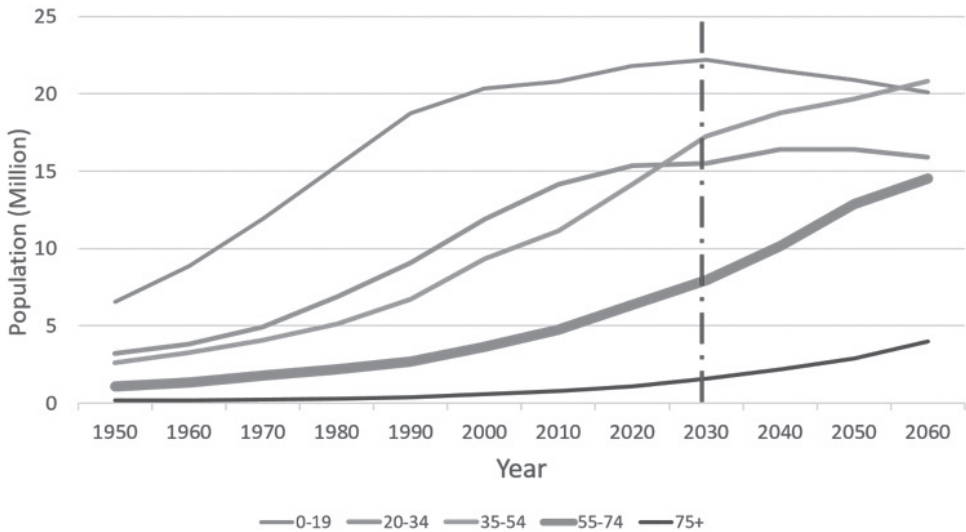

Figure 4. South African population age groups. Source: Own compilation from UN 2017 update of World Population Prospects

Life expectancy at birth

Between 1950 and 2000 the life expectancy of South African people increased steadily. It then plateaued (mostly as a result of the influence of HIV / AIDS) but is projected to increase again from 2030 onward. By 2100, a baby born in South Africa can expect to live around 78 years.

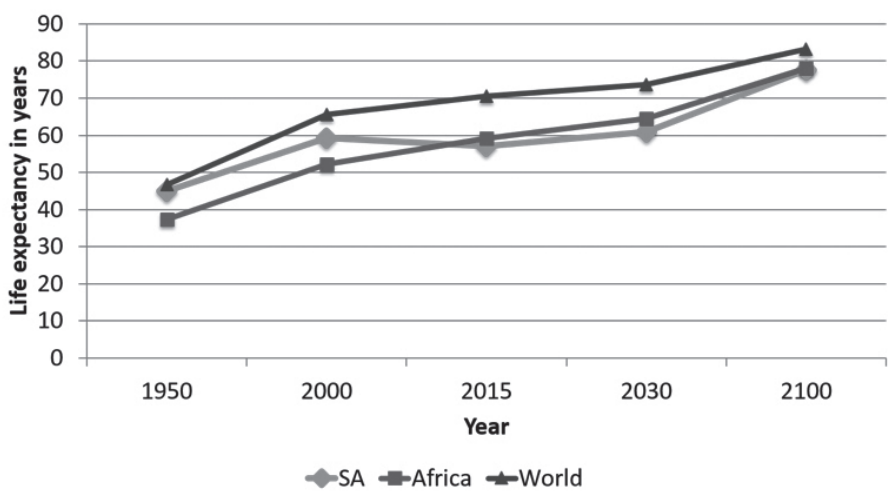

Figure 5. Life expectancy at birth, 1950-2100. Source: Own compilation from UN World Population Prospects, 2015.

Life expectancy at 65

If a person lived until the age of 65, s/he could expect to live another 9 years in 1950. This number is steadily increasing and in 2030 a 65-year-old person can expect to live another 14 years. By 2100 this number is projected to increase to 19 years. Figure 6 illustrates how life expectancy at age 65 in South Africa was, and is projected to remain, slightly higher than the average for Sub-Sahara Africa, but significantly lower than that of the rest of the world.

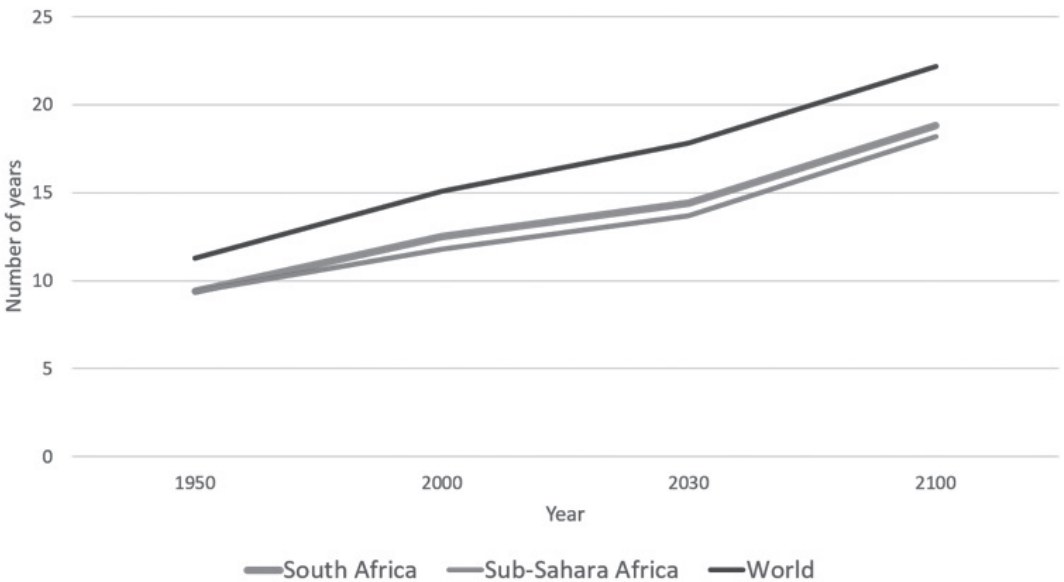

Figure 6. Life expectancy at age 65, 1950-2100. Source: Own compilation from UN World Population Prospects, 2015

Current levels of educational attainment

In South Africa, Grade 12 marks the end of primary and secondary schooling. Higher education comprises college, university and any other post-school education. Figure 7 portrays the educational attainment of people aged 40 and older in South Africa. The older cohorts of the South African population do not have high levels of educational attainment; very limited numbers have any higher education at all. The 40-54 year age groups are included in this analysis, because the 55+ cohorts of 2030 would have been 40 years and older during the 2011 census. Although these younger groups show significantly higher levels of basic education, fewer than 15% of them hold some sort of higher education qualification, while 26% have Grade 12 as their highest level of educational attainment.

There are more recent statistics available, but it comes from a community survey. The 2011 numbers are derived from a national census and were therefore deemed to be a more accurate source of data and also more appropriate for comparisons over time.

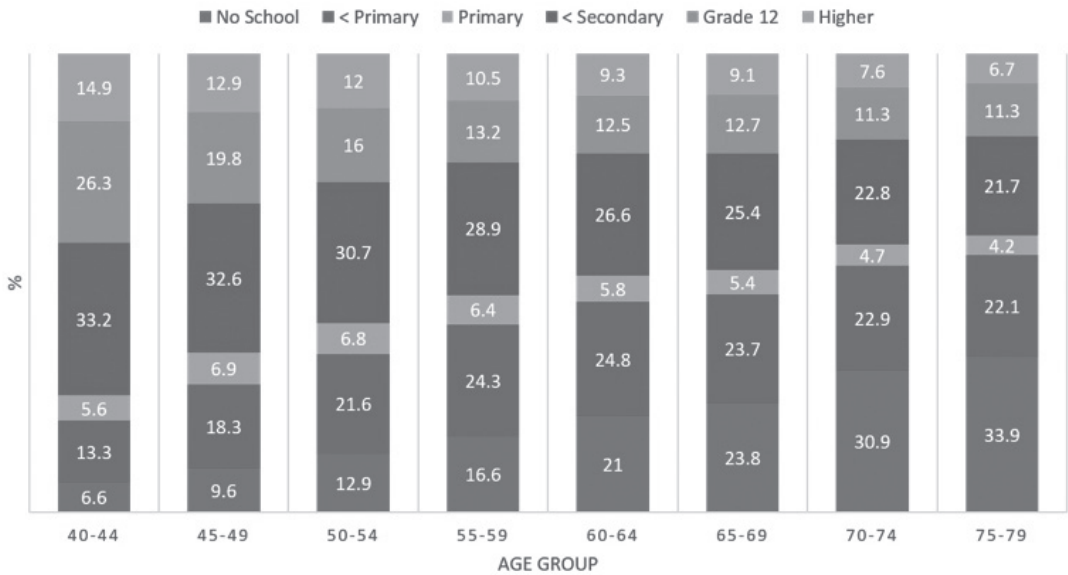

Figure 7. Levels of educational attainment. Source: Own compilation from StatsSA Census 2011

Current levels of economic activity

Statistics SA considers a person as employed if they, during the reference week, did any work for at least one hour (StatsSA, 2016). Details of the 35-44 and 45-54 age groups were included in this analysis because it could inform the assessment of future economic activity of people that will be aged 55 and older in 2030. StatsSA does not publish details of the economic activity of people older than 65 as part of their employment statistics.

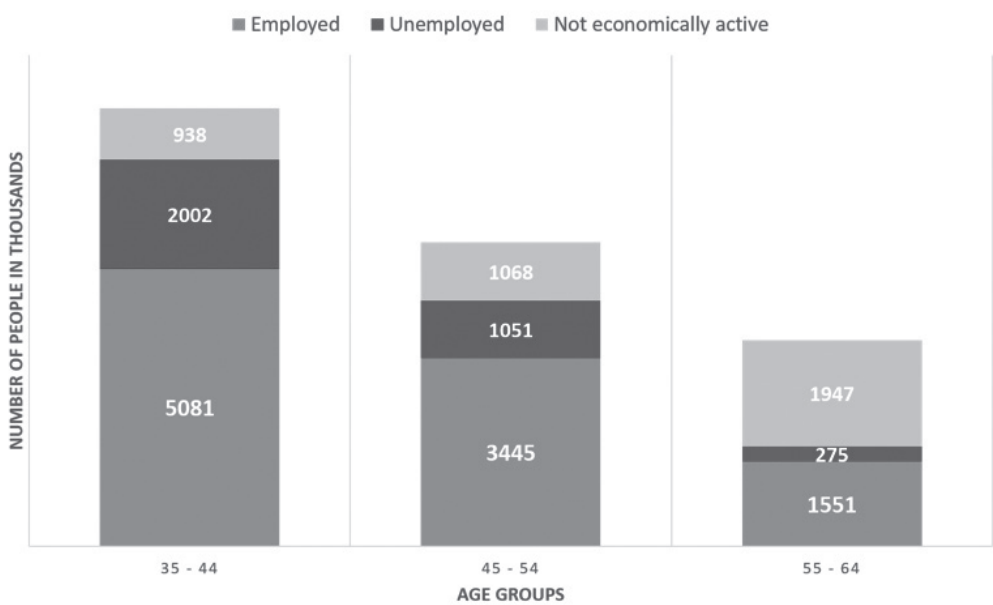

Figure 8. Levels of economic participation. Source: Own compilation from StatsSA Quarterly Labour Force Survey, Quarter 4, 2017

Figure 8 indicates the significant numbers of people that are either unemployed or not economically active in the 35-44, 45-54 and 55-64 age groups. The analysis seems to point to an entrenched culture of increased economic inactivity among the older cohorts of the population.

Health profile

The causes of death of people aged 40 and older and the prevalence of risk factors for non-communicable diseases were analysed to form an understanding of the overall health status of the older cohorts of the population. Figure 9 illustrates that non-communicable diseases are the main cause of death of people 55 and older in South Africa.

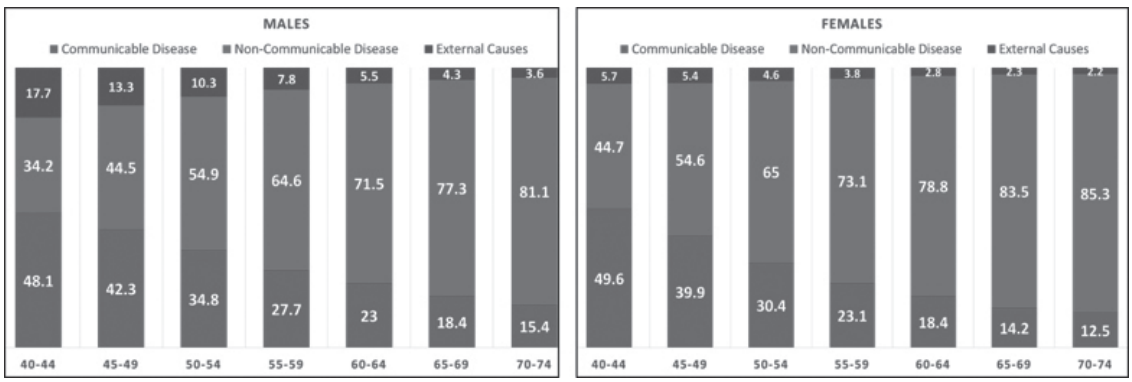

Figure 9. Causes of death: South African males and females aged 40-79, 2016. Source: Own compilation from StatsSA, 2018

Non-communicable diseases are chronic non-infectious medical conditions. An analysis of the prevalence of the known risk factors for non-communicable diseases is important for this study because the occurrence of one or more of these risk factors potentially has an influence on the quality of life of the people suffering from them and on their ability to participate in the workforce in an efficient manner. Furthermore, prevalence of the risk factors increase health-care expenses and lowers productivity levels on both the personal and country level (Bradshaw, Steyn, Levitt, & Nojilana, 2011). The *Study on global AGEing and adult health* (SAGE) by the World Health Organisation collects health data from China, Russia, India, Ghana, Mexico and South Africa. Findings from the study indicated that, of the countries included in the study, South Africa had the highest percentages of adults with two or more of the major risk factors across all age groups (WHO, 2011). Figure 10 illustrates the alarmingly high levels of elevated blood pressure, obesity and inactivity among the older cohorts of the South African population.

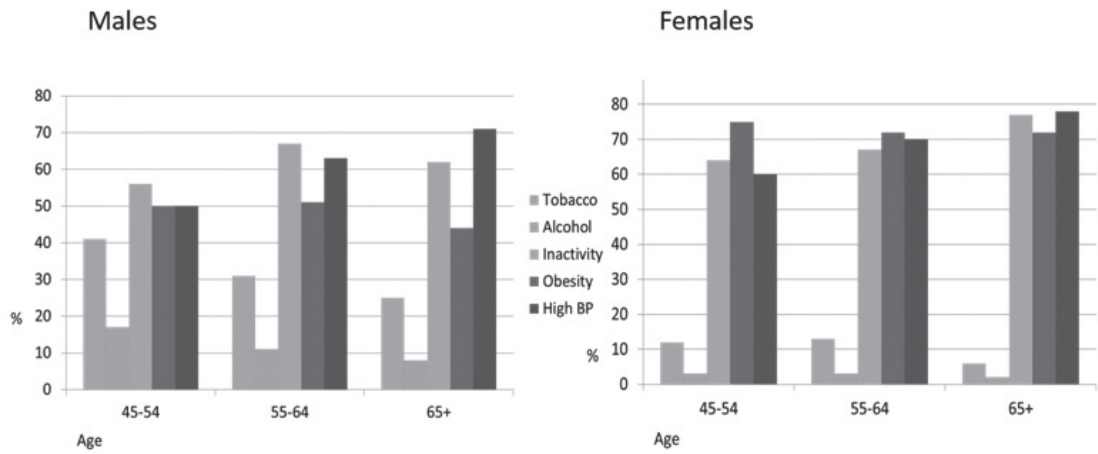

Figure 10. Prevalence of risk factors for non-communicable diseases, South Africa males and females aged 45+. Source: Own compilation from Bradshaw, Steyn, Levitt, & Nojilana, 2011

Causal layered analysis

A causal layered analysis was performed to enable deeper thinking around the current economic participation of people aged 55 and older in South Africa.

The litany

Headlines from recently published articles told the story of how older people struggle to be economically active.

'Old people are just slower': Ageism has taken over the tech industry
Older women struggle to find work
In search of the missing office minority – the over-fifties
City watchdogs investigate financial age discrimination

Systems level

Issues were initially harvested from the environmental scan; the focus group added to the list and elaborated on the prevalence and influence of the issues. Thirteen significant issues were eventually identified.

Lacking skills. The skills development system does not deliver suitably skilled older participants. Its main focus is the education of the youth and older people are therefore left out of skills development initiatives.

Competition for jobs. Many older people find themselves not shortlisted for positions that they apply for, because the high unemployment rate leads to a multitude of applicants for each job opening.

Mandatory retirement age. Most organisations apply a mandatory retirement age; as such it removes older people from secure employment.

Disruptive change. Technological advances and business model changes are disrupting whole industries, putting people out of employment.

Social background. Social background (standing) seems to predispose people toward future economic participation / exclusion.

Limited prior economic activity. If a person was unemployed or not economically active up to the age of 55, they will probably not become economically active thereafter.

Early retirement offers. Corporates and government organisations use early retirement offers to cut costs and to create employment opportunities for the massive numbers of unemployed young people.

Health issues. People suffering from TB and / or HIV/AIDS, elevated blood pressure and obesity have diminished potential for productive economic activity.

Low economic growth. The country is experiencing a period of economic growth that is lower than that of its peers.

BBBEE / race issues. The system of broad-based black economic empowerment is contributing to an increase in racial tensions and divisions in the country.

The grants system. Many social grants are available in South Africa; in some cases it stifles the will to be economically active and the practice of entrepreneurship.

Youth focus and incentives. Youth employment is incentivised by government – therefore the chances of older people being appointed to open positions are slim.

Funding system. The age of older applicants is regarded as a risk factor when they apply for funding, limiting the opportunities of older entrepreneurs to access funding.

Worldview

Probing the worldview level revealed ideological outlooks and deep assumptions about how the world is and should be (Inayatullah, 2004, p.17). The enquiry delivered two overarching, nine general (but rather negative), and three positive worldviews.

Overarching views

'Someone has to …..' (External locus of control). Many South Africans perceive themselves as not in control of their own fate, attributing the full responsibility for their past, present and future to 'something' or 'someone'.

There is no hope. Many people aged 55 and older express their hopelessness, not only about their personal economic future but also that of South Africa as a whole.

Negative views

Older people can't adapt to change. They are viewed as fixed in their ways and this notion is strengthened when advertisements, movies and cartoons depict older people as stubborn and obstinate.

Men work, women care for the home. The still-persistent gender bias influence the economic potential of older women in South Africa since they were denied access to training and economic opportunities earlier in their lives.

Older people are slow, younger ones are fast. Many sectors experience an age bias where younger people are perceived to be more suitably skilled, faster and more adaptable.

Older people are physically weak. There is a wide-spread view that older people are physically weak and therefore unable to keep up with the fast pace and physical challenges of many jobs.

Young workers are cheaper than older ones. Budget constraints lead managers to look for 'cheaper' options. Older workers are perceived to be more expensive than new entrants.

Older workers will be absent more. This view stems from the notion that older people experience failing health, leading to more absent days and increased pressure on workplace clinic services and medical aid programs.

People aged 55 or more **have limited time left to serve an employer**. Such applicants are therefore eliminated from recruitment processes. Age 65 is the mental cut-off in the minds of employers and if someone has less than 10 years to serve they deem the investment of employing them as not feasible.

Older people will disrupt team dynamics. The prevailing view is that older people will resist learning from younger people or partaking in more social ways of communicating and working in teams.

Older people are thought to have health issues or to pass on soon and are therefore perceived as **too high a risk to grant access to finance** to start a new business.

Positive views

Older people have gained a lot of experience over time. They are able to pass on their technical skills and institutional knowledge to a next generation.

Over 55s **have wisdom** and as a result are able to bring together people with conflicting views and to use their deep industry knowledge to sense both threats and opportunities that other (less experienced) people would miss.

Older people are **willing to share** their experience and knowledge; they want to create more sustainable organisations that add value to the lives of all stakeholders.

Myths and metaphors

The unconscious and emotive levels of our knowing is formed by the visual images that we create in our minds; those ancient stories that we keep on telling ourselves and others (Inayatullah, 2004). Ten myths and metaphors were identified.

55 is old. The majority of the population in South Africa is younger than 35; to them, a person of 55 seems very old

There are three separate and distinct life phases (Learn, work, retire). There subsists a shared perception that people are born, learn things during early life, then enter employment until they retire to rest until they pass on - three consecutive phases, with no going back and forth between them.

Older people's time is over. There is an entrenched belief that older people do not have the physical or mental ability to be economically active. In the South African society, where the bulk of the population is younger than 35 years, this myth is constantly reinforced because people reaching the age of 55 are not considered for opportunities or they are retrenched from their employment.

Older people have to be cared for / looked after. Society believes that older people need the help of younger people because they are unable to cope on their own. This myth is closely linked to the myths that older people's time is over and that they have to rest.

Older = seniority. People believe that an older person should be the one in the senior position; therefore they could / should not gain access to entry-level positions.

They deserve to rest now. This is a deeply embedded conviction in the South African society and it probably underpins the constrained access that older people have to finance for new ventures and reskilling opportunities.

Going on early pension is proof of a successful life. Large portions of society believe that early retirement is evidence of the fact that one has earned enough money.

They are 'old-school'. References are made to older people as being from an earlier time without labour-saving devices, where hard, mostly physical work was required.

Older people are not 'young and hungry' any more. The notion that older people have become dull and placid; they have no more drive and eagerness to explore new things.

They are 'golden oldies'. A positive metaphor applied when referring to older people who are valued for their (old-fashioned) way of doing things.

Analysis of key issues

The issues identified on the systems level of the causal layered analysis, were further analysed to generate insights about the influence that the issues have on each other. Kosow and Gaβner (2008) recommend a scoring method that captures the influence of the issues on one another, generating an active and passive score for each issue. The active score indicates how strongly an issue influences other issues, while the passive score indicates how strongly an issue is influenced by other issues. Following the recommendations of Kosow and Gaβner (2008) the focus group analysed the issues and arranged them into four groups based on the active and passive scores of each issue.

Critical / dynamic issues have a strong influence on other issues and are strongly influenced by other issues. The analysis delivered six critical issues:

- Economic growth
- Prior economic activity
- Access to training opportunities
- Suitable skills
- Unemployment / competition for positions
- Access to funding

Active / impulsive issues have a strong influence on other issues, but are weakly influenced by other issues. Three issues were analysed as active / impulsive:

- Social background
- Red tape / regulatory issues
- Broad-Based Black Economic Empowerment / race issues

Reactive / passive issues have a weak influence on other issues, but are strongly influenced by other issues. In this analysis, the availability of social grants was a reactive / passive issue.

Lazy / buffering issues have a weak influence on other issues, and are weakly influenced by other issues. The health of the older cohorts, early retirement offers and the mandatory retirement age were found to be lazy / buffering issues.

The outputs of this analysis became an important input into the scenario process; it was crucial during the consideration of key uncertainties and the generation of the scenario stories.

2030 Scenarios

The final activity of the focus group was the generation of a set of scenarios. As mentioned earlier, the outputs of the environmental scan and the statistical analysis were the inputs into the causal layered analysis. The insights from the causal layered analysis, in turn, were the inputs into the issues analysis and eventually the scenario generation process.

The focus group analysed the key factors at play in the scenario field towards 2030 and identified two pivotal uncertainties:

- The potential of the system to enable and support economic participation.
- The willingness and ability of people aged 55 and older to participate.

Each scenario was described according to the four CLA levels to give structure and to ensure comparability between the set of scenarios.

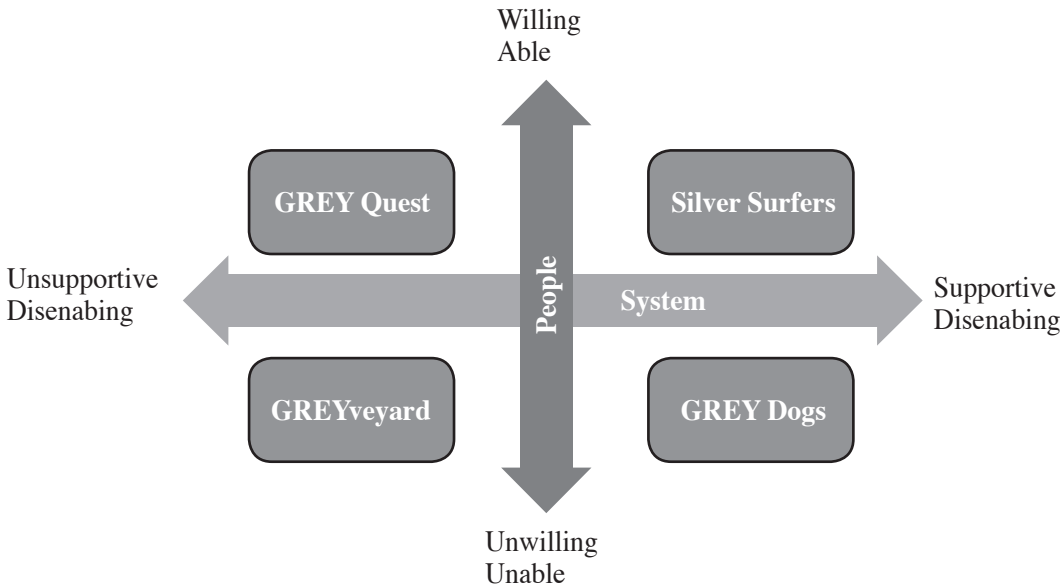

Figure 11. Scenario set on the economic participation of older cohorts in South Africa toward 2030

The GREYveyard

In the GREYveyard the unwilling and unable people are marginalised by a disenabling and unsupportive system. The prevailing **metaphor** is: "get these oldies out of the way; their time is over." The shared **worldview** is that older people are a burden on society. Persons aged 55 and older grovel in negativity in the GREYveyard; their strong external locus of control is one of the reasons why they blame everyone and everything for their bleak future.

On the **systems level** the 4th industrial revolution wreaked havoc and rendered the bulk of jobs in South Africa obsolete. The economy cannot absorb people 55 and older, because they do not have the specialised skills required for the limited jobs that are available. There were a few skills development initiatives for people aged 55 and above between 2018 and 2030, but it was sub-standard, inappropriate and only available to a few well-connected individuals in urban areas. These well-connected individuals benefit from available opportunities, but the bulk of the over-55 cohorts are in dire straits with little to no chance of securing employment or accessing economic opportunities. The 2030 government's planners are surprised by the demographic changes in the population; they were still concentrating on creating educational and economic opportunities for the youth, but now there are waves of people aged 55 and older who are demanding grants, jobs and upskilling.

On the **litany level** we see South Africa in a deep and on-going recession. Economic growth is mediocre, unemployment levels, especially under the older cohorts of the workforce, are higher than ever, radicalism rules in a severely polarised society and international watchdogs warn that South Africa is well set on the path toward becoming a failed state.

The GREY quest

People aged 55 and older are confronted by an unsupportive and disenabling system; they are willing and able participants, but the maze in this GREY quest is a daunting challenge.

The prevailing **metaphor** among the older cohorts of the population is one of a continuous and lifelong loop of learning and doing; the myth of three distinct stages (learn, work, retire) in life, is dead. The people aged 55 and older, with their 'we can' **worldview,** accept that falling (failing) in the maze of the GREY quest happens, but they believe that getting up and continuing is what gets you through. The images and perceptions that people aged 55 and older hold about themselves and their capabilities are positive; they have an 'I-can-do' mindset. They accept the barriers (red tape, discrimination and unnecessary regulations) as the salient characteristics of their operating environment and make plans to enable themselves to be successful within these constraints.

On the **systems level**, the 2030 government is creating an increasingly controlled economy. They over-regulate new initiatives and the vested interests of established role-players are protected through government connections that create barriers keeping new entrants away from emerging opportunities. The system is extremely difficult to navigate. Entry for people aged 55 and older into state-run skills development programs is almost impossible. The same goes for funding; applications by people older than 55 are summarily dismissed. However, innovative private training providers started entering the market from 2018 onward with niche products aimed at older and 'next-round' participants. Now, in 2030, their graduates are the strongest maze runners in the GREY Quest. Peer-to-peer funding platforms between the older cohorts are the main source of financing for their new initiatives.

On the **litany level**, we see large corporations and the government enforcing a strict retirement policy – out at 55. But that is all right in the GREY Quest, because in this scenario the people do not retire at 55, they just rewire and refire themselves into another round (or two, or three) of self-driven economic activity. South African people over 55 are frequent recipients of international innovation awards.

GREY Dogs

In this scenario the system is enabling and supportive, but the GREY Dogs are unwilling and unable to learn new tricks.

Four **myths and metaphors** prevail:

- Work is bad (the salt-mine)
- I deserve my rest now; I have done my bit
- You learn, you work, you retire (there are 3 distinct phases in life).
- Old dogs cannot learn new tricks

'Someone has to care for me' is the overarching **worldview** of a GREY dog. They live out their learnt helplessness by regarding themselves as entitled to do nothing and be cared for by someone else. Work is seen as something unpleasant and therefore a thing that should be retired from as soon as possible.

On the **systems level** we see that programmes were designed and are offered to facilitate lifelong learning, financiers offer equal access to applicants of all ages without unnecessary red tape and corruption is almost eradicated; the economic playing field is fair and open. Although a lot of effort went into changing the rules and regulations of the system over the past 15 years, planners did not focus on changing the mindsets of people who were around 40 in 2018. Now, in 2030, they are 55 and older and still firmly stuck in their old views.

Observations on the **litany level** show that the South African government scrapped mandatory retirement in 2025 already and people aged 55 and older are offered incentives to remain economically active. Researchers identified two main reasons why people do not take up these offers of incentives; their health is failing, and they are just not interested in being active economic participants. The GREY Dogs of 2030 want to be left to rest.

Silver surfers

An enabling system supports the willing and able silver surfers.

One of the **metaphors** held in the minds of the Silver Surfers is that 55 (or any age) is just a number. Another metaphor is that 'There is a next thing', referring to the deeply held notion that the traditional retirement age is not the end of an economically active life – multiple next rounds of different kinds of economic activity is possible. The general population of South Africa embrace the perception that 'We don't have to slice the pie into ever-smaller pieces; we can actually create a bigger pie'.

The **worldview** of the Silver Surfers is that anything is possible and everyone is equal, no matter what their age is. They have an internal locus of control – taking responsibility for their own future, not expecting 'someone' to do 'something'. About government, their view is that 'We can trust government – they are the good guys; they govern in a just and fair manner.' Work is not regarded as something you do between the ages of 23 and 55 or the place where you arrive at 8:00 and leave at 17:00 anymore; it can be done by anyone and from anywhere.

On the **systems level**, business, civil society and government collaborated in order to prepare for the demographic changes; they created initiatives and adequate systems to accommodate the increasing numbers of older people. Health care is good, corruption is almost eradicated, and the education system enables access to economic opportunities in a fair and just system with no age discrimination.

The **litany level** portrays organisations where no-one thinks that it is strange to have both mentors and interns with ages ranging between 18 and 80. The mandatory retirement age was scrapped in 2020 already. South Africa now has some of the healthiest over-50s globally – only 12% of them suffer from obesity, elevated blood pressure or other risk factors for non-communicable diseases. The Silver Surfers are economically active and valuable members of society.

Conclusion

South Africa is experiencing an interesting ageing process; the median age of the population is still low at the moment, but the share of people aged 55 and older is increasing in a significant manner. Older cohorts of the population are not well skilled, have a history of non-participation in economic activities and have a high prevalence of risk factors for non-communicable diseases. In short, older South Africans are living longer, but they are not economically active, not suitably skilled and they are not particularly healthy.

Planners and policy makers in South Africa currently focus most of their efforts on the enablement of the youth. The findings of this research indicate that they may soon be caught unawares by the exponential increase in the numbers of people aged 55 and older.

The research highlights the role of two equally important factors:

- A system that supports and enables economic participation.
- People that are willing and able to participate in the economy.

The use of the four CLA levels during the generation of the scenarios provided structure and enriched comparisons between the different scenarios; thereby enhancing the level of internal validity (Amara, 1981).

Participants in the scenario building process indicated that, although all four of the scenarios seemed plausible to them, they expect the GREYveyard scenario to play out toward 2030 if no interventions happened.

Possible interventions to co-create the more desirable Silver Surfers scenario include:

- Educational institutions should be motivated to develop short courses and further training interventions focused on the development of entrepreneurial intelligence and other skills of people aged 40 and above.

- Societal views about the economic participation of older people should be re-booted; both in the minds of the older people themselves, and in the minds of the rest of the population.

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References

Amara, R. (1981). How to Tell Good Work from Bad. *The Futurist,* April 1981.

Apt, N. (2005). Guest Editorial. 30 Years of African Research on Ageing: History, Achievements and Challenges for the Future. *Generations Review,* Vol. 15, No. 2, April 2005.

Bradshaw, D., Steyn, K., Levitt, N., & Nojilana, B. (2011). *Non-Communicable Diseases – A Race Against Time*. Policy Brief, September 2011, updated 2014. MRC and UCT.

DSD (Department of Social Development, South Africa). (2008). *Active Ageing must be expanded for overall wellbeing: Minister Dlamini*. Media Release on 29 October 2008. [Online] Available: www.dsd.gov.za .

Guest, R. (2014). Population ageing and productivity: A survey with implications for New Zealand. *New Zealand Economic Papers,* 48, 153-168.

Haldenwang, B. B. (2011). Projections of the South African population, 1985-2040. *Institute for Futures Research Occasional Paper,* March 2011.

Harper, S. (2010). The capacity of social security and health care institutions to adapt to an ageing world. *International Social Security Review,* Vol 63, 3-4/2010.

Hines, A., & Bishop, P. (2006). *Thinking about the Future: Guidelines for Strategic Foresight*. Washington, DC: Social Technologies LLC.

Inayatullah, S. (2004). *The Causal Layered Analysis (CLA) Reader. Theory and Case Studies of an Integrative and Transformative Methodology.* Taiwan: Tamkang University Press.

Inayatullah, S. (2015). Ensuring Culture Does Not Eat Strategy for Breakfast: What Works in Futures Studies. *World Future Review, 2015, 7*(4), 351-361.

Institute of Ageing in Africa. (2016). *Institute of Ageing in Africa – About Us*. [Online] Available: www.instituteofageing.uct.ac.za

Kosow, H., & Gaßner, R. (2008). Methods of future and scenario analysis. Overview, assessment, and selection criteria. DIE Research Project "Developing Policy: Questions for the Future". Bonn: Deutsches Institut für Entwicklungspolitik.

Mason, A., & Lee, R. (2006). Reform and support systems for the elderly in developing countries: capturing the second demographic dividend. *Genus,* 62, 11-35.

Matsukura, R., Ogawa, N., & Clark, R. L. (2007). Analysis of Employment Patterns and the Changing Demographic Structure of Japan. *Japanese Economy,* 34, 82-153.

Olshansky, S. J., Perry, D., Miller, R. A., & Butler, R. N. (2007). Pursuing the Longevity Dividend: Scientific Goals for an Aging World. *Annals of the New York Academy of Sciences,* 1114, 11-13.

Population Reference Bureau (PRB). (2013). Glossary of Demographic Terms. [Online]. Available: https://www.prb.org/glossary

StatsSA. (2004). Census 2001: Primary tables South Africa. Census '96 and 2001 compared. Report no 03-02-04 (2001)

StatsSA. (2012). Census 2011 Methodology and Highlights of key results. Report no 03-01-42. Pretoria: Statistics South Africa.

StatsSA. (2015). Mid-year population estimates, 2015. Statistical release P0302. Pretoria: Statistics South Africa.

StatsSA. (2018). Mortality and causes of death in South Africa, 2016: Findings from death notification. Statistical release P0309.3. Pretoria: Statistics South Africa.

StatsSA. (2018). Quarterly Labour Force Survey, Quarter 4, 2017. Statistical release P0211. Pretoria: Statistics South Africa.

United Nations. (2006). Major developments since the Second World Assembly on Ageing. Report of the Secretary-General of the United Nations to the Commission on Social Development, 2006. *International Social Science Journal,* 58, 667-680.

United Nations Department of Economic and Social Affairs / Population Division. (2017). *World Population Prospects: The 2017 Revision, custom data acquired via website*. https://esa.un.org/unpd/wpp

World Economic Forum. (2012). *Global Population Ageing: Peril or Promise?* Geneva. WEF.

World Health Organization. (2011). *Global Health and Aging*. WHO. October 2011. [Online] Available: www.who.int/ageing/publications/global-health.pdf

Yenilmez, M. I. (2015). Economic and Social Consequences of Population Aging the Dilemmas and Opportunities in the Twenty-First Century. *Applied Research in Quality of Life: The Official Journal of the International Society for Quality-of-Life Studies,* 10, 735-752.

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ARTICLE
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Exploring the Futures of Agricultural Research and Innovations (ARI) Systems in Africa

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Abstract

For many African countries, the structure of the economy is still tilted towards agriculture and agro-allied industries. In recent times, investment in agriculture is being championed as one of the key routes to bolstering African economies, providing jobs for the burgeoning youthful population, and lifting many Africans out of poverty. However, the form of agriculture that will deliver these lofty goals (ambitious outcomes) cannot rely on the typical way agriculture has been, and is being practised, in many parts of Africa. It will have to draw heavily on locally relevant, sound science based, and well adopted agricultural research and innovations, tailored to African contexts. In this paper, drawing from the outputs of a foresight workshop by African agricultural experts, we explored the plausible futures of agricultural research and innovations in Africa. In the end, four future scenarios of African agricultural research and innovations derived from the combination of dominant drivers as conceived by African experts are presented.

Keywords: Foresight, Agricultural innovations, Research, Futures, Africa.

Introduction

Africa is undergoing many transformations in its bid to catch up with other regions of the world. With technological advances and new knowledge that are democratizing access to information and other vital resources, African economies are being restructured – even as they expand (Leke & Barton-WEF, 2016). Nevertheless, agriculture remains very relevant for African economies, and agribusiness is being pushed as a viable sector to absorb the growing youth demography. The population of African youth age between 15-35

years according to the African Union, make up about 35% of general but a disproportionate 60% of the unemployed population (AUC, 2015; ILO, 2013; Lohento & Ajilore, 2015). The proposition of using the agricultural sector as source of solution to the social, economic and governance problems emanating from the demographic change is largely facing its own constraints. The logic behind the proposition of youth engagement in the agricultural sector stems from the popular data and mantra that 60% of the population in Africa derive their livelihood from the agricultural sector (World Bank, 2013a), which was based on the Africa rural population, a variable that has changed significantly over the years. Observations and various analyses over time have shown, that agriculture in Africa will need to evolve to a higher level of productivity to be able to attract and retain many of Africa's youth, between 10-12 million whom enter the labour market yearly (ILO, 2013). Consequently, the future of Africa and its prosperity is seen to be linked to the future of its agriculture. One key issue, among many others, is the need for more affordable scientific innovations that improve productivity and sustainability, while ensuring growth and profitability. For this to happen, agricultural research and innovations in Africa must not only address the present challenges of agricultural development but also explore and propose solutions to the possible future challenges.

The State of Agriculture in Africa

Agriculture in Africa has attracted much scientific inquiry in recent past; the sector has also attracted the interest of the development actors across the globe and the regional economic organization in Africa and beyond. The agricultural sector is besieged by a handful of issues that affects its stability and productivity. Being an old ancient source of livelihood, especially in Africa, the sector has suffered lack of coherent scientific and policy attention which is mainly responsible for low total factor productivity.

The agricultural sector has largely not been able to cater for the food need of the population leading to huge food importation bills from the different countries on the continent, this is disturbing considering the fact that as at the year 2013, 70% of the Africa population live in the rural areas and 30% of the total GDP is derived from the agricultural sector (World Bank, 2013b). In addition, agricultural production per capital has decreased consistently in Africa in the last 30 years, although production itself has increased but not at the same pace as population growth. (Haggblade & Hazell, 2010; Sason, 2012). Figure 1. Indicated growth in the agricultural sector and its relationship with the population growth rate

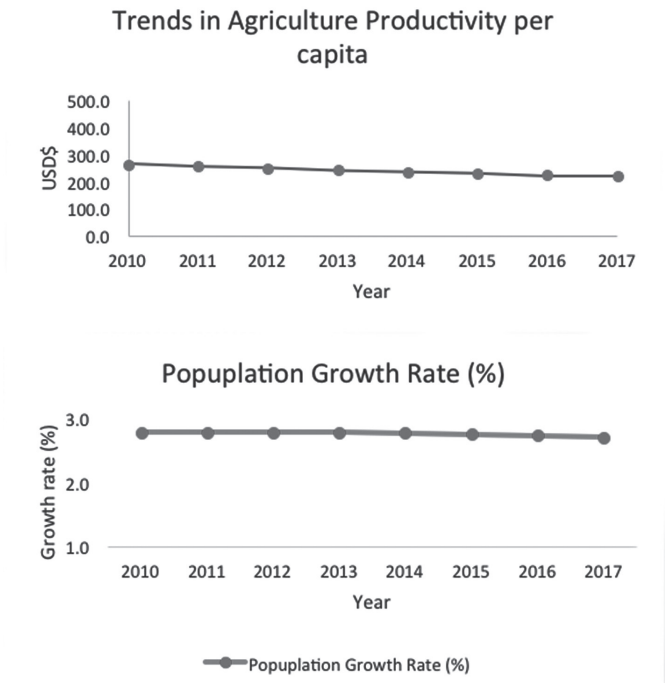

Figure 1. Aggregated agricultural growth rate per capital and the population growth rate

The growth in agricultural total factor productivity has been at a low at continental level, reflecting the inability of change under the current circumstances (Table 1)

Table 1. *Agricultural total factor productivity growth in eight Africa countries. (Source: Roe, Smith and Tambi, 2016)*

Country	Agricultural total factor Productivity Growth	Years to Double	Doubling year
Burkina Faso	0.017	41.4	2051
Cameroon	0.023	30.4	2040
Malawi	-0.029	-	-
Morocco	0.019	36.8	2047
Nigeria	0.039	18.4	2028
Tunisia	0.014	50	2060
Uganda	0.014	50	2060
Zambia	-0.016	-	-

The low productivity at the farm level is largely preventing interest in the sector which will only support sustainable livelihood if it operated in a business mode. Efforts to run Africa agriculture as a business includes policies that channel investment into research actions as well as the provision of needed infrastructure to ensure the development of the value chains. The mass engagement of the youth in agriculture will only be functional where production is profitable and engagement along the value chain is fruitful.

A study that investigated the status of agricultural research and innovation systems in 13 countries across all the sub-regions of Africa in the last 20 years showed that the generation of agricultural technologies and innovations in Africa is still very low compared with other regions of the world. The study which considered the level of innovations and development of new technologies across 9 broad sub-sectors of agriculture (including cropping, livestock, fisheries, processing, value chain management, natural resource management, finance/market, governance and others) found that more that seventy percent (71%) of the overall innovations focused on one sub-sector – cropping (PARI, 2016). Also, among the countries studies, there were huge disparities.

One of the major reasons for this is the limited financing available for innovations and development of new technologies for agriculture in Africa. On the average, Africa spends just 0.4% of its relatively small GDP on research and development (UNESCO, 2011). This is across all sectors of the economy and agriculture often take even a really tiny slice of this limited funding.

Exploring the plausible futures of agriculture and the drivers of agricultural systems, among many other advantages will help to better tailor limited funding for research and innovations to evolving trends and pathways. Also, it will empower other stakeholders and end users of agricultural innovations and research products – such as farmers, processors, agribusiness entrepreneurs etc. – to better identify their own innovation needs through participatory foresight and anticipatory systems.

Role of Foresight in Fostering Africa Agricultural Growth

Understanding the plausible futures and the roles of Africa research and innovations (ARI) systems achieving sustainable and profitable agriculture in Africa is a central pillar of the Science Agenda for Agriculture in Africa (S3A)[1]. Foresight is seen as playing three crucial roles:

1. Through foresight, agricultural research and innovation can be made more responsive to future agricultural development needs in Africa. Especially, agricultural research institutes (ARI) will become more responsive if their stakeholders are more pro-active i.e. prepared, willing and empowered to take actions towards the future they want.
2. As "a systematic, participatory and multi-disciplinary approach to explore mid- to long-term futures and drivers of change", foresight provides space for different stakeholders and experts for systemic thinking and developing anticipatory knowledge. It explores future changes by anticipating and analyzing possible future developments and challenges both qualitatively and quantitatively, and supports stakeholders to actively shape the future vision for today strategies and actions.
3. With back-casting, foresight exercises will be used to generate pathways leading to the elaboration of an overarching strategic vision to which the different stakeholders in the agricultural development space in Africa can have a shared sense of commitment. (FARA, 2016)

Understanding plausible futures of agriculture and harnessing the knowledge to influence or shape agricultural development discourses and policies (and to guide the implementation of policies) will require a critical mass of a new generation of African agricultural scientists, research and development experts, innovators and policymakers with the ability to combine forward thinking and strategic foresight with their engagements. Building the capacity of this new set of agricultural development futurists that will embed futures thinking into their respective agricultural research and development roles, is important and urgent.

Building Africa Research and Innovations Systems Scenarios Through Foresight Analysis

To better understand the future of agricultural research and innovation systems and also start building foresight capacity of key stakeholders, FARA organized a foresight workshop in 2018. The objectives of the workshop is to (1) To develop the foresight capacity of a new set of agricultural professionals in Africa and explore the future roles of agricultural research and innovations in the implementation of the Science Agenda. (2) To establish an Africa Foresight Academy to serve as a platform for forward thinking and foresight in agriculture exchanges and discussion in Africa, and for the training of new foresight in agriculture experts. (3) To establish a long term, growing community of foresight experts who are able to provide future-smart contributions to policy and apply strategic foresight in the implementation of the Science Agenda for Agriculture in Africa (and other relevant agricultural agendas) at regional and country levels.

The workshop used the Participatory Prospective Analysis (PPA), a co-elaborative scenario-based foresight technique that builds on the La Prospective approach (Bourgeois & Jesus, 2004). It is method that has been adopted and used by GFAR over the years, and it puts a lot of emphasis on effectiveness, inclusion, relevance and capacity development of the participants – through the process of learning by doing. In addition, for the results, emphasis is on consistency, reproducibility, transparency and plausibility (Bourgeois et al., 2017).

The workshop was implemented as a 5-day learning-by-doing sequence of collective work and took place in Accra from 12-16 February, 2018. The training targeted 16 participants mostly young and middle-aged agricultural development and innovations professionals/stakeholders in Africa. The rationale for this was to focus on agricultural research and development professionals who still have a good number of active years in the field and also have more stake in the future. This will help in building a more sustainable foresight academy in agriculture and a network of futures literate agricultural development professionals in Africa.

Among the participants were researchers, agribusiness entrepreneurs and consultants, seed certification and control professionals; and other experts in agricultural communications, agricultural financing and cooperative development, youth in agriculture issues, knowledge management, project monitoring and evaluation, programme management, policy research and experts from ministries of agriculture. 8 out of the 16 participants were women.

The selected participants were trained in the use of participatory foresight method for visioning and implementation of agricultural development programmes that keyed into the Science Agenda for Agriculture in Africa (Bourgeois et al., 2017).

Defining the foresight Analysis System

Clarity on the purpose and focus of the work to be done is of great importance. Participants need to understand the scope and limits – such as geographical and time limits – of the system which they will be exploring at the beginning of the foresight exercise. The questions what, where, when and who need to be answered before proceeding to the main exercise.

For this workshop, it was agreed that the system being explored in the futures of the agricultural research and innovations (what) in sub-Saharan Africa (where), looking at the plausible scenarios that could have emerge by the year 2030 (when) and what plausible roles various stakeholders such as farmers, researcher, policymakers etc. (who) could be playing in the system at that time based on the different pathways considered.

Identifying and defining the forces shaping the future

Having defined the system, the next step in the PPA method is to identify the forces of change that have been driving or have the potential to drive of influence the system. Forces of change were divided into internal and external forces, with a focus on internal forces – i.e. those forces that is within the sphere of influence of stakeholders in the system. Participants at the workshop identified 56 forces shaping the future, under broad categorizations of social, technological, environmental, economic and political forces.

Thereafter, the forces identified were defined. Definitions are clear and concise and were agreed to by all participants through a consensus building process before acceptance.

Table 2. *Forces of change and their definitions*

Name	Definition
	SOCIAL
1. Perception	Attitudes, believes and opinions of a particular group towards agricultural research and innovation
2. Women and youth inclusion	Equitable inclusion of all (gender and age groups) relevant stakeholders.
3. Cultural diversity	Interaction among different socio- cultural groups in a common geographical entity.
4. Population	Number of people living in a particular place (geographical location) at a particular time.
5. Migration	Migration is the physical movement of people from one geographical location to another
6. Indigenous knowledge	Non – Conventional science knowledge – in the Africa context
7. Literacy	Ability to receive, process, understand and use information and knowledge products towards agricultural research and innovation
	TECHNICAL/TECHNOLOGICAL
8. Availability of technology	The existence of relevant technology for agricultural research and innovations
9. Cost of access to technology	Cost associated with ensuring that a particular technology is available and accessible to its relevant users Access: Availability, Affordability and effective use of new technology by its relevant users
10. Technical capacity and development training	Ability to generate and harness the technical knowledge
11. Knowledge transfer	Sharing intellectual resources
12. Attitude to technology	Response and reaction to the use of technology
13. Intellectual property right	Ownership and control over a particular innovation
14. Access to technology	Availability, affordability and effective use of technology
15. African authentic technology	Technology designed and implemented successfully by Africans

16. Research and innovation funding	Availability and accessibility to finance resources allocated to agricultural innovation research by government and other fundersi.e. public and private funding.
17. Data / privacy	Ownership and control over data handling and utilization
18. Information knowledge management/data management	The collection, processing and effective use of data or information
19. Mechanization	Use of machines and systems to achieve desired result
20. Alternative /emerging / complementary tech	New, emerging and non-mainstream technology
ENVIRONMENTAL/ECOLOGICAL	
21. Access to climate information	Judicious and effective utilization of natural resources
22. Bio-diversity	The existence and interaction of flora and fauna in an ecosystem
23. Pest and diseases.	The control and prevention of disease causing organisms
24. Land availability	Existence of land for use and appropriation
25. Waste management systems	The structure and measures for effective control in the use and disposal of waste
26. Climatic condition	Natural elements that can affect productivity
27. Land use pattern	The way land is distributed and used in a geographic area
28. Water management	The mechanisms of effective utilization and conservation of water resources
29. Soil Management	Measures of sustaining productivity of soil
30. Weather	Natural element that can affect productivity
ECONOMIC	
31. Human resources	Availability of and access to productive human engagement
32. Standard of living	The level to which an individual or group of people can have their need and wants met
33. Market trends and systems	Patterns of demand and supply of agricultural products and services
34. Cost of living	The expense involve in maintaining a certain standard of living
35. Infrastructures	Facilities that enhances and strengthens (mediate) productivity
36. Access to Input	Ability to obtain and utilize inputs
37. Taxation	It is the system of collecting levy on income generated
38. Access to market	Facilitation of linkages between buyers and sellers of agricultural products and services
39. Market supply	Interactions of policies, institution, and other actors or players in the economic exchange (of agricultural products and services)

40. Cost of production	The expense involved in making available goods, services or research and innovation products
41. Intellectual property law	Set of rules that guide and protect the exclusive right of ownership of a particular innovation
POLICY AND POLITICAL	
42. Land tenure system	System of land ownership in a particular country including access, control and transfer
43. Regulations	Set of rules and norms that guide the operations of agricultural research and innovation systems
44. Policy integration	Level of interaction among interrelated policies
45. Political will/leadership	The extent to which policy makers are committed to develop and implementing policies that support agriculture research and innovation
46. Farmers' rights	The extent of freedom and level of protection within which farmers can conduct activities beneficial to them
47. Policy implementation	Concrete actions of putting policies into practice
48. Advocacy	Systematic campaign to raise awareness and influence policy agenda to influence change
49. Government/systems of governance	Administrative and political structure of a country (Including African Tradition)
50. Bi-lateral relationship/ relations	Conduct of Political, economic and social relations between countries
51. Political Atmosphere/ environment	Current situation of political affairs affecting the people at any giving period of time in particular country
52. Stakeholders' relations	State of political, economic and social relations among stakeholders in agricultural research and innovation systems

Structural Analysis and Measures of Mutual Influences

The next step after identifying and defining the forces of change is the analysis of mutual influences between the identified forces. This work consisted of an evaluation of the direct influence of each force on each of the other forces in the system. The existence or absence of direct influence between forces results in a classification of forces contributing to "structure" the system.

It is for this reason that this work is also called "structural analysis". Understanding the relationships between forces is an important component of the co-elaborative scenario building work because it allows both to understand the drivers of the system and in which direction it moves. It also allows the participants to understand the nature of interactions at work and relationships between the essential components of the system from a dynamic point of view.

The structural analysis is done through a binary scoring system (0:1), indicating indirect or direct influence, which are then entered into a structural analysis software (designed by Bourgeois

and Jesus, 2010) which quantitatively measures the mutual influences of the forces and provides the basis for ranking the most influential forces within the system.

Results

Unveiling the driving forces

The driving forces are the forces which are the most influential, the strongest in the system. They are called driving forces because the way they may change in the future will orient the system in a specific direction. The identification of the driving forces is a crucial step in this scenario building process because these forces are used to build the frame of the scenarios. This step aims at identifying the type of transformation that could take place in the future in relation to each selected driving forces. Each driving force can evolve in different directions leading to a specific state in the future. These states will be used in the next step to produce plausible scenarios.

The selection of the driving forces by the participants take place after the analysis and discussions of the measurements of direct, indirect and total influence are completed.

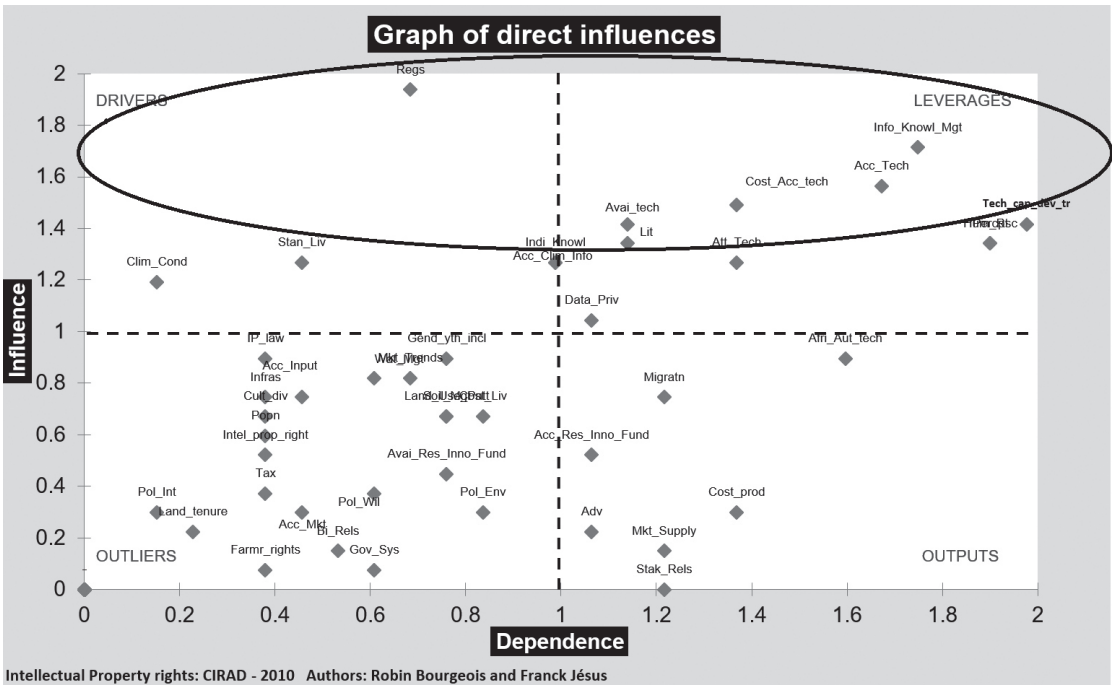

Figure 2. The graph showing the level of direct influences of forces of change in the system

Output

Participants selected 6 driving forces. These included a) regulation b) access to technology c) information & knowledge management d) literacy, e) available technology f) technical capacity. The plausible future states of these forces were then used to build scenarios for the future agricultural research and innovation in Africa.

Table 3. *Most influential driving forces in the system*

Force number	Force	Definition
43	Regulations	Set of rules and norms that guide the operations of agricultural research and innovation systems
14	Access to technology	Availability, affordability and effective use of technology
18	Information Knowledge Management/Data management	The collection, processing and effective use of data or information
7	Literacy	Ability to receive, process, understand and use information and knowledge products towards agricultural research and innovation
8	Available Technology	The existence of technology
10	Technical Capacity	Ability to generate and harness technical knowledge

Table 4. *Plausible future states of forces of change of the agricultural research and innovation systems*

Forces of change	Plausible future states of driving forces			
A. REGULATION	**Adaptive/fair regulation** *In 2030, regulations governing agricultural research and innovation (ARI) systems are fair and equitable*	**Rigid regulation** *Regulations governing ARI systems are rigid and not evolving*	**Ineffective regulation** *Regulations governing ARI systems are ineffective, unenforced and redundant*	**No regulation** *There are no regulations governing ARI systems*
B. ACCESS TO TECHNOLOGY	**Inclusive access** *Affordable, easy and socially acceptable access to technologies that aid ARI systems and technological products of ARI systems*	**Centralized and exclusive access** *Centralized access to ARI technologies; only few have access to ARI technologies and their products*	**Disrupted access** *Interrupted access to ARI technologies as a result of conflict, or other disruptions*	**No access** *No access to ARI technologies*
C. INFORMATION KNOWLEDGE MANAGEMENT	**Open access** *Information and knowledge products from ARI systems are shared and available to whoever wants access e.g. online*	**No access** *Information and knowledge products from ARI systems are limited to those who generate the products*	**Restricted access** *Information and knowledge products from ARI systems are shared and available with restriction e.g. paywalls*	

D. LITERACY	**Total literacy (everyone is literate)** *All stakeholders within the ARI system, including farmers, are literate*	**No literacy (No one is literate)** *None of the stakeholder within the ARI system, including farmers, is literate*	**Limited literacy (Only few are literate)** *Only few stakeholders within the ARI system, including farmers, are literate*	**Only women are literate** *Only female stakeholders within the ARI system are literate*	**Only men are literate** *Only male stakeholders within the ARI system are literate*	
E. AVAILABLE TECHNOLOGY	**Advanced and user friendly** *Available ARI technologies are state-of-the-art and easy to use*	**Obsolete** *ARI technologies are old and outdated*	**Rudimentary** *ARI technologies are very basic*	**Complex(not user friendly)** *Available ARI technologies are complex and not user friendly*		
F. TECHNICAL CAPACITY	**Total capacity (everyone is skilled)** *All ARI stakeholders are skilled and technically capable*	**No capacity** *No ARI stakeholder is skilled and technically capable*	**Limited capacity** *Few ARI stakeholders are skilled and technically capable*	**Unexploited capacity** *ARI stakeholders are skilled and technically capable, but cannot use their skills and technical capacity*	**Only woman have technical capacity**	**Only men have technical capacity**

Scenarios

Workshops participants identified a number of compatible states of the forces with which they build a number of scenarios. As there was limited time to finalize this aspect of the workshop, a number of scenario narratives were proposed in their unrefined forms. We have tried to refine the four of the proposed scenarios which are consistent to the overarching views of the participants at the workshop about how the future of agricultural research and innovations may unfold in Africa.

Scenario 1: The African Big Bang

***Future States*: Adaptive/fair regulation, inclusive access, open access information and knowledge products, limited literacy, availability of advanced and user friendly technologies, limited technical capacity.**

In 2030, regulations governing agricultural research and innovation (ARI) systems are in Africa fair and equitable. This is as a result of an increasing open access to information and knowledge which improves the literacy of stakeholders in agricultural research and innovations space – though still at limited level – and enhance their ability to advocate for better policies and implementation from policy and decision makers. Because, policy makers are held more accountable, the quality of policymaking and implementation for agricultural research improves and fosters an enabling environment for the advancement of agricultural research and innovations that are relevant to the needs of stakeholder in the sector. Also, open and inclusive access to information and better sharing of knowledge products unleash the production of a host of advanced, fit-for-purpose and user friendly agricultural research and innovations that are easily accessible to users, despite their limited technical capacity.

Consequently, this will lead to affordable, easy and socially acceptable access to the agricultural technologies that will aid the diffusion of technological products. Available ARI technologies will be state-of-the-art and easy to use. Information and knowledge products from ARI systems are shared and available online to whoever wants to access them.

Even though only a few stakeholders within the ARI system, including farmers, are literate, this will not impact on the strength of the system itself. In conclusion, the few ARI stakeholders who are skilled will use their technical capability to bring about innovations that drive forward agriculture in Africa.

Scenario 2: From Malabo to Accra

Future States: **Adaptive/fair regulation, inclusive access, open access information and knowledge products, total literacy, availability of advanced and user friendly technologies, total technical capacity.**

By the year 2030, regulations governing agricultural research and innovation (ARI) systems are adaptive, fair and equitable. African ARI policy and decision makers become more accountable to the stakeholders and implement the commitments of the Malabo Declaration, by increasing funding to agricultural research and innovation systems towards significantly reducing hunger and poverty, improving agricultural stakeholders' livelihoods and African economies – as result of boosting trade of agricultural commodities. Due to increased funding to the ARI systems in Africa and inclusive and adaptive policies, coupled with open access to information and knowledge production and data sharing among ARI stakeholders, there is proliferation of relevant, advanced agricultural research, innovations and technologies in Africa. Access to ARI technologies and their products also become affordable, easy to use and socially acceptable.

All stakeholders within the ARI system, including farmers, are literate as a result of a combination of policies that build their capacity and empower them, a democratized and inclusive access to information, open access to new and existing knowledge, and access to the technologies that significantly improves their productivity, reduces the drudgery associated with farming and frees up significant time for to engage in learning and build their own capacity. Thus, all stakeholders including farmers are skilled and technically capable in deploying ARI technologies.

Scenario 3: The Road to Sambisa

Future States**: Ineffective regulations, disrupted access, restricted access to information, limited literacy, complex technology, limited capacity**

In 2030, regulations governing ARI systems are ineffective, unenforced and redundant. This is due to resource conflict situations, such as farmer-herdsmen and territorial conflicts, that broke out as a result of past rigid/no regulations and poor management of policies which have thus rendered governments ineffective and unable to enforce any of the current regulations. There is disrupted access to the limited technology available to ARI stakeholders and the available technologies are complex, not user friendly and not fit for purpose. There is diminished technical capacity of ARI stakeholders who are unable or find it very difficult to access new information and knowledge products in order to improve their own capacity, because of the restricted access to information and the disruptions to normal life.

Scenario 4: Every man for himself (Isolated islands of capacity)

Future States: **Rigid regulation, centralized and exclusive access, no (or exclusive) access to information, only men are literate, complex technology, limited capacity**

In 2030, regulations governing ARI systems are rigid and not evolving as a result of closed and exclusive systems that centralize access to technologies and give preferential access. Only few privileged groups have access to ARI technologies and their products. Information and knowledge products are closed off and limited to those who generate them, limiting cross fertilization of knowledge and hampering creativity and innovations in ARI systems. Women are structurally excluded through low literacy and capacity. Overall there is limited capacity in the system as the

exclusionary tendencies ensure there is limited or no capacity building to replace aging stakeholders and to transfer skills and knowledge and ensure sustainability. As a result, available technologies are too complex for the current stakeholders and not relevant to their limited skills and capacity. Few ARI stakeholders have adequate skills and capacity and the close access means they are hardly sharing their capacity nor the products their skills with others.

In the end, farmers will continue with ARI technologies that are old and outdated, and the system stagnates and atrophies.

Conclusion and Way Forward

It is clear that that Scenario 2: From Malabo to Accra is the desired future scenario. What is not very clear is what it will take to get there. Political will, will be crucial. This will mean implementing the Malabo declaration that seeks to increased funding for agriculture to at least 10% of the government budget and accelerate agriculture GDP growth by 6%. Central to this objective will be an increased focus of ARI systems as the key vehicle for achieving these objectives.

African agriculture is going through transformations – with an increasing need for relevant research and innovation – and requires anticipation and foresight tools to better shape its futures. Participatory foresight techniques such as PPA offer the opportunity to explore the futures of the agriculture research and innovations in a multi-stakeholder setting through diverse perspectives of multiple actors. Exploring future trends through the interactions social, technological, environmental, economic and political forces shaping agricultural and innovation systems in Africa provides robust views of how the futures may be shaping up. However, understanding that the agricultural research and innovation systems in different countries of Africa are at different levels of development and thus not homogenous is important. Indeed, different scenarios as envisioned by the stakeholders can actually manifest in different countries of Africa, or within different regions of a country, at the same time. Therefore, the scenarios put forward are to facilitate dialogues and discourses around agricultural research and innovations in Africa, their drivers and plausible directions.

The shaping of better futures will also require this new generation of African agricultural scientists, research for development experts and innovators with futures literacy to start embedding forward thinking and strategic foresight into their work. The group will form the core of the emerging Africa Foresight Academy – a regional platform for foresight exchange and discussion on futures of agriculture in Africa. As part of its main constituencies and a key stakeholder, the Global Forum on Agricultural Research (GFAR) supports the Forum for Agricultural Research in Africa (FARA) in its work that focuses on driving agricultural transformations in Africa.

To this end, GFAR and FARA have collaborated to establish the Africa Foresight Academy in agricultural development that will support the ongoing transformation of agriculture in Africa with foresight knowledge through futures literacy outputs that will help policymakers and agricultural development and innovation stakeholders to better understand the drivers of the futures and identify potential leverages for policies. The academy, whose founding members came out of the workshop, will engage in strong advocacy, based on foresight knowledge outputs, and lead discussions on the futures of agriculture at different levels – regional, sub-regional, national and subnational – to facilitate the agricultural transformation process across Africa.

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Endnotes

1. This Science Agenda is an Africa-owned agenda for the mobilization of science for the improvement of the livelihoods of the majority of African farmers and agribusiness entrepreneurs, and a drive towards a coherent investment in agricultural development. The Science agenda has been developed by the Forum for Agricultural Research in Africa (FARA), which is the overarching body with the mandate to drive the agricultural development agenda of the African Union (FARA 2014)

References

Bourgeois, R., Liswanti, N., Mukasa, C., Zamora, A., Herawati, T., Monterroso, I., Mshale, B., Banjade, M. R., Mwangi, E., & Larson, A. (2017). Guide for co-elaboration of scenarios: Building shared understanding and joint action for reform and security of forest tenure. Bogor, Indonesia: CIFOR.

Bourgeois, R., & Jesus, F. (2004). Participatory prospective analysis: Exploring and anticipating challenges with stakeholders. CGPRT Publication (ESCAP) No. 46. Bogor: ESCAP.

Bourgeois, R., Penunia, E., Bisht, S., & Boruk, D. (2017). Foresight for all: Co-elaborative scenario building and empowerment. Technol. Forecast. Soc. Chang. 124, 177-188. doi:10.1016/j.techfore.2017.04.018

FARA. (2014). Science agenda for agriculture in Africa (S3A): "Connecting Science" to transform agriculture in Africa. Forum for Agricultural Research in Africa (FARA), Accra, Ghana.

ILO. (2013). Global Employment Trends for Youth 2013: A generation at risk. International Labour Organization Report 2013, Geneva, Switzerland.

Leke, A., & Barton, D. (2016). 3 reasons things are looking up for African economies. In the Africa series of WEF publications for the World Economic Forum on Africa, 11-13 May, 2016.

Lohento K, & O Ajilore. (2015). ICT and Youth in Agriculture. In AGRA 2015 Africa Agriculture Status Report, Chapter 5. Published by Alliance for a Green Evolution in Africa (AGRA). p 118-142.

PARI. (2016). National innovation studies in 12 African PARI countries.

Roe, L., Smith, B. W, Rodney, & Tambi, E. (2016). Study of Growth, Structural Changes and Total factor Productivity in Eight Africa Countries. Forum for Agricultural Research in Africa. PP 30.

Sasson A. (2012). Food security for Africa: An urgent global challenge. Agriculture & Food Security 1(2). Available at http://www.agricultureandfoodsecurity.com/content/1/1/2

UNESCO. (2011). Global Investments in R&D, August 2011.

World Bank. (2013a). Agriculture and rural development: regions. Available at http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTARD/0,,contentMDK:20445375~mnuPK:1308541~pagePK:148956~piPK:216618~theSitePK:336682,00.html

World Bank. (2013b). Fact sheet: The World Bank and agriculture in Africa. Available at http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/0,,contentMDK:21935583~pagePK:146736~piPK:146830~theSitePK:258644,00.html

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Challenging Human Trade in Sub-Saharan Africa: Reconstructing the Narrative of Human Trafficking for the Creation of a More Enabling Environment in 2037

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Abstract

This article puts the transnational crime of human trafficking in the context of Sub-Saharan Africa and its quickly growing youth bulge. Through Causal Layered Analysis of various alternative future scenarios as well as the identification of the core narrative surrounding the international discourse, it illustrates more deeply the forces that underlie trafficking and what change is possible. With the provision of a reconstructed narrative that avoids the current blind spots, this research points out the need for a new leadership paradigm that allows for a more holistic and future-oriented inquiry about socio-economic and political change and what it entails for human trafficking.

Keywords: Human Trafficking, Sub-Saharan Africa, Ubuntu, Leadership, Scenarios, Causal Layered Analysis, Emerging Issues.

Introduction

As of 2016, the International Labour Organization (ILO, 2016) estimated that 21 million people around the world are victims of forced labor[2]. Meanwhile the number of actual human trafficking victims remains largely unknown due to the underground nature of the crime and reliable data being scarce. The trade in humans, according to the ILO, generates illicit profits of around 150 billion USD each year, which ranks it one of the most profitable transnational crimes, along with drug trafficking and the trade in firearms. At the same time, reporting on the issue in popular media is rather rare despite a significant increase in the last decade (Gulati, 2010). In November 2017, videos from Libya emerged where migrants and refugees were auctioned off and sold as slaves, causing an international public outcry (Al Jazeera, 2017). Thus, while awareness is common, international action against crime networks and affiliated people outside such networks that operate this trade does neither show a promising future of decreasing numbers of victims nor a sufficient understanding of the crime's dynamics.

The third biennial Global Report on Trafficking in Persons (2016) by the United Nations Office on Drugs and Crime (UNODC) provides arguably one of the most insightful and reliable presentation of trends in this regard. In this report, the UNODC reveals numbers on trafficking and addresses the drivers that underlie the various forms as well as what potential forms may emerge in the future. It is valuable as it enables a better understanding of the dynamics of the crime and demonstrates the varying drivers and cultural aspects that complicate and very much influence human trafficking. In this respect, and to introduce some quantitative data, the trade in humans that the sub-Saharan African region experiences differs greatly in forms and drivers from the rest of the world. Globally, the most common form of human trafficking is sexual exploitation (54%) with forced labor (38%) coming in second. This global perspective also shows that women are the most vulnerable to victimization, with 51% of trafficked people globally being women. In Sub-Saharan Africa (SSA) on the other hand, forced labor dominates the trafficking market (53%) with sexual exploitation and other forms only constituting 29% and 18%, respectively. In this region then, 39% of trafficking victims are boys, whereas female adults and girls make up 27% and 25%. These numbers can be linked with the fact that heavy-labor industries such as mining, labor on cocoa plants, fishing as well as the exploitation for begging and recruitment of child combatants are much more prevalent in Sub-Saharan Africa (UNODC, 2016). When investigating the underlying driving forces, it becomes apparent that human trafficking in the region not only roots from the common push and pull factors. Economic disparity, a rise of international conflicts as well as a demand for workers through globalization and the possibilities of higher standards of living (Shelley, 2010) certainly are more severe in Sub-Saharan Africa, however, regional factors play a significant role in the facilitation of the crime too. The ancestral family structure, voodoo as well as *"Cultural practices, such as forcing young girls into ritual servitude, Trokosi (slaves to the Gods), Wahaya (fifth wife), Ukuthwala (kidnapping girls for marriage), payments of dowry, male dominance, female genital cutting, witchcraft, and child marriage, perpetuate the crime of human trafficking*." (Msuya, 2017)

International human trafficking, as identified by UNODC's aforementioned report, is subject to constant change as the driving forces of the crime are diverse and dependent on regional factors and stakeholders' involvement. Having put values and belief systems that are common in Sub-Saharan Africa into the context of trafficking on the continent as well as in the international sphere, it illustrates the need for a deeper understanding of underlying causes and narratives that surround the crime. However, as reliable data and research is scarce and does not inform policy actions very effectively, such an endeavor proves to be increasingly difficult too. This is reflected in legal frameworks and in actions taken on the international and regional level (Shelley, 2010). While the issue itself has continuously gained more and more attention and also improved in the way it is more encompassingly addressed, language remains ambiguous, leaving gray areas and the possibility of non-action and deflection (Gallagher, 2010). The local acceptance, enforcement and ownership of actions towards the eradication of human trafficking lacks behind. Two international agendas that experts and leaders turn to regarding the creation of a better future and are vital for the discourse surrounding human trade, are UN's global Sustainable Development Goals and the continental Agenda 2063 by the African Union.

The Two Agendas

As one of the major multilateral action-plans against human trafficking, UN's 2030 agenda with its Sustainable Development Goals appears to have broaden the outlook on global challenges as opposed to its predecessor, the Millennium Development Goals. However, the eventual effectiveness of these goals regarding human trade remains subject to speculation since their distinguishing features in the fight against factors that systemically cause human trafficking are

mostly of a semantical nature and will have to stand the test of time in terms of its local and regional implementation and how much of a difference it can in fact make. This is due to the fact that the essential value and vision of two of the trafficking-relevant SDGs - SDG 5 and 8 (gender equality and economic growth) - were already existent 15 years ago, whereas SDG 16, which focuses on access to justice, did not have any similar equivalent in the predecessor goals (UN General Assembly, 2015). The main difference between the predecessor goals and the SDGs then, lies in the bottom-up approach through localization (Global Taskforce of Local and Regional Governments, 2016). In the same vein as the UN's agenda to transform the world, the African Union in 2013, rolled out its own vision and set of aspirations which are however, strictly targeted at the continent itself (African Union Commission, 2015). While the grand vision of this agenda may differ from that of the SDGs, many of the goals and aspirations overlap. In fact, Agenda 2063 also includes specifically human trafficking as one of the issues that need to be eradicated, although its apparent understanding of the crime according to the first ten-year implementation plan, seems rather incomplete (African Union Commission, 2015). It writes, "*Since the guns would have been silenced and primary and secondary education will be compulsory, child labour exploitation, marriages, trafficking and soldiering would not be seen or experienced by children born after 2023*" (p.46, 2015), illustrating a shallow understanding of, and a reductionist approach towards, trafficking.

Without a doubt, the urge to understand and react holistically to this issue requires a multidisciplinary scrutiny of a much broader environment, of drivers, trends and particularly emerging issues. An aging society and a lack of sustainable policies serving towards this problem, terrorism and conflict causing the displacement of people, economic migration and urbanization, as well as automation are just few developments (Rotberg, 2013; Shelley, 2010) that currently, and in the near and far future will drastically reshape the dynamics of human trafficking and potentially organized crime too. With these factors in mind, this article executes a closer look at Sub-Saharan Africa as it stands out as a region that, regarding human trafficking on a transnational level, has not yet sparked the necessary interest of international politics and policy-makers. It appears that some of the the most important stakeholders have not made the connections and have so far failed to see implications of the regions rise with regards to the trade in humans. While these rapid developments on the continent may mostly be reflected economically if done right, it first and foremost will constitute a rise in population, as Sub-Saharan Africa's birth rate remains the highest rate worldwide (He, Goodkind, & Kowal, 2016; World Bank, 2016). As such, it creates an extremely opposing force to global trends and will challenge best practices in a region that is heavily burdened already. The urgent need for action is illustrated clearly when consulting Graham Molitor's Emerging Issues Analysis (Molitor, 2010) for the purpose of timing the problem – it then becomes apparent that the issue is not merely an *emerging* one but already well developed, which is supported by empirical data and various regional studies that demonstrate the possible implications that are detailed later on.

Emerging Issues – What is Changing and What is to Come?

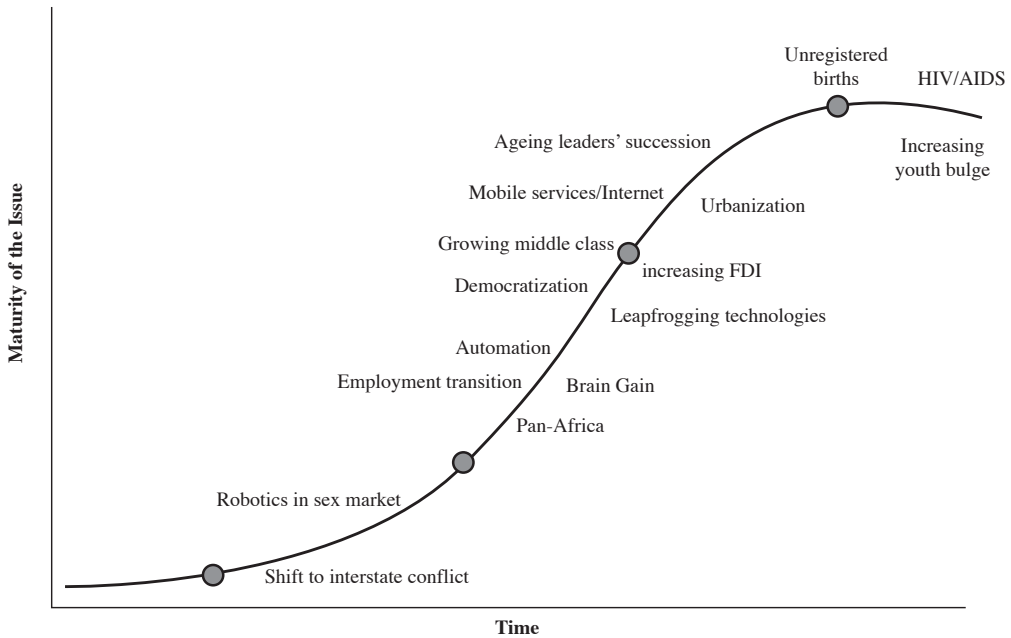

Figure 1. Emerging Issues Model for human trafficking in Sub-Saharan Africa (Adapted from Molitor, 2010)

Feeding text-based research data according to the STEEP taxonomy into the s-curve shown in Figure 1 made it possible to relate institutional trends and emerging developments to the issue of human trafficking regionally as well as globally. Social realities paint a picture of a growing youth bulge (CIA, 2016; UN, 2015) with continuing high numbers of unregistered births in most parts of Sub-Saharan Africa (UNICEF, 2010) as well as the problems of a fast-paced urbanization for which public services are provided too sparsely (Rotberg, 2013). In addition to that, HIV/AIDS further complicates the trade in humans by already in present times shifting supply and demand regionally (Shelley, 2010). These social trends create many challenges. Challenges that if not met with strategic policies, create vulnerability through youth-unemployment, migration and the lack of rights and social protection. Technology promises some opportunities, however, while mobile phone/internet use and leapfrog technologies may suggest a better future with job creation and ways to fight trafficking more effectively, it also adds complexity and new channels to the trade. In the economic realm, Sub-Saharan Africa experiences great change with increasing FDI, growing intra-African trade, and a growing middle-class as well. To utilize these opportunities and further expand the regions global competitiveness and their independence from aid however, SSA is required to change their employment model – an issue that is paramount for future growth opportunities (Fox, Haines, Munoz, & Thomas, 2013; Gyimah-Brempong, 2013). Lastly, none of these developments are exempt from the impact that the political landscape in Sub-Saharan Africa has. While the number of democracies is growing, best practices in good governance need still be incentivized and solutions to the current intrastate violence and wars ought to be found (Radelet, 2010). With a tendency towards regional integration, Sub-Saharan Africa is slowly developing an alternative worldview in which Africa the continent stands more unified, however, not all implications of free movement of labor are yet explored.

To conclude, in the current narrative of a quickly changing SSA, the region faces a great number of threats and opportunities. The complexity of coping with these strategic issues requires a deeper

analysis of ongoing developments and the creation of a new narrative which engages strategy and policy-actions that better integrate opportunities and threats for creating not only a preferred future but also a feasible one.

Alternative Futures for Human Trade in Sub-Saharan Africa - 2037

The following three scenarios could be derived from assumptions that were made, based on the previous analysis of emerging issues and trends. Two main reasons exist for the chosen time frame. Firstly, the growth of SSA's working-age population, in direct opposition to aging societies elsewhere, will take time and should definitely be scrutinized 15-16 years from now, when millions of children more have reached the minimum legal working age, may enter the labor force and will have lowered the average citizen's age dramatically. Secondly, the aforementioned SDGs are set to expire in 2030 (UN, n.d.) and are deemed as a great landmark for achievements and remaining challenges. It is relevant then, to so see how the resulting scenarios will have played out a few of years beyond 2030 and what strategic implications this might have for further actions.

Causal Layered Analysis (CLA), as will be seen in the following tables, enables to look deeper into the narratives and apply critical thinking, where conservative ways of inquiry would usually prevail. To better understand this process of deconstruction and analysis, the first table briefly introduces the characteristics of each layer. Thereafter the method is directly used to assess the scenarios.

Table 1. *A brief introduction to the layers of CLA* (Adapted from Inayatullah, 2004)

Litany	"*The official, unquestioned view of reality.*"
Systemic	"*The social causation level […] the data of the Litany is explained and questioned at this second level.*"
Worldview	"*Deeper, unconsciously held ideological, worldview and discursive assumptions are unpacked at this level.*"
Myth / Metaphor	"*[…] the unconscious, emotive dimensions of the issue."* (p.8, Inayatullah, 2004)

Table 2. *The Long-Road scenario*

Litany	Trafficking numbers up, SSA as major supply region; transregional and transcontinental trafficking on the rise; immigrants to EU and MENA increased, causing stricter border controls; disenfranchisement of youth; discrimination of minorities and continuing intrastate conflicts causes displacement (Elahi & De Beer, 2013); new forms and channels of trafficking: webcamming/broker (debt bondage); stalling FDI in many nations
Systemic	Lack of jobs and social welfare; 'slumification'; xenophobia in urban SSA; 'gangification' and terrorism; conflicts; easy smuggling through regional economic communities (RECs) to trafficking hubs/migrant smuggling hubs in the West, North and East; connectedness of SSA through internet
Worldview	Economy needs labor supply Globalization as a problem and as a solution Leadership is dead in SSA Human security only for the rich
Myth / Metaphor	I am because I want to be like them.

Scenario 1 – the Long-Road tells a story of Sub-Saharan Africans looking elsewhere as the region itself has turned into a toxic environment without prospects for its own people. The dominant metaphor here is "I am because I want to be like them". In this desperate attempt to make this move away from Sub-Saharan Africa and even fit into the new world that they are pushed and pulled into, people meet their fate of vulnerability, eventual exploitation and an unclear, mostly dark future. On a worldview level, it can be said that policy-making and governance has failed to see the mutual dependence of economy and people, while the latter need to be provided with security and a feeling of integration that enables a harmonious society. Leadership in SSA unfortunately could not establish the transition of employment and creation of jobs. The massive unemployment and underemployment thus, spurred vulnerability and anger among citizens who not only turn against minorities and targets of usual discrimination, but they also turn against their own roots and lose their African link and connection to their home. The litany itself gives away that this scenario is not a desired one for most stakeholders. It is a disowned future (Inayatullah, 2015) - a possible future that has been pushed away and ignored by decision-makers and leaders for long enough to have turned into reality. One that tells of a paradigm shift in which the cultural and socio-economic environment has put traffickers and organized crime in the position of power over the future African diaspora.

Table 3. *Borderless scenario*

Litany	Unified Africa sees rising economy and strong urbanization; 'slumification'; trafficking numbers highest ever; shift in forms of trafficking appear on researcher's data; more sex trafficking, more begging, less heavy-labor industry trafficking; intergenerational- and ethnic trafficking on the rise as well as social stratification issues and possibly new, intra-African slave trade
Systemic	Use of pan-Africanism as silver-bullet to economic problems, while discounting corruption and freedom of movement implications = easy trafficking; middle-class rise brought economic disparity = enslavement and discrimination of minorities (incl. elderly); xenophobia
Worldview	NIMBYism Economy > the people Capitalistic 'anocracies'[3] Africa requires young and urban leadership Elbow-society
Myth / Metaphor	I desire, therefore I am

In scenario 2 – Borderless illustrates a future in which a top-down approach caused Sub-Saharan Africa to sacrifice its values and belief systems for the sake of a more Western-rationalist view, in which the mantra goes according to "I desire, therefore I am" – one that very much reminds of Descartes' "I think, therefore I am", but adds a capitalistic component to the story. By creating a borderless pan-Africa, the continent has lost touch with its multitude of cultural identities effectively being forced into one. This sort of cultural globalization on a regional level was inherently un-African. The reasoning behind such a paradigmatic, progressive shift is a worldview that continues to incentivize trickle-down economics and problem-solving through top-down approaches with a silver-bullet mindset. Here, the economic well-being has been put over the well-being of people, while the stakeholders in power convinced themselves that it is indeed meant for the people, but neglecting obvious cultural and societal obstacles that stand in the way of betterment. As free movement of labor and the prioritizing of economic growth intended to establish a competitive edge

for the global free-market and solving other ills incidentally as they come up - similar to what the Schengen treaty did in Europe - the complete integration and unification of the continent merely gave agency to the people, who in fact, were most in need of leadership. People were led into a used future (Inayatullah, 2015) – one that may have succeeded elsewhere but does not fit into the local context of Sub-Saharan Africa. The pan-African vision is a leader-induced, shared vision on paper, but it is not the shared vision of the people.

Table 4. *Preferred Future scenario*

Litany	Trafficking and displacement of people low; out-migration/economic migration and brain drain resolved (Goldin, Geoffrey, & Balarajan, 2011); SSA rises to catch up with the Global North; tendencies towards gender equality and human rights as national priorities across the region
Systemic	Region-wide conjoint operations to fight & enforce law on trafficking; climb out of poverty; employment transition and diversification with future-proof industries achieved; education focuses on diversifying; little to no conflict (intrastate); crack-down on corruption in local governments and law enforcement; succession of old rulers by younger rulers and further rise of democratization (Arnould & Strazzari, 2017)
Worldview	Economy is for the people Transnational problems need transnational solutions Root-cause leadership / SDGs (localized) – bottom-up Ubuntu as a social philosophy
Myth / Metaphor	I am because we are; and since we are, therefore I am

Finally, scenario 3 – the preferred future, as seen from the point of view of NGOs and multilateral organization that are dedicated to the fight against human trafficking, shows a different Sub-Saharan Africa. In this scenario, the story depicts a sharing-culture with humanity at its core – sharing not only of resources and positive developments, but also sharing problems and challenges, creating a more collective and holistic mindset for the approach towards a better and preferred future. The leading metaphor here relates to the South African philosophy of Ubuntu, which dictates a community-centered and humanistic way of living that can best be captured in Desmond Tutu's quote "I am because we are; since we are, therefore I am" (Ngunjiri, 2016). On the worldview level, it is not about a causality dilemma along the chicken and egg narrative – here, the story plays out as the acceptance of the fact that the economy is for the people, implying the mutual dependence and complementation of the two. However, as opposed to the borderless scenario where labor supply is also recognized as a necessity, the fundamental difference lies in the bottom-up approach and empowerment of people with a collective sense of sharing as the maxim of one's actions. As opposed to Western philosophies, Ubuntu as a social philosophy here, is intrinsically African and suits local cultural believes. In such a future, trust and equality are premises for a functioning society where every stakeholder works jointly towards the same end and dividing factors are bridged democratically and respectfully.

Challenging the Core Narrative

Together with the Emerging Issues Analysis, these three alternative futures showcase overlapping and recurring patterns in the discourse which allows the identification of the core narrative surrounding human trafficking in Sub-Saharan Africa from a solution-oriented point of view.

Table 5. *Causal Layered Analysis of the core narrative*

Litany	Human security; no vulnerability; no human trafficking An integrated, prosperous and peaceful continent[4]
System	Gender equality; sustained economic growth; access to justice and legal frameworks; reduced poverty, inequality and improved education Three pillars: Politically united, good governance, people (women & youth)-driven (African Union Commission, 2015)
Worldview	Pan-Africanism – unification is destiny Ethos of Sustainable Development Goals/Agenda 2063; global challenges vs. continental challenges Humans can change the world Combination of classical, visionary and organic leadership paradigms (Clark & Murray, 2012)
Myth / Metaphor	"We are one" (The United States of Africa)

On the litany-level, the discourse revolves around the assurance of human security. As a means of achieving a world in which there is no vulnerability to a crime such as human trafficking, the ultimate vision is one in which trafficking is fully eradicated. Gallagher's "The International Law of Human Trafficking" (2010) arguably presents the most comprehensive and complete view on the legal frameworks for human trafficking and shows that governments, policy-makers and legislators as well as (I)NGOs already have adopted such a human-centered approach, with the key premise being the protection of human rights and achievement of human security. The African Union's vision on the litany-level is an integrated, prosperous and peaceful continent (African Union Commission, 2015).

The systemic layer explores how the litany is affected and, as the litany here mentions a specific end state, also how this state ought to be achieved. On this level then, the main focus lies on push and pull-factors that facilitate the crime and on specific visions that ensure that these factors, or drivers, will become an issue of the past. The suggestion and implication here is, that with a gradual movement towards achieving these goals, human trafficking can be effectively fought through removing underlying causes and supply and demand. Essential pillars from which such an achievement can be realized are political unity, good governance and development driven by the people.

On a worldview-level, this translates into the ethos of the aforementioned Sustainable Development Goals. This global agenda with its shared set of goals focusing on drivers in the system-layer shapes the core narrative as one that is collective, global and of highest priority. The SDGs concomitantly function as values for positive change and incentivize global action to put an end to human trafficking and other ills in the world. In this worldview the power to change lies within the people, and it is the core belief that humans can change the world. In addition to this global agenda, Agenda 2063 is one that focuses on the development of the continent and on challenges it faces. The continentally-shared aspirations of this agenda are not only acknowledged and supported by the 2030 agenda of the United Nations, they also overlap in many ways with SDGs and as such, can inspire in a complementary fashion, the end of human trafficking. Pan-Africanism is at the very core of this worldview which is also reflected on the aforementioned first and second layer - not only as the dominant political and economic worldview, but also as believed to set off the so-called 'African Renaissance'. As will later be explored in more detail, the manner of leadership in this narrative follows a combination of the classical, visionary and the organic model (Clark & Murray, 2012).

The worldview is better understood through a layer four analysis. The metaphor here is "We are one". This metaphor refers to the African continent and all its people being unified and work conjointly together for "*an integrated, prosperous and peaceful Africa, driven by its own citizens and representing a dynamic force in the international arena.*" (African Union Commission, 2015). This narrative of an African renaissance under pan-Africa, doesn't imply that every country and every African is the same, however, it does encourage the acknowledgement and acceptance of each other. It is possible to add to this metaphor "the United States of Africa" which would refer to the capitalistic and ambitious goal of global market participation and the escape from being marginalized from the same. Such a metaphor then, details the underlying driving forces that are mostly of a political and economic nature, while according to the agenda's vision, it indeed is people-driven, implying that people are standing behind the very same vision.

The Core Narrative's Dilemma

The Sustainable Development Goals have been deemed much more inclusive now, following a more bottom-up approach as opposed to its predecessor goals (Sengupta, 2016). The way in which these goals ought to be achieved is through the localization of SDGs. The Global Taskforce of Local and Regional Governments (2016) made a comprehensive report on how to successfully localize the 2030 agenda. According to this report, some of the essential aspects of implementation are the raising of awareness of the SDGs on a community level, local ownership of the goals, decentralization of government as well as a prioritization of actions and the continuous monitoring and evaluation of indicators of change. While this new approach will likely prove to be more inclusive than previous MDGs, the same can't be said about the Agenda 2063.

In their paper on the African Union's agenda, DeGhetto, Gray and Kiggundu (2016) question the real inclusiveness and bottom-up nature of the agenda, which was drafted without the involvement of over 50% of the population, excluding mostly the poorer and more vulnerable Africans from the process (2016). While certainly an issue that needs to be addressed in further adaptations of Agenda 2063, the mutual complementation of the two agendas does enable improvement and may compensate for shortcomings of either one. Important is however, to avoid drafting action plans that are counterintuitive to this symbiotic relationship, and instead exploit the benevolent visions and frameworks that have been created in this endeavor.

Nonetheless, the cornerstone of Agenda 2063 is its high regards for pan-Africanism or, a united Africa. As mentioned in the worldview previously, according to the African Union Commission and their surveying of African people, a united Africa is the Africa that is needed in order to set off the African renaissance. When revisiting the scenarios and the possible consequences of a large-scale integration, such a core belief gives the impression of it being mostly rooted in economic and political aspirations that promise sustained development of the continent and its eventual rise to become a global player. The problem that arises from such a rather rational and capitalistic, yet Afro-optimist worldview, is that it creates tunnel vision. The narrative puts a unification central (African Union Commission, 2015) and thus, makes believe that Agenda 2063's core vision is a panacea for the continent's problems.

Because the pan-African concept is a rather political and economic one, and little is explored in terms of implications for society, there is a major lack of ownership when it comes to the aspirations of the agenda. DeGhetto, Gray and Kiggundu argue that treating Africa as a single unit of analysis can be dangerous as the Agenda 2063 is interpreted differently throughout the continent's nations and inspires different change on different levels and regions. For this reason, the current core metaphor "We are one" is not one that should be taken as a foundation for moving towards a desired future, as it ignores the differences among nations and further neglects the prioritization of some of the more burdened ones over others, regarding their emerging issues and challenges in general.

Lastly, the real importance of UN's agenda and Agenda 2063 lies in their implementation on the local and regional level, as both intend to work from the bottom up. Implementation is key to success and can only be effective if leadership allows for it. However, the question of leadership is mostly ignored in both agendas. The mentioning of transformative leadership being needed does not suffice in times of complex problems and emerging issues when conceptualizing agendas for a more sustainable world. As the current core narrative revolves around two agendas with a set of globally-shared and continentally-shared visions, leadership must be rethought so that action plans can be effectively followed through with.

The Reconstructed Narrative – Challenging the Leadership Paradigm

Table 6. *Causal Layered Analysis of the reconstructed core narrative*

Litany	Human security; no vulnerability; no human trafficking Inclusive, prosperous and peaceful
Systemic	(I)SDGs - Gender equality; sustained economic growth; access to justice and legal frameworks; reduced poverty, inequality and improved education Three pillars: Good governance, empowerment of communities, and research and monitoring of the relevant ills across the region of SSA Acknowledgment and analysis of emerging issues - local and regional challenges that have potential to go global
Worldview	Ubuntu as a leadership & social philosophy (organic) Humans together can change the world Alignment of ethos of SDGs/Agenda 2063; global challenges and continental challenges
Myth/Metaphor	"I am because we are; since we are, I can be"

Because layer three and four dictate the systemic and litany layers and how change is being driven, the reconstruction of a new story begins on the metaphor-level. Having analyzed the core narrative, it was possible to determine where the narrative had to change exactly, and thus, formulate a new story. From the current core narrative "We are one", the core metaphor of the path towards a truly desired future becomes "I am because we are; since we are, I can be". This metaphor shifts the story from one where power structures remain, global and continental challenges are not completely aligned in our approach towards them, and one that lacks a needed discourse on effective leadership, to one where power is more fairly distributed, and leadership is central to the achievement of the visions. It is a story of co-dependence and reciprocity within a local context, where ownership of challenges is taken throughout all, individual, communal and institutional levels. In order to achieve a better understanding of this narrative, it is important to realize that the metaphor is a quote, rooted in the essential principles of Ubuntu, an African, social and leadership philosophy (Ngunjiri, 2016).

This philosophy has been previously mentioned as part of the preferred scenario and its relation to the metaphor there too. In that scenario, while the majority of the SDGs are relevant to Sub-Saharan Africa, they do not provide the people and communities with the feeling of having been involved in its creation. At the same time, Agenda 2063, despite being more African in its origin, also could not incentivize large-scale ownership, as economic and political disparities were too strong for bridging the gap. Thus, while the implementation of Agenda 2063 and the localization of SDGs increased the overall success of fighting human trafficking in that scenario, many nations remain left out as the agendas either felt foreign or constituted a different meaning and priority

there. The major underlying reason then, for the previously preferred scenario not also being the most desired future, is that Ubuntu is merely practiced as a social philosophy to live by, by the people, but the implementation of Ubuntu principles in leadership is not internalized. The rather western looking form of leadership that results, may indeed realize some positive change, but for a more effective approach to change that truly improves the situation from the community-level up and not marginalizing people or nations, a more African and communal leadership needs to be applied. This means that both, social and leadership dynamics are supported by the same principles.

The philosophy of Ubuntu, while often said to originate from South Africa, plays a significant role across all Bantu people and is therefore a very common and well-known one in the region of Sub-Saharan Africa (Khomba, 2011). As the metaphor has already suggested, the essence of its principles is best understood through the African proverb that Desmond Tutu translated into "*A person is a person through other people*" (Tutu, 2011). In his assessment of the Ubuntu philosophy for his PhD-thesis, James Khomba writes: "*Practising the Ubuntu philosophy unlocks the capacity of an African culture in which individuals express compassion, reciprocity, dignity, humanity and mutuality in the interests of building and maintaining communities with justice and communalities*" (2011, p.129). Here, the humanist nature of Ubuntu is highlighted and shows how people, when they work together in harmony and according to the very pillars of Ubuntu, positive change can be achieved. Khomba goes on and writes:

> *The Ubuntu philosophy believes in group solidarity, which is central to the survival of African communities. […]An African is not a rugged individual, but a person living within a community. In a hostile environment, it is only through such community solidarity that hunger, isolation, deprivation, poverty and any emerging challenges can be survived, because of the community's brotherly and sisterly concern, cooperation, care, and sharing."(p.128, 129).*

Not only does Khomba's statement confirm the community-centered approach of the philosophy, it also disparages the effectiveness of top-down ideologies in terms of their benefits for the people themselves. According to Ubuntu then, communities and the solidarity between people are the seed for change – the seed for a preferred future. Thus, while a pan-Africa and the allegedly resulting African renaissance are the main worldview and vision in the old narrative, the new one suggests the non-inclusion of such. Central here, becomes a new leadership paradigm, which with the help of the two agendas, a better alignment of their ethos and visions and a complete and holistic translation into action, will more effectively fight human trafficking and other ills. The reason for the necessity of alignment and utilization of the complementary nature of the two is the fact that SDGs by themselves may, by some nations, be merely viewed as 'imported' goals (Persson & Nilsson, 2015) that are non-African and would therefore create the possibility of competing agendas gaining momentum and a growing divergence between nations. Contrary to the non-inclusion earlier mentioned, Ubuntu does in fact support pan-Africanism. According to Ncube, "*Ubuntu recognizes the genuine otherness of all people"* (2010), which expresses the acceptance of diversity, other ethnicities, languages and even cultures and belief systems. While for Ubuntu as a worldview, the community is central, in a unified Africa such an acceptance too, is key for a harmonious society. Although the African renaissance may appear as an elitist vision that was created with little consideration for the majority of people of Africa and forced onto them from top-down power structures, according to some authors, Ubuntu philosophy supports and enables a move towards, at least a similar vision to that of an uprising of Africa – "*At the heart of the African Renaissance beats the pulse of ubuntu*" (Kessel, 2001, p.48). However, there is a significant difference between the role of pan-Africanism in the current core narrative and the role of it in this reconstructed one. In the old story, pan-Africanism is seen and perceived as an ultimate state within a desired future.

It is a vision that has been previously identified as being based on economic and political interests, but not social or cultural ones. The reconstructed core narrative on the other hand, puts central, the leadership and social philosophy of Ubuntu in order to create a preferred future that is indeed open to pan-Africanism, but doesn't treat its potential emergence and effect as deterministically as it has been in the previous story, where it is seen as the silver bullet. The reason for Ubuntu needing to play such a central role for a desired future is not only because of its African and benevolent traits, it is because it represents the missing link, not only between the two agendas, but also between the agendas and the people themselves. After all, Ubuntu supports the bottom-up, community-driven change that truly puts people first. In this worldview, the belief still remains that humans, or more accurate, communities and humans together can change the world. Essential is, that the worldview moves from people being connected based on political and economic ideologies that may result in a used future – to one where communities and solidarity become the glue of society based on cultural values and the acceptance of one another.

For approaching a challenge such as human trafficking, Ubuntu as a social and leadership philosophy is one that from the core and through its values and principles has the power to give guidance to the African people and collaborate from within, as a community, and eventually eradicate human trafficking. Such leadership supports an integration and alignment of the African and the global agenda which has the advantage of creating a more holistic vision in which not only responsibilities can be shared, but also the resources needed for them, while incentivizing action as part of the African way of life.

Although the central focus of the reconstruction of the narrative has been on the worldview-level, changes on the systemic one will become visible too. However, both agendas and their respective goals and aspirations are not officially tentative and now rely completely on the implementation by the member states who subscribed to them, which once again, emphasizes the importance of Ubuntu leadership. In table six, in order to distinguish the old core narrative and the reconstructed one from each other, the new SDGs have been rebranded into (I)SDGs, emphasizing the need for inclusiveness and the localization of the goals through leadership on a regional and local level. This narrative pushes ownership of these goals as they have intrinsic value for communities' future. As for the African Agenda 2063's core vision, which in the old narrative was revolving around political unification, good governance, and people (women & youth)-driven, the systemic drivers of change have become slightly different as well. The three major pillars identified for this layer are good governance, empowerment of communities and research and monitoring of the relevant ills across the region of SSA. Reasons for these particular pillars culminated throughout the deeper exploration of human trafficking dynamics and trends earlier on. Good governance in addition with leadership, as previously stated, is essential for successful guidance and implementation of strategies. Whereas the previous focus in the core narrative also identified this as an important pillar, the emphasis here lies also on the sort of leadership that is more enabling. Furthermore, the empowerment of communities, as prescribed by the Ubuntu worldview, much like the localization of SDGs, demands decentralization of governance and actions rooting from the community-level – bottom up instead of top-down. Such an approach is more inclusive of local and regional factors and can tackle issues as they are emerging and before they trickle across and eventually turn into challenges on a national or transnational level. Finally, essential is the continuous monitoring and research of the environment as well as the change that is achieved, through key performance indicators that factor in the community level and relate them with corresponding indicators on the national and global level. This requires more diligent and ambitious efforts in conjoint research and data accumulation. With sufficient and reliable empirical data, either local advocacy groups or government bodies can provide reports on the status quo of hardships felt on the local and regional level. This information does not only provide the essentials for a path towards a truly desired future, but it would also enable to identify and analyze possible emerging

issues and trends that may become global – thus, practicing foresight in a so far multidisciplinary, underexplored field of crime.

The transcending of the metaphor throughout the layers which illustrate the community-centered approach with inclusive and aligned, global and African, sets of visions and the consideration for local and regional values has created a systemic layer that can improve action for the eventual achievement of the litany 'headlines'. In these headlines, human security is high, vulnerability low and the crime of human trafficking indeed fading away.

Discussion and Conclusion

In the discourse about leadership, Clark and Murray (2012) identify four major leadership paradigms – classical, transactional, visionary and organic. These types can be situated in personhood, position or the process, and have a certain focus and a manner in which leadership is practiced. When trying to fit Ubuntu as a leadership philosophy into one of these typologies, it most suits the organic paradigm. Clark and Murray also argue that the organic way of leadership, in which leadership is perceived as a process rather than practiced through position or a person, will be the future of leadership as it continues to grow in importance. An organic leadership emphasizes relationships, participation and a shared collective responsibility and it is where reciprocity and interactions are the major focal points. This very much correlates with the ideas and principles of Ubuntu. Such organic leadership, say Clark and Murray, shifts the underlying question of "who leads" to "how leadership is practiced" instead. They further argue that "s*ustainable improvement can not be achieved by a single leader*" and a "*collective and ethical nature of this leadership assures checks and balances in the leadership process*." The latter is an important aspect in a political environment where democracy is a relatively new concept of governance, such as Sub-Saharan Africa.

Lisa Ncube's assessment of Ubuntu (2010) as a transformative leadership philosophy points out many important aspects of it that positively distinguishes it from the Western leadership paradigm. She writes,

> *[…]Ubuntu invokes traditional cultures. Scholars of leadership now recognize the importance of including traditional cultural perspectives of leadership. Although Ubuntu is more than a cultural practice of the Bantu people, as a leadership philosophy it balances the past (by learning from it), the present (by examining immediate and pressing concerns), and the future (by providing a vision).*

illustrating how such a leadership approach might be particularly important for diverse regions as is the case in the African context, and emphasizing the inclusion of futures thinking in its principles. Not only does Ncube suggest that openness towards diversity and the integration of indigenous perspectives are key parts of this philosophy, she also explains why the Western paradigm should not always be seen as a universal solution to great challenges by stating that "*Not all knowledge resides in the north, to be transferred to the south as necessary; there is richness in cross-cultural fertilization*." On the one hand, Sustainable Development Goals can be seen as Western approaches through Western leadership, despite localization of global problems. On the other hand, Agenda 2063 conveys a narrative of pan-Africanism that is not completely rooted in the peoples' visions, but reflects a rather imported and capitalistic mindset with focus on economy and politics as the panacea for the continent. In the realm of Ubuntu leadership, Ncube explains the process as one where

> *Leaders search for opportunities to initiate change through people. Rather than being forced on people, change comes through a process of openness and transparency; people*

> *come to accept change. Decisions to change come by consensus rather than polling, and there is circularity in the decision-making process (2010).*

This notion coincides with the reconstructed core narrative in the way that it proposes change from within. This implies change from within the community, and therefore, change based on African values and belief systems, rather than on the responsibility that is created by a leadership paradigm that does not support the openness towards diversified cultures, their empowerment and local participation.

For a Huffington Post article, Ichak Kalderon Adizes (2017) considered leadership in terms of management in the professional world. Here, he uses a metaphor for leadership when referring to the quest of finding translations of the verb "to manage", arguing it is a one-way flow of energy and often resembles the handling of cars or horses. Adizes' "I am leader and you are hereby led"-narrative shows the power structures often present in leadership when it is situated in personhood or position. With such hierarchies in place, visions are often biased towards benefitting those at the top and can't function effectively from the bottom up. Moving away from such a paradigm and embracing the process-driven one changes the narrative and the metaphor becomes invalid – exactly the point of what Adizes also argues, needs to happen.

When revisiting the creation and supposed implementation of the two agendas and how they inspire change, it becomes evident that leadership is not only for the most part left out of the discourse but is also incoherent. It has been established earlier that both agendas officially intend to approach the global and continental issues in a decentralized manner, despite the African Union Commission having neglected a large part of the continent's citizens during the creation of the vision. The UN's agenda to transform the world on the other hand has proven to be indeed much more inclusive of regional and local developments, particularly considering the range of these global challenges. Overall, it appears that in the current core narrative, the two agendas combine the shared sense of collective responsibility from the organic paradigm, with the classical power and authority model, and a possibly over-ambitious, transformative, visionary leadership. Based on the arguments that have so far been made with the aid of scenarios and Causal Layered Analysis, the business-as-usual path and leading through power and personhood are considered to be secondhand and obsolete approaches and need to be replaced by moving to a wholly organic leadership model which fully supports Ubuntu as a way of life and guidance towards creating a desired future. Clark and Murray (2012) argue that, when structuring leadership according to a collectivist mentality, it encourages teamwork and a noncompetitive environment. A competitive environment, as could be seen in two of the three scenarios, affects the people on the local level in a way that is counterintuitive to the way of life dictated by Ubuntu. The collective has to become more important than the individual leader or a small elitist collective at the top. This is necessary for creating a climate in which positive change can be accelerated and said change will reflect the value of the African people.

When taking a closer look at the path that leads from the core narrative towards the reconstructed narrative and desired future, the transitional stage in-between is one that paints a picture of conflicts and opportunities. Thus, while the current narrative may well tend to create a used future, much like scenario 2 in which an un-African and non-inclusive vision illustrates the inevitable change that is needed, moving towards the reconstruction and creation of a story that is indeed desired, requires short- and mid-term conflicts to be reframed and overcome. There are conflicts that have been a recurring pattern in this article and that are evidently standing in the way of achieving a world according to Ubuntu. They can be structured along top-down vs. bottom-up, authoritarian vs. democratic, centralized power vs. decentralized power, global vs. African, and more specific in terms of leadership, position and personhood vs. process-driven - or the question of 'who leads' to 'how is leadership practiced'. These conflicts then, give rise to strategies and approaches that are not as evolved as, and committed to the longer-term concept of Ubuntu

leadership, but represent important steps that may be taken as a result of current resource capacities and compromises between stakeholders.

One possible strategy that could be seen rising, might be the decentralization of power, meaning the empowerment of local governments, with the actual leadership and vision remaining in personhood at the top. Change here, is neither imposed on the people, nor is it initiated through openness, but it is incentivized – a middle way that intends to harmonize the process of leadership so that existing governance through the sort of 'anocracies' that have been identified earlier in this article, does not need to be completely sacrificed, and leaders consequently stay in power. When taking this path, no actual paradigm shift would occur in leadership and the model would continue to be of a classical nature, while also showcasing transformative and organic features in it. What such a short- or mid-term strategy may also include is a more intense focus on regional economic communities as a more localized approach – following the ways of the UN's agenda and its SDGs. Rather than pushing for transforming the continent, leadership encourages more of the same – a strategy that is grounded in the realization that change is inevitable, but underestimates the extent to which change is needed.

Another approach that is possible, is that of reframing pan-Africanism as a societal concept first. This implies the push for the acceptance of otherness and society and its diversity of people to come together for the collective achievement of prosperity through utilizing economic opportunities and political unity that supports an African renaissance.

Furthermore, rather than SDGs and the Agenda 2063 working alongside each other on all levels, their visions and their implementation can be divided through specifying their respective sphere of influence. In this approach, Agenda 2063 (with a reconstructed and more inclusive implementation plan than its first edition) can incentivize change and actions on the local and regional level, defying problems of ownership, while SDGs can be utilized on the cross-regional or continental level, working as an inspiration for Agenda 2063 as well as a benchmark tool on the global level.

Finally, as could be seen a version of in the preferred scenario already, Ubuntu as a way of life and social philosophy can be utilized by leaders at the top for creating an empowerment through people themselves. It is noteworthy that such a strategy can also be used to give the illusion of political empowerment through the teaching of Ubuntu principles, while actual leadership remains the same. As beneficial as such a strategy and the supposed harmonizing of society could be for the stakeholders that are truly in charge, it also may backfire if governments and leaders do not align their leadership with the principles of Ubuntu and refer to the rather conservative way of exerting power over a quickly growing, young population.

With the conflicts presented, this article showed possibilities of reframing the issue. It is important to understand that Ubuntu, if implemented properly as a social and leadership philosophy, is able to succeed in whatever stakeholder's visions by starting locally and expanding positive change towards regional, national and global levels. It can be expected that with a paradigm shift in leadership, short- and mid-term strategies have to eventually give way to the commitment to a greater shared vision and corresponding long-term strategy that is inclusive and will in its own way create an African renaissance that is not rooted in ideological thinking, but a co-dependent, shared and collective approach towards a desired future.

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Endnotes

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2. Forced labor excludes some other forms of human trafficking, as these two terms have their clear distinctions, however, ILO writes on their website that "most situations of slavery or human trafficking are […] covered by ILO's definition of forced labour." (ILO, 2014)b
3. In their report on African futures, Arnould and Strazzari (2017) define anocracies as "[…] *political systems combining democratic and authoritarian traits and practices"*
4. According to the Agenda 2063 vision.

References

Adizes, I. K. (2017, February 5). A Paradigm Shift in Leadership is Needed. *Huffington* Post. Retrieved December 22, 2017, from https://www.huffingtonpost.com/entry/a-paradigm-shift-in-leadership-theory-is-needed_us_5908965ce4b084f59b49fcc5

African Union Commission (2015). *Agenda 2063. The africa we want*. Final Edition. Retrieved November 28, 2017, from http://www.un.org/en/africa/osaa/pdf/au/agenda2063.pdf

African Union Commission (2015). *First Ten-Year Implementation Plan 2014-2023*. Retrieved November 29, 2017, from http://www.un.org/en/africa/osaa/pdf/au/agenda2063-first10yearimplementation.pdf

Al Jazeera (2017, November 26). Migrants for Sale: Slave trade in Libya. *Al Jazeera News*. Retrieved December 11, 2017, from http://www.aljazeera.com/programmes/countingthecost/2017/11/migrants-sale-slave-trade-libya-171126063748575.html

Arnould, V., & Strazzari, F. (2017). African Futures: Horizon 2025. *EU Institute for Security Studies* (Report No 37). Retrieved October 18, 2017, from https://www.iss.europa.eu/content/african-futures-horizon-2025

CIA (2016). World Factbook. Retrieved September 29, 2017, from https://www.cia.gov/library/publications/the-world-factbook/rankorder/2054rank.html

Clark, J. M., & Murray, R. (2012). *Reconceptualizing Leadership in the Early Years*. Berkshire: Open University Press

DeGhetto, K., Gray, J., & Kiggundu, M. (2016). The African Union's Agenda 2063: Aspirations, Challenges, and Opportunities for Management Research. *Africa Journal of Management, 2*(1), 93-116. Retrieved from https://www.tandfonline.com/doi/abs/10.1080/23322373.2015.1127090?src=recsys&journalCode=rajm20

Elahi, S., & De Beer, J. (2013). Knowledge & Information in Africa. Scenarios for the future. Cape Town: Open AIR

Fox, L., Haines, C., Munoz, J. H., & Thomas, A. (2013). Africa's Got Work to Do: employment prospects in the new century. *IMF Working Paper 13/201*. Retrieved August 3, 2017, from https://www.imf.org/external/pubs/ft/wp/2013/wp13201.pdf

Gallagher, A. T. (2010). *The International Law of Human Trafficking*. New York: Cambridge University Press

Goldin, I., Geoffrey, C., & Balarajan, M. (2011). *Exceptional People. How migration shaped our world and will define out future*. Princeton: Princeton University Press

Gyimah-Brempong, K., & Kimenyi, M. S. (2013). Youth Policy and the Future of African Development. *African Growth Initiative (Working Paper 9*). Retrieved August 17, 2017, from https://www.brookings.edu/wp-content/uploads/2016/06/04_youth_policy_african_development_kimenyi.pdf

He, W., Goodkind, D., & Kowal, P. (2016). *An Aging World: 2015; International Population Reports*. Washington DC: Government Publishing Office

ILO (2016). *ILO Standards on Forced Labour. The new protocol and recommendation at a glance*. Geneva: ILO

Inayatullah, S. (2004). *The Causal Layered Analysis (CLA) Reader: Theory and case studies of an integrative and transformative methodology*. Taipei: Tamkang University Press

Inayatullah, S. (2015). *What Works: case studies in the practice of foresight*. Taipei: Tamkang University Press

Kessel, I. (2001). In Search of an African Renaissance. *African Journal of Philosophy,* Vol. 15(1-2) Special Issue: p.43-53

Khomba, J. K. (2011). *Redesigning the Balanced Scorecard Model: An African Perspective*. (Doctoral dissertation) Retrieved December 27, 2017, from https://repository.up.ac.za/bitstream/handle/2263/28706/Complete.pdf?sequence=13

Molitor, G. (2010). Timeline 22-Step Model for Tracking and Forecasting Public Policy Change. *Journal of Futures Studies, 14*(3), 1-12.

Msuya, N. H. (2017). Tradition and Culture in Africa: Practices that Facilitate Trafficking of Women and Children. Dignity: A Journal on Sexual Exploitation and Violence*: Vol. 2(1), Article 3*. Retrieved from http://digitalcommons.uri.edu/dignity/vol2/iss1/3/

Ncube, L. B. (2010) Ubuntu: A transformative leadership philosophy. *Journal of Leadership Studies, 4*(3), 77-82.

Ngunjiri, F. (2016). "I Am Because We Are": Exploring Women Leadersip Under Ubuntu Worldview. *Advances in Developing Human Resources, 18*(2), 223-242.

Persson, A., & Nilsson, M. (2015, September 18). *Taking action: Why national ownership of the Sustainable Development Goals is vital to success*. Retrieved January 17, 2018, from http://deliver2030.org/?p=6229

Radelet, S. (2010). *Emerging Africa. How 17 countries are leading the way*. Baltimore: Brookings Institution Press

Rotberg, R. I. (2013). *Africa Emerges*. Cambridge: Polity Press

Sengupta, M. (2016, January 18). The Sustainable Development Goals: An Assessment of Ambition. *E-International Relations*. Retrieved September 19, 2017, from http://www.e-ir.info/2016/01/18/the-sustainable-development-goals-an-assessment-of-ambition/

Shelley, L. (2010). *Human Trafficking: A global perspective*. New York: Cambridge University Press

The Global Taskforce of Local and Regional Governments (2016). Roadmap for Localizing the SDGs: Implementation and monitoring at subnational level. Retrieved November 23, 2017, from https://unhabitat.org/roadmap-for-localizing-the-sdgs-implementation-and-monitoring-at-subnational-level/

Tutu, D. (2011). *God is not a Christian. Speaking truth in times of crisis*. London: Rider Books.

UN (2015). The Millennium Development Goals Report 2015. Retrieved August 20, 2017, from http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20(July%201).pdf

UN General Assembly (2015). Resolution Adopted by the General Assembly on 25 September 2015. Retrieved April 17, 2018, from http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E

UNICEF (2010). *Strengthening Birth Registration in Africa. Opportunities and partnerships*. Retrieved April 26, 2018, from https://www.unicef.org/esaro/resources_6185.html

UNODC (2016). *Global Report on Trafficking in Persons 2016* (United Nations publication, Sales No. 16.IV.6).

World Bank (2016). Fertility rate total (birth per woman). Retrieved September 2, 2017, from http://data.worldbank.org/indicator/SP.DYN.TFRT.IN

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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).

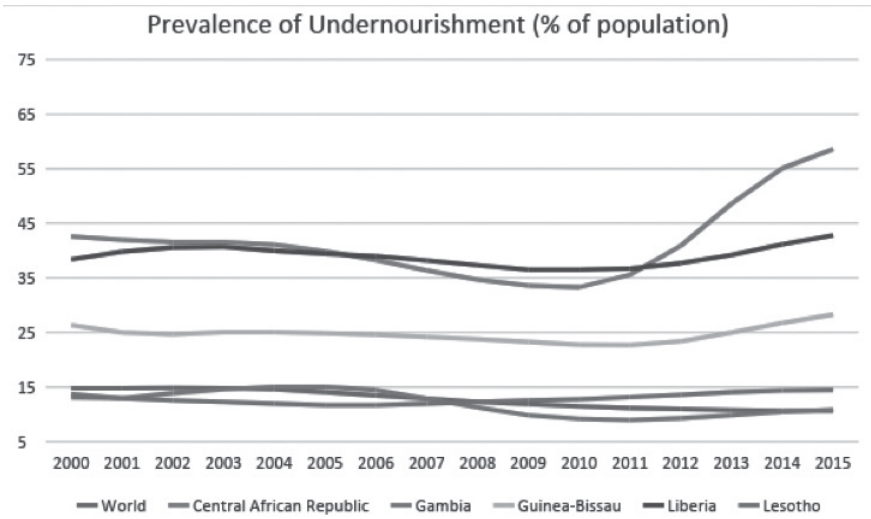

Figure 1. Prevalence of undernourishment as a percentage of the total population. (Data from World Bank)

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).

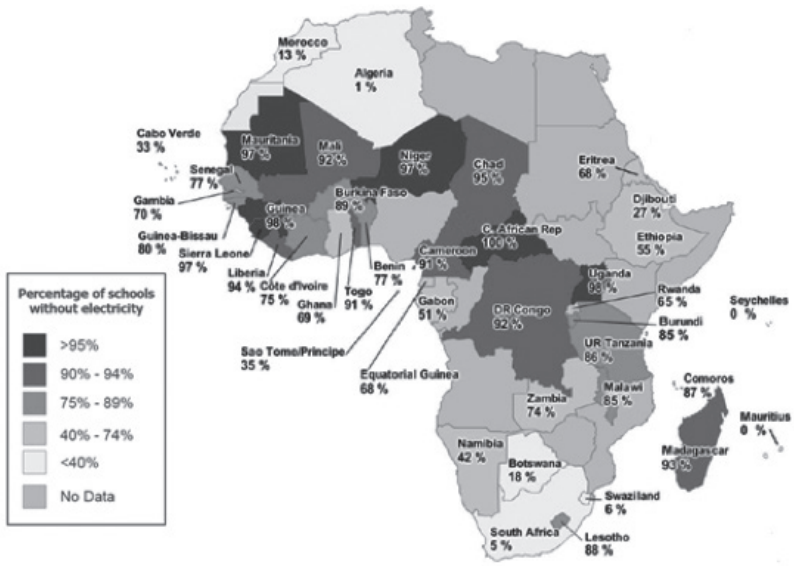

Figure 3. Percentage of primary schools without electricity in African Countries, 2015. (Adapted from UIS, 2015)

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.

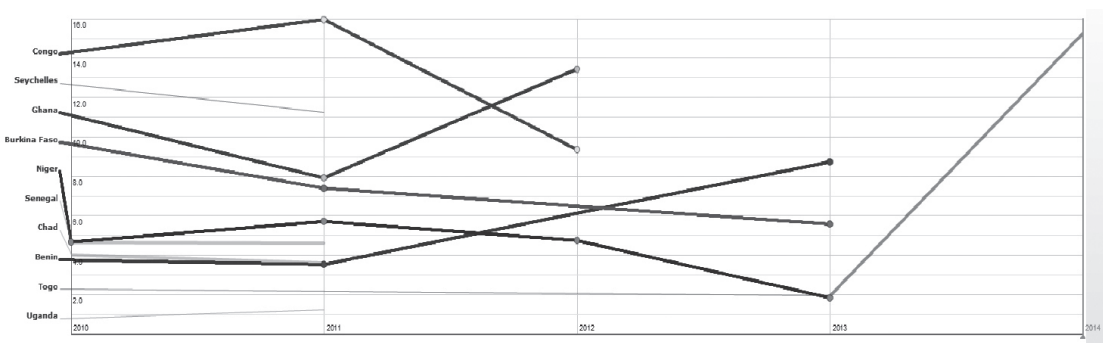

Figure 4. Percentage of teacher attrition rate from public primary school, both sexes 2010-2014. (Data from UNESCO Institute for Statistics)

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).

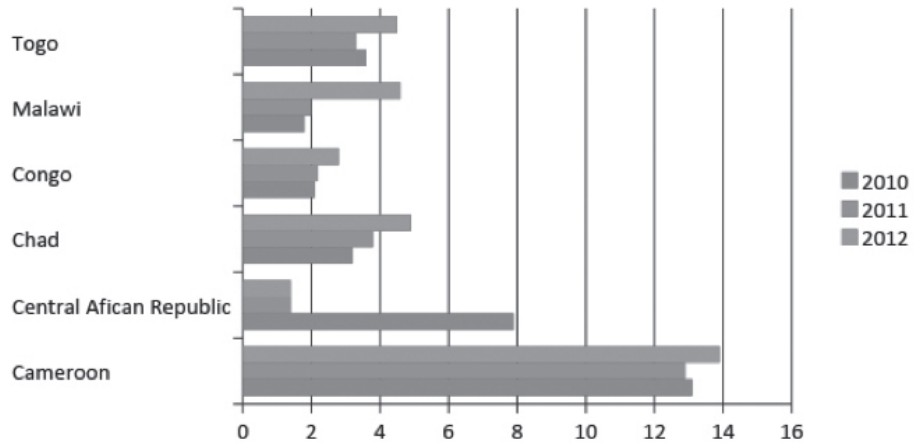

Figure 5. Average number of pupils per mathematics textbook in primary education. (Data from UNESCO Institute for Statistics)

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.

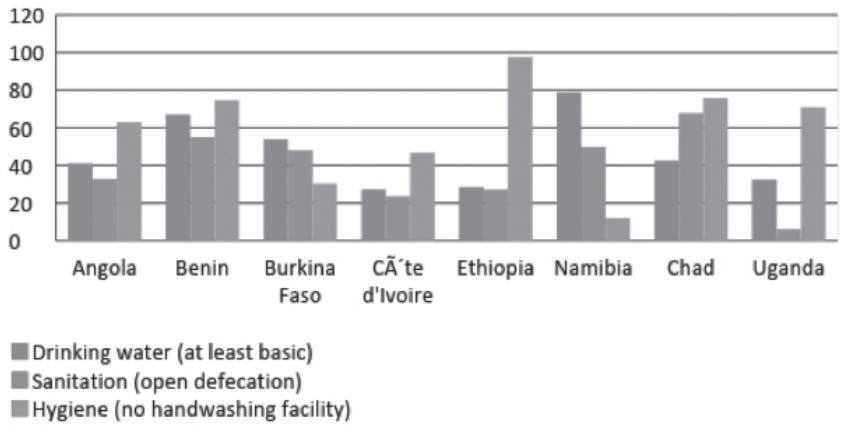

Figure 6. Percentage of population in selected African countries with certain level of water supply, sanitation, and hygiene

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).

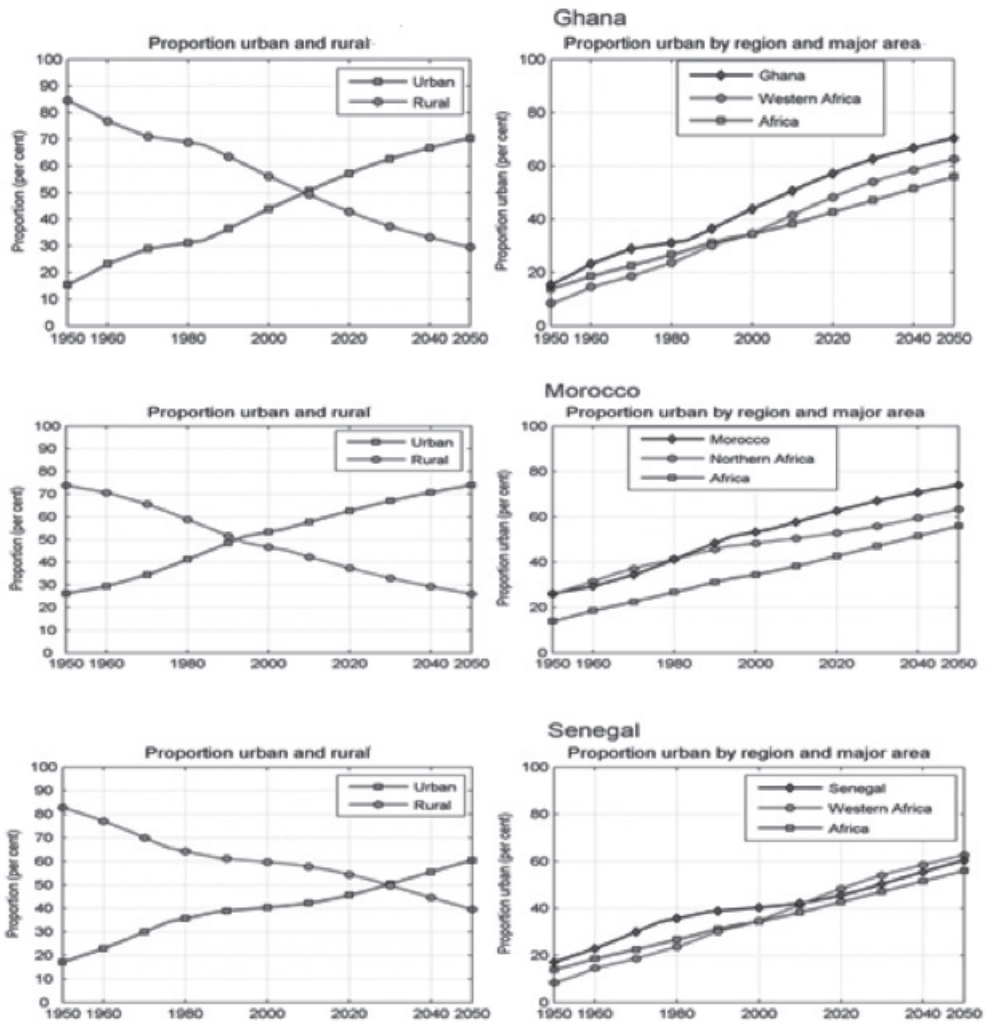

Figure 7. United Nations Population Division 2014 www.unpopulation.org

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 (SGD 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.

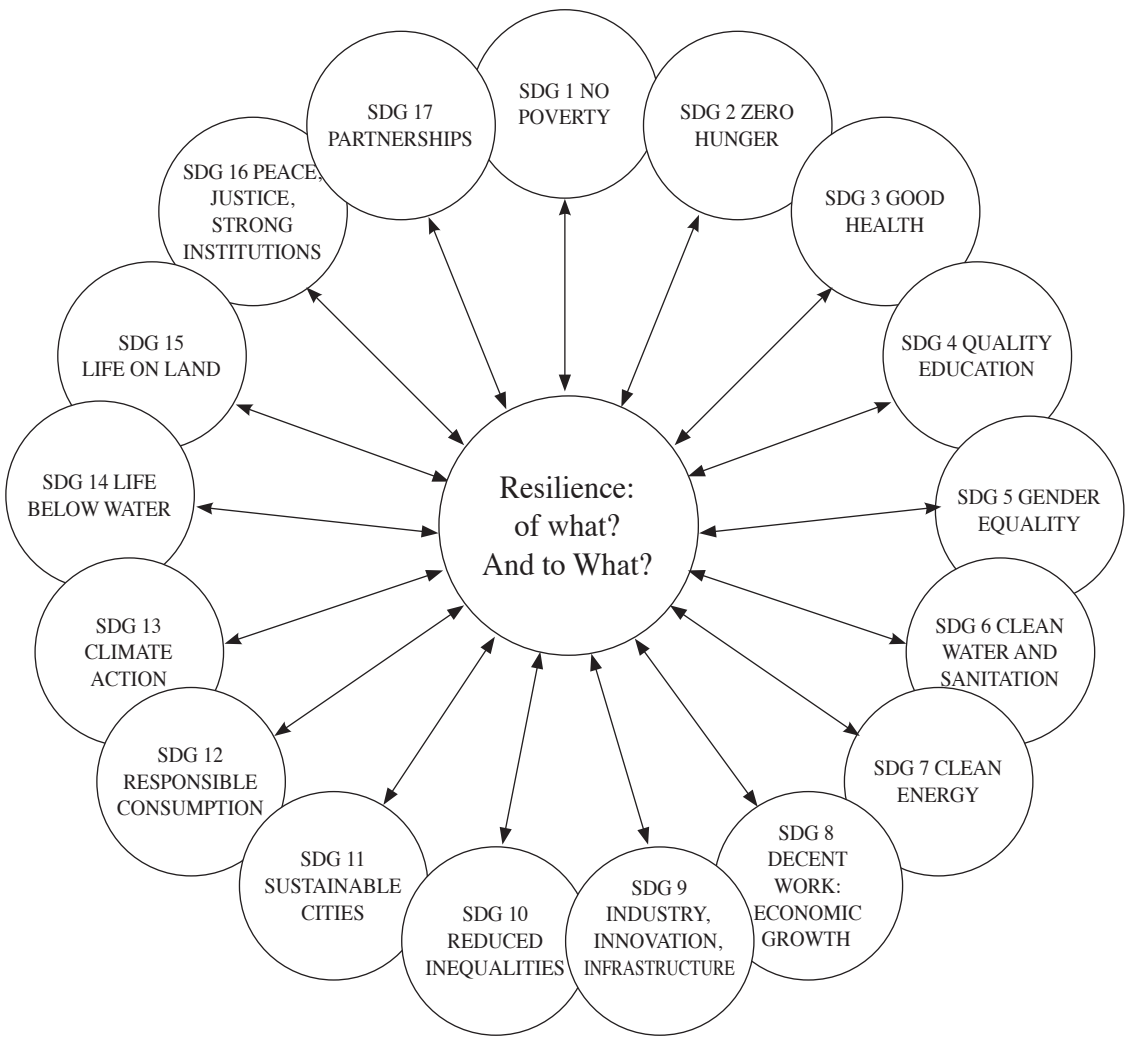

Figure 8. A proposed resilience thinking framework for the Sustainable Development Goals

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 crave 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 perceive 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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References

Adger, W. N. (2003). Social capital, collective action, and adaptation to climate change. *Economic geography*, *79*(4), 387-404.

Adger, W. N., Hughes, T. P., Folke, C., Carpenter, S. R., & Rockström, J. (2005). Social-ecological resilience to coastal disasters. *Science*, *309*(5737), 1036-1039.

African Union Commission (2015). Agenda 2063: the Africa we want. http://www.un.org/en/africa/osaa/pdf/au/agenda2063.pdf

Aldrich, D. P., & Meyer, M. A. (2015). Social capital and community resilience. *American Behavioral Scientist*, *59*(2), 254-269.

Bafana B. (2016). Africa's cities of the future: Proper planning key to sustainable cities. Africa Renewal 30 (1) http://www.un.org/africarenewal/sites/www.un.org.africarenewal/files/Africa_Renewal_EN_April_2016.pdf

Bamutaze, Y. (2015). Revisiting socio-ecological resilience and sustainability in the coupled mountain landscapes in Eastern Africa. *Current Opinion in Environmental Sustainability*, *14*, 257-265.

Bourdieu, Pierre: The forms of capital. In: John G. Richardson (ed.): Handbook of Theory and Re-

search for the Sociology of Education. New York: Greenwood Press 1986, s. 241-258.
Bresser-Pereira, L. C., Oreiro, J. L., & Marconi, N. (2012). A theoretical framework for a Structuralist Development Macroeconomics. *Draft paper*.
Butz, M. V. (2002). *Anticipatory learning classifier systems* (Vol. 4). Springer Science & Business Media.
Camp, E. V., W. E. Pine III, K. Havens, A. S. Kane, C. J. Walters, T. Irani, A. B. Lindsey, & J. G. Morris. (2015). Collapse of a historic oyster fishery: diagnosing causes and identifying paths toward increased resilience. *Ecology and Society, 20*(3), 45.
Chandy L. (2015). Why is the number of poor people in Africa increasing when Africa's economies are growing? https://www.brookings.edu/blog/africa-in-focus/2015/05/04/why-is-the-number-of-poor-people-in-africa-increasing-when-africas-economies-are-growing/
Chapin III, F. S., Peterson, G., Berkes, F., Callaghan, T. V., Angelstam, P., Apps, M., Beier, C., Bergeron, Y., Crépin, A. S., Danell, K., & Elmqvist, T. (2004). Resilience and vulnerability of northern regions to social and environmental change. *AMBIO: A Journal of the Human Environment*, *33*(6), 344-349.
Coleman, J. S. (1990). Foundations of Social Theory. Cambridge, MA: Belknap Press.
FAO (2017). The number of people suffering from chronic undernourishment in sub-Saharan Africa has increased. http://www.fao.org/news/story/en/item/1062874/icode/
Folke, C., Carpenter, S., Elmqvist, T., Gunderson, L., Holling, C. S., & Walker, B. (2002). Resilience and sustainable development: building adaptive capacity in a world of transformations. *AMBIO: A Journal of the Human Environment*, *31*(5), 437-440.
Gallopín, G. C. (2006). Linkages between vulnerability, resilience, and adaptive capacity. *Global Environmental Change*, *16*(3), 293-303.
Grumbine, R. E., Dore, J., & Xu, J. (2012). Mekong hydropower: drivers of change and governance challenges. *Frontiers in Ecology and the Environment*, *10*(2), 91-98.
IPCC (2014). Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R. K. Pachauri and L. A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.
Kelleher, A. (2005). A personal philosophy of anticipatory action-learning. *Journal of Future Studies 10*(1), 85-90.
Knight, M., Loayza, N., & Villanueva, D. (1993). Testing the neoclassical theory of economic growth: a panel data approach. *Staff papers*, *40*(3), 512-541.
McCombie, J., & Thirlwall, A. P. (2016). *Economic growth and the balance-of-payments constraint*. Springer.
Ministry of Finance and Development Planning (MFDP) (2016). Draft National Development Plan 11: April 2017-March 2023 http://www.ncongo.info/wp-content/uploads/2017/02/NDP-11.pdf
NPA (2015). *Second national development plan (NDPII), 2015/2016-2019/20*, 315. Available from: http://npa.ug/wp-content/uploads/NDPII-Final.pdf
OSAA (2018). Climate Change: Impact on Africa. http://www.un.org/en/africa/osaa/advocacy/climate.shtml
OSSAP-SDGs and NBS (2017). Nigeria: Sustainable Development Goals (SDGs) Indicators Baseline Report 2016 http://sdgs.gov.ng/nigeria-sdgs-indicators-baseline-report-2016/
Naik, R., & Kaneda, T. (2015). Non-communicable Diseases in Africa: Youth Are Key to Curbing the Epidemic and Achieving Sustainable Development. Population Reference Bureau. http://www.prb.org/pdf15/ncds-africa-policybrief.pdf
Peet, R., & Hartwick, E. (2009). Theories of Development: Contentions, Arguments. *Alternatives. The Guildford Press. New York*.
Pisano, U. (2012). Resilience and Sustainable Development: Theory of resilience, systems thinking.

European Sustainable Development Network (ESDN), *26*, 50.
Ramos, J. M. (2006a*)*. Action research and futures studies *Futures,* 31, 639-641.
Resilience Alliance. (2010). Assessing resilience in social-ecological systems: Workbook for practitioners. Version 2.0. Online: http://www.resalliance.org/3871.php
Newell, A., & Simon, H. A. (1972). *Human problem solving* (Vol. 104, No. 9). Englewood Cliffs, NJ: Prentice-Hall.
Stevenson, T. (2006). From vision into action. *Futures*, *38*(6), 667-672.
Temple, J. (1999). The new growth evidence. *Journal of Economic Literature*, *37*(1), 112-156.
Tschakert, P., & K. A. Dietrich. (2010). Anticipatory learning for climate change adaptation and resilience. *Ecology and Society, 15*(2), 11. [online] URL: http://www.ecologyandsociety.org/vol15/iss2/art11/
Tutu, R. A. (2013). Self-rated resilience among young migrants in old Fadama, Accra, Ghana. *GeoJournal*, *78*(4), 709-725.
UIS (2018). Education in Africa. http://uis.unesco.org/en/topic/education-africa
UN (2014). African strategy on climate change. http://www.un.org/en/africa/osaa/pdf/au/cap_draft_auclimatestrategy_2015.pdf
UN (2017). Tanzania: Taking Action for Sustainable Development http://www.un.org/sustainabledevelopment/wp-content/uploads/2017/07/Tanzania_poverty_Final.pdf
UNCG and CSO (2017). The Sustainable Development Goals (SDGs) in Ghana: Why they matter & How we can help http://gh.one.un.org/content/dam/unct/ghana/docs/SDGs/UNCT-GH-SDGs-in-Ghana-Avocacy-Messages-2017.pdf
UNDP (2018). UNDP Africa http://www.africa.undp.org/content/rba/en/home/sustainable-development-goals.html
UNESCO (2016). School Resources and Learning in Africa. http://uis.unesco.org/sites/default/files/school-resources-and-learning-environment-in-africa-2016-en/school-resources-and-learning-environment-in-africa-2016-en.pdf
UN-HABITAT (2014). The State of African Cities 2014: Re-imagining sustainable urban transitions. http://www.gwp.org/globalassets/global/toolbox/references/the-state-of-african-cities-2014_re-imagining-sustainable-urban-transitions-un-habitat-2014.pdf
United Nations Inter-agency Group for Child Mortality Estimation (UN IGME), 'Levels & Trends in Child Mortality: Report 2017, Estimates Developed by the UN Inter-agency Group for Child Mortality Estimation', United Nations Children's Fund, New York, 2017. https://www.unicef.org/publications/files/Child_Mortality_Report_2017.pdf
Van den Berg, H. (2016). *Economic growth and development*. World Scientific Publishing Company.
Walker, B., & Meyers, J. A. (2004). Thresholds in ecological and social-ecological systems: a developing database. *Ecology and society*, *9*(2), 3.
Walker, B., Salt, D., & Reid, W. (2006). In Resilience Thinking: Sustaining People and Ecosystems in a Changing World.
Walker, B., & Salt, D. (2012). *Resilience thinking: sustaining ecosystems and people in a changing world*. Island Press.
WHO (2014). GLOBAL STATUS REPORT on non-communicable diseases 2014. http://apps.who.int/iris/bitstream/10665/148114/1/9789241564854_eng.pdf?ua=1
WHO (2017). Overview: Non Communicable Diseases. http://www.afro.who.int/health-topics/non-communicable-diseases
World Commission on Environment and Development (WCED). (1987). *Our Common Future*. Oxford: Oxford University Press.
Zolkoski, S. M., & Bullock, L. M. (2012). Resilience in children and youth: A review. *Children and youth services review*, *34*(12), 2295-2303.

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Information Warfare as Future Weapon of Mass-disruption, Africa 2030s Scenarios[1]

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Abstract

Information warfare is an emerging threat which is developing into a significant future global security challenge, especially as the relationship between information and power is strengthened. Futures studies generate foresight about the manifestation of information warfare in the 2030s as an upcoming national security threat in Africa. The four scenarios developed provide plausible futures which offer early warning insights on the manifestation of information warfare as a national security threat confronting Africa during the 2030s. Polarisation poses a significant future risk in terms of leveraging information warfare as a future weapon of mass-disruption.

Keywords: Information warfare, Cyber warfare, Netwar, Psychological operations, Futures studies, Environmental scanning, Foresight, Scenario study, 2030.

Introduction

In an age where information is increasingly positioned at the centre of society, a future in which information also becomes a security liability is a reality for Africa and the world at large. Information in all its manifestations – from data to wisdom – has been central to institutional power since the dawn of humankind. Technological efficacies brought about by the digital revolution and enhanced global networking activities have boosted the role of information in national power. Furthermore technological development catapulted information to the centre of most human endeavours, although high levels of inequality persist as manifested in the digital divide.

Information warfare is a subject intimately linked to the future because it is closely related to technology futures as well as the changing manifestation of warfare and conflict. Futures thinking is based on three interrelated inquiries into the future with the objective to create broad awareness about the future. The inquiries are measuring the future to obtain knowledge about the future; imagining the non-existing future; and purposefully designing or making the future. Measuring, imagining and making sustainable alternative futures should be the preferable outcome of holistic futures thinking and requires active interventions to realise (Spies, 2015). In this article, the focus is on the measuring and imagining dimensions, but it also provided insight

regarding the design of countering information warfare futures in Africa by 2030[2]. Thus, a futurist perspective does not entail prediction of the future. Instead, the futurist strives to provide insight and foresight with the aim to promote knowledgeability which could assist in creating a preferable future.

The following key questions are focused on:

What is information warfare as well as its link to power?

What are the main driving forces which will influence the shaping of the future of information warfare as a national security threat for Africa?

What are the plausible scenarios in which information warfare would manifest as a national security threat for Africa?

What propositions can be identified applying to the plausible information warfare threats against African governments and societies in the 2030s?

Information and Power: the Growing Synergy and Implications for National Security

Before the scenarios, which the African population and governments could plausible be expected to be confronted by, could be presented, it is important to focus on what exactly constitute information warfare. Generally, the term information warfare is still associated with high-technology weapons and broadcast images of drones destroying military targets with apparently assured accuracy and computer hackers taking down a country's power grid by gaining control of the power supplier's mainframe computers. Unfortunately, this armchair view of the sometimes confusing capabilities made possible by high technology and information technology has created a simplistic and sanitised vision of information warfare in which, to paraphrase Toffler (1990), the mindless fist is replaced by the congealed mind.

The media's initial focus on guided missiles and intelligent warfare systems, the tangible element of the so-called digital battlespace, masked the potentially deeper societal implications of virtual warfare strategies and global power projection (Cronin & Crawford, 1999, p.257). Increasingly cyber security and cyber warfare are becoming a major threat narrative with a wide range of applications in the fields of crime, business and politics (Carr, 2012, pp.1-5). Of specific interest for further study is the additional intangible role that information and communication play in terms of success in this new unfolding conflict environment. It is suspected that this aspect might become a major determinant of potential future political and economic supremacy.

Information is increasingly linked to power. How a government uses that power progressively controls how effectively a country may be influencing world politics and national security. In the past, the elements of power included mainly military, economic and diplomatic factors. However, in the 21st century, information is rapidly assuming a key position in foreign and security policy. It can potentially fulfil many roles, such as being a force multiplier, a tool for influencing decision-making and/or an instrument for manipulation. Information has evolved into a significant power projection instrument for the state. However, as much as it presents an offensive power projection capability to the state, it also poses a potential momentous threat to the state and society in general (Armistead, 2004, p.231).

The constantly changing national security environment is linked to the shifting basis of state power. As the foundation of global civilisation evolved from agriculture to industry and then to the information sector, the power structures within states also changed. At its core, the transformation

to an information-based society represents a shift from manufacturing to knowledge, where the creation, application and dissemination of knowledge, rather than the production of manufactured goods or agricultural products, is becoming the central defining activity of modern society and governance (Mazarr, 1997, p.25). This shift has a direct impact on how national security is being viewed by some governments. At the same time, there has been an increase in the number of countries studying innovative ways to endeavour to gain an advantage by changing the way in which conflict is managed and power is projected. The information society brings new and revolutionary technologies and means, which demand change in the way state security is managed (Lin, 2000). This has a broad impact on modern society, changing risk and threat analysis in most human endeavours.

Regardless of shifting global power structures, a coherent national security strategy is an important instrument for any state. All states, even those with limited resources, have a broad range of tools at their disposal to advance their interests. These tools, whether diplomatic, economic, informational or military, provide the means by which they seek to achieve their security objectives. A national security strategy provides a rational framework for specifying interests in a comprehensive and methodological way (Africa Centre for Strategic Studies, 2005, p.1).

While many governments have developed strategic security frameworks as national security strategies, this remains largely limited to the developed world countries. Even in the case of countries addressing information-related threats the focus remains largely limited to cyber security. However, the threat from the information environment is broader than the cyber dimension. The pervasiveness of information in modern society makes it a key factor in the construction of a global information society (Chadwick, 2006, p.209). The African Union's Agenda 2063 foresee a peaceful and secure Africa an integrated, prosperous and peaceful Africa, driven by its own citizens and representing a dynamic force in the international arena. (African Union Commission, 2015, pp.1-2).

Already in the 1990s the potential threat posed by information warfare was identified as a significant national security threat in the future (Waltz, 1998, p.13). A significant question to be asked is whether the information dimensions, especially in terms of their comprehensive implication for national security, are adequately addressed by an upcoming continental power such as Africa. Finding a practical definition for information warfare has been a challenge but a necessity for the development of information warfare futures in Africa by the 2030's.

Defining Information Warfare

While a significant amount of work has been done on efforts to define information warfare and related concepts, this is taking place mainly in the developed world. In general, information warfare has not been regarded in a comprehensive manner as a significant part of the national security threat perception in the developing world, especially in Africa. Larger developing countries such as China (Cheng, 2017, p.1) and India (Sekhar, 2015) are exceptions.

In this article the term information warfare is used in its contemporary and futurist contexts, but it is also acknowledged that the phenomenon has strong historical links. Although information warfare is a recent concept that has only been used since the early 1990s, diverse and sometimes even contradictory definitions of information warfare have complicated study of this phenomenon. Existing definitions of information warfare have limitations. These are related to being too expansive or purely focusing on USA military-centric definitions, and lastly being limited or largely limited to attacks on the ICT infrastructure and capacities of countries and/or entities (Arquilla & Ronfeldt, 2001; Denning, 1999; Ventre, 2009 & 2011).

While some aspects related to information warfare are as old as humankind, many aspects as to how it is being applied in our contemporary information driven world are new (Jones, Kovacich, & Luzwick, 2002, p.5). In an effort to address the limitations of current definitions the following

definition of information warfare is proposed: *Information warfare is defined as actions focused on destabilising or manipulating the core information networks of a state or entity in society with the aim to influence the ability and will to project power as well as efforts to counter similar attacks by an opposing entity and/or state* (van Vuuren, 2016, p.77).

The above definition encompasses three manifestations of information warfare, namely netwar, psychological operations and cyber warfare.

- Netwar is described by Arquilla and Rondfeldt (1997) as referring "... to an emerging mode of conflict at societal levels, involving measures short of traditional war, in which the protagonists use network forms of organization and related doctrines, strategies, and technologies attuned to the Information Age. These protagonists are likely to consist of dispersed small groups who communicate, coordinate, and conduct their campaigns in an internetted manner, without a precise central command."
- Cyber warfare (cyberwar) describes a power related conflict that takes place in cyberspace[3] (the virtual world and the internet) instead of in the physical world.
- Psychological operations refer to an intangible sphere, in essence the power related conflict area is people's minds, and criteria for winning or losing are also heavily culture-dependent (Eriksson, 1999, pp.57-64).

Taking into account the definition of information warfare as well as its constituent elements, information warfare is taking place on a cognitive-technological continuum. Within the cognitive sphere information warfare manifests as netwar and psychological operations. Within the technological sphere information warfare manifests as cyberwar. See Figure 1 for a graphical representation of the components of information warfare.

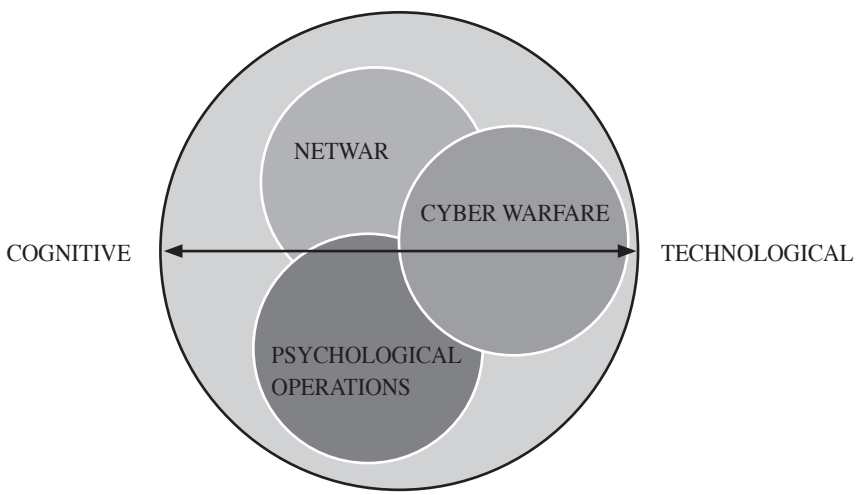

Figure 1. Components of information warfare

The Fundamentals of Information Warfare

Taking cognisance of information warfare as an overriding term, while also noting the history of information in conflict as well as criticism on existing definitions, the following fundamentals endeavour to identify some common elements as well as significant characteristics of information warfare:

- Information in especially a networking capacity is central to the information warfare concept with attaining information superiority as a tactical and strategic aim.

- Information warfare refers to the cognitive and technological disruption linked to conflict and war but not to the kinetic aspects associated with war and terrorist activities.
- Information warfare is linked to using information as instrument for manipulation, power projection, leveraging and creating an advantage.
- The strengthening of network-orientated organisations and interactions, while consequently hierarchical orientated organisations and interactions are weakened because of the information revolution and expansion of global communications (Arquilla & Ronfeldt, 2001, p.1).
- The global network ecology is transforming itself from a purely communications medium to a social environment of growing political and security significance (Vlahos, 1998, p.77).
- The exponential growth of technology, globalisation and increasing significance of networking are enhancing the future significance of information warfare.
- Information warfare is in essence a transdisciplinary concept covering a wide array of interests, including the political, governance, technological, psychological, social, media, economic and military fields.
- Both offensive and defensive roles are envisaged for information warfare.
- Information warfare is not bound by geographic limitations.
- The cost of conducting information warfare would in most cases be much lower compared to other forms of power projection.
- It is widespread and available to any country, and, in most cases, to any individual or group that wants it (McLendon, 1994). Technological skills barriers exist in the case of cyber warfare.
- The increasing dual-use nature of especially information technology results in many technologies having both military and civilian applications (Schneier, 2008).
- Information warfare invokes asymmetric action. Asymmetry is about the qualitative difference in the means, values and style of opposing powers. Once a state or entity insists on superiority in power projection, its disadvantaged opponents resort to unconventional asymmetrical means to oppose it, avoiding its strengths and concentrating on its vulnerabilities (Bishara, 2001).

The Future of Information Warfare

Taking into account the current manifestation of information warfare related issues (from Ransomware like WannaCry affecting hundreds of thousands of users to indications of international digital interference in national elections), governments worldwide are actively investigating and building information warfare capabilities. Most developed states and some developing states have conducted information warfare related exercises and established national monitoring entities (Breene, 2016). At the same time non-governmental entities are also getting involved in information warfare related activities (Cronin & Crawford, 1999, p.259). Information warfare is a global phenomenon, which makes it difficult if not impossible to evaluate in a domestic context. This will become even more so considering the future of information warfare.

Despite these capacities being created by governments and interest groups, the dynamics of emerging emergencies and the unintended consequences of information warfare make the control of information-driven dynamics highly problematic. Controlling the potential consequences of information war in terms of its netwar and psychological dimensions will be difficult, if not impossible, in the future. The emergence of various other information warfare actors other than government controlled entities remains a high probability in the future.

Protest movements and/or governments are massing force in the infosphere as well as cyberspace for viral propaganda and debilitating IT infrastructure attacks. As a result, there is

a renewed focus on mass cyber-mobilisation and concentration as part of information warfare. Networked actions, cyber-mobilisation and rhizome[4] organisation are underpinning popular forms of conflict and not only lower impact cyber-related activities such as the disruption of websites. These activities require public participation for success and social media like viral organisations (Elkus, 2009).

In the future it can be expected that this form of mobilisation will even be more effective. The rise of artificial intelligence will probably change the nature of cyberwar in particular. Instead of relying on human hackers to carry out their attacks, antagonists will in the future continue to automate information warfare, relying on artificial intelligence systems to probe opposing defences, carry out attacks, and defend against opponents' artificial intelligence. It is probable that this competition could eventually outstrip human control or even monitoring (Pazvakavambwa, 2018).

In the modern field of struggle between a sovereign country and non-state actors it also becomes necessary to refer to the information warfare that is taking place in the new and traditional media as well as other technological platforms, from the internet to virtual reality and computer games. Such groups, including terrorist organisations, continue to invest efforts in information warfare tools, which enable them to bridge the physical gap between these entities and their conventional law enforcement and security forces. Some of these entities' irregular capacities will probably outstrip the competencies of states in this regard (Gilat, 2009).

These largely asymmetric warfare capabilities, which include information warfare, are even empowering the individual to conduct war. While the concept of asymmetric warfare dates back to ancient times, most modern conflicts have redefined the nature of such struggles. As the manifestation of information warfare indicates, warfare is being transformed from a closed, state-sponsored affair to one where the means and know-how to do battle are readily found on the internet and social networks. This open and global access to increasingly powerful technological tools is in effect allowing small groups to declare war on states. Insurgent groups can be expected to increasingly form loose and non-hierarchical networks to pursue a common vision. United by that vision, they exchange information and work collaboratively on tasks of mutual interest (Charette, 2007).

Outcome of an Environmental Scan

In measuring and imagining the future of information warfare for Africa an environmental scan was used to evaluate the current milieu within which information warfare manifests with the capacity to also provide some level of insight into the driving forces which will influence how it might manifest in the future. The environmental scan focused on events, developments and manifestations related to information warfare and national security within the Technological, War/Conflict, Economical, Political and Social (TWEPS) macro-environmental hexagon, which is used instead of the frequently used STEEP (Social, Technological, Economic, Environmental and Political) sectors[5] (Kurian & Molitor, 1996, p.814). This multi-disciplinary environmental scanning focused on literature with the aim to identify current manifestations and to recognise possible trends and driving forces flowing from this (van Vuuren, 2016, p.77). See Figure 2 (Adapted from Spies, 2005) for a graphical representation of the TWEPS macro-environmental hexagon.

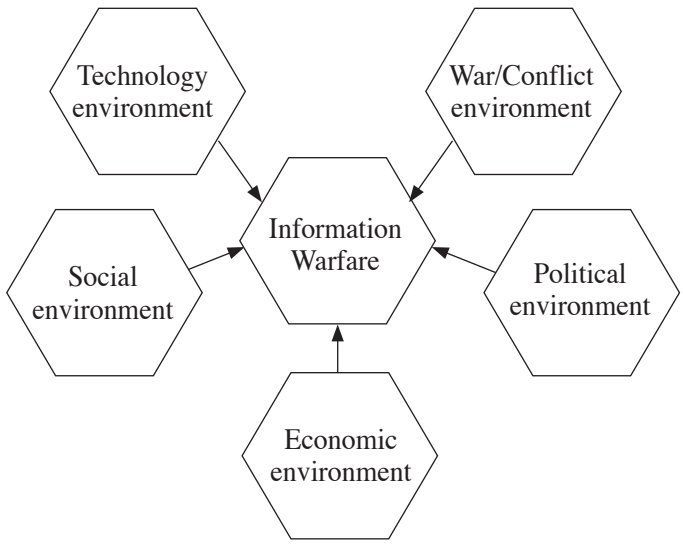

Figure 2. The TWEPS macro-environmental hexagon

The outcome of the environmental scan focusses on three overriding trends present in all environments. Transformation, networking and the impact of technological innovation in all the environments investigated were highlighted as central to the manifestation of information warfare currently as well as in the future. These trends influence not only the entities involved in power relations in society, but also enhance the potential influence and power of small and marginalised entities in society. New forms of network-related actions such as the rhizome phenomenon (small, highly interconnected networks) using social network phenomena for cyber mobilisation have been identified as of particular use for information warfare in the future. In order for information warfare activities in line with the identified trends to accomplish any outcome it should be focused on specific targets in the information society.

Information warfare targets are multi-dimensional, focusing on tactical and strategic targets. The environmental scan highlighted the significance of growing interdependence and globalisation in economic prosperity, exposing the commercial networks and the global service sector as highly vulnerable to all constituent elements of information warfare, namely netwar, cyberwar and information operations. Information warfare is primary targeted at the power structures in any state. These structures are part of the complex and inter-related processes and services underlying the information structures in society. In this regard, see Figure 3 for an illustration of the pillars of an information society. The key vulnerable access points include factors underlining the networking, coordination, integration, compatibility and connectivity of the information and knowledge society.

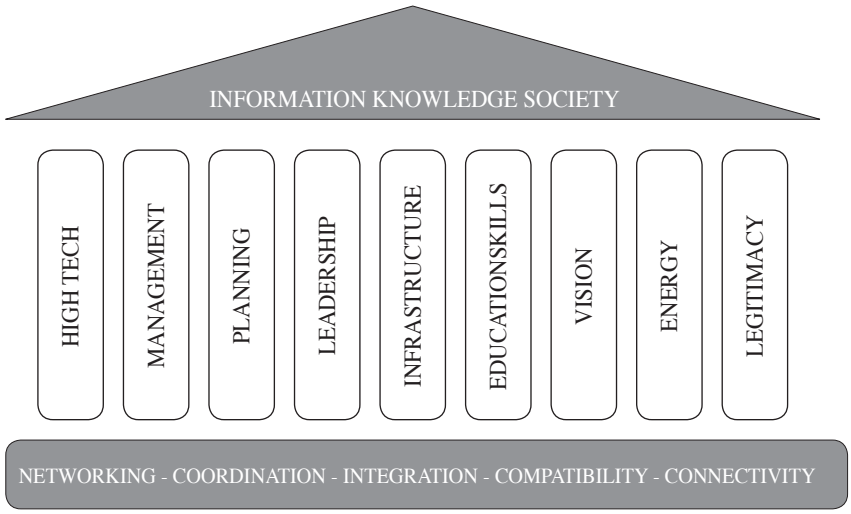

Figure 3. The pillars of an information society

Based on an evaluation of the past manifestation of information warfare, it can be concluded that practically all recent conflict situations have had an information dimension (van Vuuren, 2016, pp.116-124). While information warfare enhances military power, especially in developing countries, it also creates new vulnerabilities. It can be assumed that this trend will continue and that nearly all future conflict situations will have an information warfare dimension.

Social media and internet/mobile device platforms for such media empower most net-enabled individuals with an interest in participating in practically any global issue (van Vuuren, 2016, p. 262). This has created platforms for involvement and participation in social and political issues on a level never seen before in the history of humankind. Increasingly, it does not matter what the majority's view on issues are; it matters more what the majority of "empowered individuals" are doing.

Identification of the Scenario Drivers

The process to identify the scenario drivers is done by using qualitative text analysis on the outcome of the environmental scan deploying coding techniques, assisted by the use of software. Coding can be done using structured or unstructured data as source material. The best results are obtained by using qualitative text analysis of documentary source material (Kuckartz, 2015).

Kuckartz (2014, p.33) states that qualitative text analysis is a form of analysis in which an understanding and interpretation of the text play a far greater role than in classical content analysis, which is more limited to the so-called manifest content. In qualitative text analysis, codes are typically words or devices used to identify themes. As the research focuses on theme-related issues associated with the current and future manifestation of information warfare, thematic qualitative text analysis is focused on the environmental scan's text in its entirety, identifying the common occurring codes.

After studying the text, the summative, essence-capturing codes are identified, which are applicable to all text in the environmental scan narrative. Three such overarching codes have been identified. The three coding concepts overlap to some extent but for each paragraph the essence-capturing categories and then subcategories are conceptualised. The source of these qualitative text analysis thematic coded categories, identified as Innovation, Networks and Transformation, is the three cross-cutting trends identified from the environmental scan.

Firstly, the rapid spread of technology and innovation has a major impact on states, organisations and individuals while also contributing to significant inequality. Secondly, the world community has reached a new level of integration, accompanied by the rise of networks, especially social networks. Thirdly, societal change has been accelerated to new levels, resulting in transformation as a constant reality affecting nearly all social entities. The outcome of the environmental scan is coded using Coding Analysis Toolkit (CAT) software developed by the University of Pittsburgh's Qualitative Data Analysis Program (QDAP) (University of Pittsburgh, 2015).

The value of the identified driving forces is increased when the driving forces are scrutinised, integrated, prioritised and validated by panels of global and local experts knowledgeable about information within the TWEPS environments. For this purpose two Delphi studies are conducted as the most appropriate method for arriving at an expert validation and consensus on the key driving forces impacting the manifestation of information warfare as a national security threat by the 2030s.

Two separate Delphi studies were conducted. The one Delphi study used South African security experts while the second Delphi study uses both domestic and international experts (knowledgeable in one or more TWEPS environments). Input from a multi-disciplinary pool of experts enhanced the value of the analysis already done during the environmental scan and also provided some additional input and insight to the development of scenarios.

The two Delphi studies refined and validated the ten most significant drivers influencing the manifestation of information warfare as a national security threat in the 2030s:

- The centre of power is shifting from the traditional developed countries to the developing countries.
- Security in a networked environment will increase in complexity as its physical and non-physical elements become more tightly interwoven.
- An increase in integration and polarisation will contribute to systemic stresses.
- Information warfare will become a growing option for power projection.
- Symbolic, information-related phenomena are increasingly impacting behaviour.
- The speed of change is increasing exponentially with global communication becoming instantaneous.
- Non-state actors are increasing their influence related to global security.
- Global and intra-regional inequalities are stimulating conflict potential.
- Information communication technology (ICT) is embedding itself as a crucial part of society.
- Social media is a significant part of communication and this is expected to grow in the future.
- The two most significant driving forces for scenario building are obtained by combining the prioritisation of the Delphi studies creating the two key drivers namely:
- An increase in integration and polarisation will contribute to systemic stresses.
- ICT is embedding itself as a crucial part of society.

Africa Information Warfare Scenarios 2030s

The horizontal axis of the scenario matrix represented the spectrum measuring the extent to which ICT is embedding itself as a crucial part of society. The upper side of this spectrum represented an environment in which ICT is highly embedded in society resulting in high connectivity. The lower side of the axis represented an environment in which ICT is poorly embedded in society resulting in lower connectivity. The vertical axis represented a spectrum measuring the extent to which integration and polarisation will contribute to societal systemic stresses. The right-hand side of this axis represented an environment in which society experiences high levels of integration. The left-hand side of this axis represented an environment in which

society experiences high levels of polarisation. Thereby four information warfare scenarios for Africa in the 2030s are created (See Figure 4).

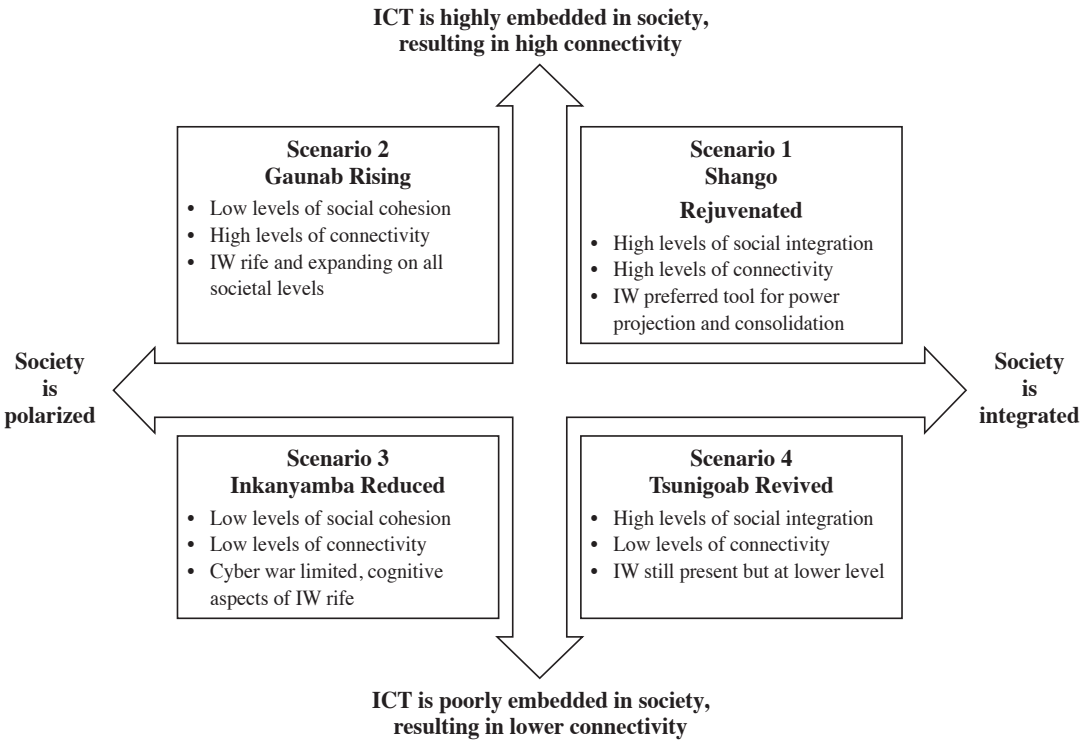

Figure 4. Information warfare 2030s scenarios

Rationale for the scenario names

Metaphors from African traditional religion and myth are adopted for the identified scenarios with the aim to advance creative thinking about the content of the scenarios and setting it within an Africa milieu.

Shango is from Yoruba tradition in Nigeria. As an earth deity he was once a mortal man, the king of Oyo, who transformed himself into an immortal. According to tradition, during his life he breathed tongues of fire. He then ascended into the sky by climbing a golden chain and became the god of thunder and lightning. He is also god of justice, punishing thieves and liars (Jordan, 2004, p.282). Shango Rejuvenated illustrates a scenario in which a high level of ICT embeddedness and high levels of integration boost assimilation, cooperation and technological advancement but also provide the ideal staging area for the use of information warfare as power projection method.

Gaunab is malevolent god of darkness from the Khoi culture in Namibia. This deity is the chief adversary of the creator god Tsunigoab. He was engaged in a primordial struggle for supremacy during which Tsunigoab was wounded but eventually triumphed, consigning Gaunab to the so-called "dark heaven" (Jordan, 2004, pp.102-103). Gaunab Rising does not necessarily reflect the rise of authoritarian societies but rather highlights the possible consequences of international, regional and even national polarisation in an environment in which high levels of ICT embeddedness will enhance the capabilities of all the role-players involved in society.

Inkanyamba is a Zulu storm god from South Africa. The deity is specifically responsible for tornados and perceived as a huge snake coiling down from heaven to earth (Jordan, 2004, p.139).

Inkanyamba Reduced reflects a polarised environment in which the embeddedness of ICT remains at a low level. Although the technological element of information warfare such as cyberwar could be constrained, high levels of potential conflict are experienced.

Tsunigoab is the creator god in the Khoi tradition in Namibia. Tsunigoab walks with a limp, because of an injury sustained in a primordial battle with his arch rival Gaunab, the god of darkness, who was eventually driven away to live in the dark heaven. Tsunigoab is invoked at dawn each day (Jordan, 2004, p.323). Tsunigoab Revived reflects a scenario in which a high level of social, political and economic integration is achieved but this is not supported by a high level of ICT embeddedness in society overall, resulting in general stability but difficulty in maximising technological opportunities in society.

Scenario 1: "Shango Rejuvenated"

The first scenario is one in which technological progress takes place in an increasingly cooperative and networked global society. This scenario is formed in the quadrant where both the two main driving forces – ICT embeddedness and societal integration – are high. This provides for a highly technological driven African society in which the consumer and business demand for technological solutions are elevated. Information warfare is seen as a common but also practical and useful instrument for the projection of power by many entities within Africa. In Africa the governments and other prominent local and international role-players are forcing commercial values on the continent, creating a largely homogeneous landscape, with main stream diversity decreasing and some sub-cultures forced to the margins. Information warfare is regarded by many domestic but also foreign role-players as a legitimate method for dissent and conflict. The governments but even larger corporate entities invest significant resources into both defensive and offensive capabilities.

Shango Rejuvenated: Information Warfare and National Security Manifestation

The high levels of social cohesion play a role in limiting both international as well as domestic conflict and war. However, competition, especially competition leading to conflict, remains common. Because of the high level of ICT embeddedness in African society, information warfare remains a useful as well as viable instrument of influence and power projection. Many African states continue to survive challenges against their legitimacy. However, powerful non-state entities such as corporations and ideological or religious groups continue to challenge the sovereignty of many African states.

As interconnected high technology and especially the digital economy are central to stability and wealth creation in Africa, societies are highly vulnerable to information warfare. It also occurs on all levels and in all of its manifestations as cyberwar, netwar and psychological operations. Information warfare is regarded as a major national security issue in most African states. It is also being developed by some governments and other entities as offensive power projection tools. At the same time counter measures against threats are highly specialised and evolving fast. Networked security is seen in Africa as of major significance and substantial resources are invested in this.

The relevance of information warfare is strengthened by the systemic nature of conflict because of the high levels of ICT embeddedness. Conflict is highly complex with growing interaction between technological change, system development and operational innovation. Within Africa the deployment of autonomous weapons and security systems are common. Asymmetric action forms part of conflict in Africa but is somewhat restrained because of high levels of global integration and the focus on multi-level defensive capabilities.

Africa's multi-lateral security cooperation is strengthened and assists in the overall maintenance of order in the international system. Africa is exposed to less inter-state conflict while the occurrence of intra-state conflict within the countries is increasing in which information warfare

will increasingly become the method of choice for dissent. The added value of high level anonymity provided by technology, especially with cyberwar, is also exploited by non-government institutions and the government alike. Globally the borders between military and civilian conflict weakens partly because of the proliferation of power projection opportunities brought about by information warfare options. This leads to the expansion of a technological arms race between governments and non-government groups. Despite the information warfare related challenges in general, a balance of power within Africa as well as between African countries and foreign competitors in terms of this phenomenon exists as counter measures are largely in place or are developed quickly.

Terrorism presents a threat in Africa but increases also in the non-physical (information warfare) part thereof. Crime and terrorism are increasingly being combated by way of algorithms and big data. In Africa crime and terrorism groups use advanced technology that is basically matched by the advanced technology of the government entities opposing them. The high levels of integration in Africa will also result in the expansion of the reach and innovativeness of disruptive and terrorist means.

Scenario 2: "Gaunab Rising"

The second scenario is one in which technological progress takes place in an increasingly polarised society. This scenario is formed in the quadrant where the two main driving forces – ICT embedding and polarisation – are high. While technological progress and technological interconnectedness are high, the potential thereof cannot be realised because of divisions in society. This scenario represents a divisive continent with increasing competition between societies mobilised on the grounds of status, nationality, religion and class, providing opportunities for authoritarian elites to expand control. Information warfare remains rife and its use is expanding on all societal levels. Inequality of capacities could lead to rapidly changing power configurations.

Gaunab Rising: Information Warfare and National Security Manifestation

The nation state is paramount, but non-state entities organised on religious, ideological and national grounds do present a growing threat to national security. Full-blown information conflicts and wars are common with a mix of kinetic and non-kinetic elements. In this regard virtual cyber-based groups such as Anonymous (or its future successors) pose a major national security threat. Non-state actors regard information warfare as a primary tool to promote and advance their political agendas.

In Africa information warfare thus poses a significant national security risk and growing ICT embeddedness ensures that states are highly vulnerable, especially to cyberwar. The level of potential hostility in Africa ensures that all methods for promoting interests in a fairly hostile environment are used. Both terrorism and cybercrime are serious local and global threats. Information warfare is regarded as a legitimate instrument of power projection by both the elite and the dissatisfied in Africa. The ruling elites in African countries manipulate and force the rest of the population into submission with whatever means at their disposal. However, the marginalised are also turning to information warfare as a practical tool to pursue their interests. Conflict becomes highly complex and common with growing interaction between technological change, system development and operational innovation. Asymmetric war and conflict options are an ingrained part of conflict and war globally.

The broader continental and global environment experience an increase in inter-state and intra-state conflict. The threat of nuclear war will be significant as the non-proliferation system is increasingly eroded. The start of a Second Cold War is a potential risk, especially if authoritarian states expand their assertive stands and military capabilities. This leads to an escalation of an arms race with high-technology weapons and even weapons of mass destruction (WMD). Private armies

(mercenaries) are significant role-players in these conflicts. Drone warfare is rife and used by many governments and even non-government role-players.

Scenario 3: "Inkanyamba Reduced"

The third scenario is one in which polarisation is high while technology participation is low. This scenario is formed in the quadrant where the ICT embedding is low but polarisation is high; magnifying dissent, resulting in high levels of conflict and competition for resources. The technological part of information warfare in the form of cyberwar is limited, but the cognitive aspects in the form of netwar and psychological operations remain high. Elites control resources and inequality is widespread.

Inkanyamba Reduced: Information Warfare and National Security Manifestation

The potential for general anarchy is a significant national security risk resulting in security being a major but also expensive reality in African countries as well as in many other countries. In most cases, only the wealthy in Africa can afford security. The use of information warfare (especially netwar and psychological operations) is widespread. In general, the mix of kinetic and non-kinetic elements in war and conflict is common. Asymmetric war and conflict options form an ingrained part of conflict and war globally, although it is not as technology driven as it could be. Inequality leads to conflict and unrest in many African countries. Conflict about resources is common and hybrid warfare is widespread worldwide. The global non-proliferation system collapses and increases the possible use of WMD substantially. An arms race between states and even in some cases non-state entities are a reality.

The nation state including African countries are under pressure as non-state entities organised on religious and ideological foundations assert alternative and hybrid configurations. Ultra-regulated digital and physical fortresses are maintained in Africa, while outside of these a general "survival of the fittest" mind-set reigns. Private armies (mercenaries) are significant role-players in security as well as in the conduct of conflict.

Scenario 4: "Tsunigoab Revived"

High levels of social integration with low levels of technological participation ensure relative stability but also limit the potential value that technology could add to society. This scenario is formed in the quadrant where societal integration is high and ICT embeddedness is low. Levels of information warfare are lower but information warfare continues to be an instrument for power enhancement in society. Inequality continues to be a challenge.

Tsunigoab Revived: Information Warfare and National Security Manifestation

African governments remain paramount while non-state entities organised on religious, ideological and ethnic grounds do present some level of threat to national security. Information war is part of the power projection instruments available to state and non-state role-players. Cyber warfare's significance, however, is diminished by the lack of ICT embeddedness in society. Asymmetric threats and operations form part of conflict but are restrained because of high levels of global integration. These threats and operations are disruptive when they occur. The threats associated with global conflict types, such as nuclear war, are less significant as the multi-lateral system is more robust as a result of the high levels of international cooperation that are maintained. Global and national conflict continues but the risk of serious escalation is lower. The start of a new global Cold War is unlikely. Terrorism remains a threat but counter measures are more coordinated in this more cooperative global environment.

Propositions

The formulation of the propositions is done from the viewpoint of endeavouring to find commonalities between the different information warfare scenarios. Although the propositions focus on African situations similar to the scenarios, the perspective is applicable globally. Information warfare as national security threat is so ingrained in global society that it is difficult to only restrict these propositions to Africa.

- *Information warfare will be a national security threat of note by the 2030s.*
- *Multi-lateral measures would be ineffective to control information warfare.*
- *Polarisation poses a significant risk for the boosting of information warfare as a national security threat.*
- *Innovative forms of network-related actions will transform information warfare into ever-changing manifestations in the national security threat environment.*
- *While information warfare is a national security threat, it also potentially implies an information warfare threat from the state posed to the freedom of the population.*
- *Information warfare will become ingrained in society as the virtual and real worlds increasingly merge.*
- *The identified four information warfare scenarios for the 2030s as well as the information warfare future model can serve as frameworks or mental models for wider application in the TWEPS environments and further research.*

Conclusion

Globalisation and a high level of interconnectedness are changing the world, creating new national security challenges, processes and actors. Despite optimism that multi-lateral efforts would solve global security problems, it is clear that significant work still needs to be done in this regard. In terms of containing information warfare, it is even seriously questioned if any multi-lateral agreement to contain this phenomenon would even be possible, as verification would be practically impossible. It can be expected that national security will remain a national government responsibility, albeit a much more complex phenomenon in which individuals, non-state actors and alliances of individuals and other entities will be highly relevant actors. It can be expected that with technological development will come many innovations and improvements in the quality of life. At the same time, the negative side of these technologies will also be present and will mutate to hamper the development of solutions.

The two key driving forces on the continuum presented by the level of integration versus polarisation and the level of ICT embedding in society will be crucial in the manifestation of information warfare by the 2030s. On a strategic level, the management of these two driving forces and the countering of polarisation will be crucial in negating the threats posed by information warfare. However, irrespective of which scenario manifests, information warfare will become a national security threat of note by the 2030s. As economic, political and social life becomes more and more intertwined in everyday life, so does the vulnerability of humankind.

Furthermore the plausible scenarios also highlights how countries are able to manage discontent through a collaborative ethic of common purpose namely the ability of countries to build and sustain partnerships to combat discontent will increasingly depend on bolstering a country's credibility with the broader global population and forging an ethic of common purpose. It can be expected that political credibility and international esteem will probably grow in political significance in the future. The Western model of political development and values was dominant up to the 20th century but is increasingly being challenged by the rise of Asia and Africa. The political democratic models as conceived and developed by the West will not necessary represent the models for the political environment of the future.

The threat of some form of global anarchy is an underlying theme regarding the nexus of the identified main driving forces namely polarisation and ICT embeddedness in the future. Therefore the importance of strengthening national and social will to enhance collaboration and shared common purpose might be that which will differentiate places of human progress from places of increasing inequality and increased chaos in the future.

The viability of futures research is related to the quality of the research methods used. The viability of futures research is also associated with the diversity of research methods used, specifically in the developing world. As long as futures research is seen as a sole domain of the developed North, it will struggle to maintain its global position as an instrument of change and sustainable growth.

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Endnotes

1. This article is based on research conducted for a University of Stellenbosch (US) Futures Study PhD thesis: "Information warfare as future South African national security threat" finalized in 2016.
2. In this article, the 2030s are set as the timeframe for the development of scenarios because of various reasons. As this study was conducted during the period from 2008 to 2015, the 2030s provides a time horizon of minimum 15 years, which is short enough to fit comfortably in the lifespan of individuals involved and interested in the question of how information warfare might influence society, but long enough to feel confident that significant changes in this regard could occur over this time period. At the same time, South Africa's National Development Plan (NDP) 2030, drafted in August 2012 by the National Planning Commission (2011), contains a series of proposals to eliminate poverty and reduce inequality by 2030.
3. Arquilla and Ronfeldt (1997, p.41) described cyberspace as follows: "... is a bioelectronic environment that is literally universal, it exist everywhere where there are telephone wires, coaxial cables, fibre-optic lines or electro-magnetic waves. This environment is inhabited by knowledge, existing in electronic form." Cyberspace consists of two measurable elements: connectivity and content. Connectivity encompasses the physical hardware, software and connecting electromagnetic or cable media that permit the generation, transfer, storage and sharing of data. The second element of cyberspace is content which influences behaviour and decision-making (Campen, 2008).
4. Deleuze and Guattari (1980, p.29) used rhizome as a metaphor to refer to a non-hierarchal form of organisation. Vail (2007) has extended this metaphor, referring to rhizome as an alternative mode of human organisation consisting of a network of minimally self-sufficient nodes that leverage non-hierarchal coordination of economic activity. The two key concepts of rhizome are self-sufficiency, which eliminates the dependencies that characterise hierarchy, and loose but dynamic networking that uses the "small worlds" theory of network information processing to allow rhizome networks to overcome information processing burdens typical of hierarchies. Rhizome therefore refers to an organisational pattern characterised by interconnected but independent networks of entities.

5. As the focus of research is on information warfare, the applicability of the STEEP sectors would need to be critically evaluated. Haberman (2013) identifies the Environmental (Ecology) Scanning sector as encompassing the natural world around us and understanding how the nature affects humanity and how humanity affects nature. Issues of concern are inter alia global warming, clean water, air quality, agriculture and increasing severity of storms. While these phenomena do have a significant influence on the world currently and in the future, these phenomena do not significantly manifest in the information warfare domain. Additionally the absence of the phenomena such as war and conflict, which go to the core role of information warfare in society as an additional fully-fledged sector, can be regarded as a significant gap. Therefore, the environmental sector is replaced with a War/Conflict sector creating the Technological, War/Conflict, Economic, Political and Social (TWEPS) macro-environmental hexagon.

References

Africa Centre for Strategic Studies. (2005). *Background paper on the senior leader seminar*. Gaborone, Botswana, 19 June to 1 July.

African Union Commission. (2015, April). *Agenda 2063: The Africa we want*. Final Edition.

Armistead, Edwin. L. (2004). *Information operations: Warfare and the hard reality of soft power.* Washington DC: Brassey's.

Arquilla, John., & Ronfeldt, David. (1997). Information, power and grand strategy. In Arquilla, John. & Ronfeldt, David. (Eds.), *Athena's camp: Preparing for conflict in the information age*. Santa Monica: RAND Corporation, MR-880. Retrieved April 15, 2005, from http://www.rand.org/publications/MR/MR880/indext.html

Arquilla, John., & Ronfeldt, David. (2001). The advent of netwar (Revisited). In Arquilla, John. & Ronfeldt, David. (Eds.), *Networks and netwars: the future of terror, crime, and militancy.* Santa Monica: National Defence Research Institute, RAND.

Bishara, Marwan. (2001, October 3). An enemy with no forwarding address. *Le Monde Diplomatique*, Retrieved January 12, 2004, from ttp://mondediplo.com/2001/10/03asymmetry

Breene, Keith. (2016, May 4). Who are the cyberwar superpowers? World Economic Forum. Retrieved April 8, 2018, from https://www.weforum.org/agenda/2016/05/who-are-the-cyber-war-superpowers/

Campen, Alan. D. (2008, January). Cyberwar, anyone? *SIGNAL Magazine*. Retrieved January 8, 2008, from http://www.afcea.org/signal/articles/templates/Signal_Article_Template.asp?articleid=1452&zoneid=223

Carr, Jeffrey. (2012). *Inside cyber warfare*. Sebastropol: O'Reilly Media.

Chadwick, Andrew. (2006). *Internet politics: States, citizens, and new communication technologies*. Oxford: Oxford University Press.

Charette, Robert. N. (2007, November). Open-source warfare. *IEEE Spectrum*. Retrieved December 15, 2007, from http://blogs.spectrum.ieee.org/riskfactor

Cheng, Dean. (2017). *Cyber dragon: Inside China's information warfare and cyber operations*. Santa Barbara: Praeger.

Cronin, Blaise., & Crawford, Holly. (1999). Information warfare: Its application in military and civilian contexts. *The Information Society*, 15(4), 257-263.

Deleuze, Gilles., & Guattari, Félix. (1980). *A thousand plateaus: Capitalism and schizophrenia*. London and New York: Continuum.

Denning, Dorothy. E. (1999). *Information warfare and security*. Reading MA: Addison-Wesley.

Elkus, Adam. (2009). The rise of cyber-mobilization. *Groupintel.com*. Retrieved February 16, 2009 from http://www.groupintel.com/2009/02/13/the-rise-of-cyber-mobilization

Eriksson, E. Anders. (1999). Viewpoint: Information Warfare: Hype or Reality? *The Nonproliferation Review*, Spring-Summer, 57-64.

Gilat, Amir. (2009). Information warfare in the 21st century: Ideas are sometimes stronger than bombs. *Eurekalert.org*. Retrieved March 23, 2009 from http://www.eurekalert.org/pub_releases/2009-03/uoh-iwi031809.php.

Haberman, Michael. (2013, April). Four ways to do environmental scanning. *Omega Solutions Blog*, Retrieved July 25, 2016 from http://omegahrsolutions.com/2013/04/four-ways-to-do-environmental-scanning.html

Jones, Andrew., Kovacich, Gerald. L., & Luzwick, Perry. G. (2002). *Global information warfare: How businesses, governments, and others achieve and attain competitive advantages*. Boca Raton: Auerback Publications.

Jordan, Michael. (2004). *Dictionary of Gods and Goddesses* (2nd edition). New York: Facts On File, Inc.

Kuckartz, Udo. (2014). *Qualitative text analysis: A guide to methods, practice and using software*. London: Sage.

Kuckartz, Udo. (2015, April 3). Personal e-mail communication responding to question on the use of documentary material in qualitative text analysis.

Kurian, George. T., & Molitor, Graham. T. T. (1996). *Encyclopaedia of the future*, Volume 2. New York: Simon and Schuster Macmillan.

Lin, Abe. C. (2000). Comparison of the Information Warfare Capabilities of the ROC and PRC. *Cryptome*. Retrieved October 27, 2005 from http://cryptome.org/cn2-infowar.htm

Mazarr, J. Michael. (1997). *Global trends 2005: The challenge of the new millennium*. Cambridge, MA: Center for International Studies.

McLendon, James. W. (1994, April). Information Warfare: Impacts and Concerns. *Air War College Maxwell Air Force Base*. Retrieved March 2, 2008, from http://warandgame.wordpress.com/2008/02/24/information-warfare-impacts-and-concerns/

National Planning Commission. (2011). *National development plan: Vision for 2030*. Pretoria: South African Government.

Pazvakavambwa, Regina. (2018, March 1). AI now on cyber criminals' agenda. *ITWeb*. Retrieved on April, 8, 2018 from https://www.itweb.co.za/content/G98YdMLxaapMX2PD

Schneier, Bruce. (2008, May 1). America's Dilemma: Close Security Holes, or Exploit Them Ourselves. *Wired News*. Retrieved May 4, 2008. from http://www.wired.com/politics/security/commentary/securitymatters/2008/05/blog_securitymatters_0501

Sekhar, Raja. (2015). Digital India in the age of information warfare. *GreatGameIndia Magazine*, Oct-Dec 2015 issue. Retrieved March, 6, 2018 from http://greatgameindia.com/digital-india-in-the-age-of-information-warfare/

Spies, Phillip. (2005). Measuring and making the future. Volume 4: The views of futurists. In Slaughter, Richard. A. (Ed.), *Knowledge base of future studies*. Foresight International, CD-ROM.

Spies, Phillip. (2015). Futures Studies' 'Holy Trinity' within the context of a trained futures mind. Stellenbosch: Institute for Futures Research, Stellenbosch University. *Learning Hub Lecture Notes, Principles of Futures Studies*.

Toffler, Alvin. (1990). *Powershift, knowledge, wealth and violence at the edge of the 21st century*. London: Bantam.

University of Pittsburgh. 2015. *Coding Analysis Toolkit (CAT). Qualitative Data Analysis Program (QDAP)*. Retrieved and used for coding May, 18 to 20, 2015 from http://cat.ucsur.pitt.edu/app/main.aspx

Vail, Jeff. (2007). What is rhizome? Retrieved December, 5, 2008 from http://www.jeffvail.net/2007/01/what-is-rhizome.html

Van Vuuren, Rianne. (2016). *Information warfare as future South African national security threat*. PhD thesis. Stellenbosch: Stellenbosch University.

Ventre. Daniel. (Ed). (2011). *Cyberwar and information warfare*. London: ISTE Ltd & John Wiley and Son Inc.

Ventre, Daniel. (2009). *Information warfare*. London: ISTE Ltd & John Wiley and Son Inc.

Vlahos, Michael. (1998). The emergence of the infosphere and its impact on military operations. In Campen, Alan. D. & Dearth. Douglas. H. (Eds.), *Cyberwar 2.0: Myths, Mysteries and Reality*. Fairfax: AFCEA International Press.

Waltz, Edward. (1998). *Information warfare: Principles and operations*. Boston: Artech House.

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Forging A New Future: Africa and her Diaspora

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In the process of being arrested by colonial authorities in 1953, Jomo Kenyatta, future president of independent Kenya hurriedly scribbled on an envelope, "Please send to Moshi for my lawyer, Dudley Thompson" (Thompson, 1993, p.93). When this Jamaican lawyer rose in court to defend Kenyatta, it was emblematic in many respects of the bonds between Africa and its diaspora, that was forged in the crucible of the colonial experiment. While Africa's diaspora is global, its largest and most prominent manifestation exists in the Americas and not surprisingly, most of the diasporan influence on the continent have emanated from this region. From even before the post-war years, the diaspora played an active role in shaping Africa's futures especially in the political arena. The influence of Marcus Garvey was instrumental in fomenting resistance to apartheid and colonialism in South Africa (see for example, Vinson, 2012). This ideology also found a place for expression in many of the first leaders of post-independent Africa such as Kwame Nkrumah of Ghana, Patrice Lumumba of the Republic of Congo, Nnamdi Azikiwe of Nigeria and the afore-mentioned Jomo Kenyatta of Kenya. Consequently, the diaspora has been shaping Africa's future since decolonization, a process which continues in tangible ways today, and by all indications, has future ramifications on the continent.

Africa has always held a central place in world history and the contest among European powers for the continent's resources placed Africa under colonial domination for the greater part of the 20th century. The continent played active supporting roles in both world wars and was reluctantly released from the colonial grip during decolonization, that effectively began at the end of World War II. While a wave of independence swept through the continent beginning in the late 1950's, Africa remained in the political spotlight as a place to be contested for by industrialized nations within context of the political rhetoric that characterised the Cold War between the only two superpowers, the United States (US) and the Soviet Union (USSR). It is within this general context that Africa's diaspora constantly negotiated and renegotiated the continent's future, shaping the continent in a way that would ensure its emancipation from the prevailing political and economic depredations of the western world.

Pan-Africanism was the first medium that transported these aims of the diaspora to the continent. This ideal was formed in the diaspora as disparate Africans were forced to cultivate a composite notion of togetherness that would alleviate their oppressive conditions in the West. The key component of this was the idea of forging an identity that transcended language and culture and see Africans as one people. This of course was not an easy task considering the complex nature of African cultures, but for those outside of Africa, it was an immediate solution to a common oppression that they all faced. While the actual authorship of pan-Africanism itself, can be debated, it is widely accepted as being from the African diaspora and some of its prominent early exponents and practitioners were Edward Wilmot Blyden, Henry Sylvester Williams, Marcus Garvey, and W.E.B. DuBois. While pan-Africanism developed in the diaspora, its leadership and articulation in Africa was effectively controlled by Africans living on the continent. This shift is marked by the 5th Pan African Congress held in Manchester, England in 1945, where Kwame Nkrumah transformed the notion of pan-Africanism from a "Diaspora affair in which a few continental Africans participated to an African affair in which the Diaspora continued to contribute" (Fergus, 2010, p.29).

Perhaps the most overt expression of the Pan Africanism ethos in the way of shaping Africa's futures is demonstrated by the existence of the African Union (AU). This body seeks to address various challenges facing the African continent with the view of improving the conditions of African peoples, *vis a vis* security, human rights, environmental sustainability, and gender equity among other things (Makinda, 2016, p.1). The AU attempts to produce an organization that speaks for the continent on important matters, much like how the later European Union attempt to represent and deal with major issues concerning Europe. The African Union however, owes its existence to the Organization of Africa Unity (OAU) that emerged as a direct result of the pan-African ethos with which newly independent African countries in the 1960s were imbued. Established in 1962 in Addis Ababa, the OAU had among its aims: the promotion of unity among African states, to defend the independence of African states, and to eradicate colonialism on the continent (OAU, 1963, p.41). The OAU can be understood as an outgrowth of a social movement towards African unity (Wallerstein, 1966, p.774). The African unity component of the OAU underscored the presence and importance of pan-Africanism. The OAU operated until 2001 when it was replaced by its successor, the AU.

How then has the OAU/AU shaped Africa and is continuing to affect the future of the continent? The OAU provided emerging independent African countries with a sense of stability and somewhat of an economic and political countermeasure to balance the influence of Europe on the continent. For example, the OAU initiated financial institutions like the African Development Bank in 1963. The OAU also mediated border disputes between members as in the case of Algeria and Morocco in 1963 and between Somalia and neighbours Kenya and Ethiopia in 1964 (Wallerstein, 1966, p.780-781). This organization also actively supported liberation movements in countries like Guinea Bissau and Mozambique by providing funding (Yousuf, 1985, p.57). This was no doubt in keeping with their stated aim of eradicating colonialism on the African continent. Despite this however, both the OAU and its successor the AU, struggled and failed with throttling the scourge of apartheid on the continent. Serendipitously, this failure presented the African diaspora with an opportunity to insert their agency in Africa by galvanizing to present a valuable component that ended apartheid.

Agitations to bring attention to the apartheid situation in South Africa, came from all sections of the diaspora. There were rallies, demonstrations, concerts, and lectures aimed at challenging the support by western countries of the apartheid regime in South Africa. The most effective of these challenges emanated from Latin America in the form of Cuba's involvement. The participation of Cuban troops that included diasporans, in African liberation struggles in southern Africa, finally broke the military might of the apartheid regime while bringing the civil war in Angola to a conclusion (Laumann, 2013, p.32-33). Despite the looming presence of Cold War influences in the support of, and opposition to the apartheid regime, the leadership of Cuba decided to directly intervene in the military struggle by sending materiel and thousands of troops to southern Africa. The importance of the diaspora in toppling apartheid was underscored in Nelson Mandela's visit to Cuba where he expressed his gratitude to the people of that country. Ironically, the largest diaspora from Africa resides in Brazil where they have had limited impact on Africa. The members of this diaspora in Brazil are mostly marginalized along a sharp racial divide that limit their agency and mostly exclude them from the corridors of power. Historically however, the diaspora in Brazil did produce members that made their way back to Africa and left their mark in the narrative of the continent's history, even serving to create a distinct ethnicity in West Africa (see Alcione, 2001; Essien, 2016).

The diaspora is dynamic, evolving and continuing to shape Africa today through this pan-African ethos. Recently, the AU designated and the diaspora as the 6th region of Africa. This demonstrates the AU's efforts to reinvigorate a brand of pan Africanism aimed at developing "a common understanding and connection among African nations and African descended peoples cross-continentally and globally (Edozie, 2012, p.270). This is quite poignant as it now allows many

diasporans, generations removed from Africa, to feel like they officially belong to the continent even without holding a passport from any country or even having visited. It clears the way ideologically and, in some ways, administratively for members of the African diaspora to better see themselves as Africans and contribute towards the development of the continent. This, combined with efforts from within individual countries presents Africa in a more accessible light to those in the diaspora who want to and are able to contribute to the continent's growth. In Ghana for example there is an established practice of bestowing honorary traditional titles on individuals from outside the continent who can provide usually financial means to facilitate development (Bob-Milliar, 2009).

The evolution of the African diaspora also carries implications for the future of Africa. Apart from the 700-year period where Africans occupied parts of the Iberian Peninsula, the African diaspora for the most part was evolved from the trafficking of Africans for the purposes of enslavement. The constituent of the diaspora is now radically different as it is not made up exclusively of slave descendants. Millions of Africans have made the choice to travel and live outside of Africa for numerous reasons, primarily economic ones. The diaspora today therefore, boasts a large number of persons who came directly from the continent or who are first generation Africans. The implication of this is that there is now a stronger sense of what Africa is in the diaspora, and there is also a need to be connected to it as these diasporans return to the continent for family occasions, vacations, to explore business ventures, or to prepare for retirement there. This has resulted in the transfer of many things from outside Africa to Africa, and in this case the transference is more readily accepted as it is being brought by Africans who had spent time abroad, or by their children with a strong sense of home, rather than by long lost cousins, generations removed from, and who have little in common culturally with Africans living on the continent.

Within this paradigm, the diaspora is uniquely positioned to shape Africa's future in many ways. Already, African migrants are the most educated demographic in the United States (US). In addition, the African diaspora has already laid claim to a US president, Barack Obama, and Oscar winner Lupita Nyongo. What can this mean for Africa in terms of how the diaspora will shape and continue to shape the continent's future? The increased visibility and significance of members of the African diaspora have in turn created a new understanding of the continent by others in the diaspora and have influenced the positioning of Africa as a site for tourism among many other diasporans. This in turn have fuelled the growth of Afro-futurism and a new appreciation for the African aesthetic. This was most notably displayed in the blockbuster film *Black Panther*. With the success of this film, members of the African diaspora have already started to wear more African inspired fashion, which could have a positive economic ripple effect on the continent. Already, in US society, it has become a tradition for many black college graduates to adorn themselves in stoles made from woven kente material at their graduation ceremonies.

Africa's cultural landscape is also being shaped by the diaspora, a trend which is only set to intensify in the future. Africa today boasts a burgeoning film industry with its primary audience being continental as well as Africans in the diaspora. Thousands of these films, notably from Nigeria have found willing audiences in abroad. The acceptance and popularity of these Nollywood productions—as the movie industry in Nigeria is called—in turn have further stimulated a proliferation of these movies to meet the increased demand for these products. It is fair to say that the growth of the African movie industry is directly linked to appreciation of these productions by the diaspora who are usually in a better economic matrix and is able to support the purchase of these films. The diaspora is also a major player in the evolution of the African music scene. Today, the continent rocks to the sound of reggae and hip hop, two music genres that emanated from the African diaspora. These two genres have influenced musicians on the continent to develop their own sound and have marketed their product all over the world. Reggae music especially, has fostered the spread of the Rastafari movement that has adherents all over the continent. It's message of fierce independence and resisting oppression will continue to shape the general outlook of urban youths on the continent, especially the disenfranchised.

The diaspora is resonating and will continue to do so in Africa's fiscal arena. In most cases, Africans in the diaspora are generally in a more advanced economic position than Africans on the continent. This is not surprising since Africans often migrate from the continent for economic reasons. The diaspora thus presents a natural market of willing consumers for African goods, especially foodstuff and services such as custom-made clothing. The demand in the diaspora for African products, will continue to stimulate exports and innovative ways of marketing as demand grows with an expanding diaspora. Recent African migrants, who compose the new diaspora are significant players in education, business, and technology in the west. In returning to Africa, they often found private schools modelled along the line of western institutions with the intention of offering a similar education product to that of western countries. Members of the diaspora are also making their presence felt on the continent as they return to contribute to Africa's emerging business climate marked by expanding oil and telecommunications industries and the recent entry of China as a major investor on the continent. Perhaps the most significant way that the diaspora is shaping Africa's future in the economic arena is through direct cash remittances. The World Bank estimates that in 2016, remittances to sub-Saharan Africa alone stood at 33 billion (Worldbank.org, 2018). These remittances feature quite significantly in the economy of several African countries with less advanced economies like Liberia and The Gambia, where remittances account for upwards of 20% of their GDP (Worldbank.org, 2018).

In conclusion, Africa's diaspora is perhaps its most well-known product and its most significant product in terms of how this diaspora have shaped and continues to shape Africa's future. Africa's diaspora was forged by the need to unite in order to cope with oppressive conditions that faced Africans, regardless of their cultural origin. This pan-African ethos was successfully transferred to Africa to cope with its own oppression under colonial domination. Pan-Africanism informed how post-colonial leaders envisioned and fashioned independent Africa and is exemplified in the OAU and the AU, the organization that is the most overt political expression of pan-Africanism on the continent. The diaspora helped to topple the scourge of apartheid and continues to reverberate in the continent's cultural and economic arenas. The diaspora is a driver of cultural development and simultaneously an active market for Africa's cultural production. In addition, the diaspora is a key component of the continent's economic landscape by funnelling money through remittances that is crucial to many economies. The nature and reach of the African diaspora enables it to continue its role as a major and effective player in determining the continent's future with the same level of importance, if not more, than it had in shaping Africa's post-colonial past.

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References

Amos, Alcione M. (2001). Afro-Brazilians in Togo: The Case of the Olympio Family, 1882-1945. *Cahiers d'Études Africaines, 41*(162), 293-314.

Edozie, Rita Kiki. (2012). The Sixth Zone: The African Diaspora and the African Union's Global Era Pan Africanism. *Journal of African American Studies, 16*(2), 268-299.

Essien, Kwame. (2016). *Brazilian-African Diaspora in Ghana: The Tabom, Slavery, Dissonance of*

Memory, Identity and Locating Home. East Lansing: Michigan State University Press.
Fergus, Claudius. (2010). From Prophecy to Policy: Marcus Garvey and the Evolution of Pan-African Citizenship. *The Global South, 4*(2), 29-48.
Bob-Milliar, George M. (2009). Chieftaincy, Diaspora, and Development: The Institution of Nkocsuohene in Ghana. *African Affairs, 108*(433), 541-558.
Laumann, Dennis. (2013). "The Battle of Cuito Cuanavale." *African Agenda, 16*(2), 32-33.
Makinda, Samuel et al. (2016). *The African Union: Addressing Challenges of Peace, Security, and Governance*. New York: Routledge.
Organization of African Unity. (1963). Charter of the OAU. *Transition,* 10, 41-42.
Thompson, Dudley with Margaret Cezair Thompson. (1993). *From Kingston to Kenya: The Making of a Pan-Africanist Lawyer*. Dover: The Majority Press.
Vinson, Robert Trent. (2012). *The Americans Are Coming: Dreams of African American Liberation in South Africa*. Athens: Ohio University Press.
Wallerstein, Immanuel. (1966). The Early Years of the OAU: The Search for Organizational Preeminence. *International Organization, 20*(4), 774-787.
Worldba.nk.org. (2018). Press Release.
Yousuf, Hilmi S. (1985). The OAU and the African Liberation Movement. *Pakistan Horizon, 38*(4), 55-67.

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The Fourth Industrial Revolution is Africa's to Lose

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Two Kenyans "sheltering" under a drone used to deliver drugs and medicine in Rwanda. Africa must not lose in the 4th industrial revolution. Photo by XN Iraki

On Wednesday 14th March, 2018 Africa Centre for Economic Transformation (ACET), a think tank based in Ghana was in Nairobi with a simple mission. To" undertake a study to better understand what the Fourth Industrial Revolution (4IR) means for the future of jobs and especially youth employment in Africa." The study is on behalf of Africa development bank (AfDB).

The key areas of focus in 4IR include machine learning/artificial intelligence/robotics. Machines can now do jobs that were previously the domain of human beings. Machines can learn and adopt. Think of computers that can play games or driverless cars than keep tabs on the road conditions including traffic jams. Many people would be hesitant get into a driverless car, but that the future reality. Don't we use "driverless" lifts in high rise buildings?

The second area is Internet of Things (IoT). Devices from our fridges to other gadgets we use every day are connected to the net. This allows unprecedented controls and communications whose social economic effects are yet to be fully understood. Think of picking items in a supermarket, without going through the cashier, money is debited directly from your bank account or Mpesa. In a continent where human interaction really matters, this is an interesting area to watch.

Third is Data mining technologies/data science: ACET (2018) notes that "The capture of vast amounts of data, when combined with powerful computing capabilities and AI algorithms, generate unprecedented amounts of insights." Statistics is enjoying a renaissance. The patterns and trends within data are business opportunities. Think of airlines booking systems, hotels reservations, and even tax returns or customer information in banks. African governments holds vast amount of data. Will it become a public good or will it be commercialized by entrepreneurs?

Fourth is 3D printing. Just design a product and print it. From prosthetics to artificial teeth. Going directly from designing to physical product, promises the revival of cottage industry and could help developing countries particularly in Africa avoid the smoke stacks. What will happen to the factories, some that have stood for hundreds of years? As Vimal Shah (2017), the boss of BIDCO, a leading industrial firm in Kenya once joked, we could in future start printing pizzas. Have African policymakers factored realities like 3D printing in their long term plans?

The fifth area is Blockchain or trust technologies: ACET (2018) notes, "Blockchain lets people who may have no confidence in each other collaborate without having to go through a neutral central authority. Blockchain is an open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way." What will happen to lawyers, bankers, brokerage firms and lots of government officials? No wonder Blockchains are seen as the silver bullet against corruption. Blockchains will be the deathblow to power as we know it. Once in place, lots of power wielders and brokers in both private and public sector will lose their power. No stamps, no signatures, no come tomorrow for services. Blockchains could finally set Africa free from the yoke of nepotism into a growth trajectory.

The fifth area, which ACET left out, is the convergence of physical and biological systems. Do you call artificial hand that could be controlled by the brains just like the normal hand? Imagine such a robot? One hot area for those in school to think about is biophysics or bioengineering. We are accepting a simple fact, nature is far better than us, we better learn from it. The professions of the future will be more multidisciplinary. Have universities and school systems factored that in curriculum designs?

If you recall, the World Economic Forum Annual Meeting 2016, was held under the theme "Mastering the Fourth Industrial Revolution" (Schwab, 2016), the founder of World Economic Forum noted "4IR is characterized by a range of new technologies that are fusing the physical, digital and biological worlds, impacting all disciplines, economies and industries, and even challenging ideas about what it means to be human." It seems as usual, Africa is catching up with the rest of the world.

Now that we know what entails the 4IR, how shall Africa, a continent where joblessness is a huge problem, particularly among the youth react to the new reality? There three possible scenarios.

One, Africa can watch as the rest of the world moves on. We did that with the first three industrial revolutions. The first was based on mechanization of textile mills and steam engine, the second on mass productions pioneered by Henry Ford and the third was on digitization of manufacturing. I encountered the second and third revolutions by use of manual lathes and later numerically controlled lathe machines in a technical school. We are yet to come to term with earlier revolutions. The basics of an engine have remained the same, but we still can't make cars. We prefer to show off our new cars oblivious of the jobs we could create if we made cars here. No wonder Obama made sure General Motors was saved after he became the president (Bigman, 2013). We still do not mass produce anything in Africa.

Two, we can do what we did in telecommunications, leapfrog. Most Kenyans never had fixed telephones in their house. We got directly into mobile phones which we have exploited better than western countries that came up with the mobile phone. Think of Mpesa and other services uniquely Kenyans that we get through our phones. This would be our preferred route.

The nature of social economic set up makes it easier to adopt the 4IR. Since we do not like learning, we can let machines do it for us. Blockchains can slay our most popular dragon, corruption. 3D would make our homes new industrial centers, with the biggest bottleneck being the design. All the data lying within the government and private sector, including churches could be mined for patterns and trends. Maybe we could eventually explain why we behave the way we do.

Three, we can move up the value chain so that we can become the providers of these technologies to the rest of the world. Japan did that with cars while India did the same with pharmaceuticals and software. Why can't Kenya become the leader in artificial intelligence? We only need our brains, unlike steel mills that demand huge capital outlay. Why can we be leaders in designing blockchains? The most important input in 4IR is brain, which lowers barrier to entry for professionals and new firms. The beauty about this approach is that instead of worrying over job losses we shall create more. Think of the jobs created by computers, yet we feared lots of jobs would be lost. After fearing computers as job killers, they spawned a new area of study, computer science and millions of jobs.

One big question is whether Africa is prepared for 4IR. Anecdotal evidence seems to suggest we are not. Are our schools ready for 4IR? I used to wonder why my maths, physics and chemistry teachers in high school were Indians. By focusing on sciences, India prepared itself to become the pharmacy of the world and center for software development. What of Africa?

To what extent have African education systems espoused the 4IR? To what extent has government policies embraced 4IR? Are we ready for the socio-psychological disruption from 4IR? Yet, we have not even fathomed the effects of social media on our society.

Africa has been losing other Industrial revolutions; the 4IR is ours to lose. We can be even be smarter, start the 5IR and reap all the benefits like other pioneers.

On The Fringes of 4IR: Drones in Rwanda

The 6th Africa Humanitarian Logistics Conference took place in Nairobi from 14-15 March 2018. The conference shared ideas among humanitarian supply chain managers, logisticians, academia and other stakeholders. Among the key players in the conference was World Food Program (WFP), Kuehne Foundation and University of Nairobi.

Expert Speakers included Dr Jon Lenchner, Chief Scientist for IBM Research Africa, Prof. Gyongi Kovacs from Hanken in Finland, Prof. Nico Vandaele from KU Leuven, Prof. Alan McKinnon from Kuehne Logistics University among others.

One major attraction in this conference was the use of modern technology in a very sensitive area, delivery of drugs and medicine in Rwanda. Yaniv Gelnik who works for Zipline demonstrated how a drone can deliver two kilograms of essential drugs to remote areas using a miniature parachute then return to base. The drone for this type of work resembles a plane, and is launched like a plane instead of vertical landing and takeoff like helicopters or drones popular in photo shooting.

Yaniv plans to get into the Kenyan market soon. In his discussion, one thing came out clearly. The regulatory regime is a big factor in adoption of new technologies including 4IR. Rwanda was quick to see the potential of drones. Yaniv, who imports the drone technology from California, thinks Rwanda is even ahead of USA in the commercial use of drones. USA is way ahead in the military use.

The use of drones to deliver medicine to remote areas in Rwanda can be a good template in how we can exploit the 4IR technologies. The government first must create an enabling environment, where private investors find it easier to exploit their talents and new technologies. Think of future uses of drones in other areas including in e-commerce.

Two, we do not need to reinvent the wheel. The drones have been used successfully in others areas e.g. the military. Why not adopt the 4IR technologies which have been used successfully elsewhere?

Someone is using artificial intelligence somewhere, with China becoming a power in this area. Someone must be data mining, with some software for that available for free. The same applies to blockchains and other facets of 4IR.

We also must build local capacity to use the technology. This will reduce resistance once the technology recipients see direct benefits like job creation. The capacity should be beyond the hand on training. It should extend to integrating new technologies into our curriculum right from primary to university. Can I find Artificial intelligence or blockchains in school textbooks or students only hear about them on TV or radio?

The young minds are more agile to exploit the new technologies and create new ones. How can they create 5IR when they are not conversant with 4IR? Unlike political revolutions that are started by emotions, industrial revolutions are started by hard thinking, investment in research and development and forward thinking. More importantly is that to reap from 4IR or 5IR we must believe in possibilities and ourselves. Who thought one day we could deliver drugs or medicine by drones or send money by phone? This project in Rwanda shows clearly Africa can reap from 4IR and 5IR, what it will contain.

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References

Bigman, D. (2013). How General Motors Was Really Saved: The Untold True Story Of The Most Important Bankruptcy In U.S. History. Forbes, November 18, 2013. https://www.forbes.com/sites/danbigman/2013/10/30/how-general-motors-was-really-saved-the-untold-true-story-of-the-most-important-bankruptcy-in-u-s-history/#3b95f8a7eea2, Retrieved on September 17, 2018.

Boateng, G. (2018). The challenging problem of labour and youth education: A wake up call for Africa, Africa Centre for Economic (ACET), Transformation(ACET), Accra , Ghana.

Gelnik, Y. (2018). Exhibition, The 6th Africa Humanitarian Logistics Conference, Nairobi, Kenya, 14-15 March 2018.

Shah, V. (2017). Keynote speech at Africa international Management Conference (AIBUMA), Nairobi, Kenya.

Schwab, K. (2016). Address to World Economic Forum Annual Meeting, Davos, Switzerland.

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E S S A Y
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The Future of Africa – Not What it Used to Be

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Abstract

Usually the present-day understanding of Africa doesn't look back beyond its colonial past. But the difficulties of African nation states with the Western system of a strong and accountable state and an open civil society have to be understood from the perspective of the precolonial system of in-group solidarity and vertical networks under paternalistic authority. The Western political order doesn't stand a chance of being adopted if the traditions of social solidarity and personalized relationships cannot be integrated into it. This need comes in a different light by the recent developments of the impersonal and functionalized political and economic system of neoliberalism in the West itself, which increasingly evokes neo-tribal reactions in search for new in-group solidarity and identity. While Africa is grappling to adopt the Western system, Western societies return to the tribal heritage, it seems. This essay makes a plea to locate the need and desire for belongingness in the economic sphere of small and medium-sized enterprises. They cultivate strong bonds of solidarity and cooperative networks. Their temporary existence and fast rhythms of change prevent them from slipping off into the old exclusion mechanism of the tribal existence, which is so dangerous in politics. Both Western and African societies may find a new future by learning from each other's past.

Keywords: African history, Lifelong solidarity, Vertical networks, Rule of law, Civil society, Social entrepreneurship.

Introduction

We have as much future as we have a history. The future cannot be derived by extending the curves of growth or decline from past statistics. It announces itself in the challenges society faces, in crises, in problems not solved. In order to meet the challenges of the future cultures and societies need to delve deeper into their histories. This also counts for Africa. This essay is in search of a new balance between past and future of sub-Saharan Africa.

The postcolonial expectation of industrialization, of catching up with the west, of self-rule and democracy, failed to deliver on its promise. The reason is that the binary opposition between colonial and postcolonial proved to provide too short a historical perspective. Often we need to delve deeper into history to find paths into the future (Rosenstock-Huessy, 1993). Much of the older layers of African history survived both colonialism and post-colonialism: the system of lifelong solidarity (Tshikuku, 2001), of personalized relationships and vertical networks (Hyden, 2006). It has not effectively been replaced by a Western style civil society and

universalist state. As an informal system it makes its impact the more felt inasmuch as it is less explicitly mentioned (Kelsall, 2012). The old layers of African history should be taken into account to find paths into modernity. But then again, which modernity? Modern nation states seem to be dissolving either in bigger units like the European Union or in smaller units characterized by neo-tribalized nationalism, language groups, or even, like in Italy, old city states. While Africa is trying to depart from its tribal past, the West is re-tribalizing (Bauman, 1993, 2011).

A new balance needs to be found between the heritage of Africa and the heritage of the West. In a sense the one's heritage may be the other one's future. This essay attempts to explore how such a balance might look like. It will focus especially on governance, society, and the role of entrepreneurship.

The development debate

Every era produces its own myth: the belief of this one generation turned into a universal recipe. Its own solution or fashion also becomes its export product (Rosenstock-Huessy, 1993). Such solutions are mostly partial and one-sided. This is what turns them into a myth. If myths are left to their inner dynamics they make a mess of society. After the second world war the first development myth consisted in the belief in money and technology (Gasper, 2004). The developing countries would catch up like Europe did thanks to the Marshall plan. In the 60s when the Western world industrialized rapidly, the emphasis shifted towards industrialization and infrastructure. Next the emphasis was on rural development, services, education, health, often bypassing the government. The Western donors began to discover that the African nations had a different social system. But the Cold War stood in the way of a deeper understanding. The elites of the decolonized "nations" consolidated their power by installing large bureaucracies (Hyden, 2006; Moyo, 2009). Since these elites consisted of minorities or (coalitions of) tribes they used these bureaucracies to keep competitors at bay and in check. But in an era of general confidence in state interference in the economy (socialism), this was hardly noticed. What was noticed, however, was increasing corruption. Many NGOs and donor institutions moved away from working with the state institutions. Grassroots development and community management became popular (Schouten & Moriarty, 2003). It was associated with the then socialist preference for the poor. During the 80s the nonfunctioning state bureaucracies became untenable and "structural adjustment" programs were enforced upon the African countries by the World Bank and IMF: the West entered upon another myth, the era of neoliberalism. The criticism from Africa, but also within the Western world was severe, because African countries were forced to cut their budgets on education, health and welfare and stop protecting their markets. After 1989 the World Bank responded to the criticism by starting the debate on governance (World Bank, 1998), which was later followed by the debate on civil society (Eberly, 2008). The term "governance issues" was introduced as a diplomatic term for nepotism, particularism and outright corruption. Since 2000 the debate is dominated by the millennium goals, the grand challenges, either in the form of the comprehensive approach of Sachs (Sachs, 2005) or of the searching approach of Easterly (Easterly, 2006).

Entrepreneurship is the latest offshoot in this cascade of development discourses (Prahalad, 2010; Valerio, Parton, & Robb, 2014). It has become fashionable not only in the West (where it is the dream of students to start their own business) but also in Asia and Africa (where the reality of lack of jobs urges people in this direction). The good thing is that it enhances bottom-up initiatives and self-organization (Samli, 2009). But it may be as promising and disappointing as all the other myths, if it still shares the same blind spots. Blinded by our own export products and good intentions often we do not see what is really going on at the other side. Specifically two of those blind spots need to be mentioned: these are (1) the lack of capacities (skills, entrepreneurial mindset, cultural characteristics and values) and (2) the lack of an enabling environment (vertical

networks, nonfunctional state bureaucracies) (Kroesen, Darson, & Ndegwah, 2014). It would be a bad service to Africa to remain silent on these issues for reasons of political correctness and shame for the crimes of colonialism (Calderesi, 2006). But we need a deeper understanding of Africa's past to comprehend where it might (or should) be heading.

What about tribes and empires in Africa?

We need to understand Africa's oscillation between tribes and empires. Tribes have been roaming around all over the world. On top of those tribes empires have been built (Fukuyama, 2011; Rosenstock-Huessy, 1958). But the system of hunters and gatherers was longer dominant in Africa than in the rest of the world; tribes that exercised agriculture (especially introduced by groups of Bantu origin) entered at a later stage (Vansina, 1990). Only from the 14th or 15th century onwards small empires turned into larger imperial conglomerations (deGraft-Johnson, 1954). It is a strange paradox. One of the most successful empires, pharaonic Egypt, originated in Africa and precisely this heritage could not successfully be copied in Africa. Due to its vast area which has long been impenetrable due to the lack of roads and the impossibility of the use of horses (the tsetse fly), in sub-Saharan African empires there was always the exit option (Oliver & Atmore, 2001; Vansina, 1990). Time and again new territories have been entered and cultivated by people seeking refuge from the central authority of kingdoms and empires. Such centralized governments could provide safety and security, but tax pressures and exploitation always pushed families and clans out of their orbit. The raids for slaves either from Arab raiders or from their Western counterparts, or from intermediary groups from African origin, reinforced this ambivalent attitude to central rule. Many times African kingdoms reorganized themselves into larger centralized empires under the pressure of those raids. Often these empires in their turn raided other farther away groups to satisfy the demand for slaves and become rich (Oliver & Atmore, 2001). In Africa as elsewhere the slave trade was an important source of revenues and wealth and always the groups raided at reacted by attempting to stay out and move farther away. This ambivalent attitude to central power might have left a lasting imprint on the African soul: one of adapting to the central power or big men, and at the same time ridiculing them in a healthy attitude of irony and laughter. Nowhere a strong hierarchy marked by labor division and strong imperial authority could for a very long time be established (Reader, 1997), like in China or in India. The main feature of governance remained paternalistic rule by means of clientelistic vertical networks of separate small clannish groups and families, living as pastoral nomads or from agriculture, with limited labor division. It has been argued that it was actually the Western administrative system that organized the population in tribes more strictly than ever before (Bayart & Bertrand, 2006). And indeed tribes merged or separated, so that membership changed according to opportunity. But the system of houses and clans, the mindset and values of "family is all" or even better "family-line is all" has prevailed everywhere and always (Ayittey, 2006). Beyond the family-line and the continuity of the "house" all and everything was or needed – for reasons of survival – to be approached in an instrumental way, with the ambivalence of respect for authority and having the exit option in the back of one's mind.

System I → System II

This history created a specific value set which still survives (Kelsall, 2003). Everybody up in the political hierarchy, MPs, ministers, presidents inherited this patriarchal role of distributing favors in return for services. Economic profits are used to buy votes for political offices and these in turn are used to compensate for the "investment" by privileged tendering, monopolies of parastatal companies etc. MPs are chosen to act as strong men who can achieve something for their constituency, the region or the tribe. If one needs a license, or taxes arranged, or a clearance for imports, one needs a "friend" in the government bureaucracy who can help in return for a favor. One may have to "buy" this favor, in case the person is not part of one's solidarity network. Such services may take a "little something" or an "allowance". The solidarity system and personalized

rule make it difficult for the state to create an equal level playing field (Ayittey, 2006; Hyden, 2006). That in turn makes it difficult to enhance voluntary cooperation apart from clientelistic networks. The two biggest obstacles for economic development therefore are (1) the lack of a universalist state (rule of law, transparency, equal playing field, contract enforcement) and (2) lack of voluntary cooperation on the level of civil society apart from family loyalties or state authorities (Fukuyama, 2011). These two issues make doing business in Africa 20% to 30% more expensive (Cooksey & Kelsall, 2011; Eifert 2008). That may explain why a home grown industry and entrepreneurship in general do not really come off the ground. The formal institutions are present, state agencies, laws, bureaucracies. But informally different rules prevail (Ekeh, 1975) – often not even perceived by Westerners, who make indiscriminate use of the word "corruption" for everything they do not understand (Sardan, 1999). As a consequence of these informal rules investments and property rights are insecure (Besley, 1995; Bromley, 2008). Patrimonialism from the top and distrust between different groups at the bottom of society stand in strong opposition to the "modern" system of a universalist state and an open civil society (Stackhouse, 1984).

Should I now make use of the distinction between tradition and modernity? Or old and new? Or African and Western? None of these terms is completely correct. In traditional Africa there were countervailing powers against the power of the chiefs and kings (Ayittey, 2006). There was a council of elders keeping the rulers within the royal house in check. And the institutions of state and civil society have to such an extent become indigenous to Africa that they cannot be treated as exclusively Western anymore. On the other hand, in the modern West as well such vertical networks exist, old boys networks, professional groups, lobby groups, who distribute privileges and create "less equal" access (Fukuyama, 2011). Therefore I prefer to make use of the more neutral terms System I and System II (table 1). System I: patrimonialism from the top, lifelong solidarity among closed in-groups at the bottom. System II: rule of law and universalism at the state level and open cooperation (competition and cooperation, realignment of loyalties etc.) at the bottom. These two systems imply two different value sets. System I: obedience and loyalty, participation in the group, traditionalism, uncertainty avoidance, go with the flow. System II: individual judgment, initiative, status by achievement, importance of planning and innovation.

Table 1. Overview System I and System II

System I		System II	
Institutions	Values	Institutions	Values
Patrimonialism at the top, granting favors in return for services	Obedience and loyalty, hierarchy, status	Rule of law and universalism at the top	Equal access, transparency,
Closed in-groups at the bottom	Lifelong solidarity, participation in the group, traditionalism, uncertainty avoidance	Civil society, open cooperation at the bottom, changing coalitions (apart from family loyalty and state authority)	Individual judgment, initiative, status by achievement, planning and innovation

These two systems can be considered as a continuum along which different sectors of business and activity score differently, cities and villages, rural areas etc. Three comments may put table 1 and the transition between the two systems in the right perspective:

1. The distinctions are of an ideal-typical nature. Historically speaking System II features have also been present in Africa: checks and balances on government, egalitarianism, open cooperation

often functioned well on the small-scale of nomadic or/and agricultural societies.
2. The postwar socialist ideology that was also strong in Africa was not only attractive to legitimize the liberation struggles in Africa against the exploitative colonial powers, but also to unify the different tribes and regions under the umbrella of a strong state. The socialist principle of putting all power exclusively in the hands of the state suited the African need for unity well.
3. The ethnic coalitions that conquered state power during the liberation struggles consolidated their political rule (deemed indispensable for the higher purpose of national unity) often by keeping the other ethnic groups out or at a distance. That the different ethnic coalitions struggle with each other for political power within the framework of a modern state in itself is indicative of the transition between System I and System II that is taking place.

Generally speaking Africa is on the move, from tradition to modernity, whatever one understands by it, from System I to System II. Should sub-Saharan Africa eventually copy the Western world? The real challenge may consist in a revival of the precolonial heritage within a postmodern framework that does inherit modernity, but also goes beyond it. Only if Africa can translate – which literally means "taking along" – the older system of lifelong solidarity, of slow rhythms of change, of personalized relations, into a new and creative future, the continuity of history will be restored. Only if the heritage of Africa can merge with the Western heritage of an open civil society and a universalist state, a new future opens up that may be sufficiently mature to solve the pressing problems of the continent.

System II – Heritage of the West?

What is the origin of System II? Is the West the exception? Yes, and no. No: in many parts of the world the struggle to supersede the tribal organization by an imperial system ran its course. The difficult question always was how to get an effective and accountable hierarchical authority above and beyond tribal and clannish loyalties and prevent clientelism (Fukuyama, 2011; Rosenstock-Huessy, 1958)? Sooner or later always one clan or tribal group conquered the state apparatus and used it keep the others in check. Such a system of rule is not sustainable. China tried to solve this problem by means of a system of state examinations creating at least limited equal access. India tried to solve it by means of an intricate equilibrium between the different castes. The Empire of Turkey tried to solve it by establishing a layer of privileged slaves, imported from its European territories, which functioned as a civil service between the Emperor and the clientelistic systems of clan and region. In Western society the church was the solution (Fukuyama, 2011; Rosenstock-Huessy 1993, 1958). Before the fall of the Roman Empire the church was already present in all the tribes. Tribal rulers and kings used the authority of the church to legitimate their rule over the other tribes and in return the church urged them to codify their laws in order to put an end to arbitrary rule (Berman, 1983). In this competition between two great powers the law became the instrument to compromise and compete in peace. In a long process and by many revolutionary upheavals – the Struggle of Investiture, the city movement, the German Reformation, British parliamentarism, the French Revolution and the Russian Revolution and finally the world wars increasingly an open civil society was created with equal rights for all citizens (Berman, 1983; Rosenstock-Huessy, 1993). In this way Western society pushed back the bonds of tribe and family. Individuals and non-family based corporations could now compete and cooperate on a larger scale under the umbrella of a universalist state.

The benefits are enormous, but they did not come without a price. The price of citizens rights, mass production and mass consumption, consists in the gradual instrumentalization of our lives in large-scale social systems and in the anonymity of becoming cogs in the production machine, while as consumers we are becoming spiritual dwarfs that live by the day. The West itself is attempting to counterbalance this mechanized existence by seeking refuge in an older past. Although some time ago the Western system of a strong, universalist and accountable state, was considered to be the

end of history (Fukuyama, 1992), history itself went further and nowadays in politics and in society we are witnessing a revival of ethnic and national identities and of personalized relationships that rely on the authority of big men. Didn't the African rhythms already invade much earlier the musical styles of the West, the dances and other forms of art? Wasn't that an announcement of what lies ahead of us and what is now gradually happening? The youth is seeking the unconsciousness of participation in the group instead of the independent, waking, objectifying mind of Western scientific analysis and individual independence (Rosenstock-Huessy, 1993).

In sum, where Africa is struggling to inherit the Western system of universalist rule, open civil society and independent individualism, both Africa and the West attempt at the same time to restore lifelong solidarity, reverence for authority, belongingness (Junger, 2016). Could it be that Africa and other parts of the world kept this old heritage of belongingness in store precisely in order to make it available at the right time? In any case, if we consider the last 1000 years of Western history as a great leap forward, the challenge now, both for the West and the Rest is how to connect this leap forward to the heritage of the past. Not only Africa is challenged by the West. The Western institutions are also challenged by the heritage of Africa. The future is open.

Will Africa's tribal past thus experience a revival? Will the West as well seek to revive the older layers of its own past? But isn't violence lurking around the corner if this course is taken (Rosenstock-Huessy, 1958)? It is the violence that Western society attempted to eliminate – the violence of exclusion and persecution, of victimizing the others, of tribal wars. Should the universal speech of numbers really be replaced by the tribal tongues of closed we-groups?

How can we revive the heritage of the tribes without at the same time also reviving the violence and persecution of the old tribes, the exclusion of the others? Can a balance be found between the Western heritage of state universalism and open civil society on the one hand, and lifelong solidarity, belongingness, authority and identity on the other hand? If by reflection on our past we are able to delineate the contours of such a future, how much violence both of the Western system and the African tradition might be averted?

The entrepreneurial tribe

I already mentioned entrepreneurship. It should not be considered just a contingency that everywhere people speak of living-labs, consisting of technical whiz kids, starting an enterprise or consisting of volunteer groups doing projects in developing countries. They are exemplifications of the introduction of tribal bands and strong group loyalties right in the heart of modern society (Drnovsek, Cardon, & Murnieks, 2009). They counterbalance the functionalization of our existence by the state apparatus and the technological machinery that has taken hold of disciplined and functionalized, and spiritually suffocated people. Such groups may strike a creative balance between group belongingness and initiative, past and future, and insiders and outsiders. They may function as strong we-groups, but also as a team, coordinating different contributions. They don't reduce their members to a common denominator. And they are also open to outsiders, open to the market forces and the customers, open to partners from which they can learn in order to take the next step. Such entrepreneurial networks or groups, or connected individuals are a mixture of self-affirmation – show what you can do! – and of social service, because they feel their work should also be meaningful and welcomed by other people. Entrepreneurial teams with a passionate spirit might be more successful than individual entrepreneurial heroes (Reich, 1987; Ruef, 2010), since they foster a set of values that provides their members with strength, conviction, but also commitment and compassion. As member of such groups people can grow above and beyond themselves (Rosenstock-Huessy, 1973).

There already is an example: the guilds and commons of the Middle Ages (Moor, 2008). They were part of the city movement and although they were denounced by the French Revolution as

conservative they, together with the monasteries, set the oldest entrepreneurial examples. They watched over the professional standards of their members and gave them training. They supported competition, but not completely free competition, but responsible and regulated in order to include and not exploit weaker parties. They could think in terms of long-term continuity and not only of quick gains. Together with the monasteries they invented the word that is still in use for an organized body of people: corporations (or universities). This kind of attitude, spirit, and responsibility may be a viable way of re-tribalization for the West and de-tribalization for Africa.

Conclusion

In response to the development failures of Africa I have proposed an attempt to understand the present predicament not only from the perspective of the colonial but also the precolonial history of Africa. Africa has known a system of lifelong solidarity especially on the family level, and patrimonial/clientelistic governance from its rulers. This system of rule, to be summarized as System I, has been suitable to agricultural and nomadic societies. I have opposed it somewhat ideal-typically to System II, the system of universalist rule, equal access and of cooperation and changing alignments within an open civil society. Although this system can be considered as a leap forward within human history, this very fact implies that it has to be reconnected to the older layers of history represented by Asia and Africa. This need is articulated as a longing to reinstall strong we-groups and vertical networks, and reinforce belongingness. It raises the question how the older systems and the new system can be integrated into each other. Tribal politics is a dangerous affair. It lacks the inclusiveness of a universalist state and as such the self-confirmation of such we-groups is prone to violence. However, if this spirit of belongingness, identity and self-affirmation is located in the economic sphere (and not in the sphere of politics!) by cooperative networks and entrepreneurial "tribes" an equilibrium may be found between the heritage of the past and the challenges of the future. Such groups can intensely cultivate their own identity and still exchange with their environment since their profits depend on it. They can combine the intense belongingness of a tribe with the temporary existence of an enterprise. This spirit of collective action can take the shape of social service and create the socially and environmentally sustainable society of the future. For sub-Saharan Africa this entails the adoption of universalistic rule and an open civil society from System II, but in the form of cooperative entrepreneurship networks with a strong team spirit among its members. In such groups, understood as egalitarian and cohesive teams with strong leadership, old-time African traditions are combined with initiative, inclusiveness and innovation. Such a revival of the heritage of Africa may also open a door into the future for established System I societies that need to compensate for the functionalization and atomization of their members.

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References

Ayittey, G. B. N. (2006). *Indigenous African Institutions*, 2nd Ed., Transnational Publishers, USA.
Bauman, Z. (1993). *Postmodern Ehics*. Massachusetts, Blackwell.
Bauman, Z. (2011). *Culture in a Liquid Modern World*, Polity Press, Cambridge.

Bayart, J. F., & Bertrand, R. (2006). De quel 'legs colonial'parle-t-on?, *Esprit*, Paris.
Berman, H. J. (1983). *Law and Revolution – The Formation of the Western Legal Tradition*, Harvard College, Cambridge, Massachusetts, London, England, Vol I.
Besley, T. (1995). Property Rights and Investment Incentives: Theory and Evidence from Ghana, *The Journal of Political Economy, 103*(5), 903-937.
Bromley, D. W. (2008). Formalising property relations in the developing world: The wrong prescription for the wrong malady. *Land Use Policy*, 26, 20-27.
Calderisi, R. (2006). *The Trouble with Africa; Why Foreign Aid Isn't Working*. Palgrave McMillan, New York.
Cooksey, B., & Kelsall, T., (2011). *The Political Economy of the Investment Climate in Tanzania*, Research Report 01, Africa Power and Politics Program, London, www.odi.org.uk, 1-96.
Drnovsek, M., Cardon, M. S., & Murnieks, C. Y. (2009). Collective Passion and Entrepreneurial Teams, in *Understanding the Entrepreneurial Mind*, International Studies in Entrepreneurship 24, A. L. Carsud, M. Brannback (eds.), DOI:10.1007/978-1-4419-0443-0_9. Springer Science+Business media, LLC.
Eifert, B., Romeo, A., & Ramachandran, V. (2008). *The Cost of Doing Business in Africa: Evidence from Enterprise Survey Data*, World Development, 36, 1531-1546.
deGraft-Johnson, J. C. (1954). *African Glory*, Walker, New York.
Easterly, William. (2006). *The White man's burden: why the West's efforts to aid the rest have done so much ill and so little good*, Penguin books, New York.
Eberly, D. (2008). *The Rise of Global Civil Society: Building Communities and Nations from the Bottom up*, Encounter Books, New York, London.
Ekeh, P. P. (1975). Colonialism and the Two Publics in Africa: A Theoretical Statement. *Comparative Studies in Society and History, 17*(1), 91-112.
Fukuyama, F. (1992). *The End of History and the Last Man*, Penguin, New York, London.
Fukuyama, F. (2011). *The Origins of Political Order*, Exmouth House, London.
Gasper. (2004). *The Ethics of Development*, Edinburg: Edinburg University Press.
Hyden, G, (2006). *African Politics in Comparative Perspective*, Cambridge University Press, Cambridge.
Junger, S. (2016). *Tribe, on Homecoming and Belonging*, Hachette, New York.
Kelsall, T. (2012). Neo-Patrimonialism, Rent-Seeking and Development: Going with the Grain?, *New Political Economy*, 17, 677-682.
Kelsall, T. (2003). *Democracy, De-argrarianisation and the African Self*, Occasional Paper Center of African Studies University of Copenhagen, ISBN 87-91121-07-8, pp. 1-46.
Kroesen J. O., Darson R., & Ndegwah D. J. (2015). Capacities, Development and Responsible Innovation, in *Responsible Innovation, Concepts, Approaches, and Applications*, Ed. Koops, Bert Jaap; Oosterlaken, Ilse; Romijn, Henny; Swierstra, Tjalling; van den Hoven, Jeroen, Springer, Cham Heidelberg New York Dordrecht London, DOI 10.1007/978-3-319-17308-5, pp. 201-224.
Moyo D. (2009). Dead Aid: why Aid is not Working and how there is Another Way for Africa, Penguin books, New York.
Moor, T. (2008). *The Silent Revolution: A New Perspective on the Emergence of Commons, Guilds and Other Forms of Corporate Collective Action in Western Europe*, in IRISH 53, pp. 179-212 doi: 10.1017/S0020859008003660.
Oliver, R., & Atmore, A. (2001). *Medieval Africa, 1250-1800*, Cambridge University Press.
Prahalad C. K. (2010). *The Fortune at the bottom of the pyramid: Eradicating Poverty Through Profits*. New Jersey: Prentice Hall.
Reader, J. (1997). *Africa: a Biography of the Continent*, Penguin, London.
Reich, R. (1987). Entrepreneurship Reconsidered: the Team as Hero, *Harvard Business Review*, 67

(2): 278-298.
Rosenstock-Huessy, E. (1973). *The Multiformity of Man*, Argo Books, New York.
Rosenstock-Huessy, E. (1993). *Out of Revolution – Autobiography of Western Man*. Argo Books, New York (original 1938).
Rosenstock-Huessy, E. (1958). *Soziologie II*, Stuttgart, Kohlhammer.
Ruef, M. (2010). *Entrepreneurial Groups,* Center for the Study of Social Organization, working paper #3, Princeton University
Sachs, J. (2005). *The End of Poverty: Economic Possibilities for Our Time*. Penguin Press, New York.
Samli, A. C. (2009). *International Entrepreneurship, Innovative Solutions for a Fragile Planet*, Springer, New York.
Sardan, J. P., & Olivier de. (1999). A Moral Economy of Corruption in Africa? *The Journal of Modern African Studies, 37*(1), 25-52.
Schouten, T., & Moriarty, P. (2003). *Community water, community management. From system to service in rural areas*, IRC, London.
Stackhouse, M. L. (1984). *Creeds, Society and Human Rights, A Study in Three Cultures*. Eerdmans, Grand Rapids, Mich.
Tshikuku, K. (2001). *Culture, Entrepreneurship and Development in Africa*, International conference on the cultural approach to development in Africa, 10-14 December 2001, Dakar – Senegal, 1-27.
Valerio, A., Parton, B., & Robb, A. (2014). *Entrepreneurship Education and Training Programs around the World: Dimensions for Success*, ISBN 978-1-4648-0203-4, http://dx.doi.org/10.1596/978-1-4648-0202-7, World Bank.
Vansina, J. (1990). *Paths the Rain Forests: Towards a History of Political Tradition in Equatorial Africa*, James Currey, Woolbridge
World Bank report. (1989). Cited in Civil Society and Governance in Ethiopia, Asnake Kefale and Dejene Aredo, p. 103 in *Good Governance and Civil Society Participation in Africa*, 2009, Organization for Social Science Research in Eastern and Southern Africa (OSSREA).

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REPORT
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Social Innovations Shaping North Africa's Future-Reflection and Synthesis

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Abstract

To better understand the trends shaping the future of the Middle East and North Africa (MENA) region, the Futures Research methodology of Environmental Scanning was deployed. This basically involves scanning both published and unpublished literature to identify key trends. Then a deep dive on the identified trends through further reviews of materials including research papers, news items, blogs etc. and interviews with experts in the area. Data was then analyzed and synthesized to produce trends monitoring reports and policy briefs over the course of one year. The trends synthesized to identify megatrends and potential impacts, as well as potential innovations being used to mitigate key challenges and take advantage of emerging opportunities.

The four key themes/trends identified were: Securing Wheat Availability for North Africa; The Future of Millennials in North Africa; Managing Water Scarcity in North Africa; and Future of North Africa's Slums. While these trends were found to pose serious concerns for the future of the region, there were many innovations and policy options identified that have potential to mitigate the impacts. Public-private partnership was found to be a key way forward in further scaling the innovations identified. Therefore, inclusive business approaches are key to a better future and policies to encourage such practices are needed. Our research also identified important innovations in the area of policy e.g. providing loans and subsidies to urban users so that they can retrofit home appliance to better conserve water. The key message is that the future of the region will depend on understanding key drivers of the future, catalyzing innovations to address future challenges and opportunities, and also mobilizing private sector in more cooperative public-private ventures. Trends and potential innovations identified provide both governments and development partners with points of leverage in shaping a better future for the region.

Keywords: Millennials, North Africa, Arab Spring.

Introduction

The Arab Spring made it clear that the Middle East and North Africa (MENA) is moving to new trajectory that looks tumultuous, given the several challenges spawned by the rapid changes occurring. However, the perturbations we see at the surface may not tell us much about the future of the region. What is needed is delving deeper to grasp what the underlying drivers are, the likely trajectory, and what they mean for the future.

This is not to say that we can predict the future if we only know the drivers, however, we can paint scenarios of the future. More importantly we want to identify potential leverages that can help move to a better future. So part of the futures exercise is understanding how various stakeholders are addressing or taking advantage of challenges and opportunities being spawned. It also involves highlighting potential innovations, the scope for scaling them, and determining the missing innovations needed to direct the future to a more desirable trajectory. This is obviously the mandate of the policy makers (or leaders), where future studies are ultimately aimed at helping policy makers craft better policies to allow innovations to emerge, and to scale human response to challenges and opportunities.

Future methodology provides a window to understanding what is driving change and what leverage we have in shaping the future. This paper uses data gathered from one year of monitoring trends to identify the key drivers and more importantly key innovations that are helping shape the future of the region. Section 2 gives a literature review of futures studies and their application, section 3 discusses the methodologies used, section 4 discusses the results and emerging insights and section 5 concludes.

Overview of Futures Studies and their Applications - A Literature Review

Futurology, Futuristics, Futurism, Strategic foresight and Futures Studies are all terms that are commonly used interchangeably to describe the science of studying the possible, probable and potential futures. The founding father of futures studies is known to many as Herbert George Wells in his 1901 book "Anticipations of the Reaction of Mechanical and Scientific Progress Upon Human Life and Thought: An Experiment in Prophecy" (Wells, 2006), in which he predicted the way the world would be like in 2000.

It was not until the mid-sixties that futures studies developed into an academic discipline, with first generation futurists including Herman Kahn, Bertrand de Jouvene, and Edward Cornish. According to many experts in the field, the term 'futurology' was first introduced by Ossip Flechteim in his 1966 book "History and Futurology" (Flechteim, 1966). The term was later adopted by many, although Finnish Pentti Malaska provided one of the strongest defense for the term, where he acknowledged that futurology describes "what futures knowledge is all about – not only epistemologically, i.e. how to acquire knowledge of the future with different techniques for this or that pragmatic purpose (as done in foresight), but especially ontologically, i.e. what the knowledge of the future may mean, in what sense it is possible (and impossible) to know the future, and in what sense futures knowledge can be accounted as a proper scientific field of inquiry, parallel with the other scientific fields of knowledge (physics, chemistry, biology, sociology, psychology, anthropology, history, humanities, etc.) (Sardar, 2016)"

Foresight can be defined as a systematic, participatory process involving future intelligence gathering and medium-to-long-term vision-building, with the aim of informing present day decisions and mobilizing joint actions. It can hence actively contribute to improving anticipatory intelligence and an increased awareness of knowledge resources and strategic orientations of the actors that participated in the foresight activities (EU, 2002). A broad range of analytical & participatory methods can be employed in futures research, ranging from desktop research, expert

groups, stakeholder involvement to interactive brainstorming processes or broad participatory arrangements.

The importance of foresight stems from the significance of understanding that today's decisions form and shape the societies of tomorrow, and hence looking into the possibility of different futures, provides opportunity of shaping our futures, since it can serve as a useful policy tool to address different societal challenges, and also to raise awareness and create consensus around promising ways to exploit the opportunities and diminish the risks associated with new developments.

Participative, transparent, forward-looking methods are needed when decision-makers are trying to find solutions for the above challenges. Foresight can make a unique strategic contribution to social actors' forward thinking and develop adaptability and readiness for change. The process of foresight involves multiple actors with diversified backgrounds, where participants can include: policy actors, experts from science, companies, managers from SMEs, as well as large and multinational enterprises, citizens, as individuals or NGO-drivers.

Foresight facilitates collective intelligence by allowing the discussion of alternative options, bringing together different communities and stakeholders with their complementary knowledge and experience, and promote a common understanding of issues and sometimes shared visions about the future. It might even go so far as to establishing joint agendas for action. Foresight activities are an important vehicle in prompting broad social debates, based upon expert inputs and mobilizing broad sections of all stakeholders to give collective thought on priorities and actions. Bringing together experts with people from different disciplinary and sectoral backgrounds makes it possible to impact policy-making and even change the perceptions and beliefs of the participants (EU, 2002).

Methodology

A wide range of foresight methodologies can be used in futures research, these include Scenario building, Delphi, Futures Wheel, Technology Road Mapping, Trend Analysis, Cross Impact analysis and many others. However, due to the nature of our research, the futures research methodology of Environmental Scanning was deployed.

Key sources of information used, included published and unpublished (grey literature) research, news items, blogs to identify broad themes. Then a deep dive (more detailed and directed search and analysis) on the identified trends through further reviews of materials (research papers, news items, blogs etc.). Research was supplemented by interviews with experts to get deeper insights

The objective of the scan was to identify key trends and potential impacts and also potential innovations being used to mitigate key challenges and also take advantage of emerging opportunities.

The countries that were monitored and the key data sources are shown in Table (1) below.

Table 1. Key Data Sources Used in the FSF Newsletters

	Newsletter	Key data sources	Key informants interviewed (Yes/No)
1	Securing Wheat Availability: What Prospects for North Africa?	High: Research Papers and Journals (National Academies Press, Oxford Business Group) High: International Reports (FAO, World Bank, UNECA) High: Websites (CIGAR, Agricultural Research Center) Low: Newspapers	Yes: Dr. Hammou Laamrani- Water and Climate Change Expert, League of Arab States
2	The Future of Millennials in North Africa	High: Websites High: Research Papers and Journals High: International Reports (UN Program on Youth, UNESCO, UNDP) Low: Newspapers	Yes: Dr. Nadine Sika- Assistant Professor Department of Political Science, American University in Cairo (AUC)
3	Managing Water Scarcity in North Africa	High: Research Papers and Journals (Science Direct, Bloomberg) High: International Reports (World Bank, UN, IWRA) Medium: Websites	Yes: Dr. Diaa El Din El Quosy- Water Specialist (Egypt) Dr. Mahmoud Al Azzazy - Agricultural Expert (Egypt) Dr. Jauad El Kharraz - Water Specialist (Morocco)
4	Future of North Africa's Slums: "Slums of Hope" or "Slums of Despair"?	High: Research Papers High: International Reports (UN Habitat, WHO) Medium: Websites Medium: Newspapers	Dr. Khaled Abdelhalim – Assistant Professor of Urban Policy- AUC

There was a choice between two approaches; a directed scan versus a general scan. A directed scan focuses on a theme and goes deeply into the issue, while a general scan approach collects a huge amount of data on a range of topics. Both approaches are important. Choosing one implies trade-offs. An in-depth approach allows one to deeply understand drivers and thus one can identify potential leverages to effect the future through policy or otherwise. However, the in-depth approach can miss drivers that are not seen as important now but could become significant in the future, the so-called wildcards or weak signals. A breadth approach can catch many signals but not enough insights. In general, a balance is needed and this is the approach that was adopted.

Every quarter, initial scanning undertaken during the first two months was fairly general, and in the third month a deep dive was done on the trend that was seen as warranting deeper attention. The data was then analyzed and synthesized to produce trends monitoring bulletins.

Bi-annually roundtable discussions took place where experts were invited to discuss the emerging issues from the monitoring exercise and provide new insights. The details of two roundtables are shown in Table (2) below.

Table 2. Two Roundtables Held by FSF During 2015

Roundtable	Representation		Sector
	Expertise	Regions	
Amman, Jordan (May 16 -17, 2015)	Communications, Research and Policy Advise, Lecturer, Professor, Water and Climate Change, Polling.	Kenya, Ghana, South Africa, Libya, Sudan, France, Egypt, Morocco, Tunisia, Jordan	Government Academia International Organizations Private Sector NGOs
Rabat, Morocco (Dec 4 -5, 2015)	Research Analysis, Intelligence and Governance, Policy Advice, Strategic Studies, Water, Academia, Energy, Innovation.	UAE, Morocco, Senegal, Cote d'Ivoire, South Africa, Egypt, France, Ghana, Tunisia, Jordan, Germany	Government Academia International Organizations Private Sector NGOs

Results and Insights (Synthesis)

While there were many trends identified, the four key themes/trends identified as critical to the future of the region and thus warranting a deep dive were: (i) Securing Wheat Availability for North Africa; (ii)The Future of Millennials in North Africa; (iii) Managing Water Security in North Africa; and (iv) Future of North Africa's Slums. These key issues that were captured in the newsletters are summarized below:

Issue 1: Securing Wheat Availability for North Africa (NAH 2015a)

- Moving towards the cultivation of "new wheats" in North Africa, such as millets, sorghum and quinoa, which can grow under dry and harsh conditions with minimal water. They are also a move towards healthier "wheat-free" products that are gaining momentum in the region (WGC, nd).
- High wheat import dependency among NA countries and the high risk vulnerability lead to the emergence of new trends such as stockpiling to secure physical grain availability and to mitigate price volatility. The building of grain storages is still overcrowded by the government sector due to hidden costs, but there are signs that the private sector will start to take a bigger role in this area. Bringing private sector not only improves supply but also allows government and private sector resources to be leveraged through a Public-Private Partnership (PPP).
- Trends to improve logistics that enhance grain transportation from global to local consumers in the region, with a country like Tunisia demonstrating logistic excellence that promote its potential as a future regional wheat import hub (WB and FAO, 2012).
- North African countries have opted for a two pronged approach, as they seek to use off shoring as a way to secure their food supply. They are investing in farm land in neighboring African countries, and at the same time inviting investors to cultivate in their countries. Trends differed among countries, with Egypt opting for both investing in and receiving investment in land, Libya totally depending on offshore investments, Algeria reforming its laws to allow private leasing of agricultural land, and Morocco launching agricultural lands for leasing to foreign countries (GBA, 2008).
- The abundance of land in Sub-Saharan Africa, but its lack of expertise and technological

utility provides huge potential for cooperation between "resource poor and expertise rich" countries of North Africa with "resource rich and expertise poor" countries of SSA in off shoring opportunities.

Issue 2: The Future of Millennials in North Africa (NAH 2015b)

- The millennials use of social media plays a role in undermining the old order, where the facilitation of political organization and mobilization means that these youngsters will have a significant role in shaping political discourse in the years ahead (Ibrahim, 2008).
- The potential of millennial use of the internet in a globalized world, and risks for radicalization of this youth by Extremist Islamists.
- The birth of a renewed spirit for social activism among millennials represents signs of the formation of a new society, with growing rates of volunteerism constituting a new significant social force.
- Growing desire among millennials to immigrate to countries with bigger economic prospects, which could mean more remittances, but also a drain of the region's social capital and innovative skills.
- The abundance of entrepreneurial talent and social enterprise among youth in NA indicates a boom in innovative initiatives to the countries' most pressing issues, and a means of creating employment for many of the young populations.
- There is a growing trend for the emergence of global and regional education and innovation hubs, which might reverse brain drain and attract back some of the region's brightest minds.
- Millennials with their tech savviness, their strong networking skills honed by social media and strong entrepreneurial bend are more likely to create their jobs in the future.
- The MENA millennials are slowly creating a new narrative in the region though music, theatre and literature. Music is increasingly being used to protest against autocratic practices in the region.

Issue 3: Managing Water Security in North Africa (NAH 2015c)

Key driving force behind increasing demand for water is the demographic trend of rapid population increase. While demand is rising, the supply of water is also being challenged by decreasing precipitation, and deteriorating water quality.

- Innovative technology has a strong role to play in the water and wastewater industry going forward by increasing water supply. This includes better management of water supply using analytics, recycling, and desalination. There is generally a lack of know-how and institutional "strength", particularly in the area of integrated water resource management (IWRM), and this has limited the success of water resource management initiatives. Some actions can help improve the climate for reform such as promoting education about the multi-sectoral aspects of water management, with a particular focus on the region's water challenges, and investing in data collection and tailoring of that data to the needs of policy makers in various sectors.
- Private financing has become a powerful driver in the increasing construction of desalination plants.
- Some of the innovative options available for the region include involving communities in adopting new strategies, which can increase the acceptance of new water systems, and increasing cooperation and integration with national, regional and international institutions to help develop innovations in irrigation methods employed in North African countries.
- Pricing water in NA might not only be publicly opposed but will also raise questions on the idea of tradability of water. The deteriorating water conditions in NA countries and current

long term strategies of water resource management in the region all show a clear trend of NA countries to price their water resources (particularly irrigation water) in the near future, and possibly gradually on the long term. Improved water pricing is necessary to indicate rising water scarcity and its value, and is expected to force water towards high-value uses, encourage investment and improve water services.

- Agricultural growth is the mainstay of most North African economies and many have a quest to achieve self-sufficiency in food. Engaging in virtual water trade will become a common practice for countries in the region. The prospects of a better utilization of water among the five NA countries if a fair virtual water trade is applied, is extremely promising. The only missing factor is a strong political will, as all other technical, social and economic factors are available.
- Innovation technology labs and platforms are emerging in the region and have started addressing the challenge of water.

Issue 4: Future of North Africa's Slums (NAH 2015d)

- Private responses to the growth of slum areas in NA countries for the rich has been a growing trend of moving out to super-elitist, new peri-urban purpose-built cities, and an increasing number of gated communities who have chosen to quarantine themselves of malfunctioning municipal services and infrastructure. These then become "islands of prosperity in a seas of despair".,
- City planners are at a disconnect with the reality and trends in urban development, so urban informality continues unabated a clear message that the sterile Modernist city is being rejected by the urban dwellers as neither affordable nor the social habitat of choice.
- The debate is increasingly moving towards accepting the permanence of informality and looking for ways in which the marginalized can be involved in decisions affecting their lives and also seeking to improve their access to services.
- Politically, slums can be an important source of votes, therefore political manipulation of slum dwellers in NA is a problem expected to grow in the future. It is clear that slum vote is going to be heavily contested and with proper organization slum dwellers have the opportunity to have a powerful voice that can advocate their interests. This will require civil societies to put more emphasis on organizing slum dwellers and providing them with data and tools for them to engage effectively with the political forces and hold politicians accountable.
- Connectivity is key. Slum dwellers need to be connected to new opportunities and work places. Some innovations that have potential in NA include the establishment of online platforms to connect informal laborers with potential employers.
- Innovation in financing slum improvement programs is key to improving slum conditions in NA. The partnerships set up under these programmes undoubtedly help to re-energies the production of social housing, and structure the private sector.
- Slums attract the most ambitious and the most tenacious of the city's new entrants. Hence, slums team up with energy and enterprise. Despite the many challenges, many people make a living in these slums either as service providers for the formal city or as business operating to endogenously provide for the slums. Most slum dwellers in NA are in low-paying, informal jobs.
- Most of the urban slum areas represent economic clusters in a specific activity, or a range of related economic activities. Slum economies are comprised of slum-based businesses and workers and the complex network of economic actors and institutions that participate in and enable this economic activity. They play a critical role in fulfilling slum dwellers' livelihoods and consumption needs, while also making important contributions to the

growing urban economies. Slums are thus places of opportunities, and once there, fortunes of slum dwellers can be very diverse. Thus even though most slum dwellers work in the informal economy, it is not unusual for them to have incomes that exceed the earnings of formal sector employees.

- Beyond shelter, slums provide means to access jobs and also provide a network of relations that improve resilience of its members. Relocating slums to new satellite towns moves people to locations far away from where their service are needed and more importantly shreds significant social capital that slum dwellers have accumulated as they have created new relationships. The importance of networks, social cohesion and human intimacy should not be underestimated as vital elements of social capital that develop in slums, despite the squalor, extreme lack of privacy and non-existent services.
- Local government and other public-sector bodies should adopt a more supportive role towards the informal sector, either in their own direct work or when contracting to the private sector. While slum economies are already interfacing with the formal city economy through the many services and goods that are exchanged between them more formal arrangements can unleashes better synergies between the two.
- Informal slum economies need to be directly integrated into city planning priorities and become a widely acceptable vision for urban development. For this situation to crystallize, there needs to be a political change in the vision and orientation away from the non-inclusive pursuit of "world class cities" to the realization of the vast potential existing in the current areas. Also, allowing the private sector to lead slum engagement initiatives which puts pressure on urban planners to accommodate and support slum economies.
- Realizing change in the current situation will require effort from slum-based workers and businesses to organize themselves better in a manner that enables them to have a voice in municipal decision making. Shared and open data will be key in fostering cooperation and emerging slum data systems point to an important innovation in giving greater voice and accountability.
- The issue of gentrification was raised as a crucial issue in all slum upgrading and prevention programmes in NA.
- Do-it-yourself (DIY) approaches can tap into local communities' capacity to self-organize. Encouraging data ownership by communities and strengthening coping mechanisms and individual and household incentives align with community actions to implement holistic, sustainable community solutions. Using crowdsourcing and open data, especially mapping data, to inform community design activities can bridge these gaps and empower households and local communities to integrate a wider set of resilience measures into daily lives, budgets, and decision making.
- There is a need to give voice and visibility necessary for women to report their experiences. Slums are inhabited and managed by women, who represent two thirds of the slum population. In general, it is women who face the daily management issues (water, sanitation, health centers) for the latter, all is far, everything is expensive, and everything is inaccessible.
- Opportunities that allow slum upgrading include, among other things, considering cities as engines of sustainable development, to test and promote leaders and strengthen democracy, to boost construction jobs, and ultimately to empower the poor. The poor inhabitants should be at the center of development, which means that governments must not only consult slum households, but empower them to be active agents of change in the formulation of policies, programs and implementation.

Synthesis of Emerging Drivers

The two key drivers of themes are really demographic shifts, rapid population growth coupled with rapid urbanization. Rapid population growth has not only increased demand for food (and thus water) but more importantly also spawned a veritable segment of young people born between mid 1980's and 2000, otherwise referred to as millennials who were starting to change the society in a very significant way with the "Arab Spring" being the calling card. Rapid urbanization has also meant increased demand for water and also rapid shift in diets that has seen wheat demand rise, and as result the region became more and more dependent on very volatile global commodities markets. At the same time lack of economic opportunities has seen the rise of mega-slums in the wake of urbanization and also rise of informal sector as people seek way to make end meet.

This is indeed a potent mix and the Arab Spring revolution that toppled the old order is a testimony to this. It was largely unemployed millennials living in city slums and "bread and freedom" were their rallying cry. This has also not been lost on forces competing to shape the region future and extremists have been quick to reach out and recruit from among this group. On the surface the confluence of these forces means chaos especially in the aftermath of a stillborn revolution as millennials were really too young to take care of the baby they gave birth to. While food insecurity continues to haunt and the region and Egypt has openly mused about bombing the dams Ethiopia is building upstream of the Nile.

However, the future could be very different. Indeed, our synthesis of the trends identified 4 mega trends that have potential to mitigate the impacts.

1. Millennial preparing for the future leadership

   The millennials are using the zeal and energy that saw them topple the old order to change their society tapping into their innovative energies and sense of social justice. They are volunteering and are also developing social enterprises and in the process building critical skills in solving problem, leadership and also creating veritable networks that make them ready for leadership.

   Promoting social entrepreneurship and volunteerism business models are key to tapping the millennials energy and drive while rethinking planning where the informal and the formal live side by side can build more resilient cities.

2. Rethinking of concept of food security

   There is a growing realization that food self-sufficiency is more that growing more food but thinking the issue in broader terms of infrastructure, water use, trade and regional cooperation. Trying to achieve self-sufficiency is not efficient and indeed unaffordable in the long run.

   - Countries like Morocco are now shifting toward growing and exporting high value food and that consume little water like olives and import low value food like grains. In essence this is virtual water trade.
   - It is also becoming apparent that perhaps a better way to increase security and food supply is countries in NA work together Sub Sahara Africa (SSA) to transfer irrigation know how and in turn get food from the irrigated land under a cooperation framework that guarantees food security for all.
   - Diet shift will also need to be part of the solution. For instance, moving back to traditional grains of sorghum and millet can reduce reliance on wheat

3. New Voices, New Space shaping The Society

   New voices led by millennial rappers are emerging and challenging society. Rappers are speaking to social injustice; Women rappers are also challenging gender discrimination. Rappers are challenging extremists in a more powerful way than airstrikes can ever. Rappers are raising awareness on the environment and use of Nile water. New spaces are also being created for new voices:

   - In Morocco L'abattoir is creating a space where culture is being created.

Innovation hubs e.g. Tahrir2 in Egypt are springing everywhere proving space for innovative minds to create new solutions to new and even old age challenges. These are spawning technologies and re-framing challenges in new ways that are more promising, for instance, the search for water desalination technologies is now being combined with research on renewable energies, a diffuser technology invented in Tunisia is 40% more efficient than drip technology.

- Of utmost important the cyberspace is creating a new place which the ground zero for the battle for the heart and minds of the millennials. New global Uma is being created here as the diaspora reconnected with the homeland creating new cultures, new voices and new networks.

4. The emergence of the innovative government

As governments struggle with steering the region in this tumultuous period the government is being re-worked with increasingly bold initiative. Some examples include:

- Innovative Public Private Partnership are emerging. The Morocco government has now the first in the work Public Private Partnership (PPP) where it allocates slum families a serviced pilot and encouraging two adjacent families to pair with a developer and develop a four storey house so that each family gets a house for free and the developer keep the two stories. Essentially unlocking private capital to provide free house.
- An appreciation of data driven policy making starting to be seen e.g. the building of a National water Information System so that all stakeholders that impact on water policy are on the same page and thus water policy is coordinated and coherent and thus effective (Minister of Finance more likely to push for needed financial reform if he/she can assess the efficiency of public spending on water)
- Data mining and analytics being deployed to improve efficiency of water system
- Providing loans and subsidies to urban users so that they can retrofit home appliance to better conserve water

Conclusion

The NA region faces a tumultuous future. Old problems are being compounded as urbanization and rapid population growth make food and water security challenges more and more urgent. The region has already faced one of the more profound though unfinished revolution of the new millennium. The older political order is unravelling undermined by tech savvy millennials while a new order is yet to emerge creating deep uncertainty,

However, millennials are proving as resilient n finding solutions as they are in undermining old order. They are driving social innovations to address age challenges and create new opportunities. Government are also becoming more entrepreneurial through institutional innovations, public private partnership was found to represent a key way forward in further scaling the innovations identified. Therefore, inclusive business approaches are key to a better future and policies to encourage such practices are needed. The key message is that the future of the region will depend on understanding key drivers of the future and catalyzing innovations to address future challenges and opportunities and also mobilizing private sector in more cooperative public-private ventures.

Where the North Africa has a fairly different historical trajectory compared to the rest of Africa (sharing more with the Middle East) it is part of Africa. Indeed historically SSA has shaped NA and vice-versa. This is likely to be more so as the futures of the two regions become more intertwined via common challenges especially the youth employment challenge, the urbanization challenge and the climate change challenge.

The shared challenges present a new opportunity for the two region to engage more closely and share expertise and resources.

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References

EU (2002). Thinking, debating and shaping the future: Foresight for Europe. European Commission Sep 2002. https://cordis.europa.eu/pub/foresight/docs/for_hleg_final_report_en.pdf, last accessed: 30 March 2016.

Flechtheim, Ossip K. (1966). History and Futurology. Meisenheim/Glan: Anton Hain 1966, (1966)

GBA (2008). The 2008 land grabbers for food and financial security. *GRAIN Briefing Annex (GBA)*, 2008. http://www.grain.org/media/BAhbBlsHOgZmSSI3MjAxMS8wNi8zMC8xNl8wMV8zNF80MTNfbGFuZGdyYWJfMjAwOF9lbl9hbm5leC5wZGYGOgZFVA/landgrab-2008-en-a

Ibrahim, B. (2008). "Young Egyptians reinvent civic engagement, leading to new forms of public service". Youth in the Arab World, Research and Policy Memo 1, Nov 2008. American University in Cairo and the Issam Fares Institute for Public Policy and International Affairs. https://website.aub.edu.lb/ifi/public_policy/arab_youth/Documents/ifi_ay_memo01_Ibrahim.pdf

NAH (2015a). Securing Wheat Availability: What Prospects For North Africa? North Africa Horizons (NAH). Bulletin 1, January, 2015. A monitoring bulletin published by FSF (Futures Studies Forum for Africa and the Middle East)

NAH (2015b). The Future of Millennials in North Africa. North Africa Horizons Bulletin 2, April 2015. A monitoring bulletin published by FSF (Futures Studies Forum for Africa and the Middle East)

NAH (2015c). Managing Water Scarcity in North Africa: Trends and Future Prospects. North Africa Horizons. Bulletin 3, July, 2015. A monitoring bulletin published by FSF (Futures Studies Forum for Africa and the Middle East)

NAH (2015d). Future of North Africa's Slums: "Slums of Hope" or "Slums of Despair"?. North Africa Horizons. Bulletin 4, October, 2015. A monitoring bulletin published by FSF (Futures Studies Forum for Africa and the Middle East)

NAH (2017). "Special Edition: Reflections on 2016". North Africa Horizons. January 2017. A monitoring bulletin published by FSF (Futures Studies Forum for Africa and the Middle East)

Sardar, Ziauddin (2010). "The Namesake: Futures; futures studies; futurology; futuristic; foresight—What's in a name?" *Futures, 42*(2010), 177-184. https://www.elsevier.com/__data/promis_misc/jftrnamesake.pdf, last accessed: 30 March 2016

WB and FAO (2012), The Grain Chain, Food security and Managing Wheat Imports in Arab Countries, 2012. The World Bank and Food and Agriculture Orgfanization (FAO). http://www.fao.org/fileadmin/templates/tci/pdf/MENA-WB-The_Grain_Chain__ENG_.pdf, last accessed January 2015.

Wells, Herbert George (2006). Anticipations of the Reaction of Mechanical and Scientific Progress upon Human life and Thought. September 9, 2006 [EBook #19229] https://www.gutenberg.org/files/19229/19229-h/19229-h.htm

WGC (nd). Sorghum June Grain of the Month. Whole Grains Council. https://wholegrainscouncil.org/

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African Futures 2035: Key Trends

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Abstract

Africa is undergoing several major transitions, including demographic, economic, technological, urban and socio-political. These transitions are all connected, and together they will shape the future of the continent. Looking to the future, Africa's overall story reveals a positive trend. Yet this trend is neither stable nor even. Things are getting better in some places, but not everywhere, not for everybody.

Keywords: Population, Demographics, Africa, Economics, Growth, Urbanization, Conflict, Democracy.

Introduction

Several major transitions are shaping Africa's future. Demographic change will be accompanied by economic, technological, urban and socio-political transformation with far-reaching implications for growth, human development and stability on the continent.

This policy brief summarises the findings from a more comprehensive report exploring how development trends are likely to unfold in Africa until 2035 (Bello-Schünemann, Cilliers, Donnenfeld, Aucoin, & Porter, 2017).

All forecasts use the International Futures forecasting system (IFs), developed and hosted by the Frederick S. Pardee Center for International Futures at the Josef Korbel School of International Studies at the University of Denver.[1]

Africa's population: growing rapidly and chronically young

From a global perspective, Africa's demographic potential is unparalleled. Yet on the current development trajectory, extremely rapid population growth is likely to compound poverty and lack of economic opportunities.

Africa's population is the fastest growing in the world and will account for nearly half of global population growth over the next two decades (see Figure 1). It is expected to increase from about 1.2 billion people today to over 1.8 billion in 2035, a roughly 50% increase over the next 18 years. By 2035, Africa's population will be considerably larger than that of India (1.6 billion) or China (1.4 billion). The demand for services such as healthcare, education, housing and infrastructure will increase dramatically and put African governments under great stress.

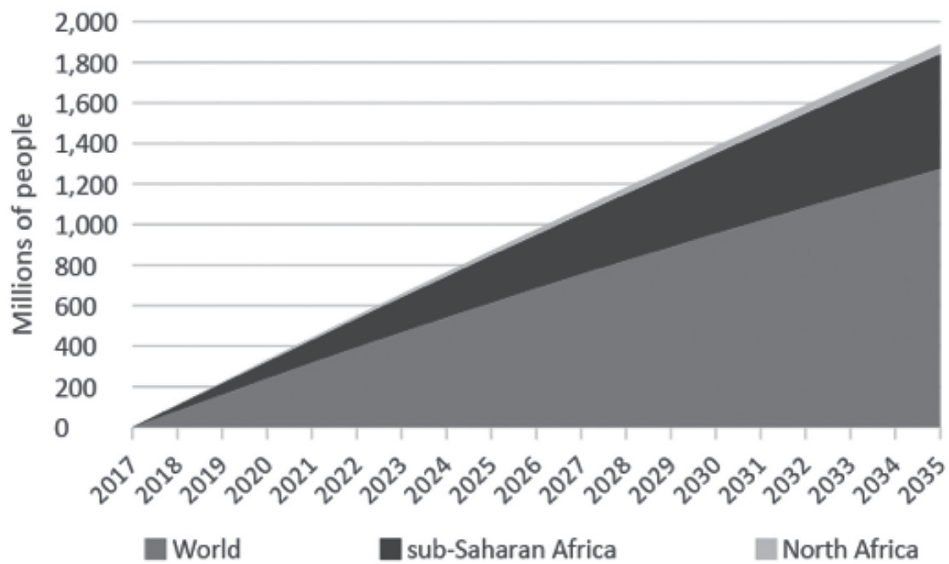

Figure 1. Population increase forecast in millions, 2017-2035: World, Sub-Saharan Africa, North Africa. (IFs v 7.26, historical data from US Census Bureau via CIA and United Nations Population Division 2015*)*.

Moreover, sub-Saharan Africa's population will remain very young. By 2035, half of its citizens will still be under 21 years old. Hence governments need to spend heavily on education, healthcare and extending basic services. In addition, they need to invest in skills development and create job opportunities for the workforce of the future. Failing the latter, youthful populations portend an increased risk of social instability (Cincotta, 2013; Hegre, Karlsen, Strand, & Urdal, 2012). A large

youth bulge, defined as the share of adults between 15 and 29 years old relative to the rest of the population, is set to remain a key feature of most countries in sub-Saharan Africa.

As Africa's population ages, the ratio between working-age individuals and the economically dependent population will improve. A relatively larger labour force can translate into a demographic dividend, boosting productivity and economic growth.

However, mostly due to high fertility rates, Africa's low-income and lower-middle-income countries are unlikely to enter this phase until well into the second half of this century (see Figure 2).

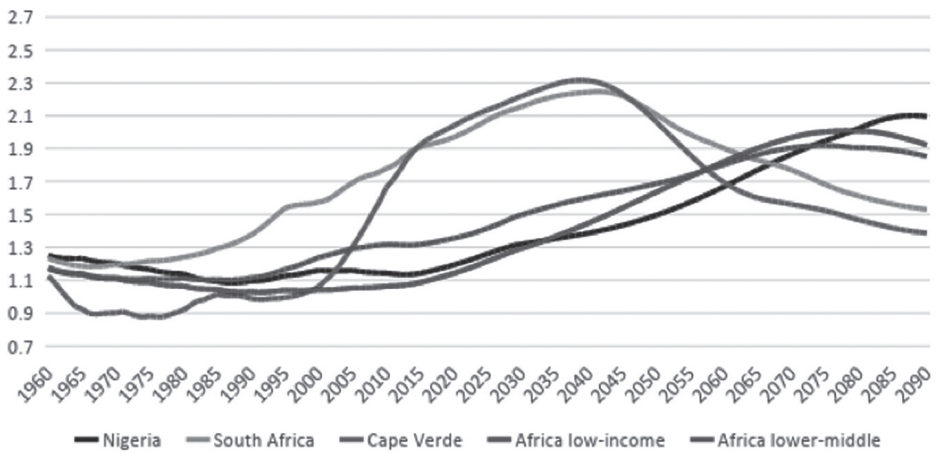

Figure 2. Demographic dividend: ratio of working to non-working age 1960-2090 (IFs v 7.26, historical data from UNPD

Reducing fertility rates via improved secondary education for girls, targeted family planning and better access to contraceptives would lead to an earlier onset of, as well as a larger, demographic dividend.

The demographic transition is connected to migration trends. Typically, younger, lower-income and/or conflict-ridden countries experience net-outward migration. Levels of extra-continental migration from Africa are low by international standards, albeit on the increase. The vast majority of migration, including forced displacements, happens within the continent. By mid-2016 sub-Saharan Africa hosted more than 27% of the global refugee population. (UNHCR, 2016).

In the future, Africa is likely to retain a high conflict burden, and climate changed-induced stress will force more people to move. The vast majority of these people will stay on the continent. Yet, an increase in extra-continental migration is possible as rising incomes in some countries will allow people to make more deliberate choices of where to go.

Africa continues to rise but economic growth paths will be more heterogeneous

Africa will continue to experience economic growth although it is expected to lag behind South Asia as the fastest-growing region in the world.In the longer term, sub-Saharan Africa is expected to settle at an average annual growth of approximately 4 to 4.5%. However, the performance of different regions and countries will vary significantly. East and West Africa are expected to grow most rapidly and North Africa the slowest. This is at least partly a function of these regions' different base lines and dissimilar rates of labour expansion. A growing workforce and an increasing share of working-age individuals will contribute to growth even if productivity remains low and if – in the worst case – African governments do little to stimulate the economy.

Yet much of Africa will remain vulnerable to global developments. Africa's oil and metal exporters will continue to be the most exposed to global price shocks. That said, the oil-dependent economies are especially vulnerable, notably Nigeria but also Angola, Chad and Equatorial Guinea. Growth in non-hydrocarbon-dependent economies – energy importers and agricultural exporters – has weathered global storms and is likely to remain stable. Current and expected growth rates for some of Africa's agricultural exporters, such as Côte d'Ivoire, Ethiopia, Rwanda and Senegal, are in line with Asia's fastest-growing economies.

Most of sub-Saharan Africa's economies are unlikely to grow fast enough to keep pace with the continent's extremely rapid population growth and the associated pressure on education, healthcare and other basic services.

Unlike the global trend, the number of Africans living in extreme poverty (less than $1.90 per day) will continue to rise, despite the fact that the percentage of the population living in poverty is set to decrease (see Figure 3). In 2035 there could be as many as 170 million more extremely poor Africans than in 2016.

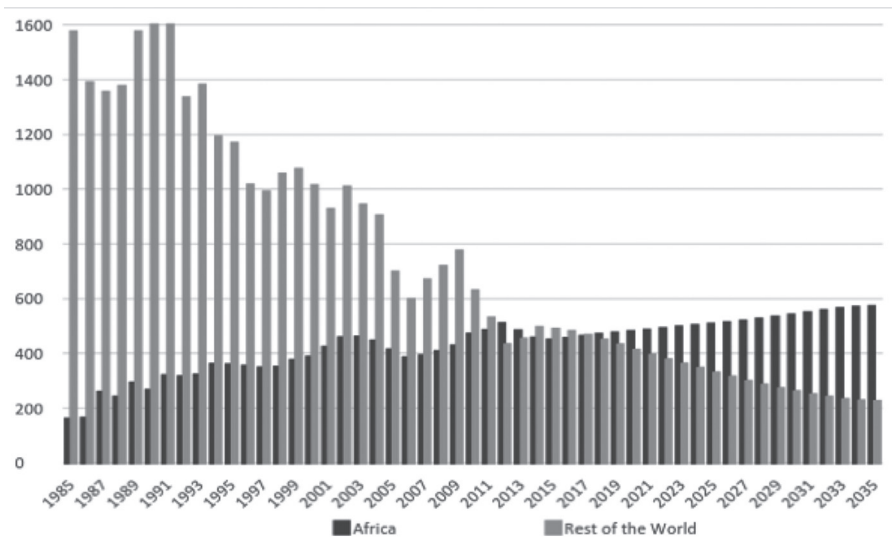

Figure 3. People living in extreme poverty (millions), Africa and the rest of the world, 1985-2035 (using a five-year moving average) (IFs v 7.27)

Sub-Saharan Africa's future economic prospects depend on the ability of African governments to create new sources of sustainable growth. This will depend on the quality of economic policies, but also on long-term integrated planning and improvements in regulatory frameworks.

Inevitably, different countries will choose different paths based on their particular economic profiles and comparative advantages. For Africa's oil exporters in particular, diversifying the revenue base is necessary to enable sustainable growth over the long term.

African governments generally need to raise domestic revenue much more effectively, including via efforts to gradually incentivise formalisation of Africa's informal sector, the largest of the world's developing regions. All countries need to simultaneously invest in trade infrastructure and agreements to foster intra-regional trade and create economies of scale.

If Africa is able to successfully leverage growth opportunities across different economic sectors – and pair that with increases in productivity, investments in critical infrastructure, human capital and human development– the continent will be less vulnerable to external shocks and increasingly able to determine its own economic future.

More connected but likely to remain relatively isolated

Africa remains relatively isolated – both from the global economy and across its regions. As a continent, Africa represented about 3% of the global economy in 2016, and that figure is only expected to change by roughly a percentage point by 2035. With such a small share of global economic output, increasing trade between African countries and regions may be the most promising avenue to promote economic growth and human development on the continent.

Africa remains significantly less integrated than other world regions. Currently, only about 16% of Africa's exports are traded between African economies. In contrast, in Europe and East Asia intra-regional trade accounts for roughly 60% and 35% of total trade volume respectively (World Bank, 2016).

Deeper regional integration can help African countries prioritise investment in sectors where they have a comparative advantage regarding their peers. Moreover, it can foster the establishment or promotion of industries in which African businesses have the potential to participate and compete in global markets.

Africa's ability to participate more in global trade depends on whether its economies are able to go up the value chain and whether some can reduce their heavy reliance on commodity exports. It also depends on progress in infrastructure development on the continent and on curbing a host of other non-tariff barriers, such as onerous regulatory procedures.

Despite some recent improvements, Africa's lack of core infrastructure increases transport costs and creates delays. It reduces the competitiveness of business and undermines much-needed investment flows

That said, improving transportation and trade infrastructure and streamlining regulations only addresses part of the infrastructure problem in sub-Saharan Africa.

Cheaper goods can help low-income individuals increase consumption, but the ability to produce, start businesses and grow is largely driven by human capabilities. Thus a strategy to connect Africa must include investment in basic infrastructure, such as access to clean water and improved sanitation (WASH – Water, Sanitation and Hygiene), to ensure healthy human capital development.

In 2016, sub-Saharan Africa endured the lowest levels of access to basic infrastructure anywhere in the world (see Figure 4). And while access to water and sanitation, electricity and the share of paved roads is expected to improve considerably by 2035, the region will still lag far behind other developing regions.

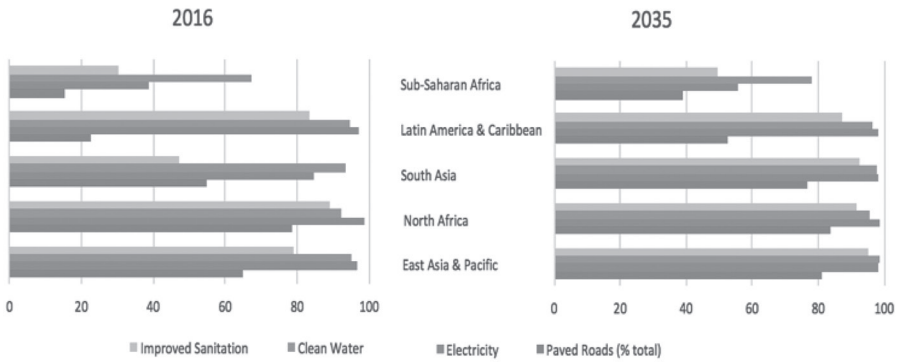

Figure 4. Levels of access to basic infrastructure (percent of population) in developing regions in 2016 and 2035. (IFs v. 7.27 initialised from UNICEF/WHO joint monitoring programme (water and sanitation), International Road Federation (roads) and World Bank (electricity) data)

This lag is most severe for electricity access and WASH. Lack of access to these basic services hinders human development, both physically and cognitively.

Lastly, in sub-Saharan Africa, efforts to improve connectivity infrastructure should not come at the cost of the provision of basic human infrastructure. In this sense, improving connectivity infrastructure should be part of a broad-based infrastructure investment strategy.

Modern technology may offer a way to replace costlier forms of more basic infrastructure. However the belief that technology will solve Africa's most tenacious problems paints an overly simplistic picture of the challenges faced by the continent.

For example, it may be possible to use drones to transport blood to rural hospitals – bypassing poor, often unpaved, roads in the process. However doctors, nurses and patients must still use whatever roads and bridges exist to get to those same hospitals.

Combining the provision of basic infrastructure with a coherent regulatory framework and policies that incentivise, rather than prohibit, cross-border trade and the free movement of people could have a profound impact on the well-being of millions.

Urbanisation comes with both opportunities and risks

Africa's future is urban. Quality of life for Africa's city dwellers will, however, directly depend on the quality of urban governance. Rapid and sustained urban population growth is bound to further constrain governments already struggling to provide land and basic services.

Africa's urban population is the fastest growing globally. In fewer than 20 years every second person in Africa is likely to live in a town or a city, and by 2030 Africa will host six of the world's 41 megacities. Cairo, Lagos, Kinshasa, Johannesburg, Luanda and Dar es Salaam will have more than 10 million inhabitants each.

The urban transition has the potential to accelerate economic and social development, but under current conditions it is more likely to compound Africa's structural challenges. Slow economic structural transformation, poverty, inequality and violence are all major stumbling blocks.

In most countries, urban population growth has been outpacing economic development, partly because of the lack of employment creation in higher productivity segments of the economy. Sharp income inequalities in many African cities also mean that the contribution of economic growth to poverty reduction is limited.

Africa has more urban poor than any other region. Research from the World Bank indicates that poverty could be urbanizing as the poor are moving to cities more rapidly than the population as a whole (Ravillion, Chen & Sangraula, 2007). And even though future improvements in urban poverty reduction are likely, the sheer number of poor people who lack access to services like improved water and sanitation is expected to increase dramatically. The African Economic Outlook 2016 predicts that Africa could see its slum population triple by 2050 (AfDB, OECD, UNDP, 2016).

Uncontrolled, rapid urbanisation in the context of pervasive poverty, inequality, large youthful populations and lack of economic opportunities does not bode well for future sustainability of Africa's towns and cities. In fact, unplanned, overcrowded urban settlements populated with marginalised youth can be hotbeds for violence, particularly in lower-income informal areas.

Urban areas are increasingly the locus for political violence in Africa. Over the past 20 years the number of politically violent events in Africa's urban areas has come to surpass those in rural settings, largely explained by the rise of riots and protests. On the other hand, terrorism in Africa to date is concentrated in rural rather than in urban areas.

Another form of urban violence is mostly economically motivated. This includes homicide, organised crime and gang violence.

Overall, conflict in Africa is causing fewer fatalities than during the 1990s

In Africa, levels of high-fatality violence (incidents with more than 500 fatalities) are now generally comparable to those of half a century ago and are significantly lower than during the post-Cold War period (see Figure 5). However, the continent is witnessing an increase in the number of violent incidents largely driven by riots and protests(see Figure 6) (HIIK, February 2017).

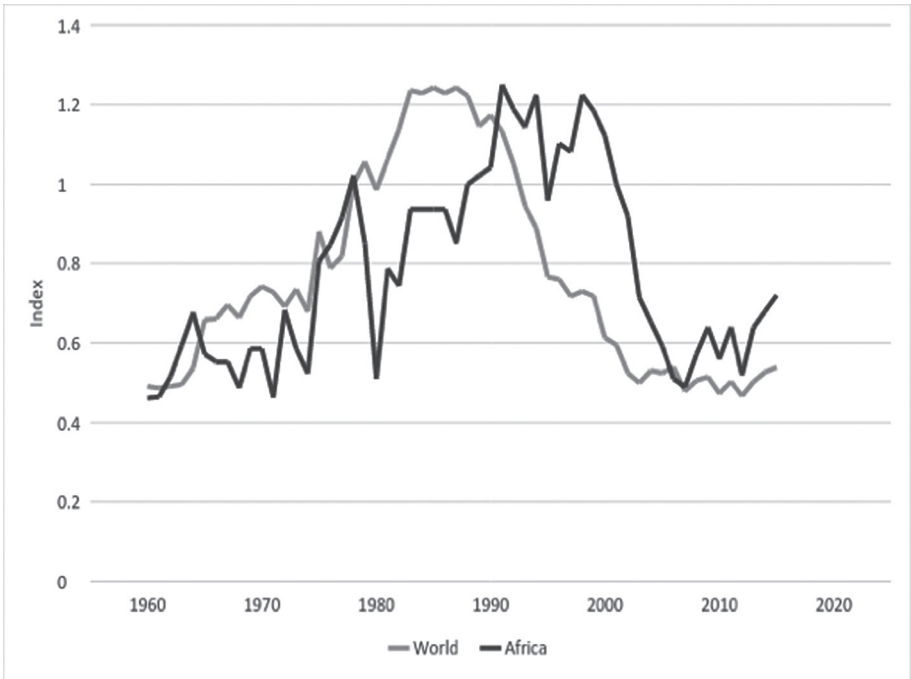

Figure 5. Conflict in the world and Africa, 1960-2015. (Center for Systemic Peace, MEPV2015)

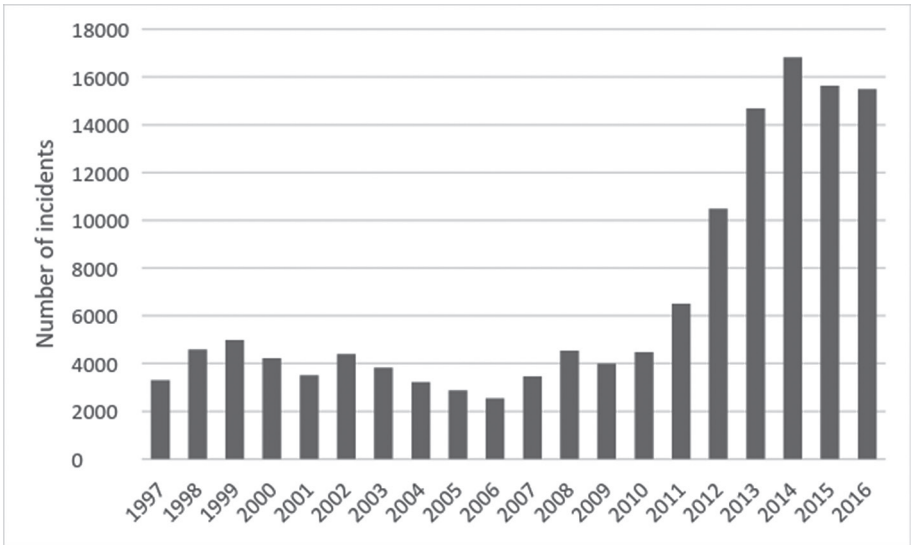

Figure 6. Incidents of political violence in Africa, 1997-2016 (ACLED, Version 7.0, January 2017).

Most armed conflicts in recent years have been clustered in four regions: North Africa, the Sahel and West Africa, the Horn, and the Great Lakes region. These areas are likely to continue to experience conflict over the coming decades, partly because past conflict is one of the best indicators of future conflict.

In 2016, the most common event types were (in descending order) riots and protests, violence against civilians, battles, and remote violence (use of improvised explosive devices or IEDs). In the same year riots and protests accounted for almost 40% of total conflict events in Africa, up 10% from the previous year.

Despite the rise in social conflict, battles between armed groups and the use of remote violence are currently the most common conflict types. In fact, the rising use of remote violence is a trend across Africa (and the world). The use of IEDs in Africa nearly doubled from 2010 to 2011 and has been rising steadily ever since.

The actors and groups involved in conflicts are also changing. Rebel groups and state forces are historically the most common actors, but increasingly, political and communal militias and unidentified armed groups dominate (*see Figure 7*).

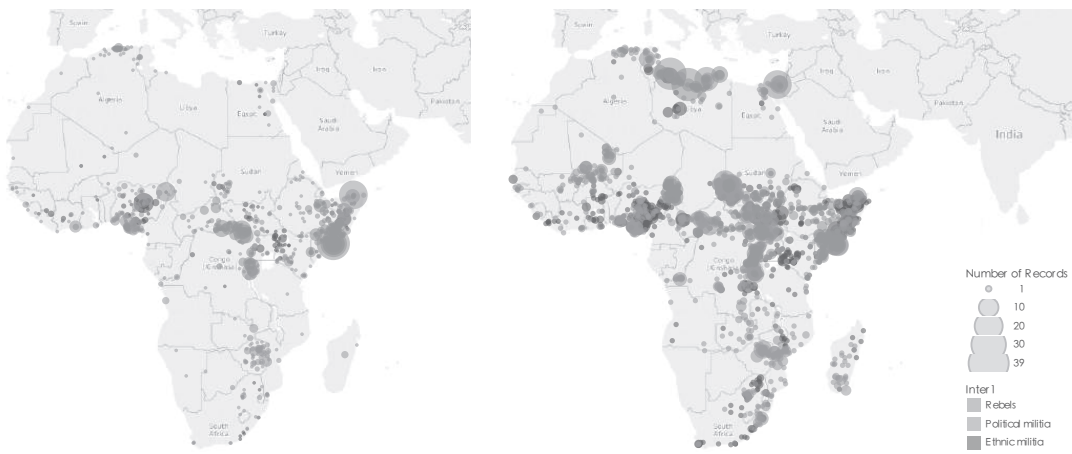

Figure 7. Conflict events by rebels and militias in Africa, 2010 (left) and 2016 (right). (ACLED, Version 7.0, January 2017)

Terrorist incidents are increasing globally – and Africa is no exception. Fatalities caused by terrorist attacks in sub-Saharan Africa increased from 3,842 in 2013 to 13,333 in 2014, although they dropped to 10,469 in 2015.[2]

Politically motivated violence, however, is only part of Africa's future. Analysts argue that the increasing levels of criminal violence in Southern Africa, West Africa, North Africa and the Sahel are expected to cause more deaths than armed conflict in the next five to 15 years and beyond. (Shaw & Reitano, 2013)

Conflict and violence are mitigated and contained both by domestic and international factors. The majority of sub-Saharan African states have low levels of state capacity compared to other developing regions, a situation that is unlikely to change significantly in the future. Where states struggle to establish rule of law, control borders, and provide basic services, conflicts will persist and have greater spillover effects. In addition, states are themselves often actors in conflicts, either directly through military offensives or through support to pro-government militias.

In the face of capacity constraints and ongoing transitions from autocracy to democracy, the international community will continue to be a key player in Africa's future security, particularly in the provision of peacekeepers.

That said, the nature of international engagement in Africa is changing. Increasingly, peace operations are deployed in situations where there is no peace to keep, where formal peace settlements between armed parties to the conflict have not been reached. In a number of countries – Sudan, Mali, the DRC – conflict persists despite long-standing operational engagement because of the shaky foundation upon which peace rests in these countries.

Despite Africa's expanding role in peace operations on the continent, operations will remain heavily dependent on the UN and various bilateral donors to fund peacekeeping and conflict-resolution activities.

Eventually only stable states with credible security agencies that control and police their borders provide a long-term solution to the current levels of instability. Therefore Africa needs to invest in the required security institutions and processes while expanding regional cooperation and collaborative approaches to responding to insecurity.

Defying the global trend, popular support for democracy in Africa should hold

The number of democracies in Africa is likely to increase, and levels of democracy are expected to continue to improve, even if slowly and from a relatively low base. Public support for democracy in Africa is particularly strong. However, since African countries are democratising at ever lower levels of income and education, democracy on the continent rests on fragile foundations.

Key datasets indicate a recent moderate decline in the level of democracy globally[3], but in Africa this trend is not evident.

Figure 8 summarises the difference in the Economist Intelligence Unit (EIU) average score for each global region between 2006 and 2016 with negative scores indicating a decline in levels of democracy over time and positive scores pointing to improvements. While the level of democracy in the world has declined, the levels of democracy in sub-Saharan Africa, Asia and Australia have improved.

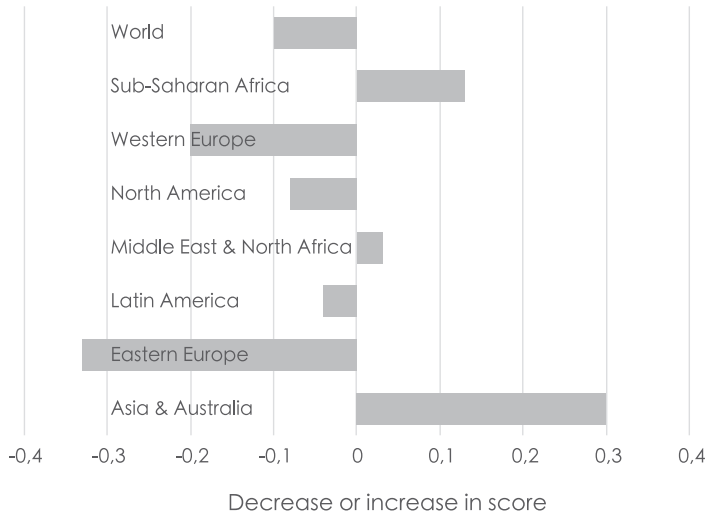

Figure 8. Difference in democracy score by region, 2006 and 2016 compared, according to the EIU

That said, democracy is still not the dominant form of government in Africa. Even the most optimistic index, Polity IV (*see Figure 9*), only classifies 21 out of the 53 African countries it assesses as democracies in 2015.

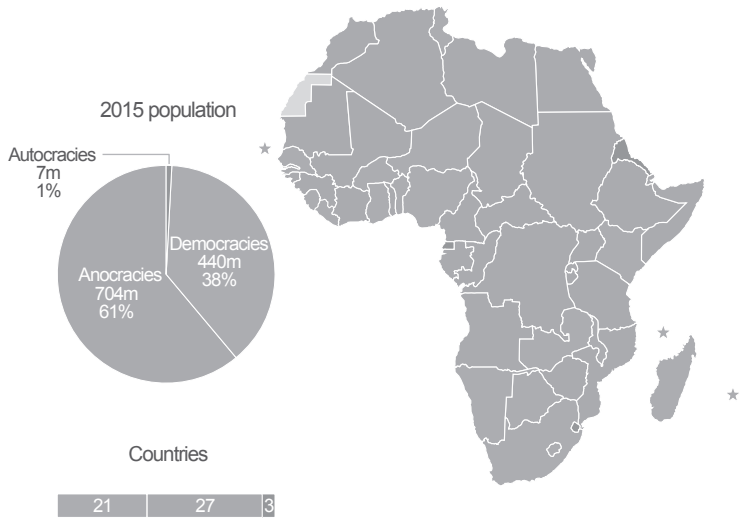

Figure 9. Democracy in Africa according to Polity IV (Polity IV, 2015)

According to the EIU, only 11% of Africans (or 128 million people) live in a full or flawed democracy, compared to 545 million who live in partly free countries and 540 million in countries deemed 'not free'.

In fact, essential elements that ensure democratic accountability are often absent on the continent (Gerring, 2015; Knutsen et al, 2015). These include clean and competitive elections, chief executives who are directly selected through elections, extensive suffrage, political and civil society organisations able to operate freely, and lastly freedom of expression including access to alternative information.

Yet Africa is relatively more democratic than could be expected given its generally low levels of GDP per capita (*see Figure 10*). This might in part be the result of conditional development assistance, the impact of the rapid spread of the internet and access to television and sources of alternative information.

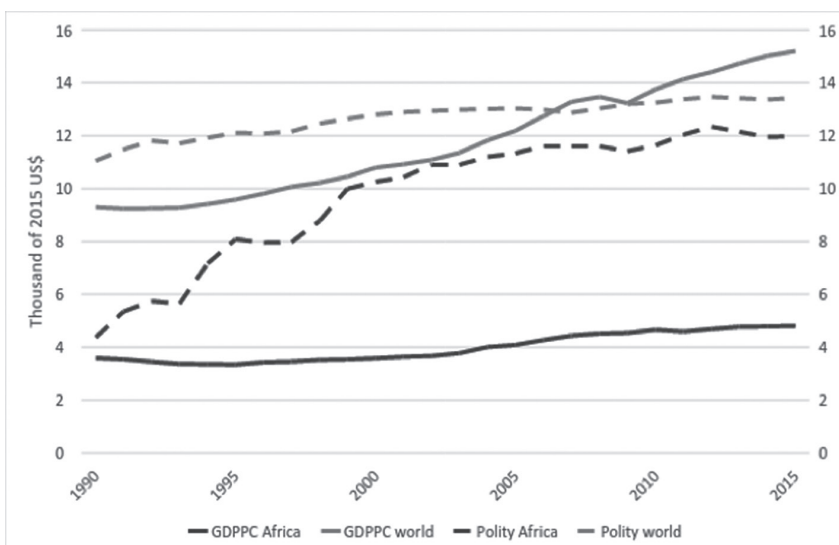

Figure 10. Income and democracy. Source: Polity IV and IFs v 7.22

Popular demand for democracy in Africa is robust and has been rising steadily over the past decade, according to Afrobarometer. More than two thirds of Africans surveyed support democracy as the preferred type of political regime and an even higher share rejects alternative authoritarian regimes (Mattes & Bratton, 2016, p.2).

This makes sense in a context where citizens have been poorly served by decades of authoritarianism and where democracy is often a facade. Today most Africans want more democracy than they are actually getting.

More than four in 10 Africans complain that voters are at least 'sometimes' threatened with violence at the polls; that opposition candidates are at least 'sometimes' prevented from running; that the news media 'never' or only 'sometimes' provide fair coverage of all candidates; and that voters are 'often' or 'always' bribed. Half of Africans say that elections are currently an inefficient mechanism to ensure that people's views are represented and that voters are able to remove non-performing leaders from office (Mattes & Bratton, 2016, p.16).

Governing elites in Africa go through the motions of elections with increased regularity, but their actions often ensure the re-election of the ruling party and its preferred candidate.

Moreover, there are several examples of African leaders amending their constitutions to remain in power (for example in Burundi, the Republic of the Congo and the Democratic Republic of the Congo).

The barriers to democracy are both deeply entrenched and widespread in Africa. Neopatrimonialism, which sees officials and elected leaders use state resources to secure loyalty, is common. This frustrates the extent to which electoral democracy translates into accountability and thus into improved outcomes on growth and human development.

Yet over time greater transparency, best practices and the use of modern technology during voter registration and during elections will undermine the opportunities for fraud and help improve electoral governance. Most important of all, African civil society is becoming more adept at guarding against manipulation, and regional organisations such as the African Union (AU) are slowly playing a more important role to verify and accompany electoral processes.

Eventually the question is if 'output legitimacy' (or whether a government delivers, aka the Chinese and/or Rwanda/Ethiopia model)will win over 'input legitimacy'(whether a government is sufficiently inclusive and hence legitimate).

The challenge faced by many African countries is that they are forced to increase inclusion when the foundations of sufficient security and state capacity upon which to build democracy are still weak. The issue is not a choice between democracy and development –it is how to steadily advance inclusion at a pace commensurate with social and economic development.

Conclusion

Overall, Africa's story reveals a positive trend. Yet this trend is neither stable nor even. Living conditions are improving in many places, but not everywhere, not for everyone and – in the light of the continent's rapidly growing population– certainly not fast enough.

Progress in sub-Saharan Africa continues to lag behind other developing regions, and in most countries population growth is outpacing economic, social and institutional developments. Technology can help promote human development, but its ability to do so is intimately linked to the development of other basic human capabilities.

Strengthening governance – by improving revenue collection, effective planning, policymaking and implementation– is vital across all issue areas. Africa faces many challenges in the coming decades. Yet, the ongoing transitions each come with opportunities which political leaders must seize to transform Africa's potential into tangible improvements for human development.

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Endnotes

1. IFs leverages historical data (over 3 500 historical series), identifies and measures trends, and models dynamic relationships to forecast hundreds of variables for 186 countries for every year from 2014 to 2100. See www.du.edu/understand-interconnected-world
2. The Global Terrorism Database (GTD) includes a two-part criterion for incidents to be included in its database. See the Codebook here: https://www.start.umd.edu/gtd/downloads/Codebook.pdf.
3. Such as the Democracy Index from the Economist Intelligence Unit (EIU), the Varieties of Democracy (V-Dem) project, Freedom House and Polity IV.

References

Afrobarometer, Afrobarometer Round 5 (2010_2012), www.afrobarometer-online-analysis.com/aj/AJBrowserAB.jsp

African Development Bank (AfDB), Organisation for Economic Co-operation and Development (OECD), United Nations Development Programme (UNDP) (2016), African Economic Outlook 2016, Sustainable cities and structural transformation, www.africaneconomicoutlook.org/en/theme/sustainable-cities-and-structural-transformation.

Armed Conflict Location and Event Data Project (ACLED) (February 2017_, Conflict Trends Report No. 55, http://reliefweb.int/sites/reliefweb.int/files/resources/ACLED_Conflict-Trends-Report-No.55-February-2017-pdf.pdf

Armed Conflict Location and Event Data Project (ACLED), Uppsala Conflict Data Program (UCDP), Heidelberg Institute for International Conflict Research (HIIK), and the Center for Systemic Peace.

Bello-Schünemann, J., Cilliers, J., Donnenfeld, Z., Aucoin, C., & Porter, A. (August 2017). African futures Key trends to 2035, Policy Brief 105, Institute for Security Studies.

Cincotta, R. P. (2013). The Future out to 2030: According to Demography, 2013. In Steven Gale and Sarah Jackson (eds), The Future Can't Wait, United States Agency for International Development, Washington.

Gerring., J. et al. (February 2016). Electoral democracy and human development, Varieties of Democracy (V-Dem) Institute, Working Paper series 2015:9 (new version).

Hegre, H., Karlsen, J., Strand, H., & Urdal, H. (2012). Predicting Armed Conflict, 2010-2050, International Studies Quarterly, 6.

Heidelberg Institute for International Conflict Research (HIIK). (February 2017). Conflict Barometer 2016, www.hiik.de/en/konfliktbarometer/pdf/ConflictBarometer_2016.pdf

Knutsen. C.H. et al. (November 2015) Economic Development and Democracy: An Electoral Connection, V-Dem Institute, Working Paper Series 2015:16, www.v-dem.net/en/news-publications/working-papers/.

Mattes, R. and Bratton, M. (November 2016). Do Africans still want democracy?, Afrobarometer Policy Paper No 36.

Ravallion, M., Chen, S., & Sangraula, P. (Summer 2007). New Evidence on the Urbanization of Global Poverty, World Bank, Research Digest Volume 1 1 Number 4, http://siteresources.worldbank.org/DEC/Resources/84797-1154354760266/2807421-1183396414833/The_Ur-

banization_of_Global_Poverty.pdf.
Shaw M., & Reitano, T. (2013). ISS, The evolution of organised crime in Africa: Towards a new response, www.issafrica.org/research/papers/the-evolution-of-organised-crime-in-africa-towards-a-new-response.
The World Bank. (2016). The Potential of Intra-regional Trade for South Asia. www.worldbank.org/en/news/infographic/2016/05/24/the-potential-of-intra-regional-trade-for-south-asia
United Nations Commission for Refugees (UNHCR), Mid-Year Trends 2016, 6 (http://www.unhcr.org/statistics/unhcrstats/58aa8f247/mid-year-trends-june-2016.html)

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  Graham, Phil, & Leigh Canny. (2004). Genre, causal layered analysis and analysis of institutional change. In Sohail Inayatullah (Ed.), *The causal layered (CLA) reader* (pp. 209-224). Tamsui, Taiwan: Tamkang University Press.
- Journal articles

  Soguk, Nevzat. (2007). Indigenous peoples and radical futures in global politics. *New Political Science, 20*(1), 1-22.

  Coote, Jennifer. (2007). Futurewatch. *Journal of Futures Studies, 11*(3), 115-126.
- Internet document

  Hertsgarrd, Mark. (2007). On the front lines of climate chang. *Time*. Retrieved on April 1, 2007, from http://www.time.com/time/magazine/rticle/0,9171,1604879,00.html

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