Policy Areas for Global Strategic Positioning for Africa in the Fourth Industrial Revolution: Key Focus Areas

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Abstract

The traditional challenges facing Africa have always revolved around civil war, poverty, conflict and violence, rising population with unemployment, health and malnutrition, poor infrastructure and weak governance and laws. The experiences of the COVID pandemic, changing world climate and the Russian-Ukranian War have laid bare the risks that world economies have unknowingly faced including rise in food prices, stock piling, domestic economies external price shocks. On the other hand, increased energy deficits, resource access inequality and high climate vulnerabilities continue hurting the world economy while increasing pressures to local sectors. These changing social demographics are integrating with economic metrics giving rise to more innovative approaches and complex models for development and growth. The 4IR is fast paced as challenges and opportunities become common to both the developed and developing country. Qualitative data approach through desk research reviewed existing data from books, journals, government reports, policy briefs, press releases, industry magazines and expert opinion publications. This study has identified three key areas for better strategic positioning of Africa in the current 4IR. Sound policy formulation is required towards: enhanced digital transformation and innovation, capitalizing on the cheaper tradeoff for Africa in the global carbon offset mission and bringing an advantage to the movement of resources and commodities in its production and consumption systems. The study recommends these touchpoints will address region-specific and country-specific problems including unemployment, financial inclusion gaps, and inequality in populations thereby providing solutions at local and regional level. Strategic investment on green-oriented structures will build climate-resilient and self-sufficient systems within developing economies thereby transforming institutions. Inclusivity will be key in the 4IR shifts to reduce the inequality gap of underserved populations which comes with unequal access to resources and opportunities. Policy formulators must be adept in incorporating the underserved populations within their regions into policy.

Keywords: **4IR, Strategic Positioning, Digital Transformation, Africa Development, Policy Formulation**

Introduction: An Overview

The Fourth Industrial Revolution (4IR) is seeing a revolution in socio-economic development worldwide. The ever-changing social demographics are integrating with economic metrics giving rise to more innovative approaches and complex models of development and growth. By the end of 2022, the world population had grown to 8 billion and this is expected to be 10 billion by 2050 (WB, 2022; ADB, 2022; WEF, 2022; Moyer et al. 2022). The Largest increases in Southeast Asia and Sub-Saharan Africa with 3 in every four people coming from Africa. The need to focus on youth as future skill providers is pegged on how much a quarter of the world's population will be in Africa (African Development Bank Group, 2018) by 2050 with 850 million (14-24 years) being youth with 77% currently being below 35 years (WBG, 2022: Ouko et al, 2022; Soucat & Offei-Awuku, 2014). This is projecting a deficit of $400 trillion by 2050 (Moyer, et al. 2022) making the role of youth in investment crucial. The need for increase in food to sustain the growing population stands at 70% currently (FAO &ITU, 2022; Lusigi, 2022) which adds more pressure to the already dwindling resources. Food insecurity is a multifaceted problem as reported from various research and these stem from the exuberances of diminishing agricultural land, urbanization, low water supply, declining fertility in soil, water shortages, outdated agricultural policies, traditional methods land management methods, declining soil fertility and yields and climate change (Lusigi, 2022; ADB, 2022; WEF, 2022). Climate change has displaced five million (Ighbor, 2022b) people in Africa already. Research also show that different political and economic forces react giving rise to high costs of input stock piling, export restrictions, power cuts, high fuel and food prices as well as country-specific problems (UNCTAD, 2022; UNECA, 2022; FAO 7 ITU, 2022). A third of Africa's GDP is from agricultural sector and this it accounts for approximately 70% of Africa's working population yet, expenditure on the food basket in developing countries is an average of 40% of income compared to that of developing countries which is at 17% (WB, 2022).

Despite these incremental changes that call for action through continuous environmental scanning and analysis, the premise surrounding organizations harbor shocks that equally require immediate response for firm survival. Turbulent forces in inter and intra-country forces are adding more pressure to organizations. Ansoff et al. (2018) explains how environmental surveillance focuses on strategic issues that require strategic feedback due to high degree of urgency and impact. Around 30 million people in Africa were pushed into extreme poverty in 2021 and about 22 million jobs were lost in the same year because of the pandemic (Anyanwu & Salami, 2021; Moyer et al. 2022). The purchasing power of consumers shrinks with this trend that is expected. The economic disruptions resulting from the Russia-Ukraine war is forecasted to push a further 3.9 million people in Africa into extreme poverty by the end of 2023 (ADB, 2022). Schendel and Hofer advice how much the need to stay strategically relevant for any participant within a market, environmental analysis should guide both resource and value analysis before strategic formulation (Chaffee, 1985). As countries all over the world have become vulnerable more than ever, global pressures and risks common to all have added on to the already dynamic forces and points of vulnerability for African markets. It is crucial to identify the core areas of concern that participants should put emphasis on for better strategic positioning as resources become more and more constrained with opening up of more opportunities for greater possibilities.

Africa At a Glance: A Global Situational Analysis

The traditional challenges facing Africa common across the continent in the twentieth century have always revolved around civil war, poverty, conflict and violence, unemployment health and malnutrition, poor infrastructure and weak governance and laws. The experiences of the COVID pandemic, changing world climate and the Russian-Ukranian War have laid bare the risks that world economies have unknowingly faced including rise in food prices, stock piling, domestic economies external price shocks (UNECA, 2022; Jayaram, 2022; Lusigi, 2022; UNCTAD, 2022). On the other hand, increased energy deficits, resource access inequality and high climate vulnerabilities continue hurting the world economy while increasing pressures to local sectors. The continent has been adept in trying to set up sound policies that are crippled by implementation as key institutions set a roadmap for unified action. The African Union (AU) has formulated the Agenda 2063 for localizing action areas in realignment to the SDGs including youth empowerment, growing value-addition industries, biodiversity conservation, digitization and innovation, ICT revolution and renewable energy for enhancing self-reliance (Nwebo, 2018; DeGhetto, Gray & Kiggundu, 2016) and building power in the world markets. On the other hand, the African Development Bank that offers technical advice and financial support to its more than fifty four member states aims at developing stronger institutional structures within the continent through an active role aligned to the Sustainable Development Goals and as explained by Runde and Bandura (2019), the high five goals include lighting and powering Africa, feeding the continent, industrializing, integrating and improve the quality of the people within. Studies by Amankwah-Amoah et al. (2022) found that the future of developing economies is dependent on how much policy will be aligned to factors within the emerging market, transition and the state of developed economies with consideration to the degree of adversities they face, uncertainty and under-developed institutional structures. The ADBG (2022) advices that in as much as the continent is faced by climate risks, high debt vulnerabilities and inflation pressures, there are opportunities availed in the resolutions towards debt problems coupled with policies of growth for structural transformation for economic resilience.

Methods

Descriptive design with qualitative data approach was employed in the study. According to Garud et al. (2020), qualitative methodologies introduces an inductive approach to research for extensive literature review. Majoring in on secondary data was due to availability and high degree of credibility (Bell, Bryman & Harley, 2022) due to the comparison of literature from various sources. Secondary data was gathered through desk research with sources selected by consideration for recency and authorities from credible authorities like international organizations in order to capture policies and action towards policy formulation. Desk research was used in the study allowing the use of proven data identified by use of key word searches including books, journals, government reports, policy briefs, press releases, industry magazines and expert opinion publications. Conclusion could be withdrawn by having an insight on experiences from existing data.

Discussion

Digital Transformation: Technology & Connectivity

The growth of connectivity has been rapid in developing economies which were once under-connected and as reported by GSMA (2022), in 2021, 300 million people made new connection to mobile internet with 92% of this population emanating from LMICs. Top digital economies in Africa are reported to be Nigeria, Egypt, Kenya and SouthAfrica and these have been trendsetters in various areas including fin-tech (WBG, 2022; OECD, 2020), ed-tech (GSMA, 2022; WEF, 2022), retail (Moyer at al., 2022; Ouko et al. 2022) and agri-tech (FAO &ITU, 2022, Karlsson, 2022; Hydle, 2021). Research by McKinsey Global Institute found that connectivity in key sectors like healthcare, retail, and agriculture has ripple effect in related sectors that increases a country's GDP (Runde & Bandura, 2019). In Kenya, internet penetration is a result of 99% of Kenyans being mobile subscribers. This population prefers mobile broadband due to its affordability and availability and with the country's population being approximated at 52 million, the number of mobile subscriptions exceeds the population at 65 million compared to 2018 where the subscription was at 42 million (KNBS, 2022). Other indicators of ICT growth and technology adoption in tech-hub countries in Africa include an overgrowth in satellite broadband, terrestrial fixed wireless broadband, GSMA mobile phones, satellite and undersea bandwidth and growth in annual investment of ISP's and telecommunication operators (KNBS, 2022). In measuring the Mobile Connectivity Index, GSMA uses four indicators namely infrastructure, affordability, consumer readiness and content and services (GSMA, 2022; OECD, 2021). Digital transformation provides a new frontier for economies and with Africa experiencing exponential connectivity growth, new opportunities can leapfrog the continent narrowing the digital divide gap and eventually economic discourse. A study on "The Potential for Digital Job Creation in Kenya's ICT Innovation Landscape", ihub Research (2014) found the ICT ecosystem in Kenya is made up of two categories i.e. job-creating stakeholders which consists of ICT start-ups and ICT growth private enterprises and job-supporting stakeholders consisting of ICT hubs and ICT training institutes. The structures for digital transformation are shaped by these actors which lead to social transformation of their immediate environments. Mobile connectivity, online applications, and digital identity have had a rapid spread in Africa with AI, machine, learning and robotics being in the infancy stages (UNECA, 2022). These trends are influencing the labour market giving a direction to the skill set required in the near and coming future. The International Development Association (IDA) advices that there is a need to disrupt the current trajectory of socio-economic development in Africa because it is not fast enough for innovation, access to services and job creation (World Bank Group, 2022) thus widening the already existing divide between the developed and developing world. Research shows 50% of today's jobs require technology skills, with the core skills of 40% of jobs will change in the coming five years while 50% of employees requiring re-skilling (WEF, 2020). According to the WEF (2020), the emerging clusters of future jobs can be categorized into cloud computing, data and AI, people and culture, content production, product development, engineering and sales. Companies are striving to achieve remote access with continuous innovation concepts for AI in small business as well as a provide cloud based services to governments and corporate with great focus on low carbon Africa by green energy initiatives (Feroz, Zo, & Chiravuri, 2021; Samarakkody et al. 2021; Reffico et al. 2018). The company is steered towards education collaboration for joint innovations to serve this growing market. Blue chip Mobile Network Operators (MNO) in Africa are currently focusing on mobile finance, super apps and green ICTs. Hydle et al. (2021) advices that collaboration between industry players, government and education institutions is necessary for policies towards technology transfer,

establishing standards and compliance, protecting. Fintech has had its share in economic development in developing economies with leading MNO's like Safaricom and MTN dominating the eastern and western Africa countries respectively having mobile money platform services as key revenue streams. The efforts towards financial inclusion by both public and private actors have led to more people in the informal sector as well as women have increasingly been assimilated within the confines of the qualified for borrowing in communities where social-economic gap had locked them out due to culture, lack of collateral and low literacy levels (FAO & ITU, 2022; UNECA, 2022).

The gap between the fast-moving digital sphere and slow-moving regulation calls for quick action in the era of 4IR whose components are Internet of Things (IoT), Artificial Intelligence (AI), big data, cyber security and block chain. A priority area is to create appropriate digitalization regulation that protects citizens and organizations to guarantee financial stability, integrity and consumer protection from cyberfraud, cyberintrusion, blockchain technology advances and other risks in the digital sphere (Samarakkody, 2021; Boiardi & Stout, 2021; Ecosystem Accelerator, 2019). Country specific complexities as a consequence of not only structural dynamics but also comparative and absolute advantages (Bakan & Dogan, 2012; Ansoff et al. 2018), have made the formulation of regulatory within each country a challenge in a world that economies are striving to open its boundaries to exploit opportunities and build capacity. The Africa Women's Report 2021 on Digital Ecosystems points out how much digitization offers a leapfrog opportunity for developing countries to bridge the socio-economic gap with developed economies (UNECA, 2022). A strategic and conscious move towards unification of standards, cross-border and regional agreements should be considered. Late adapting groups and economies continue to compromise on growth of the prospects within due to slow growing regulations against rapid innovation and technology advancement. Emerging technologies will continue to revolutionize various sectors and intertwine them through technology convergence. Kelly and Firestone (2016) explain how digital technologies give rise to efficiency, inclusion and innovation which drive the 4IR. With the many government incorporating technology in policy formulation, emerging technologies will continue to disrupt various sectors in the country with ripple effects in the region and beyond. Many studies show how much the implementation of policy through technology strategy requires a greater aspect of collaboration.

Net Zero Agenda: Climate Wars

'A code red for humanity' has been the dominating term for world conferences and conventions in modern age as climate change becomes the issue of concern as Green House Gas (GHG) deplete the ozone layer while the world temperature needs to be under 1.5°C as emphasized by the United Nations Framework Convention on Climate Change (UNFCC) (Jayaram, 2022; Chevalier, 2021; Eyoel, 2022) to decelerate global warming and its effects on humanity. World economies have been called to implement initiatives within their borders through Nationally Determined Contributions (NDC). With Africa having abundant resources and the greatest potential for growth, the continent has been reported as the least climate resilient region globally with adverse climatic shocks due to low readiness. Climate financing for Africa is on the low making it the center of climate justice conversations. The $100 billion Agenda driven by the Conference of Parties (COP) for planet action has been agreed upon as climate financing to developing countries (Karlsson, 2022; Ouko et al. 2022). Much disagreement stems from how much more industrialized nations have high carbon footprints (Ighobor, 2022b; Eyoel, 2022) with US and China being responsible for 40% of GHG emmissions. In the write-up 'A vision for international climate finance after 2025', Michaelowa (2022) discusses how years of negotiations of the Kyoto Protocol and Paris Agreement (PA) has led to the

Conference of Parties (COP) with climate financing being a sensitive component of negotiations as donors seek to limit the amount of public finance to a politically manageable level besides making allocation to support their own economies. The issue has created a greater stalemate when recipients like Africa only make-up 4% of the total GHG emission compared to developed nations that have far benefitted from industrialization. The COP 27 hosted by Egypt in 2022 dubbed 'Loss & Damage' (Duarte, 2022; Ighobor, 2022b) pointed out the lack of dishonouring the $100Bn Agenda by developed economies thus widening the climate adoption gap between top economies and those lagging behind gap by $20Bn (Michaelowa, 2022). So far, the African continent is underfunded receiving $6Bn annually compared to the $33Bn required (Ighbor, 2022a). Moreover, African countries termed as lagging behind in development are calling for a just-transition because they have a right to the underutilized abundant natural resources like natural gas which are a solution to the energy gap to take hold of opportunities in the 4IR like digitization. Duarte (2022) notes that most talks are not on emission cuts but around carbon offsets, carbon markets and heavy subsidies towards solar and wind power which brings a notion that capital cost is sufficient for transition. Countries like Morrocco, Ethiopia and the Democratic Republic of Congo are already tapping into these opportunities by investing mega renewable energy projects. However, engineering and technology bottlenecks to implement appropriate energy mix (solar, wind, hydro and biofuel) are a great barrier to a continent that is already changing a mentality of being an exporter of resources (DeGhetto et al. 2016; Amankwah-Amoah et al. 2022; Anyanwu & Salami, 2021) and become a commodity producer (Chevallier, 2021; UNCTAD, 2020; Lusigi, 2022; Soucat & Offei-Awuku, 2014) through service and manufacturing for better strategic positioning.

The urgent need for climate mitigation and adoption interventions is therefore emerging to be a more political than environmental issue with its success being largely based on resource allocation and flow. Within countries, stronger ties for public-private partnerships is required for a just-transition (Ighobor, 2022a) within sectors, industries and communities. The AU has called up its member states to address barriers to energy development in the areas of financial, technical, markets, policies and regulations. The International Bank for Reconstruction and Development is now more than ever advocating for climate smart approaches in agriculture for the outcomes of increased productivity, reduced emission and enhanced resilience (WB, 2022; FAO & ITU, 2022). International investors and funding institutions are currently assessing projects in need of funding with key indicators including technology friendly, start-up friendly and green startups (ADBG, 2022). For successful net-zero target, global strategies must be actioned locally and these will cut-across climate change mitigation, adoption, awareness and advocacy.

Production and Consumption Systems: Movement of Resources and Commodities

In being leaders in our own rights, African governments must be strategic in policing with an intent to mitigate continental challenges that range from poverty, malnutrition and unemployment while joining its global counterparts to combat the exposures of climate risks and diminishing resources. Production and consumption balances are important because alongside defining the brackets of food security, the degree of accessibility and affordability of resources and commodities are determined by within these systems. To add on, the opening up of trade markets and the opportunities thereof have been dependent on demand and supply equilibriums within countries. Factors like human capital, fuel prices, technology transfer, trade agreements and border security (ADB, 2022; WEF, 2022; UNCTAD, 2022; UNECA, 2022) are great influencers of these balances. A bias on sustainability can be witnessed in industry players as government continue to put pressure towards achievement of the net zero by 2050 agenda despite Africa being

responsible for only 4% of GHG, translating a cheaper trade-off agenda for Africa. Suitable trade agreements are in existence due to improvement in diplomacy ties and the effort of cooperation in regions within continents. The actions employed by external cooperation's like the European Union (EU) and the North Atlantic Trade Organization (NATO) as umbrellas in developed countries have a consequence on the strategies formulated by cooperation within the African continent like the East Africa Community (EAC) and (ECOWAS). Over the years, regional cooperation has been advocated for the benefits they bring along. However, studies by Otero.et al (2013) concludes that in as much as opportunities are created for developing nations in their assimilation into Free Trade Area, they eventually experience high food prices at home in the name of world price in food commodities (Karlsson, 2022). This is an example of how striving for the global market can undermine the local and regional efforts of empowerment and the narrowing of the inequity gap. It is irrational to employ a one-size fits all strategy through a blanket model and of utmost importance to rethink the strategies in place and re-design the structures to be used in ushering in the 4IR in Africa (Moyer et al, 2022; WB, 2022; Anyanwu & Salami, 2021) with consciousness that the continent has had decades of simply adopting and implementing initiatives from the western front.

Resilient structural transformation relies on cross-border collaboration and regional integration to reduce vulnerability and the impact of external price shocks on domestic economies. Deceleration of the African economy has been witnessed as the rest of the world slows down to post-pandemic effects and Russia-Ukraine wars. As short-term crisis and emergency response, the ABDG has financed food production and fertilizer supply to a tune of $1.5 billion (ADBG, 2022). More long-term solutions should also emanate for the region member states to avoid external shocks. Building buffers for food security not only rests in production at the source but requires the re-alignment of food supply chains to eliminate existing impediments. Lusigi (2022) mentions how non-tariff barriers culminating to certification and standards, high transport costs and documentation need to be removed in the trade of food. Payment systems as an order fulfilment component should also be leveraged in minimizing territorial barriers. Digital trade and currencies can strengthen cross-border operations and better present smaller firms and informal traders in larger markets. Boiardi and Stout (2021) points out that block-chain technology as an emerging technology in 4IR improves global trade by minimizing barriers from country-specific monetary policies. The African Union equally continues to consider a pan-African payment and settlement system (Nwebo, 2018; DeGhetto, Gray & Kiggundu, 2016) by use of African currencies.

Recommendation

The recent events of Russian-Ukraine war and the COVID pandemic have exposed the vulnerabilities of the world's economies with shocks that impact socio-economic development while equally providing an opportunity for policy formulators to learn and make changes for agility and responsiveness. The global nature of challenges discussed in this paper has identified three key areas that African economies need to strategically focus on in the continent's quest to leapfrog and reduce the inequality gap. As the world is diving deep into the 4IR, digital transformation, net zero agenda, and the balance in production and consumption systems are core areas that require strategic response for better positioning of the continent to capture the current and upcoming opportunities for growth. Sound policy formulation is required to: enhance digital transformation and innovation, capitalize on the cheaper-tradeoff for Africa in the global carbon offset mission and bring an advantage to the movement of resources and commodities in its production and consumption systems. Studies conclude that these will address region-specific and country-specific problems including unemployment, financial inclusion gaps, and inequality in populations thereby

providing solutions at the local level as well as the regional level. Through strategic investment on green-oriented structures, developing economies will build climate resilient and self-sufficient systems thereby transforming emerging and re-energizing dead and overlooked sectors. Structural transformation must prioritize the global pertinent issues of the 4IR culminating to three key areas namely green, inclusive and resilient structures to develop buffers that will in the long-run anchor the economy of African countries. Inclusivity is key in the 4IR shifts in order to reduce the inequality gap of underserved populations which comes with unequal access to resources and opportunities. Policy formulators must be adept in incorporating the underserved populations within their regions into policy. The uniqueness that comes with social systems and change must be recognized by governments as they make policies to realign their countries to global action while giving them strategic positioning in the 4IR where dynamic and turbulent forces are constantly revolving around and within individual businesses, firms, industries, countries and regions.

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