

# Future Prospects of Sustainable Development in Africa



Walter Leal Filho, Luiza Olim de Sousa, and Rudi Pretorius

**Abstract** This final chapter provides a brief outline of the future prospects for sustainable development in Africa. Some prominent challenges to be faced as well as opportunities that exist for sustainable development and the attainment of the sustainable development goals (SDGs) are briefly reviewed. The progress so far on the implementation of the SDGs and targets has been uneven across Africa. A huge challenge therefore lies ahead for Africa if it wants to stay on track to meet the SDGs. Africa needs to accelerate reforms and implementation. With its emphasis on self-reliance and self-determination, the African Union's Agenda 2063 provides a framework for the attainment of sustainable economic development, social prosperity and well-being, lasting political stability, security and protection, and regional integration in Africa. Achievement of success with sustainable development and the attainment of the SDGs in Africa requires linkage with the lived-experiences, indigenous knowledge systems, and contextual realities of the ethnic groups of Africa. Furthermore, increased recognition of development initiatives that consider local perceptions and ways of doing and thinking are more likely to be successful and relevant to people's needs, are needed to support sustainable development.

**Keywords** Sustainable development · Africa · Resources · Challenges · Opportunities

---

W. Leal Filho (✉)

Research and Transfer Centre "Sustainable Development and Climate Change Management",  
Hamburg University of Applied Sciences, Ulmenliet 20, 21033 Hamburg, Germany  
e-mail: [walter.leal2@haw-hamburg.de](mailto:walter.leal2@haw-hamburg.de)

L. O. de Sousa

Community-Based Educational Research (COMBER), Geography Education and Environmental  
Education, School of Mathematics, Science and Technology Education, Faculty of Education,  
North-West University, Potchefstroom Campus, Potchefstroom 2520, South Africa  
e-mail: [Luiza.desousa@nwu.ac.za](mailto:Luiza.desousa@nwu.ac.za)

R. Pretorius

Department of Geography, Science Campus, University of South Africa, Private Bag X6,  
Florida 1710, South Africa  
e-mail: [pretorw@unisa.ac.za](mailto:pretorw@unisa.ac.za)

# 1 Introduction

Africa is a continent rich in landscapes, natural resources, and biodiversity. Poor populations in particular are directly and existentially dependent on intact ecosystems and their services, as natural resources often form their livelihood and sole economic capital. These ecosystem services include the provision of elementary raw materials such as drinking water, food, timber, climate regulation or soil fertility.

At present, many African countries face serious environmental problems that affect socio-economic development and the livelihoods of the population. These include deforestation, land and soil degradation and loss of biodiversity. The over-exploitation of natural resources due to high population growth with rising living standards, is often a common problem. A further one, climate change, can contribute to a disruption of fragile ecosystems, placing high demands on the adaptive capacity of local populations who are particularly vulnerable to environmental change (Leal Filho et al. 2021).

Many studies have focused on sustainability practices in Africa. However, more recent research has highlighted that in order to achieve sustainability in the future, innovative practices need to be developed (Youssef et al. 2018).

A study undertaken in a sample of African countries identified the fact that innovation, improvement of institutional quality and entrepreneurship are vital in achieving sustainability in the future. More specifically, sustainability-orientated entrepreneurship is encouraged over conventional types of entrepreneurship. The latter contributes to environmental degradation in both the formal and informal sector. However, promoting innovation and adoption of new technologies by entrepreneurs allows for more sustainable practices and thus progression toward sustainability (Youssef et al. 2018). In terms of green-entrepreneurships, there are some evidences that Africa is moving towards sustainable urban agriculture that will promote both, economic transformation and growth in the future (Akinsemolu 2020).

Research in 13 Sub-Saharan African countries indicates that urbanisation, economic development, use of fossil fuels and electricity has contributed greatly to adverse environmental outcomes over recent years. Therefore, it is suggested that problems related to these sectors should be addressed to achieve sustainability. Emphasis is placed on switching to cleaner, environmentally friendly energy sources in Africa (Asongu et al. 2020). An article on sustainability futures suggests that Africa should use opportunities provided by the green economy to their advantage. An example is to address the pressures caused by climate change by developing new business and industries to ameliorate the problem. Researchers believe that this change will lead to a growth in the solar and wind energy industries, as seen in Kenya (Akinsemolu 2020).

Additionally, it is expected that lower rainfall may become more widespread in Sub-Saharan Africa, which may cause lower agricultural production in future. Using this information, innovative practices and adaptive measures to maximise productivity are being designed to ensure sustainable development in the future.

In this case, addressing water deficits is being seen as an opportunity to ensure sustainability (Nhemachena et al. 2020).

In other instances, an emphasis is being placed on the livestock industry, as current practices threaten sustainable development. New livestock policies are being designed to balance the cost and benefits of the livestock industry while ensuring a reduction in the impact on the environment in the future. More emphasis is also being placed on local solutions that can help to address the nexus environmental protection and nutrition (Mehrabi et al. 2020).

## 2 Challenges for Sustainable Development in Africa

Africa's population is growing at an exponential rate. The UN projects that 40% of the world's population will live on the continent by the end of the century (Coulibaly 2020). A top challenge that faces the continent is the continued discord between demographic trends and job creation. Africa's young and fast-growing population that is expected to reach over 2.5 billion by 2030 will require jobs, infrastructure and services (Begashaw 2020). Governments must attend to new policies that encourage job creation and maintain service delivery as the population grows rapidly and settlements become urbanized (Mbaku 2020).

Seventy-nine African cities, associated with 48% of the African gross domestic production, are amongst the world's fastest-growing cities and severely threatened by climate change and natural disasters (Coulibaly 2020; World Economic Forum 2019). The continent is coping with challenges that include fierce population growth, economic difficulties, corruption, authoritarianism, food shortages, health crises, extreme poverty, and extremism. Issues regarding service delivery and infrastructure are also holding the continent back from moving forward (Coulibaly 2020).

The progress so far on the implementation of the sustainable development goals (SDGs) and targets has been uneven across Africa. A lack of coordination across national and local governments is setting Africa back (Gilpin 2020). The Africa SDG Index and Dashboard (2019) shows that Mauritius, Botswana, Ghana, and Rwanda are the top performers. Of concern is that 18 out of a total of 46 countries in sub-Saharan Africa are, on average, less than 50% on the way to meeting the best possible outcome on all the SDGs. A huge challenge lies ahead for Africa if it wants to stay on track to meet the SDGs and it needs to accelerate reforms and implementation (Begashaw 2020). For Africa to accomplish the SDGs it must invest in good governance that is inclusive and builds on empowering women. Furthermore, Africa must build and sustain peace, and end corruption (Mbaku 2020). Despite visible improvement in education, progress still remains a concern. Africa is likely to meet the 2030 target of 100% education since current endeavours have achieved a primary school enrolment rate of over 90% in more than half of the countries in Africa. The challenge lies in increasing the net enrolment rate for lower secondary education since it stood at 28.3% in 2017 (Begashaw 2020).

Africa as a continent is also faced with the unique challenge of climate change (IPCC, 2018). Water, energy, and food are crucial resources that are vulnerable to the extreme weather events associated with climate change, putting vulnerable communities in Africa at risk of human migration (De Amorim et al. 2018). Water, energy, and food are interdependent, and these essential resources demand sustainable, integrated, and informed management (Ibid). In developing countries, 70% of industrial waste is untreated. 15 to 18 billion m<sup>3</sup> of freshwater resources are polluted by fossil fuel production annually (UNESCO 2020). Securing freshwater for growing populations is a challenge and a problem with multiple dimensions that presents unexpected consequences. Water challenges underscore the compromises that must be made between the environment and development (Sanya 2020). In Africa and the rest of the resource challenged Global South the rate of urbanisation is accelerating, with 43% of its population living in urban areas. Associated with rising urbanisation is the challenge to provide adequate safe water and sanitation for those who lack access (United Nations, Department of Economic and Social Affairs, Population Division 2019). These challenges are acknowledged in SDG 6 (Clean Water and Sanitation) (United Nations 2017).

Population and economic growth are primary driving forces of the continent's growth in CO<sub>2</sub> emissions (Habimana Simbi et al. 2021). African governments are faced with the challenge of supplying a growing demand for energy sources by business for economic growth without increasing CO<sub>2</sub> emissions and climate risks (Maji et al. 2019; Ssali et al. 2019). Ultimately, the challenge that lies ahead for Africa's future efforts in reducing CO<sub>2</sub> emissions should be to focus on scaling up energy-efficient technologies, renewable energy updates, emission pricing and long-term green development towards meeting the SDGs (Habimana Simbi et al. 2021). In sub-Saharan Africa coal (56%) is still the preferred choice for electricity generation. Other sources include hydro (22%), gas (9%), petroleum (9%), and nuclear (3%) (Maji et al. 2019). Renewable energy only accounts for 1% of electricity generation from wind, solar, biomass (unclean wood fuel) and geothermal sources (AEO 2014). The challenge for African countries is to move away from the heavy reliance on combustible biomass as a main source of energy for cooking and heating and include other cleaner energy sources like wind, solar, geothermal and clean biomass sources (Maji et al. 2019).

A key priority for Africa is to address the worsening food security situation that is aggravated by the effects of climate change, declining agricultural productivity, rapid population growth, and urbanization (Ehui et al. 2020). Millions of Africans living in low elevation coastal zones are also at risk of natural disasters and associated food insecurity (Mbaye 2020). Thirty-one African countries need food aid, and more than 30% of the 830 million people worldwide suffering from inadequate food supply live in Africa (Begashaw 2020).

### 3 Opportunities for Sustainable Development in Africa

Africa's potential lies in the collective positive action among its leaders and global policymakers to improve the livelihoods of all Africans guided by the SDGs and the African Union's Agenda 2063 (AUC 2014). Achievement of this Agenda is closely related to Africa's huge potential for growth, which indeed makes it one of the world's most promising continents, but not at all costs, and with cognisance of the full complement of sustainability constraints and concerns. However, it has to be pointed out that while several factors support sustainable development and the attainment of the SDGs in Africa, the persistence of some antitheses in this regard have to be noted. An example is that although Africa is blessed with an extensive natural resource base that can be used for development initiatives, these resources are often not evenly distributed between countries and/or segments of society. The latter gives rise to an associated occurrence of negative environmental impacts in contexts where environmental management practices are not in place (Gasparatos et al. 2017). Yet another antithesis is presented by the fact that although Africa is characterized by large tracts of agricultural land which have the potential to stimulate economic development (Schoneveld 2014), high levels of under-nutrition and food insecurity are rampant (EIU 2015) while agricultural practices are frequently linked to the occurrence of environmental degradation (Reynolds et al. 2015). In order to address antitheses as these, and to capitalize on the opportunities for sustainable development, it is crucial to optimally implement Agenda 2063. Agenda 2063 is the continent's strategic development program that spells out Africa's long term economic and social aspirations. Agenda 2063 is an endogenous transformation plan rooted in African values and principles, such as solidarity and *Ubuntu*. The Agenda is focused on the strategic and competitive repositioning of Africa to ensure the eradication of poverty, in addition to socio-economic and technological transformation (Mhangara et al. 2019).

With its emphasis on self-reliance and self-determination, Agenda 2063 provides a framework for the realization of sustainable development and the SDGs in Africa over medium to longer time horizons. It is generally accepted that successful implementation of Agenda 2063 is critical for the attainment of sustainable economic development, social prosperity and well-being, lasting political stability, security and protection, and regional integration in Africa (Mhangara et al. 2019). Agenda 2063 furthermore embraces the notions of Pan Africanism and the African Renaissance, with a focus on liberation, political and economic emancipation, and which Nahmo (2017) regards as essential prerequisites for sustainable development in Africa. The fact that up to two thirds of Africa consists of vast stretches of unused arable land provides the continent with the potential to not only sustainably grow its own food, but to provide food to the rest of the world as well (Muswere 2020). Although Africa therefore indeed has the resource base to support its sustainable development, accompanied by significant growth potential (Nahmo 2017), this potential will not realize if the practice persists to look for resources elsewhere instead of raising development finance from African markets (AUC 2014). Expanding on the portrayal of

Africa by August (2013) as ‘A hopeful continent’, Nahmo (2017) maintains that Africa will indeed ‘rise’ during the post-2015 Development Agenda, and supports his observation as follows:

- Africa now has its own vision, contained in Agenda 2063.
- Africa now realizes that domestic funding is crucial, including the need to mobilize these financial, as well as other resources.
- The ideal of a United Africa is closer than ever before.
- Africa is positioned strongly as part of the post-2015 Development Agenda.
- The required ingredients for development growth are slowly but surely realized.
- The view held by the world on Africa is changing positively.
- If turned to a real opportunity, the involvement of China can be of benefit to the continent.

In line with the remarks by President Obama on 26 July 2015 during his state visit to Kenya that the ‘future of Africa is up to Africans’ (Holmes and Scott 2015), the achievement of success with sustainable development and the attainment of the SDGs in Africa requires the linkage of sustainable development to the lived-experiences, indigenous knowledge systems, and contextual realities of the different peoples of Africa (Manteaw 2012). The latter is in alignment with the increased recognition that development initiatives that consider local perceptions and ways of doing and thinking are more likely to be successful and relevant to people’s needs and to support sustainable development, as alluded to by Sillitoe (1998) more than twenty years ago. Manteaw (2012) points out that the privileging as well as dominance of Western approaches to sustainable development over local approaches has not been helpful in advancing the SDGs in some regions of the world, and particularly in Africa. Template transfers of sustainability solutions between regions and between cultures have proven to be less successful. A spectrum of opportunities is provided for Africans to drive the transformative shifts required for the realization of the SDGs in a framework grounded in their knowledge and value systems, context and aspirations. The significant number of chapters in this book which deals with the nexus between indigenous knowledge systems, sustainable development and the African continent confirm the importance attached to the so-called ‘localisation’ (Jones and Comfort 2020) of the SDGs, thus making it relevant for Africa, by Africa. In this regard Chilisa (2017) holds the viewpoint that “The unequal power relations between indigenous and western academic knowledge are the greatest threat to any form of collaborative research that seek to address Africa’s sustainability challenges”. An approach relying only on contextualization, but without consideration of decolonization and a reflection on associated research philosophies, is not sufficient.

## 4 Conclusion

Africa's sustainable development requires stable living and economic spaces and the careful use of natural resources. This book has provided various examples of such research being conducted in Africa.

Governments in Africa need to adopt more pragmatic policies and treaties that address sustainability in the future (Asongu et al. 2020). Goal 1 of the African Union's Agenda 2063 is for Africa to be "a prosperous continent with the means and resources to drive its own development, with sustainable and long-term stewardship of its resources."

Such international goals take up the importance of the issue for sustainable development, poverty reduction and Africa's competitiveness: protection of ecosystems and their sustainable use are anchored in international environment and development goals and regulations on climate protection, biodiversity conservation, combating desertification and forest protection, among others.

Even though the goals set by Agenda 2063 may be feasible, it is noticeable that there is often an inverse correlation between government initiatives and environmentally sustainability. Therefore, it is vital that, in the future, governments work together with other relevant stakeholders such as higher education institutions, NGOs, companies and citizens, so as to maximise synergies and lead to more -and better- initiatives, which may support the efforts to pursue and ensure sustainability in their countries. In Africa, inter-governmental collaborations should be encouraged (Adekunle 2020), since they provide a good basis to gather capital and technical support, both within Africa and in cooperation with countries outside it.

The prospects of a sustainable Africa are bright. If carefully pursued and implemented. Taking into account aspects such as structural change and structural policy, agricultural investment, supply chains, digitalisation, trade policy, direct investment and job creation, and financial market development, sustainability policies in African countries will enable them to embark on a journey, where development may be socially acceptable, economically sound, ethically correct and socially just. Taken together, these provide suitable conditions for inclusive development, pursued along the lines of structural change and social cohesion in the region.

## References

- Adekunle IA (2020) On the search for environmental sustainability in Africa: the role of governance. *Environ Sci Pollut Res* 1–14. <https://doi.org/10.1007/s11356-020-11432-5>
- African Union Commission (AUC) (2014). AGENDA 2063: The Africa we want. African Union Commission, Addis Ababa
- AEO (African Energy Outlook) (2014) A focus on energy prospects on SubSaharan Africa. World energy outlook special report. [www.iea.org](http://www.iea.org). Accessed 10 Mar 2021
- Akinsemolu AA (2020) The future: achieving sustainability. In: The principles of green and sustainability science. Springer, Heidelberg, pp 361–380

- Asongu SA, Agboola MO, Alola AA, Bekun FV (2020) The criticality of growth, urbanization, electricity and fossil fuel consumption to environment sustainability in Africa. *Sci Total Environ* 712:136–376. <https://doi.org/10.1016/j.scitotenv.2019.136376>
- August O (2013) Africa rising: a hopeful continent. *The Economist*, 2 Mar 2013. <https://www.economist.com/special-report/2013/03/02/a-hopeful-continent>. Accessed 11 Mar 2021
- Begashaw B (2020) Strategies to deliver on the sustainable development goals in Africa. In: Coulibaly BS (ed) *Foresight Africa: top priorities for the continent 2020 to 2030*, pp 9–13. Africa Growth Initiatives at Brookings
- Chilisa B (2017) Decolonising transdisciplinary research approaches: an African perspective for enhancing knowledge integration in sustainability science. *Sustainability Science* 12(5):813–827
- Coulibaly BS (2020) *Foresight Africa: top priorities for the continent 2020 to 2030*. <https://www.brookings.edu/multi-chapter-report/foresight-africa-top-priorities-for-the-continent-in-2020/>. Accessed 10 Mar 2021
- De Amorim WS, Valduga IB, Ribeiro JMP, Williamson VG, Krauser GE, Magtoto MK, de Andrade JBSO (2018) The nexus between water, energy, and food in the context of the global risks: an analysis of the interactions between food, water, and energy security. *Environ Impact Assess Rev* 72:1–11
- Ehui S, Kray H, Mghenyi E (2020) Policy priorities for achieving food and nutrition security by 2030. In: Coulibaly BS (ed) *Foresight Africa: top priorities for the continent 2020 to 2030*. Africa Growth Initiatives at Brookings, pp 56–59
- EIU (The Economist Intelligence Unit) (2015) *Global food security index 2015*. An annual measure of the state of global food security. The Economist Intelligence Unit Limited, London
- Gasparatos A, Takeuchi K, Elmqvist T, Fukushi K, Nagao M, Swanepoel F, Swilling M, Trotter D, von Blottnitz H (2017) Sustainability science for meeting Africa's challenges: setting the stage. *Sustain Sci* 12(5):635–640
- Gilpin R (2020) Unpacking the implications of future trends for security in Africa. In: Coulibaly BS (ed) *Foresight Africa: top priorities for the continent 2020 to 2030*. Africa Growth Initiatives at Brookings, , pp. 31–33
- Habimana Simbi C, Lin J, Yang D, Ndayishimiye JC, Liu Y, Li H, Xu L, Ma W (2021) Decomposition and decoupling analysis of carbon dioxide emissions in African countries during 1984–2014. *J Environ Sci* 102, 85–98
- Holmes K, Scott E (2015) Obama lectures Kenyan president on gay rights. <https://edition.cnn.com/2015/07/25/politics/obama-kenya-kenyatta/>. Accessed 11 Mar 2021
- Jones P, Comfort D (2020) A commentary on the localisation of the sustainable development goals. *J Publ Aff* 20(1):e1943
- IPCC (Intergovernmental Panel on Climate Change) (2018) *Global warming of 1.5 °C*. ISBN 978-92-9169-151-7. [www.ipcc.ch](http://www.ipcc.ch). Accessed 10 Mar 2021
- Leal Filho W, Ogue N, Ayal D, Adeleke L, da Silva I (2021) *African handbook of climate change adaptation*. Springer, Cham
- Mhangara P, Lamba A, Mapurisa W, Mudau N (2019) Towards the development of agenda 2063 geo-portal to support sustainable development in Africa. *ISPRS Int J Geo-Inf* 8(9):399
- Maji IK, Sulaiman C, Abdul-Rahim AS (2019) Renewable energy consumption and economic growth nexus: a fresh evidence from West Africa *Energy Rep* 5:384–392
- Manteaw OO (2012) Education for sustainable development in Africa: the search for pedagogical logic. *Int J Educ Dev* 32(3):376–383
- Mbaku JM (2020) Good and inclusive governance is imperative for Africa's future in Coulibaly. In: Coulibaly BS (ed) *Foresight Africa: top priorities for the continent 2020 to 2030*. Africa Growth Initiatives at Brookings, pp. 23–30
- Mbaye AA (2020) Confronting the challenges of climate change on Africa's coastal areas. In: Coulibaly BS (ed) *Foresight Africa: top priorities for the continent 2020 to 2030*, pp. 52–56. Africa Growth Initiatives at Brookings
- Mehrabi Z, Gill M, van Wijk M, Herrero M, Ramankutty N (2020) Livestock policy for sustainable development. *Nat Food* 1(3):160–165. <https://doi.org/10.1038/s43016-020-0042-9>



- Muswere A (2020) Is Africa capable of achieving the sustainable development goals in the 2020–2030 decade of programming? *J Publ Admin Gov* 10(4):5372–5372
- Nhemachena C, Nhamo L, Matchaya G, Nhemachena CR, Muchara B, Karuaihe ST, Mpandeli S (2020) Climate change impacts on water and agriculture sectors in Southern Africa: threats and opportunities for sustainable development. *Water* 12(10):2673. <https://doi.org/10.3390/w12102673>
- Nhamo G (2017) New global sustainable development agenda: a focus on Africa. *Sustain Dev* 25(3):227–241
- Reynolds TW, Waddington SR, Anderson CL, Chew A, True Z, Cullen A (2015) Environmental impacts and constraints associated with the production of major food crops in Sub-Saharan Africa and South Asia. *Food Secur* 7(4):795–822
- Sanya T (2020) Freshwater: towards a better understanding of a wicked problem. *Environ Sci Sustain Dev* 48. <https://doi.org/10.21625/essd.v5i2.759>
- Schoneveld GC (2014) The geographic and sectoral patterns of large-scale farmland investments in sub-Saharan Africa. *Food Policy* 48:34–50
- Sillitoe P (1998) The development of indigenous knowledge: a new applied anthropology. *Curr Anthropol* 39(2):223–235
- Ssali MW, Du J, Mensah IA, Hongo DO (2019) Investigating the nexus among environmental pollution, economic growth, energy use, and foreign direct investment in 6 selected sub-Saharan African countries. *Environ Sci Pollut Res Int* 26:11245–11260
- United Nations (2017) Sustainable development goals-17 goals to transform our world. United Nations. <https://www.un.org/sustainabledevelopment/water-and-sanitation/>
- United Nations, Department of Economic and Social Affairs, Population Division (2019) World urbanization prospects: the 2018 revision (ST/ESA/SER.A/420). United Nations, New York
- United Nations Educational Scientific and Cultural Organisation (UNESCO) (2020). The United Nations world water development report 2017: wastewater the untapped resource. United Nations Educational, Scientific and Cultural Organization (UNESCO), Paris. <https://unesdoc.unesco.org/images/0024/002471/247153e.pdf>
- World Economic Forum (2019) The global risks report 2019 14th edn. In: African fastest-growing cities are the most vulnerable to climate change globally. <https://www.weforum.org/agenda/2018/12/africa-s-fastest-growing-cities-are-the-most-vulnerable-to-climate-change-globally>. Accessed 10 Mar 2021
- Youssef AB, Boubaker S, Omri A (2018) Entrepreneurship and sustainability: the need for innovative and institutional solutions. *Technol Forecast Soc Chang* 129:232–241. <https://doi.org/10.1016/j.techfore.2017.11.003>