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Background report on achieving progress towards the fulfilment of the 2030 Agenda and Agenda 2063 through transformative and coordinated actions in science, technology and digital innovation

I. Introduction

1. Science, technology and innovation are crucial to effecting and accelerating fulfilment of the 2030 Agenda for Sustainable Development and Agenda 2063: The Africa We Want, of the African Union. The present background report contains an overview of the main issues to be addressed at the eighth African Science, Technology and Innovation Forum. The outcomes of the Forum will inform the twelfth session of the Africa Regional Forum on Sustainable Development, to be held in Addis Ababa from 28 to 30 April 2026, and the eleventh multi-stakeholder forum on science, technology and innovation for the Sustainable Development Goals, to be held in New York on 6 and 7 May 2026.

2. The dual imperatives of the 2030 Agenda and Agenda 2063 present a unique challenge and opportunity for Africa. Although progress has been made in attaining the targets under the two agendas, accelerating development requires the deliberate embrace of science, technology and innovation as cross-cutting enablers. The eighth African Science, Technology and Innovation Forum will be held at a critical juncture, when technological advancements are being made that meet urgent African needs related to trade and development. With a young population, societies that are undergoing digitalization and abundant natural resources, Africa is fertile ground for transformative change. Making such change will require a coherent, coordinated, holistic approach, in which policy is translated into concerted action. The present background report is a call to action for partners to collaboratively bridge the gap between technological promise and inclusive impact.

II. Recent outcome documents and developments that are likely to be discussed at the Forum

3. Participants are likely to draw on the following outcome documents of the Summit of the Future, held in New York in September 2024: the Pact for the Future, the Global Digital Compact and the Declaration on Future Generations.[1] Participants may also draw on the outcome document of the 20-year review by the General Assembly of the World Summit on the Information

[1] General Assembly resolution 79/1 and its annexes.

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Society.[2] In addition, participants may draw on the outcome documents of the twenty-ninth session of the Commission on Science and Technology for Development, of the Economic and Social Council, which guides intergovernmental work on science, technology and innovation policy, as well as on frontier technologies and their development effects; that session will be held in Geneva from 20 to 24 April 2026.

4. Participants are also likely to discuss the Science, Technology and Innovation Strategy for Africa 2034, which will be a core driver of the priorities of Agenda 2063 in its second decade, and the second 10-year implementation plan (2024–2033),[3] in which the African Union explicitly links the fulfilment priorities and indicator tracking methods of the 2030 Agenda with those of Agenda 2063, underlining the need for capacity, institutions and financing to deliver results. Lastly, participants are likely to discuss the Protocol to the Agreement Establishing the African Continental Free Trade Area on Digital Trade, adopted in 2025, which is another milestone in support for the development of innovation systems and for stronger regional collaboration on digital technology and e-commerce.

III. Overview of scientific and technological developments

5. Science, technology and innovation are undergoing rapid transformation, with increasing connectivity and mobile networks enabling new digital services and innovation activities. In addition, African States are strengthening intellectual property regimes to protect domestic innovations and promote their commercialization. Nevertheless, innovation outputs, as measured in terms of intellectual property, remain remarkably low in Africa; intellectual property offices in Africa received only 0.6 per cent of global patent applications in 2023, compared with 68.7 per cent in Asia and 17.8 per cent in Northern America.[4] These figures underline the vast gap in research and development, which receives far less gross expenditure than the target of 1 per cent of gross domestic product (GDP) set by the African Union,[5] limiting the development of innovation hubs, research infrastructure and sustained innovation financing.[6]

6. Emerging technologies play a significant role in increasing the intensity of research and development and the commercialization of inventions. Such increases enhance the science, technology and innovation capacity of African countries, thereby augmenting sectoral productivity, improving the efficiency of existing public and private entities, generating revenue and creating new industries and jobs.

A. Artificial intelligence

7. Artificial intelligence presents significant opportunities for African countries in their quest to achieve the goals of the 2030 Agenda and Agenda 2063 and to transform their economies. Were the continent's companies to capture 10 per cent of the global artificial intelligence market, they could contribute $1.5 trillion to African economies by 2030. Doing so would provide

[2] Adopted by the General Assembly in resolution 80/173.

[3] African Union, *Decade of Accelerated Implementation: Second Ten-Year Implementation Plan, 2024–2033* (Addis Ababa, 2024).

[4] World Intellectual Property Organization (WIPO), *World Intellectual Property Indicators 2024* (Geneva, 2024).

[5] Davide Bonaglia, Lorena Rivera León and Sacha Wunsch-Vincent, "End of year edition – Against all odds, global R&D has grown close to USD 3 trillion in 2023", WIPO, 18 December 2024.

[6] ECA, "Towards achieving the African Union's recommendation of expenditure of 1% of GDP on research and development", ECA Policy Brief, No. ECA/18/004 (Addis Ababa, 2018).

a significant boost to growth, since that sum is equivalent to about half of the continent's GDP in 2024.[7]

8. Innovation in the artificial intelligence arena in Africa is increasingly being shaped by regional policy and coordinated capacity-building. In the Continental Artificial Intelligence Strategy, launched in 2024, the African Union outlined a number of areas of action pertaining to artificial intelligence, such as research, innovation, investment, governance and regional cooperation.[8] The Strategy is being operationalized through partnerships, such as the collaboration between the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the African Union, in which artificial intelligence is framed as an opportunity to accelerate sustainable development and cultural renaissance.[9]

9. ECA has played a crucial role in developing national artificial intelligence policies and schemes aligned with the Continental Artificial Intelligence Strategy and in helping its members to deploy artificial intelligence across various sectors. One example is help with the combined use of artificial intelligence, satellite imagery and digital technologies, such as geographic information systems, to manage regional transport corridors. In that connection, ECA has developed an African regional transport corridor management system: as of February 2026, the system has been piloted in the Lamu Port-South Sudan-Ethiopia transport corridor, the northern corridor and the central corridor. Likewise, ECA has developed an interactive database platform showcasing artificial intelligence innovations in many sectors throughout Africa. The platform is a comprehensive compendium of such innovations, in which their applications, impact and adoption status are highlighted. Designed for policymakers, researchers, industry stakeholders and investors, the platform is used to provide insights into current trends and the potential of artificial intelligence on the continent, with a view to supporting evidence-based decision-making.

10. Despite the progress that has been made in relation to artificial intelligence, Africa accounts for only about 1 per cent of global compute capacity, 3 per cent of peer-reviewed articles on the subject[10] and less than 1 per cent of global semiconductor market share.[11] Moreover, just 0.02 per cent of total Internet content is in African languages.[12] Efforts to scale up investment in artificial intelligence support infrastructure, such as data centres and fabrication hubs for semiconductors, as well as in training and research facilities, could help African countries to unlock the full potential of artificial intelligence.

B. Renewable energy technologies

11. The capacity of Africa to produce electricity from renewable energy sources is growing. The total renewable energy capacity of the region increased from 62.7 GW in 2023 to 66.9 GW in 2024. The share of renewables in total capacity increased from 19.9 per cent in 2015 to 25.4 per cent in 2024.[13] Despite

[7] United Nations Development Programme, "Africa development insights, 2024 Q2: artificial intelligence for development" (New York, 2024).

[8] African Union, *Continental Artificial Intelligence Strategy: Harnessing AI for Africa's Development and Prosperity* (Addis Ababa, 2024).

[9] UNESCO, "Artificial intelligence for Africa, by Africa", (Paris, 2025).

[10] Yushi Nagano, Ryosuke Miyashita and Atsushi Yamanaka, *Africa's AI Talent Development Landscape* (Tokyo, Japan International Cooperation Agency, 2025).

[11] Samir Bhattacharya and Yuvvraj Singh, "Charting Africa's path to semiconductor leadership", Observer Research Foundation, 3 December 2024.

[12] Landry Signé, "Leveraging AI and emerging technologies to unlock Africa's potential", Brookings Institution, 13 January 2025.

[13] International Renewable Energy Agency, *Renewable Capacity Statistics 2025* (Abu Dhabi, 2025).

these positive developments, the share of investment in clean energy technologies is low: it was estimated in 2024 that, of the $110 billion invested in energy that year in Africa, about $70 billion was channelled into fossil-fuel energy supply and power generation.[14] Addressing energy poverty and low levels of electricity access in Africa will require greater investment to be made, which is already happening rapidly in several African countries.

12. At Benban, Egypt, for example, on-grid photovoltaic plants have been developed in a coordinated solar park, leading to the rapid expansion of clean energy generation capacity and improved energy security through large-scale renewable capacity. The park has 34 plants, each with a capacity of 50 MW, and produces 3.8 TWh per year at full capacity.[15] Under another solar initiative, launched in Zambia in 2025, a 2.3 MW solar plant will be built, backed by 4 MWh battery energy storage systems in each of the country's 156 constituencies, in an effort to accelerate implementation, decentralize energy access and address energy needs directly at the community level.[16]

13. In a similar vein, the Lake Turkana Wind Power project in Kenya is an onshore wind farm with an installed capacity of 310 MW and estimated average annual electricity production of about 1,440 GWh per year. It is one of the continent's largest wind farms,[17] contributing to the expansion of clean generation infrastructure and power system capacity and reliability.

14. These success stories constitute evidence of the transformative potential of renewable energy technologies to drive a just and sustainable energy transition across the continent. Although progress is being made in bringing renewable and clean energy to Africa, most products (e.g. solar panels, batteries, inverters and various electrical control and connection devices), designers and implementers involved in such projects come from outside the continent. Importing both products and support services is likely to be expensive and unsustainable in the long run and to deny African States and institutions the opportunity to learn and build their capacity to design, deploy, maintain and decommission renewable energy products and installations.

IV. Review of progress made in sustainable development through science, technology and innovation in Africa

A. Sustainable Development Goal 6

15. In Africa, the progress made in the attainment of Goal 6 (Ensure availability and sustainable management of water and sanitation for all) is increasing, but remains far off track. As of 2022, only 31 per cent of the population used safely managed sanitation and just 28 per cent used basic hygiene services. To achieve universal coverage by 2030, the rates of progress in the expansion of safely managed sanitation will need to be increased 23-fold and basic sanitation 13-fold; meanwhile rates of open defecation will need to be reduced 3-fold to end the practice by 2030. At the current rates of progress, by 2030, no country in Africa will achieve universal access to safely managed

[14] International Energy Agency, *World Energy Investment 2024* (Paris, 2024).

[15] African Development Bank, "Egypt: Benban, a model of clean energy production in Africa", 29 March 2023. Available at www.afdb.org/en/success-stories/egypt-benban-model-clean-energy-production-africa-60169.

[16] PV Know-how, "Zambia solar battery: remarkable plan targets 150 constituencies", 23 December 2025.

[17] African Development Bank, "Executive summary of the environmental and social assessment: Lake Turkana Wind Power project, Kenya" (Abidjan, Côte d'Ivoire, 2011).

sanitation, only three countries will achieve universal coverage of basic sanitation services and just nine countries will eliminate open defecation.[18]

16. For more efficient progress in the achievement of Goal 6 across the continent, advancements in science, technology and innovation are crucial. Accordingly, many African States are deploying technologies to promote clean water and sanitation, which range from the provision of low-cost chlorine dispensers for water treatment to over 10 million people in Kenya, Malawi and Uganda[19] to the use of gravity-powered membrane ultrafiltration systems in rural Kenya to produce safe drinking water at kiosks, each of which has a filtration capacity of around 2,100 litres per hour and can store 11,000 litres of raw water and 6,000 litres of safe drinking water.[20]

17. In addition, nanotechnology is being used to expand access to clean water in rural areas. For instance, one company based in the United Republic of Tanzania has developed water purification systems of various sizes for use in rural homes and communities, using which up to 1,200 litres of water can be purified per day.[21] In the systems, nanotechnology-based filters are used, which do not require electricity. The smallest system costs about $200,[22] with a filter that needs to be replaced every three months, at a cost of $5 each time.[23] About 400,000 people in rural parts of Kenya, the United Republic of Tanzania and Zambia were using the nanofilters by late 2023.[24]

B. Sustainable Development Goal 7

18. In relation to Goal 7 (Ensure access to affordable, reliable, sustainable and modern energy for all), African energy needs in 2023 were met largely by biomass (39.9 per cent) and fossil fuels (26.5 per cent); hydropower accounted for 1.7 per cent and solar and other renewables 1.3 per cent. That energy mix has changed little since 2000.[25] Africa has abundant potential renewable energy sources: 10 TW of solar power, 350 GW of hydropower, 110 GW of wind power and 15 GW of geothermal energy.[26] Many countries face the challenge of lacking mechanisms for the cost-effective, safe and reliable conversion of their immense energy resources into power for homes, transport, businesses, farms and social amenities. Harnessing those resources could help African countries to foster innovation and to establish industries derived from new and emerging technologies, such as e-mobility.

19. Solar power is one of the cleanest, safest and most established sources of renewable electricity at small and large scale. The African market is growing rapidly and various types of solar cell, battery and inverter technology are in use. In 2025, enough solar panels to generate about 15 GW of electricity were

[18] United Nations Children's Fund and World Health Organization, "Progress on sanitation and hygiene in Africa, 2000–2022" (New York, 2023).

[19] Innovations for Poverty Action, "Chlorine dispensers for safe water in Kenya", 18 September 2025.

[20] Elmah Odhiambo and others, *Leveraging Decentralized Entrepreneurial Approach to Safe Water Supply: A Comprehensive Study on Safe Water Kiosks and their Impact in Rural Kenya* (Munich, Germany, Siemens Stiftung, 2024).

[21] Brilliant Ideas Planet, "NanoFilter water system". Available at www.bip-it.com/solution/443-nanofilter-water-system.

[22] Julie Carballo, "The Tanzanian engineer bringing clean water to the Maasai", Newsendip, 6 December 2023.

[23] Catherine Jewell, "Tanzanian entrepreneur develops innovative water filter", *WIPO Magazine*, accessed 12 March 2026.

[24] Carballo, "The Tanzanian engineer bringing clean water to the Maasai".

[25] International Energy Agency, "Africa: energy mix". Available at www.iea.org/regions/africa/energy-mix#where-does-africa-get-its-energy (accessed 24 January 2026).

[26] African Development Bank, "Why Africa is the next renewables powerhouse", 7 December 2018.

imported into Africa, which was an increase of about 60 per cent over 2024.[27] Also in 2025, solar installations generated over 10 per cent of the electricity supply in 13 African countries, bringing total installed capacity to 23.4 GW of solar power,[28] more than double the 11.4 GW recorded in 2021.[29]

20. However, Africa is not a major player in the global market for solar energy products. While the continent has abundant solar resources and growing deployment of solar power technology, its participation in global manufacturing of and markets for such technology remains limited. Africa accounts for only about 2.5 to 3.0 per cent of global installed solar photovoltaic capacity[30] and most solar technologies used on the continent are imported.[31]

21. African States need to invest in skills development, research and development and manufacturing capacity, in order to foster the design, production, installation, maintenance, upgrading and safe decommissioning of renewable energy systems on the continent. In addition to reducing the cost of electricity, such investment would create jobs and drive economic growth. The European Commission estimates that, for every €1 billion invested in green hydrogen, 10,000 jobs will be created along the supply chain.[32]

22. With a view to reducing the high unemployment levels on the continent, countries should encourage domestic and foreign investment along the entire value chain for renewable energy technologies. The transboundary special economic zone between the Democratic Republic of the Congo and Zambia that is dedicated to the development of batteries and electric vehicles – which is backed by ECA – is an example of such investment.

C. Sustainable Development Goal 9

23. In view of the indicators under Goal 9 (Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation), it is clear that the progress being made on the continent in developing industry and increasing connectivity is slow. In 2024, African manufacturing value added grew by 2.2 per cent overall and accounted for 10.6 per cent of the continent's GDP; the manufacturing sector represented 8.5 per cent of total employment in 2023.[33]

24. Regarding digital infrastructure, less than 36 per cent of Africans used the Internet as of 2025. In the same year, the significant digital divide was wider in rural areas: less than 21 per cent of rural residents were connected, compared with almost 55 per cent of urban dwellers. Also in 2025, only 31 per cent of women were connected, compared with 40 per cent of men,[34] and women were

[27] Matthew Lynas, "African PV imports from China up 60 % in one year, says Ember", PV Magazine, 27 August 2025. Available at www.pv-magazine.com/2025/08/27/african-pv-imports-from-china-up-60-in-one-year-says-ember/.

[28] Ange Jason Quenum, "Thirteen African countries now generate more than 10% of power from solar, AFSIA says", Ecofin Agency, 16 January 2025.

[29] Wood Mackenzie, "Africa's energy wealth can be unlocked by renewable expansion and hydrocarbon acceleration", 20 November 2025.

[30] Cyril Zenda, "Africa now leading global solar growth: 2026 outlook report", *Down to Earth*, 14 January 2026.

[31] Africa Solar Industry Association, *Africa Solar Outlook 2026* (Kigali, 2026).

[32] Sonja van Renssen, "Hydrogen tests climate policymakers with its job potential", Energy Monitor, 6 May 2021.

[33] United Nations Industrial Development Organization, "Factsheet: Africa – Highlights from the International Yearbook of Industrial Statistics 2025" (Vienna, 2025).

[34] International Telecommunication Union (ITU), "Individuals using the Internet", DataHub database. Available at https://datahub.itu.int/data/?e=1&c=701&i=11624 (accessed on 12 December 2025).

16 per cent less likely than men to own a cellular phone.[35] The continent's low Internet usage levels are due to the high cost of data and connectivity, as people in Africa pay nearly three times the global average for mobile data.[36] In addition, as of 2022, 12 of the 20 countries with the weakest digital skills were in Africa.[37]

25. Africa lags behind in terms of scientific and technological education, research, technology acquisition and development, and technology-driven entrepreneurship. Although, as of 2024, it was estimated that, by 2030, Africa would need an additional 23 million graduates of science, technology, engineering and mathematics programmes to fill critical roles in such fields as engineering, healthcare and information and communications technology (ICT), only 9 per cent of people 15 to 24 years of age in 15 African countries had basic computer skills, while just 10 per cent of the male workforce and 7 per cent of the female workforce possessed those skills.[38] As such, investment in science, technology, engineering and mathematics education needs to be scaled up, with a view to meeting future employment market needs.

26. Concerning research and development, Africa accounts for only 2.0 per cent of global research output[39] and the continent's gross expenditure on research and development as a proportion of GDP is about 0.5 per cent, compared with the world average of 2.2 per cent.[40] No African country has yet met the continental target of raising gross domestic expenditure on research and development to 1 per cent of GDP.[41] It has been observed that countries typically exceed 1 per cent of gross domestic expenditure on research and development as a share of GDP once private investment in research and development surpasses investment from the public, higher education and not-for-profit sectors combined.[42] In other words, the 1 per cent target is sustainably exceeded when innovation is driven primarily by companies' development and marketing of new products and processes, in particular in knowledge-intensive industries, such as pharmaceuticals, ICT and renewables.

27. Enhancing scientific research, innovation and technological capabilities could significantly advance the development of industry and infrastructure across Africa. For instance, at a leading industrial park in Ethiopia, with a combined workforce of over 28,000 people,[43] the installation of a zero-liquid-discharge common effluent treatment plant has enabled the recycling of 90 per cent of wastewater.[44]

28. In a similar vein, an industrial park in Kenya is intended as the cornerstone of the country's ICT and innovation economy. The park was

[35] ECA calculations, based on ITU, "Individuals who own a mobile cellular telephone", DataHub database. Available at https://datahub.itu.int/data/?e=1&c=701&i=28027&d=Gender&g=20694 (accessed on 12 December 2025).

[36] Yomi Kazeem, "African mobile users pay nearly three times the global average for voice calls and internet", *Quartz*, 21 July 2022.

[37] Patrick Dupoux and others, "Africa's opportunity in digital skills and climate analytics", Boston Consulting Group, 4 November 2022.

[38] UNESCO, "What you need to know about the challenges of STEM in Africa", 26 November 2024.

[39] Ameenah Gurib-Fakim and Landry Signé, "Investment in science and technology is key to an African economic boom", Brookings Institution, 26 January 2022.

[40] ECA, "Realizing the research and development expenditure target of 1 per cent of gross domestic product?" (forthcoming).

[41] Di Caelers and Dann Okoth, "Research funding in Africa: navigating sustainability and shifting perspectives", *Nature*, 14 December 2023.

[42] ECA, "Towards achieving the African Union's recommendation of expenditure of 1% of GDP on research and development".

[43] Christian Johannes Meyer and others, "The market-reach of pandemics: Evidence from female workers in Ethiopia's ready-made garment industry", *World Development*, vol. 137 (2021).

[44] Mamo Mihretu and Gabriela Llobet, *Looking Beyond the Horizon: A case study of PVH's commitment to Ethiopia's Hawassa Industrial Park* (Washington, D.C., World Bank, 2017).

established through a public-private partnership model, with investment in urban infrastructure and digital connectivity. As of 2014, at least $500 million in private investment was expected to be mobilized, with the anticipated creation of 15,000 jobs in the first five years. At its inception, the park was intended to be the catalyst for the full development of a 35,000-person city by private companies over 20 years.[45]

D. Sustainable Development Goal 11

29. Science and technology are important tools for achieving Goal 11 (Make cities and human settlements inclusive, safe, resilient and sustainable). First, they enable the design of sustainable materials, spaces and systems that are cheaper, environmentally friendly and easy to apply. Second, they continuously provide smarter solutions for urban planning, resource management and service delivery. Lastly, they are crucial in transforming cities into hubs for innovation and start-ups.

30. For example, with digital twin technology, digital replicas of entire cities or areas can be created,[46] enabling researchers and planners to, before real-world implementation, incorporate real-time data into assessing the potential effects of development and infrastructure projects and of policy changes. Such data-driven decisions are critical to the design of more sustainable, efficient and resilient urban environments, for instance in improving traffic flows, energy distribution and disaster preparedness. The data also contribute to value creation for businesses, to improved knowledge of their area of residence for ordinary people and to the work of researchers. Collaboration is central to ensuring that the three-dimensional replicas of cities are accurate representations of the real world and that the tools are useful. For example, Virtual Singapore is a collaborative effort between three government agencies and a software company, all of which contribute technical expertise in different areas.[47]

31. In a similar vein, artificial intelligence is increasingly used for predictive modelling in urban planning, infrastructure management, carbon footprint identification and public safety enhancement, while the Internet of things enables real-time urban monitoring, traffic flow optimization, waste management and, in smart buildings, improved energy efficiency. These technologies are reliant on data collected using numerous sensors and cameras housed in such places as transport infrastructure, mobile wireless devices, satellites and buildings.

32. Other technologies, such as e-mobility, digital payments, geospatial technologies, drones, blockchain and smart grids, are increasingly being employed to make cities more resilient, cleaner, safer and more efficient places to live. For instance, replacing an internal combustion engine vehicle with an electric vehicle can lower emissions by 8.72 to 85.71 kg of carbon dioxide per vehicle per month; in more advanced vehicles, emission reductions are greater.[48] Lower emissions have environmental, human health and aesthetic benefits.

33. Accordingly, making cities and human settlements inclusive, safe, resilient and sustainable must also include investment in knowledge, technology and innovation and in empowering entrepreneurs, innovators and

[45] World Bank, “Public-private partnership stories: Kenya: Konza Technology City (KMIP)” (Washington, D.C., World Bank, 2014).

[46] Urva Rajnikant Patel and others, “Digital twin technology for sustainable urban development: A review of its potential impact on SDG 11 in New Zealand”, *Cities*, vol. 155 (December 2024).

[47] Singapore, Government Technology Agency, “5 things to know about Virtual Singapore”, 28 March 2017.

[48] Wenjing Lyu and others, “Impact of battery electric vehicle usage on air quality in three Chinese first-tier cities”, *Scientific Reports*, vol. 14, No. 21 (2024).

city governments to effectively and efficiently use technologies in their specific contexts. For example, African cities are expanding rapidly at a time when technologies are also evolving swiftly, but most infrastructure that is being built is not smart, which may mean that it will ultimately require as much retrofitting as is needed for older cities. African city governments could harness emerging and frontier technologies to build smart, resilient, affordable and sustainable housing, transport, health, water and energy infrastructure.

E. Sustainable Development Goal 17

34. Partnership, cooperation and collaboration are extremely important to achieving the Sustainable Development Goals; indeed, they are fundamental to the attainment of Goal 17 (Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development). African States are addressing historical imbalances in innovation through North-South, South-South and triangular cooperation.

35. Collaboration between the African Union and the European Union on research and innovation through the various iterations of the Africa Initiative, under the Horizon Europe programme, advances African innovation networks and the large-scale participation of African institutions in frontier research and development programmes. For instance, under the first Africa Initiative, about €350 million in European Union funding was channelled into support for more than 70 projects involving about 180 African entities.[49] In addition, the European Union, through its Global Gateway initiative, has committed €150 billion in investments for Africa between 2021 and 2027, mainly to develop digital infrastructure across the continent.[50]

36. In terms of partnerships with international organizations, the African Higher Education Centres of Excellence initiative is a World Bank programme implemented with the Governments of participating countries and coordinated regionally by such organizations as the Association of African Universities and the Inter-University Council for East Africa. Under the initiative, 80 specialized hubs have been established in 20 countries. An especially noteworthy achievement is that Cheikh Anta Diop University, Dakar, has pioneered digital medical record systems for mobile clinics, thus enabling the extension of healthcare to remote rural populations.[51]

37. At the country level, over $500 million in investment under a plan of the Climate Investment Funds is enabling Ethiopia to deploy the sustainable management of biodiversity and agricultural resources to safeguard forest ecosystems and bolster food security.[52] In a similar vein, by combining international climate finance with private sector innovation, Nigeria has deployed solar mini-grids to bridge the rural energy gap, bypassing traditional fossil-fuel infrastructure.[53] For its part, Kenya is a global leader in geothermal power, which accounts for 47 per cent of the country's electricity mix.[54]

[49] European Commission, *Collaborative Africa-Europe R&I Projects* (Luxembourg, 2025).

[50] African Development Bank, "Global Gateway: European Commission and African Development Bank Group unlock new funding for African infrastructure projects", 28 January 2024. Available at www.afdb.org/en/news-and-events/press-releases/global-gateway-european-commission-and-african-development-bank-group-unlock-new-funding-african-infrastructure-projects-68243.

[51] World Bank, "The African Centers of Excellence: 10 years of innovation and impact", 13 May 2025. Available at www.worldbank.org/en/news/immersive-story/2025/05/13/the-african-centers-of-excellence-10-years-of-innovation-and-impact#group-section-The-ACE-journey-at-a-glance-q2EM5pZvhd.

[52] Climate Investment Funds, *Ethiopia (NPC) Investment Plan* (Washington, D.C., World Bank, 2024).

[53] World Bank, "Expanding Nigeria's mini-grid market", 30 June 2024.

[54] International Energy Agency, *Kenya 2024: Energy Policy Review* (Paris, 2025).

V. Main messages and discussion points

A. Public procurement to advance science, technology and innovation

38. Governments could use their purchasing power strategically to drive innovation, creating new markets and initiatives to address societal challenges. Public procurement should move beyond being merely a means of fostering economic growth and improving public services to become a tool for overcoming skills gaps, advancing research and promoting development and entrepreneurship.[55] As such, with a view to helping to build domestic scientific and technological capacity, large-scale public procurement contracts pertaining to advanced technologies could include, where applicable:

(a) Local content requirements;

(b) Incentives to establish joint ventures between domestic and foreign firms;

(c) Training and capacity-building requirements;

(d) Provisions on collaboration with national research and development institutions.

B. Rural areas as innovation hubs

39. Rural and remote communities lack the basic services and economic opportunities that are available to urban populations. Governments can provide incentives to transform rural areas into innovation hubs that harness such local assets as land, farming, culture and natural resources. The establishment of renewable energy plants, data centres, cryptocurrency mining centres and other high-tech facilities in rural areas can spur local entrepreneurs, including young people, to found small and medium-sized enterprises, thus deterring urban migration, fostering sustainable growth and occasioning the development of digital services.[56]

C. Coordinated and integrated approach to technology deployment

40. Governments should consider adopting a coordinated and integrated approach to technology deployment: aligning new technologies with existing infrastructure, organizational goals and processes, in order to minimize disruptions, reduce risks and maximize development effects.[57] For example, although a green hydrogen plant will generate renewable energy, desalinated water and ammonia and its establishment may result in the construction of infrastructure (e.g. roads, pipelines, port facilities and electricity grids) with wider socioeconomic benefits, it will require joint planning, implementation and monitoring by the various stakeholders (e.g. ministries, regulatory agencies, research and development institutions, civil society organizations, community representatives and private companies).

[55] Desalegn Girma Mengistu, Melaku Mamo Beyene and Tadewos Awugchew Wudineh, “Public procurement practice to enhance technology and innovation development in Ethiopian construction industry”, *International Journal of Construction Management*, vol. 24, No. 10 (2024).

[56] Organisation for Economic Co-operation and Development, *Rural Innovation Pathways: Connecting People, Places and Ideas* (Paris, 2025).

[57] Dariusz Plinta and Katarzyna Radwan, “An integrated approach to the development and implementation of new technological solutions”, *Sustainability*, vol. 17, No. 21 (2025).

D. Private and public sector investment to advance science, technology and innovation

41. Strong partnerships with private enterprises to fund innovation, commercialize research and drive employment are fundamental to boosting investment in science, technology and innovation. Governments need to provide tax incentives and support mechanisms to attract domestic and foreign investment. In addition, Governments may wish to dedicate 5 to 10 per cent of national science, technology and innovation budgets to maintaining and developing digital infrastructure; establishing national or regional innovation funds; supporting research and development expenditure in the public and private sectors; and strengthening research facilities, innovation hubs and, since the role of academic institutions is pivotal, technical universities.

E. Strategic priorities at the national, regional and international levels

42. African States should implement integrated national science, technology, innovation and digital strategies explicitly linked to the relevant aspects of the 2030 Agenda and Agenda 2063. They should also support those strategies with reliable funding and data governance frameworks.

F. Capacity-building projects and resource mobilization

43. In relation to innovation, Governments should implement fiscal measures, procurement rules and intellectual property models that incentivize open collaboration, public-private partnerships and the commercialization of technologies that are relevant to their domestic economies.

G. Political will and adaptive governance

44. The successful implementation of these recommendations depends on sustained political commitment and the capacity for adaptive governance. The policies of African States and institutions must be dynamic, informed by robust data and responsive to the rapidly evolving technological landscape. Such an approach will facilitate regional integration efforts and enable African firms to move up global value chains. Monitoring and evaluation frameworks, tied to the 2030 Agenda and Agenda 2063 indicators, are essential for tracking progress and ensuring accountability. By fostering an environment in which innovation can thrive even in remote rural communities, African States and institutions can set a new course for the continent.

45. The eighth African Science, Technology and Innovation Forum is a pivotal platform for solidifying these commitments, sharing transformative lessons and mobilizing the partnerships necessary to build a resilient, prosperous and self-reliant future for all Africans.