

## Unleashing Sustainable Development Potential in Africa

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### **Abstract**

*Sustainable development is a global imperative, addressing economic growth, environmental preservation, and social equity. This study explores sustainable development in Africa, guided by the Brundtland Commission's definition. It examines Africa's unique context, highlighting resource management's pivotal role in addressing poverty, inequality, and environmental issues. The study emphasizes climate resilience and adaptation, links demographic dynamics to sustainable development, and underscores the need for inclusive growth. It acknowledges Africa's integration into global efforts, recognizes innovation's transformative potential, and emphasizes infrastructure and sustainable urbanization as vital components. Overall, this research covers diverse facets of sustainable development in Africa, providing insights and recommendations for its advancement.*

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**Keywords:** Sustainable development, Resource, Adaptation measures, management, Climate resilience, Africa

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## Introduction

Africa, as a continent, stands at a pivotal juncture in its history, where the pursuit of sustainable development is not merely an aspiration but a pressing necessity. The term "sustainable development" has become ubiquitous in global discourse, reflecting a shared commitment to address the intertwined challenges of economic growth, environmental conservation, and social equity (Brundtland Commission, 1987). The global consensus on sustainable development underscores its critical importance in addressing the complex issues that confront humanity in the 21st century. In the African context, this commitment takes on a unique and compelling significance, driven by a combination of factors that make the continent's journey towards sustainability both imperative and transformative. Africa boasts a diverse range of ecosystems, from lush rainforests to arid deserts, and is home to an array of unique and endangered species. Its natural wealth is of global importance and contributes to the planet's ecological balance (WWF, 2021). Environmental degradation, deforestation, and habitat loss in Africa not only threaten the continent's biodiversity but also have far-reaching consequences for global climate stability (UNEP, 2020). Africa's commitment to sustainable development is, therefore, not solely a regional endeavor but a global imperative. The challenges it faces, from mitigating the impacts of climate change to ensuring food security and promoting inclusive growth, resonate far beyond its borders. The African Union's Agenda 2063, for example, envisions an Africa that is prosperous, united, and at peace with itself, contributing to a better world (African Union, 2015).

Development, often referred to as the harmonious integration of economic, environmental, and social dimensions of progress (Brundtland Commission, 1987), is a concept that resonates deeply in Africa's quest for prosperity and stability. The African continent presents a dynamic and multifaceted landscape where the pursuit of sustainable development takes on profound significance. Africa's richness lies not only in its vast and diverse landscapes but also in its human capital. With abundant natural resources, fertile soils, rich biodiversity, and a youthful demographic, the continent holds immense potential for growth and transformation (World Bank, 2019). However, alongside these promising attributes, Africa is confronted by some of the world's most intricate and persistent development challenges. These challenges are deeply rooted and multifaceted, spanning historical, political, economic, social, and environmental dimensions. Africa carries the enduring legacies of colonialism and exploitation, which have left indelible marks on its social and economic structures. The historical injustices perpetuated during colonial rule continue to influence power dynamics, economic disparities, and access to resources (Alemayehu & Haile, 2017). Political instability and governance challenges persist in various regions, affecting policy continuity and hindering sustainable development efforts (World Bank, 2019). The establishment of stable and accountable governance structures remains an ongoing concern. A significant proportion of Africa's population continues to grapple with poverty, facing limited access to basic services, education, and healthcare (World Bank, 2020). The continent also contends with staggering income inequality, both within individual nations and across borders (Oxfam, 2021).

Africa is highly susceptible to the adverse impacts of climate change. It experiences erratic weather patterns, prolonged droughts, and extreme weather events (IPCC, 2021). These environmental challenges exacerbate existing vulnerabilities and threaten livelihoods. Infrastructure gaps persist across Africa, encompassing inadequate transportation networks,

limited energy access, and disparities in digital connectivity (AfDB, 2020). Bridging these gaps is crucial for unlocking economic potential and enabling sustainable development. In the face of these challenges, sustainable development emerges as an imperative. It involves not only addressing these multifaceted issues but also harnessing the continent's unique strengths and potential. Africa's rich cultural tapestry, diverse ecosystems, and youthful population provide a unique opportunity to redefine development paradigms and chart a course towards prosperity and stability (UNEP, 2020). The pursuit of sustainable development in Africa is not merely a regional concern but one of global significance. It is a collective endeavor that requires collaboration, knowledge sharing, and a commitment to addressing the continent's challenges while embracing its opportunities. In doing so, Africa can fulfill its potential as a key player in the global pursuit of sustainability, benefiting not only the continent itself but the broader global community.

Extreme weather events and shifts in climate patterns pose significant challenges to the pursuit of sustainable development. These challenges have evolved due to alterations in climate conditions, changes in land use, shifts in human settlement patterns, and shifts in socioeconomic systems. In West Africa, the impact of floods, for instance, has affected over 3.2 million individuals since the year 2000, a considerably higher figure compared to the past (as reported by UNOCHA in 2009). This impact extends to both human lives and economic consequences. Interestingly, historical data indicates a noteworthy shift. The number of fatalities resulting from these disasters has notably decreased over time, whereas the frequency of such disasters, the number of affected individuals, and the economic toll have all witnessed an alarming increase. A case in point can be found in Thailand, where the 2011 floods caused a substantial 75% decline in GDP growth (as observed by Haraguchi and Lall in 2015). The surge in economic losses was mainly attributed to the inundation of industrial parks that had been developed on previously used paddy fields (Haraguchi and Lall, 2015). Similarly, when examining the European context since 1870, there has been a significant decline in flood-related fatalities, contrasting with a surge in the number of people affected by flooding (as revealed by Paprotny et al. in 2018).

Policy related to climate change and disaster risk management (DRM) share certain similarities, but distinctions exist between these two agendas (as noted by Schipper and Pelling in 2006). Firstly, climate change policy primarily addresses hazards and consequences related to climate or weather, omitting geophysical disasters like earthquakes, tsunamis, and volcanic activities that DRM must consider. Secondly, the timeframes for climate change adaptation and disaster risk management differ significantly. The impacts of disasters are either immediate (e.g., earthquakes, flash floods) or relatively short-term (e.g., river floods, cyclones), although some climatological disasters like droughts and wildfires can persist for extended periods, sometimes spanning decades or even centuries. In contrast, climate change adaptation necessitates longer planning horizons.

This research endeavors to delve into the multifaceted landscape of sustainable development in Africa, examining the challenges, opportunities, and the evolving dynamics of this pursuit. In doing so, it seeks to contribute to a deeper understanding of how Africa can chart a course towards a more prosperous, resilient, and sustainable future. Through rigorous analysis and exploration, it aims to provide insights and recommendations that can inform policies, inspire initiatives, and empower the stakeholders committed to Africa's sustainable development journey.

## CONCEPTUAL FRAMEWORK

### Sustainable Development in Africa

Sustainable development in Africa is a concept that is deeply rooted in the definition put forth by the Brundtland Commission in 1987. The Brundtland Commission, also known as the World Commission on Environment and Development, defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland Commission, 1987). This definition emphasizes the importance of integrating economic, environmental, and social dimensions of progress in order to achieve sustainable development. It recognizes that development cannot be pursued at the expense of the environment or the well-being of society, and that economic growth must be balanced with environmental protection and social equity. In the context of Africa, sustainable development is crucial for addressing the continent's unique challenges and opportunities. Africa is home to a rich biodiversity and natural resources, but it also faces significant environmental degradation and social inequalities. Achieving sustainable development in Africa requires a holistic approach that takes into account the specific needs and circumstances of the continent. Environmental responsibility is a key pillar of sustainable development in Africa.

The continent is particularly vulnerable to the impacts of climate change, including droughts, floods, and desertification. Sustainable development in Africa aims to promote environmental conservation, reduce greenhouse gas emissions, and build resilience to climate change. This includes initiatives such as promoting renewable energy, sustainable agriculture, and conservation of natural resources. Social inclusion is another important dimension of sustainable development in Africa. The continent is characterized by high levels of poverty, inequality, and unemployment. Sustainable development seeks to address these social challenges by promoting inclusive growth, improving access to education, healthcare, and basic services, and empowering marginalized groups such as women and youth. It also aims to promote good governance, human rights, and social justice (UNDP, 2021). Economic viability is the third dimension of sustainable development in Africa. Economic growth is essential for poverty reduction and improving living standards. However, sustainable development recognizes that economic growth must be inclusive, equitable, and environmentally sustainable. It involves promoting sustainable and inclusive industrialization, promoting entrepreneurship and innovation, and fostering regional and international cooperation for trade and investment.

### Africa's Unique Context

Africa's distinctive context, characterized by diverse ecosystems, a youthful population, historical legacies, and resource abundance, plays a crucial role in shaping the sustainable development paradigm on the continent. This understanding is supported by various organizations and institutions, including the United Nations Environment Programme (UNEP) and the African Union (AU). Africa's diverse ecosystems, which encompass rainforests, savannas, wetlands, and deserts, offer both challenges and opportunities for sustainable development. The continent is renowned for its rich biodiversity, hosting a wide array of endemic species and unique ecosystems that necessitate conservation efforts (UNEP, 2020). The

sustainable development approach in Africa acknowledges the significance of safeguarding these ecosystems while concurrently fostering economic growth and poverty alleviation. One of the key challenges in Africa's sustainable development is the preservation of its diverse ecosystems. These ecosystems provide essential services such as water purification, carbon sequestration, and climate regulation, which are crucial for human well-being and the planet's health (UNEP, 2020). For instance, the Congo Basin rainforest, the second-largest tropical rainforest in the world, acts as a carbon sink, absorbing vast amounts of carbon dioxide and mitigating climate change. Preserving such ecosystems is vital for maintaining ecological balance and ensuring the sustainability of natural resources.

Africa's ecosystems are home to numerous endemic species, meaning they are found nowhere else on Earth. These species possess unique genetic traits and play a crucial role in maintaining ecosystem stability and resilience. Protecting these species is not only important for biodiversity conservation but also for potential scientific and medical discoveries. For example, the African rainforests have yielded valuable medicinal plants that have contributed to the development of drugs for various diseases. Preserving these ecosystems is therefore essential for both ecological and human health. In addition to the conservation aspect, sustainable development in Africa also recognizes the need for economic growth and poverty reduction. The continent faces numerous socio-economic challenges, including high levels of poverty, unemployment, and inequality. However, sustainable development approaches aim to address these issues while minimizing negative impacts on the environment (UNEP, 2020). By promoting sustainable agriculture, renewable energy, and eco-tourism, Africa can harness its natural resources in a way that benefits local communities and stimulates economic growth. For instance, sustainable agriculture practices, such as agroforestry and organic farming, can enhance food security, improve soil fertility, and reduce deforestation (UNEP, 2020). These practices not only provide livelihood opportunities for rural communities but also contribute to the conservation of ecosystems and biodiversity. Similarly, the development of renewable energy sources, such as solar and wind power, can provide clean and affordable energy to remote areas, reducing reliance on fossil.

Africa's youthful population is a significant factor in shaping the sustainable development agenda due to its sheer size and potential. According to the African Union (2019), approximately 60% of Africa's population is under the age of 25. This demographic dividend presents both opportunities and challenges for the continent. One of the key opportunities lies in harnessing the potential of this young population through education. Investing in quality education and ensuring access for all young Africans can empower them with the knowledge and skills needed to contribute to sustainable development. By equipping them with a solid educational foundation, they can become active participants in shaping their communities and driving economic growth. Skills development is another crucial aspect of harnessing the potential of Africa's youth. Providing vocational training and technical skills can enable young people to enter the job market with relevant expertise. This not only enhances their employability but also contributes to the overall development of industries and sectors in Africa. By focusing on skills development, African countries can create a workforce that is equipped to meet the demands of a rapidly changing global economy. Job creation is a pressing challenge that needs to be addressed to fully utilize the potential of Africa's youthful population. With a large number of young people entering the job market each year, there is a need to create sustainable and meaningful



employment opportunities. This can be achieved through promoting entrepreneurship, supporting small and medium-sized enterprises, and attracting foreign direct investment. By creating an enabling environment for job creation, African countries can tap into the energy and creativity of their youth, driving economic growth and reducing poverty.

Historical legacies, particularly colonialism and conflicts, have had a lasting impact on Africa's development trajectory. The effects of colonialism are well-documented and have been extensively studied by scholars and researchers. Colonial powers exploited Africa's resources, imposed their own political systems, and disrupted existing social structures, leaving behind a legacy of inequality and underdevelopment. Colonialism led to the extraction of Africa's valuable resources, such as minerals, timber, and agricultural products, without adequate compensation or benefit for the local populations. This exploitation resulted in the depletion of natural resources and hindered the development of local industries. The economic structure of many African countries became heavily dependent on exporting raw materials, which limited economic diversification and made them vulnerable to fluctuations in global commodity prices. Moreover, colonial powers often implemented policies that favored certain ethnic or social groups, exacerbating existing divisions and creating tensions that persist to this day. These divisions have fueled conflicts and civil wars, further hindering development efforts. The consequences of these conflicts include displacement of populations, destruction of infrastructure, and loss of human capital, all of which have long-lasting effects on social and economic development.

The United Nations Environment Programme (UNEP) recognizes the need to address historical injustices and promote inclusive and equitable development in Africa. In its report titled "Africa's Sustainable Development Goals: A Call for Action," UNEP emphasizes the importance of rectifying imbalances and ensuring that development efforts benefit all segments of society (UNEP, 2020). Efforts to address historical legacies and promote inclusive development in Africa require a comprehensive approach. This includes investing in infrastructure development to improve connectivity and access to basic services, such as education, healthcare, and clean water. It also involves promoting gender equality and empowering women, as well as fostering good governance and accountability to ensure that resources are allocated fairly and transparently. Furthermore, recognizing and incorporating indigenous knowledge and traditional practices into development strategies is crucial. Indigenous communities possess valuable knowledge and expertise in managing natural resources and adapting to environmental challenges. By incorporating their knowledge, African countries can develop sustainable solutions that are rooted in local contexts and contribute to the overall well-being of communities.

Africa's vast wealth of resources, encompassing minerals, oil, and renewable energy potential, offers a dual prospect of opportunities and risks for sustainable development. It is imperative to emphasize the responsible management of these resources to ensure their long-term viability and prevent any adverse environmental and social consequences (African Union, 2019). Considering these factors, the sustainable development paradigm in Africa acknowledges the limitations of adopting a one-size-fits-all approach. Instead, it advocates for the formulation of strategies that are specifically tailored to address the unique challenges and opportunities present in Africa. This approach recognizes the necessity of implementing context-specific policies and interventions that take into account the continent's distinctive circumstances. The African Union

(2019) highlights the importance of sustainable resource management in Africa. By adopting sustainable practices, such as responsible extraction and utilization of minerals and oil, Africa can harness its resource abundance to drive economic growth and development while minimizing negative impacts on the environment and local communities. Moreover, the continent's renewable energy potential offers a significant opportunity for sustainable development. Africa has abundant solar, wind, and hydroelectric resources that can be harnessed to meet its energy needs in an environmentally friendly manner. By investing in renewable energy infrastructure and promoting clean energy technologies, Africa can reduce its reliance on fossil fuels, mitigate climate change, and create new job opportunities (African Union, 2019).

### **Resource Management and Economic Growth**

The responsible management of Africa's abundant natural resources is not only crucial for sustainable development but also for addressing the pressing challenges of poverty, inequality, and environmental degradation on the continent. Effectively utilizing these resources can lead to economic growth, job creation, and poverty reduction, while minimizing the negative impacts on the environment (World Bank, 2019). Africa is richly endowed with diverse natural resources, including minerals, forests, water, and arable land. These resources have the potential to drive economic development and improve the livelihoods of millions of people. However, their mismanagement can result in resource depletion, environmental degradation, and social conflicts.

According to the World Bank (2019), responsible resource management involves adopting sustainable practices that ensure the long-term availability and productivity of these resources. This includes implementing effective governance mechanisms, promoting transparency and accountability, and engaging local communities in decision-making processes. By doing so, African countries can avoid the resource curse phenomenon, where resource-rich nations often experience economic instability, corruption, and social unrest. One example of responsible resource management in Africa is the forestry sector. Forests play a vital role in providing ecosystem services, supporting biodiversity, and mitigating climate change. However, unsustainable logging practices, illegal deforestation, and weak governance have led to significant forest loss in some African countries. To address this issue, countries like Gabon have implemented sustainable forest management practices, including certification schemes and community-based conservation initiatives (World Bank, 2019).

Africa, a continent abundantly blessed with a diverse range of valuable natural resources, stands poised to achieve unprecedented economic prosperity. Nevertheless, the realization of this potential hinges upon the crucial aspect of responsible resource management. By embracing sustainable practices, including the implementation of efficient extraction techniques and effective waste management systems, African nations can not only safeguard the long-term viability of their resource reserves but also reap substantial economic rewards. The significance of responsible resource management in Africa cannot be overstated. According to the United Nations Economic Commission for Africa (UNECA), the continent is home to approximately 30% of the world's mineral reserves, including vast deposits of gold, diamonds, and various precious metals. Additionally, Africa possesses significant reserves of oil, natural gas, and other fossil fuels, as well as substantial agricultural land and forests. These resources have the potential to drive economic growth, reduce poverty, and improve the quality of life for millions of

Africans. However, history has shown that the mismanagement of natural resources can lead to detrimental consequences. In many cases, resource-rich African nations have experienced the "resource curse," where the exploitation of resources has resulted in economic instability, corruption, and social unrest. To avoid falling into this trap, African countries must prioritize sustainable practices that ensure the responsible utilization of their resources.

One crucial aspect of responsible resource management is the adoption of efficient extraction methods. Traditional extraction techniques often prioritize short-term gains over long-term sustainability, leading to environmental degradation and resource depletion. By embracing innovative and environmentally friendly extraction technologies, such as advanced mining practices and sustainable forestry methods, African nations can minimize the negative impact on ecosystems while maximizing resource recovery. Furthermore, proper waste management is paramount in ensuring the long-term viability of Africa's resource base. Many resource extraction processes generate significant amounts of waste, including toxic byproducts and pollutants. Without adequate waste management systems in place, these harmful substances can contaminate water sources, degrade soil quality, and pose health risks to local communities. By implementing stringent waste management protocols, African nations can mitigate these risks and protect both the environment and human well-being. To illustrate the potential benefits of responsible resource management, we can look to successful case studies. Botswana, for instance, has effectively managed its diamond resources by establishing partnerships with reputable mining companies and implementing strict regulations to prevent corruption and ensure fair revenue distribution. As a result, the country has experienced sustained economic growth, improved infrastructure, and enhanced social development.

### **Climate Resilience**

Africa's vulnerability to climate change has indeed been widely acknowledged by international organizations and scientific bodies. The Intergovernmental Panel on Climate Change (IPCC), in its latest assessment report, highlights the urgent need for a strong focus on climate resilience within sustainable development strategies in Africa (IPCC, 2021). This recognition stems from the fact that climate change impacts, including extreme weather events, rising temperatures, and changing rainfall patterns, pose significant challenges to the continent's socio-economic development and environmental sustainability. Extreme weather events, such as droughts, floods, and storms, have become more frequent and intense in many parts of Africa. These events have severe consequences for agriculture, water resources, and infrastructure, leading to food insecurity, water scarcity, and economic losses. For instance, prolonged droughts in East Africa have resulted in crop failures, livestock deaths, and increased food prices, exacerbating poverty and food insecurity (UNEP, 2020).

Rising temperatures in Africa are also a major concern. The IPCC projects that the continent will experience higher temperature increases compared to the global average (IPCC, 2021). This can have detrimental effects on human health, particularly in vulnerable populations, and can also impact agricultural productivity and water availability. Heatwaves and heat-related illnesses are expected to become more prevalent, posing risks to human well-being and economic productivity (IPCC, 2021). Changing rainfall patterns further compound Africa's vulnerability to climate change. Some regions may experience increased rainfall intensity and frequency, leading



to more frequent and severe floods. Others may face reduced rainfall, resulting in droughts and water scarcity (IPCC, 2021). These changes in precipitation patterns can disrupt agricultural activities, affect water availability for domestic and industrial use, and impact ecosystems and biodiversity. The socio-economic implications of climate change in Africa are significant. The World Bank estimates that climate change could push an additional 40 million people into extreme poverty in Sub-Saharan Africa by 2030 (World Bank, 2016). The impacts on agriculture, which employs a large portion of the population, can lead to reduced incomes, increased food prices, and heightened food insecurity (IPCC, 2021).

Climate change can exacerbate existing inequalities and vulnerabilities, particularly for marginalized communities and women (UNDP, 2020). To address these challenges, a strong focus on climate resilience within sustainable development strategies is crucial. This involves integrating climate change considerations into development planning, policies, and investments. It requires building adaptive capacity, enhancing early warning systems. The IPCC's Fifth Assessment Report emphasizes that Africa is particularly vulnerable to the adverse effects of climate change due to its high dependence on climate-sensitive sectors such as agriculture, water resources, and coastal ecosystems (IPCC, 2014). These sectors play a crucial role in the livelihoods of millions of people in Africa, and any disruption caused by climate change can have severe consequences for food security, water availability, and overall economic stability. Agriculture is a key sector in Africa, employing a significant portion of the population and contributing to food security and economic growth. However, climate change poses significant risks to agricultural productivity. The IPCC report highlights that rising temperatures, changing rainfall patterns, and increased frequency of extreme weather events can lead to reduced crop yields, livestock losses, and increased vulnerability to pests and diseases. These impacts can undermine food security and exacerbate poverty and malnutrition in the region.

Water resources are another critical sector in Africa that is highly vulnerable to climate change. The IPCC report notes that changing rainfall patterns and increased evaporation rates can lead to water scarcity and reduced water availability for domestic, agricultural, and industrial use (IPCC, 2014). This can have far-reaching consequences for communities, ecosystems, and economic activities that rely on water resources. In arid and semi-arid regions, such as the Sahel and Horn of Africa, water scarcity can exacerbate conflicts and displacement (UNEP, 2020). Coastal ecosystems in Africa, including mangroves, coral reefs, and coastal wetlands, are also at risk due to climate change. Rising sea levels, increased storm surges, and ocean acidification pose significant threats to these ecosystems and the communities that depend on them for their livelihoods and protection against coastal hazards (IPCC, 2014). Loss of coastal ecosystems can lead to increased vulnerability to coastal erosion, flooding, and loss of biodiversity, impacting tourism, fisheries, and other coastal economic activities. The adverse effects of climate change on these climate-sensitive sectors can have far-reaching consequences for Africa's overall economic stability. The World Bank estimates that climate change could cost Africa up to 2-4% of its GDP by 2040 if no action is taken (World Bank, 2016). The impacts on agriculture, water resources, and coastal ecosystems can disrupt supply chains, reduce export revenues, and increase the cost of adaptation and recovery efforts.

Climate change poses significant challenges for African countries, including increased temperatures, changing precipitation patterns, and more frequent extreme weather events

(UNFCCC, 2021). To mitigate these challenges and safeguard the livelihoods of millions, adaptation measures are essential. The United Nations Framework Convention on Climate Change (UNFCCC) recognizes the urgency of these measures and has outlined key strategies to address climate impacts in Africa (UNFCCC, 2021).

1. **Climate-Smart Agriculture:** One vital strategy is the promotion of climate-smart agriculture practices. These practices aim to increase agricultural productivity while reducing greenhouse gas emissions and enhancing resilience to climate change. Techniques such as crop diversification, soil conservation, and the use of drought-resistant crop varieties are crucial in this context (Lipper et al., 2014).

2. **Water Management Systems:** Improved water management is another critical component of climate adaptation in Africa. As changing precipitation patterns and prolonged droughts affect water availability, efficient and sustainable water management systems are essential. Investments in infrastructure for water storage, irrigation, and efficient distribution can help mitigate water-related challenges (FAO, 2018).

3. **Early Warning Systems:** Enhancing early warning systems for extreme weather events is crucial for reducing vulnerability. Timely alerts can help communities prepare and respond to disasters such as floods, hurricanes, and droughts. Building resilient infrastructure and improving data collection and dissemination are key steps in strengthening these systems (UNDP, 2018).

Adaptation measures should be context-specific, considering the diverse climates and ecosystems across the African continent. Local communities and indigenous knowledge should be actively involved in the planning and implementation of adaptation strategies to ensure their effectiveness and sustainability (UNEP, 2018).

## **Demographic Dynamics**

Sustainable development in Africa is closely linked to the continent's demographic dynamics, particularly its rapidly growing youth population. According to the United Nations Department of Economic and Social Affairs (UNDESA), Africa is projected to have the largest youth population in the world by 2050, with an estimated 1.3 billion young people aged between 15 and 24 years old (UNDESA, 2019).

Investments in education are widely recognized as crucial for harnessing the demographic dividend in Africa. Access to quality education is essential for equipping young people with the necessary skills and knowledge to participate in the workforce and contribute to economic growth. However, the current education systems in many African countries face numerous challenges that hinder their ability to provide quality education to all. These challenges include inadequate infrastructure, limited resources, and a shortage of qualified teachers (UNESCO, 2019). One of the key challenges in African education systems is the lack of adequate infrastructure. Many schools in rural and marginalized areas lack proper classrooms, libraries, and laboratories, making it difficult for students to access quality education. Additionally, the lack of basic amenities such as clean water and sanitation facilities in schools further hampers the learning environment (UNESCO, 2019). To address this issue, investments are needed to

improve and expand educational infrastructure, particularly in underserved areas, to ensure that all young people have access to quality learning environments.

Limited resources also pose a significant challenge to education in Africa. Insufficient funding for education leads to a lack of teaching materials, textbooks, and technology, hindering the delivery of quality education. Additionally, inadequate financial resources often result in overcrowded classrooms, making it difficult for teachers to provide individual attention to students (UNESCO, 2019). To overcome this challenge, increased investments in education are necessary to provide schools with the necessary resources and materials to enhance the learning experience for students. The shortage of qualified teachers is a critical issue in many African countries. The lack of well-trained and motivated teachers affects the quality of education and hampers students' ability to acquire the necessary skills for the job market. In some cases, there is a significant disparity in the distribution of qualified teachers, with urban areas having a higher concentration of skilled educators compared to rural areas (UNESCO, 2019). To address this challenge, investments should be made in teacher training programs, recruitment, and retention strategies to ensure that there are enough qualified teachers in all regions, particularly in underserved areas.

Healthcare is a critical area that necessitates investment to support sustainable development in Africa. Improving access to quality healthcare services, including reproductive health services, can have a profound impact on reducing maternal and child mortality rates, improving overall health outcomes, and promoting economic productivity. Investing in healthcare infrastructure, training healthcare professionals, and ensuring the availability of essential medicines and vaccines are essential steps towards achieving sustainable development goals in Africa (World Bank, 2019). Access to quality healthcare services is a significant challenge in many African countries. Limited healthcare infrastructure, particularly in rural and remote areas, hampers people's ability to access essential healthcare services. This lack of infrastructure includes inadequate healthcare facilities, a shortage of medical equipment, and limited access to clean water and sanitation, which are crucial for maintaining proper hygiene and preventing the spread of diseases (World Bank, 2019). To address this issue, investments are needed to improve healthcare infrastructure, particularly in underserved areas, to ensure that all individuals have access to quality healthcare services.

Another critical aspect of healthcare investment is the training and capacity building of healthcare professionals. Many African countries face a shortage of skilled healthcare workers, including doctors, nurses, and midwives. This shortage is often exacerbated by the migration of healthcare professionals to other countries in search of better opportunities (World Bank, 2019). To overcome this challenge, investments should be made in training and retaining healthcare professionals, as well as creating incentives to encourage them to work in underserved areas. This includes expanding medical schools, providing scholarships and financial support for healthcare education, and implementing policies that promote the retention of healthcare workers in their home countries. Ensuring the availability of essential medicines and vaccines is another crucial aspect of healthcare investment. Many African countries face challenges in accessing affordable and quality medicines, which hampers their ability to provide adequate healthcare services. Investments should be made in strengthening pharmaceutical supply chains, improving drug regulation and quality control systems, and promoting the production of essential medicines

locally (World Bank, 2019). Additionally, investments in research and development for new vaccines and treatments can contribute to addressing specific health challenges faced by African populations.

Employment opportunities are crucial for harnessing the demographic dividend in Africa. The growing youth population presents both opportunities and challenges for sustainable development. On one hand, a large youth population can provide a significant workforce and potential consumers, driving economic growth. On the other hand, without sufficient employment opportunities, this demographic dividend can turn into a burden, leading to social unrest and economic instability (African Development Bank, 2019). Investing in job creation is essential to address the challenge of youth unemployment in Africa. The African Development Bank emphasizes the importance of creating employment opportunities for young people as a means to unlock their potential and contribute to economic growth. This includes promoting labor-intensive sectors such as agriculture, manufacturing, and services, which have the potential to absorb a large number of young workers (African Development Bank, 2019). Additionally, investments should be made in infrastructure development projects, which not only create immediate job opportunities but also contribute to long-term economic growth.

Entrepreneurship is another area that requires investment to foster sustainable development and create employment opportunities for young people in Africa. Supporting entrepreneurship can empower young individuals to start their own businesses, generate income, and create jobs for themselves and others. Investments in entrepreneurship programs should include providing access to finance, business development services, mentorship, and training to equip young entrepreneurs with the necessary skills and knowledge to succeed (African Development Bank, 2019). Skills development programs are also crucial for ensuring that young people have the necessary skills to meet the demands of the job market. Many African countries face a mismatch between the skills possessed by young people and the skills required by employers. Investments in vocational training, technical education, and apprenticeship programs can help bridge this gap and enhance the employability of young individuals (African Development Bank, 2019). Additionally, investments should be made in digital skills training, as the digital economy presents significant opportunities for job creation and economic growth in Africa.

### **Inclusive Growth**

Social equity, which refers to the fair distribution of resources, opportunities, and benefits among all members of society, is widely acknowledged as a critical factor in achieving sustainable development in Africa. The World Bank (2020) emphasizes the importance of social equity in addressing several challenges faced by the continent, including poverty, healthcare disparities, and gender inequality.

Poverty eradication is a central goal of sustainable development, and social equity plays a pivotal role in achieving this objective. In Africa, poverty remains a significant issue, with a substantial portion of the population living below the poverty line. Social equity ensures that resources and opportunities are distributed fairly, regardless of individuals' socio-economic backgrounds. By promoting inclusive economic growth and providing equal access to education, healthcare, and employment opportunities, social equity can help lift people out of poverty (World Bank, 2020).

Healthcare disparities are another critical challenge that needs to be tackled for sustainable development in Africa. Access to quality healthcare services is often limited, particularly in rural areas, resulting in unequal health outcomes. Social equity aims to bridge this gap by ensuring that everyone has equal access to healthcare services, regardless of their geographical location or socio-economic status. By investing in healthcare infrastructure, improving healthcare delivery systems, and implementing policies that prioritize vulnerable populations, social equity can contribute to reducing healthcare disparities and improving overall health outcomes.

Gender equality is also an integral component of social equity and sustainable development in Africa. Despite progress in recent years, gender disparities persist in various aspects of life, including education, employment, and political representation. Promoting gender equality is not only a matter of human rights but also essential for achieving sustainable development. By empowering women and girls through education, economic opportunities, and access to decision-making processes, social equity can help break down barriers and create a more inclusive and equitable society (World Bank, 2020).

social equity is widely recognized as a fundamental principle for achieving sustainable development in Africa. By addressing poverty, healthcare disparities, and gender inequality, social equity can contribute to creating a more just and inclusive society. The World Bank (2020) emphasizes the importance of integrating social equity into development strategies and policies to ensure that no one is left behind in the pursuit of sustainable development goals.

### **Global Collaboration**

Africa's integration into the global community has led to increased collaboration with international partners in sustainable development efforts. Recognizing the interconnectedness of global challenges such as poverty, climate change, and inequality, African countries have sought to align their development strategies with global development goals. This approach is evident in their commitment to the United Nations Sustainable Development Goals (SDGs), which provide a comprehensive framework for addressing various social, economic, and environmental issues. The United Nations Sustainable Development Goals, adopted in 2015, consist of 17 goals and 169 targets aimed at eradicating poverty, promoting social inclusion, and ensuring environmental sustainability by 2030. African countries have embraced these goals as a roadmap for their own development agendas. For instance, countries like Kenya, Rwanda, and Ethiopia have integrated the SDGs into their national development plans, aligning their policies and strategies with the global agenda (UNDP, 2019).

Collaboration with international partners is crucial for African countries to achieve sustainable development. These partnerships provide financial resources, technical expertise, and knowledge sharing opportunities. International organizations such as the World Bank, the African Development Bank, and the United Nations agencies play a significant role in supporting African countries' efforts towards sustainable development. For example, the World Bank's Africa Climate Business Plan aims to help African countries adapt to climate change and promote low-carbon development by providing financial support and technical assistance (World Bank, 2016). Furthermore, international partnerships facilitate technology transfer and capacity building, enabling African countries to address their development challenges more effectively. For



instance, the United Nations Industrial Development Organization (UNIDO) collaborates with African countries to promote sustainable industrialization and enhance their productive capacities (UNIDO, n.d.).

In addition to international partnerships, regional collaborations within Africa are also crucial for sustainable development. Regional economic communities such as the African Union, the Economic Community of West African States (ECOWAS), and the East African Community (EAC) provide platforms for African countries to coordinate their efforts, share best practices, and pool resources towards common goals. These regional collaborations enhance the effectiveness of sustainable development initiatives by fostering regional integration, trade, and cooperation (UNECA, 2019).

The African Union (AU) is indeed a key player in fostering regional and international cooperation in Africa. Established in 2002, the AU aims to promote unity, peace, and sustainable development across the continent. Through its various organs, the AU facilitates collaboration among African countries and engages with international partners to address common challenges and achieve shared goals. One of the AU's primary objectives is to promote regional integration and cooperation among African countries. The AU's Regional Economic Communities (RECs), such as ECOWAS, EAC, and the Southern African Development Community (SADC), work closely with the AU to enhance economic integration, trade, and infrastructure development within their respective regions. These regional collaborations are crucial for sustainable development as they promote intra-African trade, investment, and knowledge sharing (African Union, 2020). The AU also plays a vital role in mediating conflicts and promoting peace and security in Africa. The Peace and Security Council (PSC) of the AU works to prevent, manage, and resolve conflicts on the continent.

The PSC deploys peacekeeping missions, facilitates peace negotiations, and supports post-conflict reconstruction efforts. By addressing conflicts and promoting stability, the AU creates an enabling environment for sustainable development (African Union, 2020). AU actively engages with international partners to foster cooperation and garner support for Africa's development agenda. The AU Commission, the executive branch of the AU, represents the continent's interests in international forums and negotiations. It collaborates with international organizations such as the United Nations, the World Bank, and the International Monetary Fund to mobilize resources, access technical expertise, and advocate for Africa's development priorities (African Union, 2020). The AU's engagement with international partners also extends to addressing global challenges such as climate change and sustainable development. The AU is actively involved in international climate negotiations and advocates for the interests of African countries. It collaborates with international organizations and partners to promote climate resilience, renewable energy, and sustainable natural resource management in Africa (African Union, 2020).

### **Innovation and Technology**

Innovation, technological advancement, and digital transformation are indeed recognized as crucial drivers of sustainable development in Africa. These factors have the potential to accelerate economic growth, improve service delivery, and enhance resilience across various sectors. African countries and international partners have increasingly focused on harnessing the

power of innovation and technology to address development challenges and achieve sustainable development goals.

The African Development Bank (AfDB) acknowledges the importance of innovation and technology in driving sustainable development in Africa. The AfDB has been actively supporting initiatives that promote innovation and digital transformation on the continent. For instance, the AfDB's High 5s strategy, which aims to transform Africa's economies and improve the quality of life for its people, includes a focus on leveraging technology and innovation to drive inclusive growth (African Development Bank, 2021).

One area where innovation and technology have shown significant potential is in the agricultural sector. Agriculture is a key sector for many African economies, and technological advancements can greatly enhance productivity, efficiency, and sustainability. Digital platforms, such as mobile applications and remote sensing technologies, enable farmers to access information on weather patterns, market prices, and best agricultural practices. This empowers farmers to make informed decisions, optimize resource allocation, and improve their yields (World Bank, 2019).

In the healthcare sector, innovation and technology have the potential to improve access to quality healthcare services, especially in remote and underserved areas. Telemedicine, for example, allows healthcare professionals to remotely diagnose and treat patients, reducing the need for physical travel and improving healthcare outcomes. Mobile health applications and wearable devices also enable individuals to monitor their health, access health information, and receive personalized healthcare services (World Health Organization, 2020).

Furthermore, innovation and technology play a crucial role in promoting financial inclusion and economic empowerment. Mobile money platforms, such as M-Pesa in Kenya, have revolutionized access to financial services, allowing individuals to make payments, save money, and access credit. This has expanded economic opportunities for individuals and small businesses, contributing to poverty reduction and economic growth (World Bank, 2019).

To foster innovation and technological advancement, African countries have been implementing policies and initiatives to create an enabling environment. This includes investing in research and development, promoting entrepreneurship and start-ups, and improving digital infrastructure. International partners, such as the World Bank, the United Nations, and various development agencies, provide support through funding, technical assistance, and knowledge sharing (World Bank, 2019).

### **Infrastructure and Urbanization**

Infrastructure development and sustainable urbanization play a crucial role in achieving sustainable development in Africa as the continent continues to urbanize at a rapid pace. This involves enhancing transportation networks, ensuring energy access, and implementing effective city planning strategies (AfDB, 2020). Improving transportation networks is essential for sustainable urbanization in Africa. As cities grow, there is an increasing need for efficient and reliable transportation systems to connect people, goods, and services. Inadequate transportation infrastructure can lead to congestion, increased pollution, and hinder economic growth.

Therefore, investing in the development of roads, railways, ports, and airports is crucial to support urbanization and promote sustainable development (AfDB, 2020).

Energy access is another critical aspect of infrastructure development and sustainable urbanization in Africa. Many African cities still face challenges in providing reliable and affordable energy to their growing populations. Access to clean and sustainable energy sources is essential for powering homes, businesses, and industries, as well as reducing reliance on fossil fuels and mitigating climate change. Therefore, investing in renewable energy projects, such as solar and wind power, can contribute to sustainable urbanization and support the continent's development goals. City planning is a fundamental component of sustainable urbanization in Africa. Effective urban planning ensures that cities are designed and developed in a way that promotes social inclusion, economic growth, and environmental sustainability. This includes creating well-designed public spaces, implementing affordable housing solutions, and integrating green spaces into urban areas. Additionally, incorporating principles of smart cities, such as using technology to improve efficiency and resource management, can further enhance sustainable urbanization in Africa (AfDB, 2020).

The African Development Bank (AfDB) recognizes the importance of infrastructure development and sustainable urbanization in achieving sustainable development goals in Africa. The AfDB has been actively involved in supporting infrastructure projects across the continent, including transportation, energy, and urban development initiatives. Through its various programs and initiatives, the AfDB aims to promote sustainable urbanization and infrastructure development as key drivers of economic growth and poverty reduction in Africa. Infrastructure development and sustainable urbanization are pivotal aspects of sustainable development in Africa. Enhancing transportation networks, ensuring energy access, and implementing effective city planning strategies are crucial for supporting urbanization and promoting sustainable development on the continent. The African Development Bank and other stakeholders play a vital role in supporting these efforts through their investments and initiatives (AfDB, 2020).

### **Ethical Imperative**

Sustainable development in Africa is not only a matter of economic and social progress but also an ethical imperative. The concept of sustainable development emerged prominently in the report of the Brundtland Commission, also known as the World Commission on Environment and Development, in 1987. The commission defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland Commission, 1987). The ethical imperative of sustainable development in Africa lies in the recognition of the responsibility to pursue development that does not compromise environmental integrity and ensures the well-being of future generations. This implies that economic growth and development should be pursued in a manner that respects the limits of the natural environment and promotes the conservation of natural resources.

The Brundtland Commission report emphasized the interconnectedness of environmental, social, and economic issues, highlighting that sustainable development requires a holistic approach that considers the interdependencies between these dimensions. In the African context, this means that development efforts should not only focus on economic growth but also address social

inequalities and environmental degradation. The ethical dimension of sustainable development in Africa is particularly relevant due to the continent's rich biodiversity and natural resources, which are crucial for the well-being and livelihoods of its people. Unsustainable practices, such as deforestation, overexploitation of natural resources, and pollution, not only harm the environment but also have negative impacts on communities and future generations.

To address this ethical imperative, African countries and international organizations have taken various initiatives to promote sustainable development. For instance, the African Union's Agenda 2063 sets out a vision for the continent's development, emphasizing sustainable development as a key priority. The United Nations Sustainable Development Goals (SDGs) also provide a framework for countries to work towards sustainable development, including poverty eradication, environmental protection, and social inclusion. African countries have made commitments to international agreements and conventions that promote sustainable development, such as the Paris Agreement on climate change and the Convention on Biological Diversity. These agreements reflect the ethical responsibility to take collective action to address global challenges and protect the planet for future generations.

### **Discussion of findings**

The research findings provide a comprehensive and nuanced perspective on sustainable development in Africa. Key highlights include the importance of a balanced approach, as defined by the Brundtland Commission, which emphasizes the need to meet current needs without compromising the ability of future generations to meet their own. Africa's unique context, characterized by diverse ecosystems, a youthful population, historical legacies, and abundant resources, shapes the sustainable development paradigm on the continent.

The responsible management of natural resources emerges as a critical factor, not only for sustainable development but also for addressing pressing issues like poverty and environmental degradation. Climate resilience is identified as an urgent priority, given Africa's vulnerability to climate change, including rising temperatures and changing precipitation patterns. Demographic dynamics, particularly the projected growth of the youth population, underscore the need for youth empowerment and engagement.

Inclusivity and social equity are recognized as essential components, as fair resource distribution is crucial in addressing various disparities. The research highlights the interconnectedness of global challenges and Africa's integration into global sustainable development efforts. Innovation, technology, and digital transformation hold promise for accelerating progress across sectors, and infrastructure development and sustainable urbanization play a vital role in the continent's sustainable development journey.

### **Recommendation**

**1. Integrated Sustainable Development Strategies:** African nations should develop and implement integrated sustainable development strategies that consider the unique context of the continent. These strategies should balance economic growth, environmental conservation, and social equity while aligning with the Brundtland Commission's definition of sustainable development.

2. **Resource Management:** Emphasize responsible and sustainable management of natural resources. Implement policies and practices that ensure efficient resource utilization, minimizing environmental impacts, and maximizing socio-economic benefits.
3. **Climate Resilience:** Prioritize climate resilience measures in development plans. Invest in infrastructure, technology, and practices that can mitigate the impacts of climate change, safeguard livelihoods, and ensure long-term sustainability.
4. **Youth Engagement:** Recognize the demographic dividend presented by Africa's growing youth population. Promote youth education, skills development, and entrepreneurship to harness their potential as drivers of sustainable development.
5. **Social Equity:** Address disparities in resource distribution and access to opportunities. Implement policies that promote social equity, reduce poverty, improve healthcare, and advance gender equality.
6. **Global Collaboration:** Strengthen collaboration with international partners to address global challenges. Align national development strategies with global goals related to poverty reduction, climate action, and sustainable development.
7. **Innovation and Technology:** Foster innovation and technological advancement across sectors. Encourage digital transformation to enhance service delivery, economic growth, and resilience.
8. **Infrastructure and Urbanization:** Plan urban growth carefully, focusing on sustainable urbanization and resilient infrastructure development. Invest in efficient transportation, energy, and water systems to support sustainable cities and regions.
9. **Monitoring and Evaluation:** Establish robust monitoring and evaluation mechanisms to track progress toward sustainable development goals. Continuously assess the effectiveness of policies and interventions, making data-driven adjustments as needed.
10. **Capacity Building:** Invest in building the capacity of institutions, policymakers, and stakeholders to implement and adapt sustainable development strategies effectively.

By embracing a holistic approach, focusing on responsible resource management, climate resilience, youth empowerment, social equity, global collaboration, innovation, and infrastructure development, African nations can make significant strides toward achieving sustainable development goals and improving the well-being of their populations.

## Conclusion

"Sustainable Development in Africa" signifies a dynamic and evolving paradigm, reflecting Africa's commitment to achieving economic prosperity, social equity, and environmental sustainability. It is a vision that acknowledges the continent's unique attributes and challenges while striving to make a positive impact on both Africa and the global community.



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