

## EDITOR REVIEWED ARTICLE

# How can African countries address climate change problems and optimise demographic dividends for socioeconomic development?

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## Abstract

*As all 54 countries in Africa strive to overcome their different socio-economic challenges, the climate crisis as well as the unsustainable population growth appear to be threatening the attainment of national and international development agenda across the continent. This paper presents the relationship between climate change and population dynamics; how Africa can address the problems of the climate crisis and rapid population growth, and create the potential to harness a demographic dividend and accelerate economic growth. Many African countries need to take necessary measures to achieve a rapid and sustained fertility transition, including providing access to quality family planning services, reducing adolescent fertility, educating female children, empowering women, reducing under-five mortality and*

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*expanding labour market opportunities. These are necessary conditions for fertility transition and reaping the benefit of a demographic dividend in Africa. As African countries take strategic steps to catalyse fertility transition and accelerate economic growth, there is a need to take urgent measures to fight the climate change crisis which appears to be eroding socio-economic gains across the continent. While Africa adds only a trifling fraction of the global greenhouse gas emissions, the continent bears a disproportionately significant portion of the detrimental impact of climate change. Without the necessary actions to stem and reverse the consequences (such as health crises, food insecurity due to the destruction of crops by severe weather, the destruction of livelihoods and increases in the numbers of internally displaced persons), climate change is likely to have significant negative effects on the achievement of the sustainable development goals and the African Union's Agenda 2063. There is a need to address the twin problems of unsustainable population growth and climate crisis in Africa.*

## **Keywords**

Climate change, population dynamics, demographic dividend, socioeconomic development, Africa

## **Introduction**

The need to ensure environmental adaptation and resilience across the world continues to be affirmed in several international strategic efforts. Recent meetings such as the 2022 United Nations Climate Summit in Egypt (COP27) and the 2022 Africities Summit in Kenya acknowledged the importance of curbing the climate crisis and ensuring sustainable socioeconomic development. Back in 2015, seventeen Sustainable Development Goals (SDGs) were adopted by the United Nations as a blueprint and call to ensure a sustainable future across all countries of the world (UNDP, 2023). Several of the goals, including SDG 6 (ensuring access to clean water and sanitation), SDG 7 (having affordable and clean energy), SDG 8 (having decent work and economic growth), SDG 11 (ensuring sustainable cities and communities), SDG 12 (ensuring responsible consumption and production) and SDG 13 (pursuing climate action) all directly or indirectly point to the need to protect the planet and ensure environmental adaptation and sustainable socioeconomic development.

Although there is a commitment to prioritise action and support countries that are furthest behind in achieving the various SDG targets (UNDP, 2023), substantial gaps in climate crisis vulnerabilities and socioeconomic development persist between the high-income and low/middle-income countries. While relevant indicators show that Africa trails many other continents in several indices of socioeconomic development, the climate crisis is also hitting the continent very hard. For instance, in 2022, heavy rainfall and flooding attributed to climate change led to the death of millions of people across many African countries, including South Africa, Nigeria, Burkina Faso, Mali, Niger and Chad (Adedini, 2023a). This precarious situation clearly shows the important link between climate change and socioeconomic development. The challenge of climate change has further worsened the socioeconomic situation of many African countries, thus aggravating problems such as food insecurity due to the destruction of crops by severe weather, the destruction of livelihoods, and increases in the numbers of internally displaced persons (IDPs) due to conflict over increasingly scarce resources (Adedini, 2023b; UNHCR, 2022). The poor socioeconomic situations of many African countries are increasingly exacerbated by the acceleration of the climate crisis.

Further, the World Health Organization has recognised the climate challenge as a health crisis because of the many negative impacts on health associated with increased rainfall, and more intense weather conditions leading to more frequent outbreaks of disease (GAVI, 2022). Global environmental change is threatening human health and welfare and nowhere is this situation more critical than in Africa. Whilst being the lowest contributor to greenhouse gas emissions, Africa has the highest rates of population growth and some of the greatest vulnerabilities to the effects of climate change ((AfDB, 2022; GAVI, 2022). For instance, currently, Africa has more than ninety per cent of the global burden of malaria. It is projected that climate change will lead to additional 60,000 malaria deaths by 2050 due to warmer temperatures and increased rainfall and flooding expanding the habitat for malaria-carrying mosquitoes thus creating budding hotspots for infections. Additionally, environmental change may lead to more cases of diarrhoea, malnutrition and under-five mortality if urgent steps are not taken to curb the climate crisis (GAVI, 2022).

There is a clear link between climate change, demographic dividend and socioeconomic development. The demographic dividend refers to the economic

growth that occurs in a country arising from a favourable change in the age structure of the population following a period of demographic transition from high mortality and high fertility to low mortality and low fertility. While mortality has steadily declined across Africa, fertility decline has remained sluggish in many countries. Bongaarts (2017) noted that Africa has a unique fertility transition due to a stall in mid-transition, a pattern that has not been observed in other continents. With an average total fertility rate (TFR) of 4.2 in Africa (Statista, 2022), which is almost double the world average of 2.4, the prospect of harnessing a demographic dividend on the continent is distant. A large body of empirical research has established the need to take necessary measures to achieve a rapid and sustained fertility transition in Africa, including quality family planning services, reducing adolescent fertility, educating female children, empowering women and reducing under-five mortality (Adedini et al., 2015; Bado et al., 2022; Bradshaw et al., 2023; Reed and Mberu, 2014; Sunmola et al., 2020). These are necessary conditions for fertility transition and reaping the benefit of a demographic dividend in Africa.

Given its richness in human and natural resources, Africa has a great potential to attain high level of socio-economic development, however there is need to urgently address the twin problems of unsustainable population growth and climate crisis that appear to be threatening the achievement of the continent's development agenda such as the African Union's Agenda 2063, the SDGs and others. Considering the increasing threat posed by the climate change, and the problem of rapid population growth occasioned by the persistent high fertility, an important question that must be addressed is 'how can African countries overcome the climate change problems and achieve fertility transition to optimise and harness demographic dividends for socioeconomic development?' Thus, this paper presents the relationship between climate change and population dynamics; and how Africa can address the problems of climate crisis and rapid population growth, and create potential to harness demographic dividend for economic growth.

### **Climate Change Challenges in Africa**

In recent times, the effects of climate change have been demonstrated by an increase in average seasonal temperatures and unfavourable weather patterns. Global warming anomalies reached a new high in 2016 since the commencement

of global records in 1880, with the ten warmest years occurring between 2010 and the present, and the year 2022 being the sixth warmest since then. Furthermore, glaciers and ice sheets are melting, and sea levels are increasing. Summer arctic sea ice coverage is shrinking by 12.6 per cent per decade, reaching a record low in 2012 (NOAA, 2023; NASA, 2023). The consequences of climate change are also readily apparent in Africa, where temperatures have been rising consistently for the past four decades (NCEI, 2023). Anthropogenic emissions have significantly exacerbated the impacts of climate change, with sixty per cent of GHG emissions emanating from just ten countries, including China and the United States of America, while sub-Saharan Africa contributed very little. In 2019, China alone accounted for a substantial 24 per cent of global total GHG while the whole of sub-Saharan Africa accounted for only 5.6 per cent and 7.26 per cent of global CO<sub>2</sub> and total GHG respectively (WRI, 2022).

Although, Africa adds only a trifling fraction of the global greenhouse gas (GHG) emissions, the continent bears a disproportionately significant portion of the detrimental impact of climate change (Ray, 2021). Nonetheless, despite its vulnerability and minimal contribution to GHG emissions, Africa partakes in global initiatives and commitments to mitigate the impact of climate change, as countries like Liberia, Guinea Bissau, Benin Republic, Nigeria, South Africa, and Madagascar have either achieved or set net-zero carbon emissions targets (NCI, 2021). Climate change has widespread global effects to which all continents are exposed, but Africa's vulnerability puts it at greater risk because many African countries do not possess the wherewithal to adequately absorb the shocks of climate change threats. Climate change presents extreme events such as heat waves, droughts, flooding and other tropical events which have significant impact on the African continent. In the summer of 2021, heat waves affected the Northern African countries of Tunisia – which experienced its hottest summer since 1950 – Libya, Morocco and Algeria, engendering wildfires with attendant unfavourable after-effects (WMO, 2022a).

Climate change also threatens food security and exacerbates other challenges to sustainability. Crop production in Africa is principally dependent on rainfall. As the amount of rainfall diminishes as a result of climate change, crops are damaged and agricultural yields decrease with resultant food insecurity. According to the WMO Provisional State of the Global Climate 2022 report (WMO, 2022b), the East African countries of Kenya, Somalia and southern Ethiopia suffered increased

drought intensity with predictions of crop failure and increased food insecurity. Meanwhile the region of southern Africa suffered cyclones with landfalls in Madagascar and resultant flooding in Mozambique and Malawi. These events have multiple effects including the proliferation of internal displacements, forced migration, the growth of urban slums and swelling of refugee numbers. Such outcomes frequently lead to the overstretching of resources, unemployment, increased substance abuse, poor access to healthcare and loss of lives (Yigzaw and Abitew, 2019; Carrillo, 2009; IDMC, 2018). Increases in morbidity and mortality due to transition in disease dynamics and psychosocial health issues, as well as the erosion of African cultural heritage are also likely to increase as temperatures rise. Moreover, climate change will adversely affect biodiversity on the African continent. As temperature rises more than 1.5°C, half of those species assessed are projected to have population declines or loss area of suitable habitat exceeding thirty per cent (IPCC, 2022).

These adverse events produce damaging economic consequences. According to a report commissioned by the United Nations Environment Programme (UNEP), the African Development Bank (AfDB) and the United Nations Economic Commission for Africa (ECA), climate change could cause up to fifteen per cent of GDP per capita to be lost in Western and Eastern Africa. Northern and Southern Africa and Central Africa could experience GDP per capita decreases of up to ten and five per cent respectively by 2050. However, if mitigation and adaptation actions are taken, considerable benefits in macroeconomic stability are likely, which could result in the creation of up to 11.8 million jobs by 2050 (AfDB, 2019). Without the necessary actions to stem and reverse the consequences, climate change is likely to have significant negative effects on the achievement of the sustainable development goals (SDGs) by African States.

### **Population Dynamics and Demographic Dividend**

The management of the population growth rate has been on the front burner of policy discussions in many African countries. The population of Africa is over 1.4 billion based on the latest United Nations estimates and forecast to double by 2050 (UN, 2022). Population growth and demographic transition in sub-Saharan Africa will see a shift in the age structure such that those of working-age outnumber other age groups, creating the potential for a 'demographic dividend'.

The economic implication of this transition is that, as dependency ratios shrink, the potential for those in the labour force to save, invest and contribute to economic growth will increase. Moreover, the transition in age distribution paves the way for a demographic dividend in Africa when the current population boom coincides with higher levels of savings and investment thus moving from a poverty stricken and lifecycle deficit<sup>7</sup> economy to a prosperous industrialised economic system. However, the window of opportunity created by demographic transition does not automatically translate into demographic dividend. Each African country's response to the above and other determinants such as domestic savings, socioeconomic environment and climate change will determine the progression of the dividends as the working age population enlarges and the youngest, less-productive age brackets shrink (Cleland, 2012).

More importantly, the window of opportunity open for demographic dividend is limited in time (Cummins, 2019). Over time, the youth bulge will transition to the older, less-productive age cohorts, thus increasing the dependency ratio and thereby creating a resurgence of economic pressures that may be extremely challenging. To maximise the opportunities that come with lower fertility and mortality rates and avoid the problems of the inevitable return to high dependency ratios, Africa must encourage savings and investment before the window closes. Unfortunately, several countries in Africa are slow to take decisions and institute policies that will benefit development when the window of opportunity for demographic dividend opens (Cardona et al., 2020). Most of the necessary decisions are long-term investments that may yield less immediate political capital. Hence, most African leaders, especially in the sub-Saharan region, prioritise short-term investments which showcase results in preparation for the next elections.

As Africa's labour force is projected to grow by thirty per cent per decade (Cleland, 2012), the danger that lies ahead signals the need to engage and persuade African leaders to create a balance between building political capital and developing a resilient and sustainable economy that will change the people's lives (Osei-Appaw and Christian, 2022). This becomes imperative in the light of multiple threats confronting the African economy, including COVID-19 and climate change. Failure to vigorously increase effort on socioeconomic interventions as

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7 Resulting from high dependency ratios.

birth and death rates fall (which would propel the production of more goods and services resulting in poverty reduction, greater income, and opportunities) will result in demographic debt or widespread misery.

### **Population Dynamics and Potential for Optimising Demographic Dividend for African Socioeconomic Development**

Perspectives on the relationship between population dynamics and economic development frequently oscillate between pessimism and optimism. However, empirical analysis shows that population age structure is more critical than crude population size. The pessimistic perspective contends that population growth limits economic growth because high fertility leads to high dependency, which in turn leads to reduced savings and investments, and ultimately a reduction in capital per worker. In essence, high dependency leads to capital 'widening' rather than 'deepening' (Coale and Hoover, 1958). On the other hand, the optimistic view contends that population growth spurs technological innovation due to the pressure on scarce resources, and that the stock of new ideas can be used more effectively in larger than in smaller populations. In essence, this position contends that 'necessity is the mother of invention' (Kuznets, 1967; Boserup, 1981; Simon, 1981). In contrast, perspectives emerging from empirical analysis conclude that population dynamics which increase the level of dependency have negative effects on economic development while those that reduce them have a positive influence (Bloom and Williamson, 1998; Kelley and Schmidt 2001). Our understanding of the links has more recently evolved to demonstrate that population growth due to increased fertility would have immediate negative effects but *may* have positive effects in a longer term. This is mainly due to the 'baby cohort' creating a bulge in the workforce accompanied by changes in saving and investment rates. Given the current negative effects of high fertility, which is consistent with the immediate term impacts, the hopes and potentials of *Africa Rising* are firmly rooted in these potential long-term effects.

Although selected countries and cities in Africa may have advanced into the third stage of the demographic transition, the African continent is largely in the second stage, where a combination of falling mortality and persistent high fertility is fuelling population growth. As a result, the population of the continent is younger today than it was fifty years ago. While falling fertility rates will open the demographic window of opportunity, shift the age structure in the right direction



for a demographic dividend and realise the first dividend, attention needs to be paid to the levers influencing the second demographic dividend for the purpose of advancing socioeconomic development on the continent.

Changes in savings and investments to drive private capital accumulation represent the most crucial of the levers of the demographic dividend. Indeed, the second demographic dividend depends solely on sufficient private capital accumulation. African countries exhibit enormous gaps in private investments as a result of high consumption propensities, thereby elevating the role of public capital in the socioeconomic development process. Unfortunately, an elevated role for public investments creates grounds for high levels of corruption and a vicious cycle of high fertility and low saving rates. High levels of corruption lower return on both private capital and labour and therefore lower the opportunity cost of having children (Blackburn and Sarmah, 2008; Arsenis and Varvarigos, 2011). Corruption takes the form of embezzlement of public funds, and thus reduces the provision of public goods and services that contribute to health and longevity. In turn, lower life expectancy weakens incentives to save, and thereby slows down capital accumulation and growth. In addition, since corruption hinders the delivery and the quality of public services that support child quality (health and education), parents will find it optimal to divert their resources towards child quantity. A demographic transition may occur as a direct outcome of reduced corruption in the public sector.

Another reason for emphasis on investment and private capital accumulation is that human capital gravitates toward physical capital due to the complementarity between the two factors in productivity and earnings. African countries are currently experiencing the *Canada Rush* and '*japa*',<sup>8</sup> two terms which capture the exit of the young and most productive population from the continent for Europe and North America. This emigration translates into huge losses of the stock of human capital in Africa to countries with high levels of capital per worker. If unabated, the exit of the most productive workforce who are also most likely to exhibit low levels of fertility will put a brake on potential African fertility transition. Along with improvement in public services, private investments are essential for reversing the 'brain drain' that Africa has suffered in the past and for halting the current '*japa*' phenomenon. Evidence from global competitiveness

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8 From the Yoruba language, meaning to run or flee.

reports indicate that labour market flexibility is not enough to attract productive workforce, but that it must be backed by effective and efficient human capital (education and healthcare) services. Conventions such as the Abuja and Paris Declarations that urge governments to increase spending on healthcare and education respectively need to be given more attention.

Implementation of the provisions of the African Free Trade Agreement (AfCFTA) and intensification of existing regional trade agreements will induce significant population dynamics. The provision of free movement of people within the regional blocks will intensify movement of productive human capital across borders within the continent. This has the potential to simultaneously create advances in some countries and regressions in others with regards to the demographic transition. Unless the managers of local economies develop the critical local and cross-border knowledge and use these in setting socioeconomic development strategies, intensification of cross-border movement under the trade pacts will potentially heighten existing demographic disparities. If smaller countries experience advances and large countries experience setbacks, which is the most probable scenario, then the continent as a whole will experience a setback in the demographic transition. The result will be the absence of a continent-wide demographic dividend.

In light of this, the territorial approach to development planning, also referred to as *local development*, holds huge potential for advancing the pace of demographic dividend and socioeconomic development on the continent. Unlike sectoral approaches to development, the territorial approach recognises the spatial dimensions of development and seeks to better understand the diversity of resources, including demographics, and markets within territories and use these to define development goals. Development plans created under the territorial approach tend to be more objective and tailor-made, use local knowledge and capacity in implementation, focus on the overall development of the specific territory (mainly county or local government area), place emphasis on socio-economic development of the territory, vary from one territory to another in content and strategy, and treat each territory as an open economy trading with other territories. Adoption of this approach requires decentralisation and devolution of authority and responsibility to counties and local government councils.

## The Way Forward

Africa is at a critical moment. As all 54 countries on the continent strive to overcome their particular challenges; the climate crisis, combined with unsustainable population growth, appears to be threatening the attainment of national and international development agenda across many countries on the continent. While economic growth has been strong and rising recently in many countries across the continent, Africa and its leaders and development partners need to collectively work towards simultaneously addressing the problems of unsustainable population growth and climate change. First, African countries must adopt necessary policies and programmes to accelerate demographic transition. Second, they must take deliberate decisions to strengthen human capital development towards placing Africa in a position to harness the demographic dividend and all benefits that demographic transition offers. Third, health is wealth; therefore, Africans and the African economy will benefit immensely from policy and programmatic actions that pay attention to the climate-health nexus and also seek to curb the climate crisis through deliberate measures and steps. These include mitigating the climate crisis through speedy global decarbonisation and increasing financing and other resources toward preventing illnesses to save lives as well as to drive economic growth. Also, Africa needs to embrace the *One Health* principle of developing research, programmes, policies, and legislations through a multisectoral approach to improve public health outcomes and socioeconomic outlook on the continent.

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