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Italy-Africa Digital Partnership under the Mattei Plan

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Ministry of Foreign Affairs and International Cooperation

ABSTRACT

By 2050, Africa's population is expected to reach approximately 2.5 billion. By the end of the 21st century, the continent will account for 40.6 per cent of the world's working age population, underscoring an urgent need to create at least twenty million new jobs annually. These demographic shifts present both opportunities and challenges for Italy-Africa cooperation under the Mattei Plan, particularly in the digital sector, as the technological and digital transformation has the potential to drive innovation, spur economic growth, empower rural communities, foster continental integration and accelerate progress towards achieving Sustainable Development Goals (SDGs). At the same time, Africa's digital transformation has sparked concern over asymmetric power structures. With majority of digital infrastructure, platforms and services originating either in China, Europe or north America, questions around technological dependency, lack of transparency, data sovereignty and the risks of perpetuating "digital colonialism" have come to the fore. By enhancing digital governance frameworks and investing in targeted capacity-building initiatives, the Italy-Africa digital partnership under Mattei Plan can serve as a catalyst for strengthening African agency.

keywords

Africa | Digital policy | Foreign investments | Italian foreign policy

Italy-Africa Digital Partnership under the Mattei Plan

by Darlington Tshuma and Marianna Lunardini*

Introduction

Africa's digital landscape is undergoing rapid transformation driven by a surge in venture capital financing, entrepreneurial activity and widespread adoption of digital tools and technologies. According to a 2020 report by the International Finance Corporation, Africa's digital economy could grow to 712 billion dollars by 2050 from 180 billion dollars today.[1] To date, over forty African countries have established digital policy frameworks and strategies, demonstrating continental commitment to leverage digital innovation for sustainable development and socioeconomic transformation.[2] However, regulatory and governance frameworks remain weak and under resourced. Additional challenges include Africa's growing infrastructure gaps, limited digital skills, financing and a fragmented digital landscape increasingly driven by geopolitics and geoeconomic competition.

Italian businesses, technology firms, academic and research institutions and civil society are well-positioned to forge strategic partnerships with the European Union and African countries to address structural constraints, close critical infrastructure gaps and mobilise additional investment finance. Through coordinated efforts that leverage both public and private capital, such collaborations can help drive inclusive growth and foster shared prosperity, a key objective of Prime Minister

[1] Google and International Finance Corporation (IFC), *e-Conomy Africa 2020. Africa's $180 Billion Internet Economy Future*, 10 November 2020, p. 17, https://www.ifc.org/en/insights-reports/2020/google-e-conomy.

[2] Darlington Tshuma, "Digital Transformation: Aligning Italy's Piano Mattei with African Development Priorities", in *IAI Papers*, No. 25|07 (June 2025), https://www.iai.it/en/node/20196.

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Giorgia Meloni's flagship initiative for Africa, the Mattei Plan.[3] Italy's Digital Flagship Initiative developed in partnership with the United Nations Development Programme (UNDP) and four African countries – Ghana, Mozambique, Ivory Coast and Senegal – exemplifies the kind of strategic and forward-looking partnerships needed to transform Africa's digital sector.[4]

Through its Mattei Plan – named after Enrico Mattei, the founder of Italy's energy giant Eni, which in the 1950s and 1960s pursued a policy of more equal cooperation and revenue-sharing with the countries in which it operated – Rome can support African countries to meet their energy access and climate goals by investing in both hard infrastructure, know-how and best practices, fostering diplomatic engagement.[5] By leveraging its leadership in international fora and mobilising EU member states through instruments like the Global Gateway,[6] Italy can play a catalytic role in accelerating Africa's renewable energy transition. At the same time, targeted investments in digital infrastructure, particularly in sustainable data centres can foster a new growth industry, enhance digital resilience and create cross-cutting benefits for climate-smart innovation and economic transformation.

1. Building Africa's next frontier: Unlocking infrastructure investment through digital public infrastructure

A landmark report by the United Nations Trade and Development Agency (UNCTAD) estimates that African countries lose more than 89 billion dollars annually to illicit financial flows (IFFs).[7] These losses undermine domestic development financing and by extension continental developmental aspirations that find expression through Agenda 2030 and Agenda 2063, the flagship development initiatives by the United Nations and African Union (AU), respectively. UNCTAD estimates that countries with high IIFs spend less on social protection, including health

[3] The Mattei Plan is an Italian national initiative to support Africa's development and reshape the country's relationship with Africa. Presented in 2023, it has counted on an initial endowment of more than 5.5 billion euros between credits, grants operations and guarantees. See Italian Chamber of Deputies-Research Department, "D.L. 161/2023 - Disposizioni urgenti per il «Piano Mattei» per lo sviluppo in Stati del Continente africano", in *Provvedimenti*, 10 January 2024, https://temi.camera.it/leg19/provvedimento/disposizioni-urgenti-per-il-piano-mattei-per-lo-sviluppo-in-stati-del-continente-africano.html.

[4] See UNDP, *Launch of Italy's Digital Flagship with Africa Initiative Aims to Close Africa's Sustainable Financing Gap*, 14 November 2024, https://www.undp.org/node/493966.

[5] Italian Chamber of Deputies-Research Department, "D.L. 161/2023", cit.

[6] The Global Gateway is an EU strategy launched in 2021 with the aim to mobilise up to 300 billion euros in investments to develop sustainable infrastructure projects in Asia, Africa, Latin America and the Caribbean regions. European Commission, *The Global Gateway* (JOIN/2021/30), 1 December 2021, https://eur-lex.europa.eu/legal-content/en/TXT/?uri=celex:52021JC0030.

[7] UNCTAD, *Economic Development in Africa Report 2020. Tackling Illicit Financial Flows for Sustainable Development in Africa*, September 2020, https://unctad.org/publication/economic-development-africa-report-2020.

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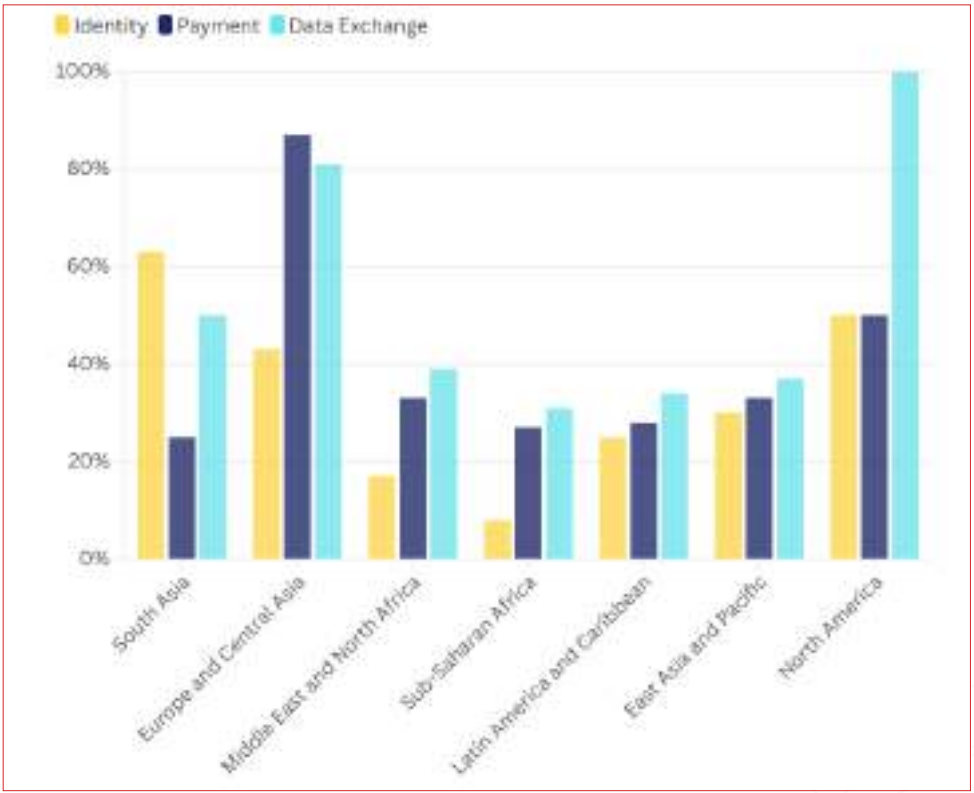
and education, than those with low IFFs.[8] In the current context characterised by declining traditional donor funding, mounting fiscal pressures and escalating debt burdens, digital innovation can help African countries generate, mobilise and allocate resources more efficiently and effectively. Strengthening Africa's digital public infrastructure is critical to curbing IFFs and mobilising additional resources needed to bridge Africa's financing and development gaps.

Figure 1 | Prevalence of systems meeting DPI criteria[9] across global regions



Source: Cathal Long and Antoine Lacroix, "What Do We Know about Digital Public Infrastructure (DPI) in Africa?", cit.

Several African countries have deployed digital public infrastructure (DPI) systems including digital ID systems, digital payments solutions and modernised tax systems. In fact, 85 per cent of African countries now have ID systems with digital capabilities, and over 70 per cent collect biometric data for authentication. Countries like Ghana, Kenya and Lesotho report optimal levels of adoption (around 90 per cent), while others such as Togo (40 per cent), Liberia (30 per cent) and

[8] UNCTAD and UN Economic Commission for Africa, *Report on Illicit Financial Flows from Africa*, November 2022, p. 18, https://unctad.org/system/files/non-official-document/IFFsAfrica_FinalReport_20221121.pdf.

[9] To see the criteria for a system to qualify as a DPI, according to the UCL analysis, please refer to Cathal Long and Antoine Lacroix, "What Do We Know about Digital Public Infrastructure (DPI) in Africa?", in *ODI Expert Comments*, 18 November 2024, https://odi.org/en/insights/what-do-we-know-about-digital-public-infrastructure-dpi-in-africa.

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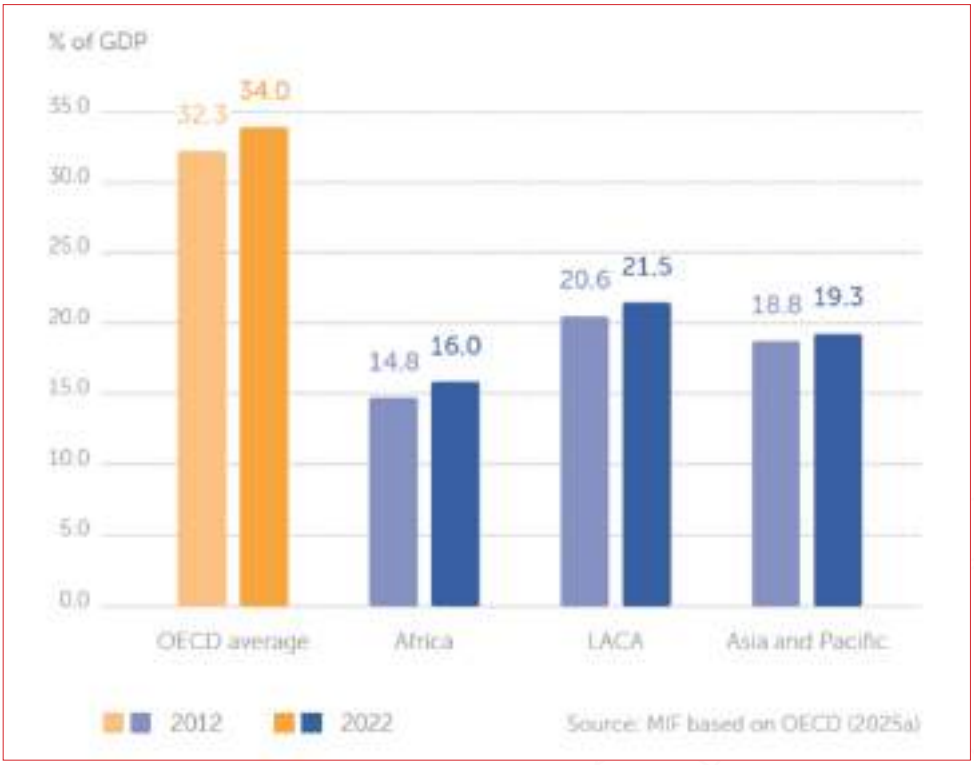
South Sudan (13 per cent) lag far behind.[10] These variations present opportunities for Italian businesses, technology firms and companies to support development and deployment of DPI in countries where demand is strong and capacity weak. Half a billion people on the African continent still lack a foundational ID.[11]

DPI can also support efforts to mobilise additional resources needed to bridge Africa's financing and development gaps, estimated at 194 billion dollars per year until 2030.[12] Currently, on average African countries have the lowest tax-to-GDP ratio in the world at 16 per cent compared to 19.3 per cent in Asia and the Pacific, 21.5 per cent in Latin America and the Caribbean and 34 per cent in Organisation for Economic Co-operation and Development (OECD) countries[13] (see Figure 2).

Figure 2 | Global tax-to-GDP ratios for 2012 and 2022



Source: Mo Ibrahim Foundation, *Financing the Africa We Want*, cit., p 29.

[10] Sanyia Ansar and Julia Clark, "The Importance of ID Access in Three Charts: Insights from Sub-Saharan Africa", in *Digital Transformation World Bank Blog*, 9 September 2024, https://blogs.worldbank.org/en/digital-development/the-importance-of-id-access-in-three-charts--insights-from-sub-s.

[11] Diana Sang, Jane Munga and Nanijira Sanduli, "Digital Public Infrastructure: A Practical Approach for Africa", in *Carnegie Papers*, February 2025, https://carnegieendowment.org/research/2025/02/digital-public-infrastructure-a-practical-approach-for-africa.

[12] Mo Ibrahim Foundation, *Financing the Africa We Want: Facts & Figures*, May 2025, p. 17, https://mo.ibrahim.foundation/sites/default/files/2025-05/2025-forum-facts-figures.pdf.

[13] OECD, *African Union Commission and African Tax Administration Forum, Revenue Statistics in Africa 2024. Facilitation and Trust as Drivers of Voluntary Tax Compliance in Selected African Tax Administrations*, Paris, OECD Publishing, December 2024, p. 10, https://doi.org/10.1787/78e9af3a-en.

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By strengthening national systems and deploying digital public infrastructure, African countries can improve revenue collection from the current 16 per cent of GDP to sustainable levels, enabling investment in critical digital infrastructure like energy and water systems, fibre cable networks, data centres, skills training, research and development. Furthermore, robust DPI systems with strong regulatory and monitoring systems can serve as effective de-risking mechanisms to enhance fiscal transparency and accountability. This will mitigate perceived risk by creditors and improve confidence in Africa's governance systems. Currently, approximately 46 billion dollars in potential revenue in Africa remains uncollected due to redundant tax incentives and poor governance.[14]

Within the framework of the Italy-Africa Digital Partnership, Italian businesses, financial institutions and technology firms can play a catalysing role in supporting African countries to develop inclusive and efficient digital public infrastructure ecosystems. By deploying cutting-edge digital solutions, development partners can help modernise tax and revenue collection systems, enable real-time tracking of financial flows and significantly reduce inefficiencies in public resource management. For instance, estimates show that countries like Benin and Senegal could achieve universal primary school meal coverage with an investment equivalent to just 0.3-0.5 per cent of GDP.[15] For Benin, allocating an additional 0.2 per cent of GDP to school feeding programmes would more than double its current coverage. These examples highlight the transformative potential of digital innovation when combined with resource enhancing reforms that integrate domestic resource mobilisation with digital public infrastructure.

At a high-level Summit in Rome on "The Mattei Plan for Africa and Global Gateway", European Commission President Ursula von der Leyen underscored a strategic link between Africa's digital transformation and global demand for critical raw materials.[16] Digitalisation is a key enabler of development and transformation of the continent's extractive sector which is essential to global green transition, the artificial intelligence (AI) revolution and the production of high-tech commodities including mobile phones, electric vehicles (EVs), semiconductors and military-grade technologies. Projections indicate that by 2029 Africa could account for up to 9 per cent of the global supply for rare earths, with at least twelve African countries holding 5 per cent or more of global critical mineral reserves.[17] For instance, South Africa holds the largest palladium reserves globally (77.8 per cent) and currently meets 36 per cent of global supply.[18] Strengthening digital

[14] UN Office of the Special Adviser on Africa (OSAA), *Unpacking Africa's Debt. Towards a Lasting and Durable Solution*, November 2024, https://www.un.org/osaa/node/1658.

[15] Kevin Watkins et al., "Seven Country Case Studies on School Meals Financing", in *Sustainable Financing Initiative Policy Briefs*, 2022.

[16] European Commission, *Speech by President von der Leyen at the Summit "The Mattei Plan for Africa and Global Gateway: A Common Effort with the African Continent"*, Rome, 20 June 2025, https://ec.europa.eu/commission/presscorner/detail/en/speech_25_1579.

[17] Mo Ibrahim Foundation, *Financing the Africa We Want*, cit., p. 54.

[18] Ibid.

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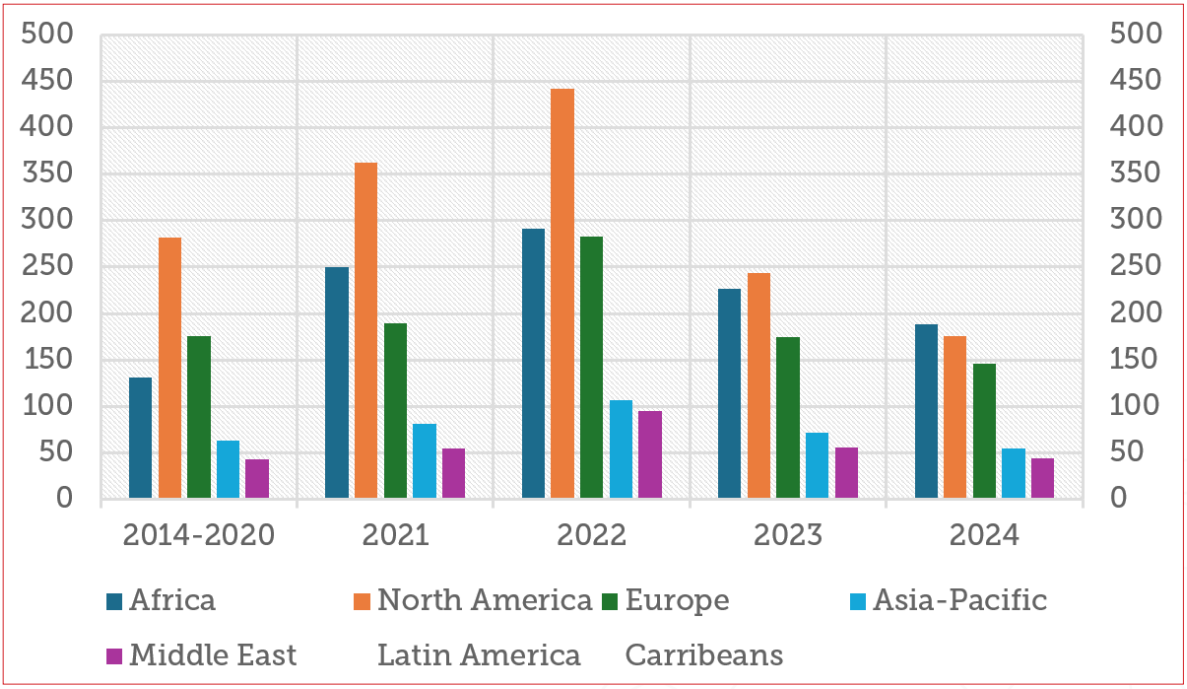
governance, infrastructure and innovation capacity is therefore not only central to Africa's economic development, but also to ensuring secure, transparent and sustainable global supply chains.

2. Bridging capital market gaps: Strengthening local investment ecosystems for inclusive growth

Another frequently overlooked dimension is the structure of financing within Africa's digital ecosystems. Although 2024 marked the first notable uptick in venture capital contributions from African-based investors, the overall landscape remains heavily dominated by foreign capital (see Figure 3).

Figure 3 | Investors participating in venture capital in Africa, 2014-2024 (million dollars)



Source: AVCA, *Venture Capital in Africa Report*, cit., p. 43.

According to the African Private Equity and Venture Capital Association, investors headquartered in North America accounted for over 42 per cent of all venture capital deals in Africa between 2019 and 2024,[19] with African-based investors contributing only 20 per cent of total venture funding[20] (see Figure 4). This financing imbalance reinforces disparities in access to capital which compels

[19] African Private Equity and Venture Capital Association (AVCA), *Venture Capital in Africa Report*, March 2025, p. 43, https://www.avca.africa/data-intelligence/research-publications/2024-venture-capital-in-africa-report.
[20] Ibid.

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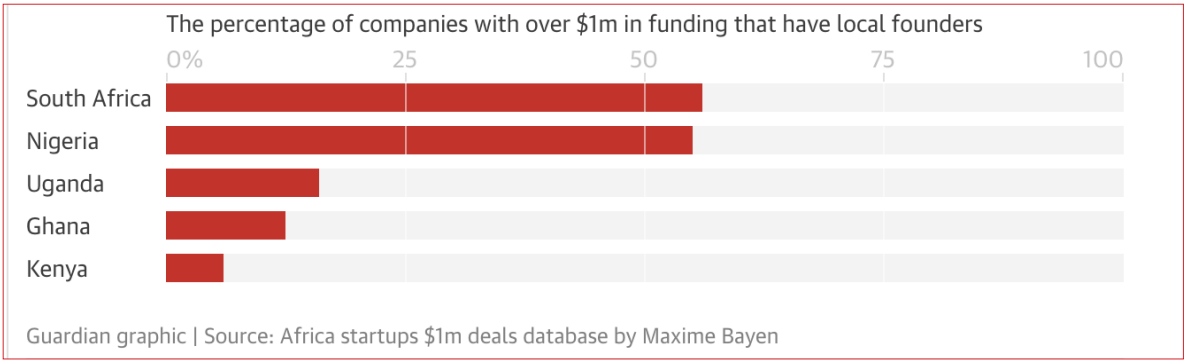
African tech entrepreneurs in underdeveloped financial markets to rely heavily on external – primarily Western – capital. Notably, in 2024, eight of the ten African-based start-ups that secured the highest levels of venture funding were led by non-Africans.[21] According to a 2017 study by Village Capital, in East Africa only 10 per cent of all funding for start-ups went to local founders.[22] These cases underscore enduring challenges to technological sovereignty, limited local ownership and restricted access to financing within Africa's digital and tech ecosystem.

Figure 4 | Expat founders receive more funding than locals



Source: Larry Madowo, "Silicon Valley Has Deep Pockets for African Startups – If You're Not African", in *The Guardian*, 17 July 2020, https://www.theguardian.com/p/eamcf.

As shown in Figure 4, countries with relatively well-developed domestic capital markets, advanced financial systems and well-established venture capital networks like South Africa can tap into their domestic markets to support local entrepreneurs before seeking out international capital. Similarly, by virtue of Nigeria's market size (largest population on the continent) combined with a growing digital consumer base that creates strong incentives for local tech-solutions, Nigerian local entrepreneurs can scale domestically before tapping into external markets. On the other hand, weak and undeveloped domestic capital markets skew funding towards expat-led ventures which are perceived as lower risk by global investors in Kenya, Ghana and Uganda, even though these countries have all vibrant innovation and tech ecosystems.

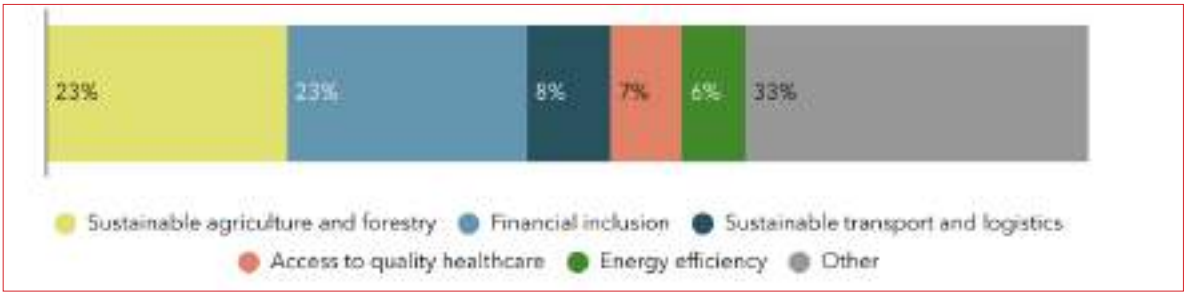
The challenge for the Italy-Africa digital partnership is to reverse this negative trend in countries with underdeveloped financial markets like Ghana, Kenya and Uganda. This can be achieved by facilitating regulatory reform and capacity building for local financial institutions to encourage venture capital activity and private equity in Africa's technology and digital sector. Additionally, creating dedicated financing facilities to provide equity and concessionary debt to start-ups led by African founders and entrepreneurs in undercapitalised markets could help empower them.

[21] Ibid.

[22] Village Capital, *Why Do Investors Continue to Shortchange Entrepreneurs in Emerging Markets?*, 12 May 2017, https://medium.com/village-capital/f57a8bf4a7d8.

IAI PAPERS 25 | 17 - JULY 2025
ISSN 2610-9603 | ISBN 978-88-9368-370-8 © 2025 IAI

Figure 5 | Venture capital deals by sector



Source: Charles Avery, "Data Snapshot: Impact Investors' Growing Presence in African VC", in *New Private Markets*, 14 April 2025, https://www.newprivatemarkets.com/?p=170404.

As illustrated in Figure 5, nearly 50 per cent of all venture capital deals in Africa are concentrated in two sectors: sustainable agriculture and forestry, and financial inclusion. These are followed by transport and logistics (8 per cent), health (7 per cent) and energy (6 per cent). The sectoral concentration closely mirrors the "six thematic pillars" of the Mattei Plan,[23] presenting a strategic opportunity to forge synergistic partnerships that align with and amplify existing EU and Italian development initiatives.

3. Plugging Africa's digital infrastructure and skills gaps

Africa's digital transformation is hindered by significant obstacles, particularly widening infrastructure gaps, regulatory and data governance concerns, limited digital skills and skewed venture capital financing. With Africa's population expected to reach approximately 2.5 billion by 2050,[24] population growth will likely outstrip investment in critical digital infrastructure like grid and fibre optic connections, water systems and data centres.

Currently, according to the Africa Data Centres Association (ADCA), African countries represent 2 per cent of the world's data centres and infrastructure footprint.[25] Despite being home to over a billion people, Africa has only 183 data centres spread across 33 countries. By comparison, Canada and Japan each have over 180, while the United States hosts more than 3,600.[26] ADCA estimates that the continent will require an additional 1,200 MW in data centre capacity by 2030

[23] The six pillars of the Mattei Plan are: education/training, healthcare, water, agriculture, energy and infrastructure (both physical and digital). See Italian Government, *The Six Pillars of the 'Mattei Plan'*, 15 March 2024, https://www.governo.it/sites/governo.it/files/Italia-Africa_MatteiPlan_6pillars.pdf.

[24] Mo Ibrahim Foundation, *Financing the Africa We Want*, cit.

[25] Africa Data Centres Association, *How Africa Can Leapfrog the World in Sustainable Digital Infrastructure Development*, 17 July 2024, https://africadca.org/?p=4253.

[26] Data Center Map website: *Data Centers*, https://www.datacentermap.com/datacenters.

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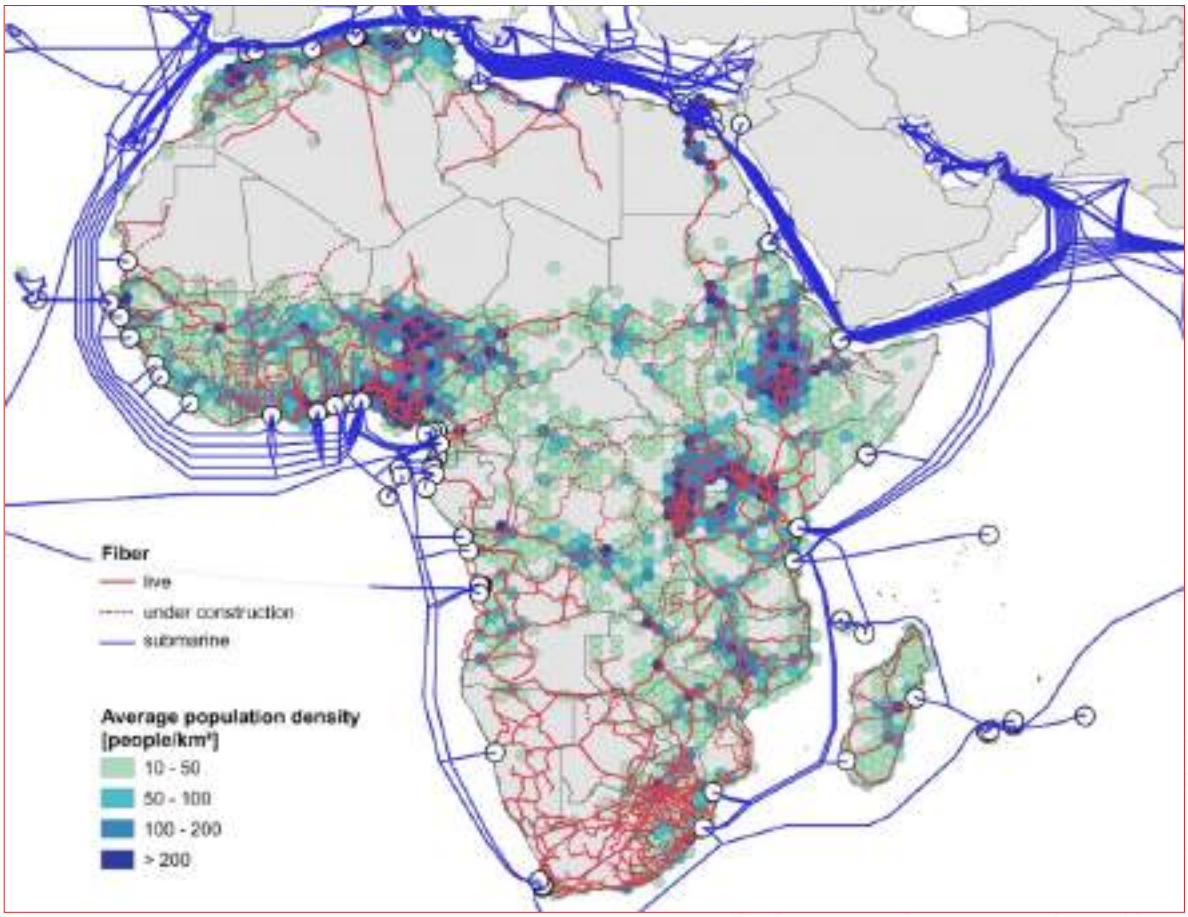
to meet surging demand for digital technologies and services.[27] Among the four countries participating in the Digital Flagship Initiative, Ghana stands out with the highest concentration of data centres, positioning it as a potential digital hub in West Africa. Despite this promising scenario, even Ghana faces significant challenges, including risks of downtime and rising electricity and water costs.[28]

Figure 6 | Fibre infrastructure per population density in Africa



Source: Roku Fukui et al. "Africa's Connectivity Gap: Can a Map Tell the Story?", in *Digital Transformation World Bank Blog*, 7 November 2019, https://blogs.worldbank.org/en/digital-development/africas-connectivity-gap-can-map-tell-story.

Access to secure and broad Internet connection is another problem. More than three hundred million Africans currently live at least fifty kilometres from a cable or fibre broadband connection[29] (see Figure 6). The International Finance Corporation

[27] Africa Data Centres Association, *How Africa Can Leapfrog the World*, cit.

[28] "Ghana's Digital Infrastructure Companies Groan under Fuel, Power Costs", in *Hyperscalers News*, 4 October 2024, https://africa.hyperscalers.news/?p=6925.

[29] AU-EU Digital Economy Task Force, *New Africa-Europe Digital Economy Partnership. Accelerating the Achievement of the Sustainable Development Goals*, June 2019, https://digital-strategy.ec.europa.eu/en/node/1744.

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estimates that Africa needs about half a million kilometres of fibre-optic cable construction to provide continent-wide coverage to its 1.2 billion citizens.[30]

In some countries, investments in energy and water infrastructure have not kept pace with population growth. Six hundred million Africans, nearly half the continent's population, lacks access to reliable and affordable energy solutions.[31] These challenges underscore the continent's widening investment and infrastructure gaps. Large scale investments in clean energy solutions including solar, wind, hydro and geothermal power are needed to make data centres a sustainable growth industry. Ethiopia, for example, is capitalising on its green energy mix to become a renewable energy hub in East Africa. The Grand Ethiopian Renaissance Dam (GERD), the Koysha Hydropower Dam and the Aysha Wind Farm constitute flagship energy infrastructure projects initiated by the government to advance the objectives of its Energy Development Plan (EDP).[32]

Africa's digital skills sector is ripe for private sector investment and participation. By 2100, Africa will account for 40.6 per cent of the global working age population.[33] Conservative estimates are that around the same time, Africa will have added eight hundred million young people to its labour market, requiring at least twenty million new jobs annually.[34]

Africa's nascent digital sector has the potential to drive innovation, spur economic growth, empower rural communities and create new jobs. Through tailored training programmes and capacity building initiatives, Africa's digital sector and its value chains can create economic and livelihood opportunities for millions, particularly in the agriculture, creatives and renewable energy sectors which combined have the largest absorption capacity alongside the potential to create over three million new jobs annually.

However, structural challenges that include high data and mobile device costs, poor infrastructure, limited digital skills as well weak regulatory and outdated policy frameworks hinder the sector's viability and full potential. For instance, in sub-Saharan Africa, where internet penetration is the lowest globally, the cost of a smartphone exceeds 40 per cent of the average monthly income and data prices remain nearly three times the global average.[35] In Nigeria, a 2020 amendment

[30] International Finance Corporation (IFC), *Fiber-Optic Cables Connect Africa to the Digital Economy*, 27 August 2019, https://www.ifc.org/en/stories/2010/fiber-optic-cables-connect-africa-to-digital-economy.

[31] International Energy Agency (IEA), *Africa Energy Outlook 2022*, June 2022, https://www.iea.org/reports/africa-energy-outlook-2022.

[32] Darlington Tshuma, "'Energising Africa': Italy vis-a-vis Ethiopia's Renewable Energy Development", in *IAI Commentaries*, No. 24|34 (June 2024), https://www.iai.it/en/node/18665.

[33] Mo Ibrahim Foundation, *Financing the Africa We Want*, cit.

[34] David McNair (ed.), *Why Europe Needs Africa*, Washington, Carnegie Endowment for International Peace, July 2024, https://carnegieendowment.org/research/2024/07/why-europe-needs-africa.

[35] Darlington Tshuma, "Digital Transformation", cit.

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to the National Broadcasting Code introduced several restrictive provisions that disproportionately impacted digital service providers, content creators and platforms. Critics note that these changes continue to impede innovation, deter investment and weaken the country's competitive edge.[36]

Africa's Millennials and Gen Z represent the continent's most digitally educated and entrepreneurially driven demographic in decades. However, despite this strong foundation, Africa's digital landscape remains deeply fragmented and characterised by access disparities linked to geography, gender, income, ethnicity and education. Similarly, without proper regulatory frameworks and awareness, disruptive and emerging technologies like AI can have negative consequences including on labour participation and workplace rights.[37]

Italian businesses and technology firms have experience in creating secure digital ID systems.[38] Rome can leverage this experience to support development of robust regional digital regulatory frameworks and deployment of DPI in support of Africa-led initiatives like intra-African digital trade and integration. In addition, to ensure that Africa's digital transformation is both inclusive and human-centred, targeted interventions are needed to reach historically excluded populations – particularly rural communities, women, minorities and marginalised groups. This includes equipping them with future-work-ready skills in data literacy and analytics, AI ethics, responsible AI deployment and the use of generative AI for learning, innovation and problem-solving. Supporting this process in Africa with digital cooperation will unlock a broader base of talent, foster inclusive growth and attract domestic capital to support a burgeoning cohort of tech innovators and creatives.

Structured programmes between Italian and African tertiary institutions such as joint research initiatives, virtual fellowships and peer-to-peer mentoring between tech entrepreneurs and creatives can serve as powerful vehicles for fostering intercontinental collaboration. These platforms can accelerate the transfer of critical skills in emerging fields such as AI, data science, digital design and ethical innovation, while also strengthening innovation ecosystems across both regions.

[36] Vincent Obia, "Regulatory Annexation: Extending Broadcast Media Regulation to Social Media and Internet Content", in *Communication Law and Policy*, Vol. 28, No. 2 (2023), p. 99-123, https://doi.org/10.1080/10811680.2023.2206382.

[37] Jacki O'Neill et al., *AI and the Future of Work in Africa. White Paper*, AUDA-NEPAD, June 2024, p. 32, https://www.nepad.org/node/17740.

[38] Marianna Lunardini, "Digital Transformation in Africa: The Role of International Cooperation and the Mattei Plan", in *IAI Papers*, 2025 (forthcoming).

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Policy recommendations

Several priority action areas are critical to advancing an inclusive and mutually beneficial Italy-Africa digital partnership:

- Support a #TeamEurope approach in cooperating with African stakeholders, by deepening dialogue and collaboration among EU partners and strengthening the role of platforms such as the EU D4D Hub[39] and strengthening synergetic partnerships between the Italian Agency for Development Cooperation (AICS) with D4D Hub activities.

- Prioritise the development of regional digital policy frameworks to compliment national-level approaches. Regional frameworks promote market aggregation, creating larger, integrated markets that attract Italian and European private sector investment. This aligns with Africa Continental Free Trade Area goals of continental integration and enables cross-border infrastructure and regulatory harmonisation.

- Reverse disparities in access to capital, consider creation of a dedicated Italy-Africa Innovation Fund within the Italy-Africa Digital Partnership to provide equity and concessionary debt to startups led by African founders in undercapitalised markets like Ghana and Kenya. Structure the fund to co-invest with African-based angel and seed-stage investors, leveraging Italy's capital and de-risking role.

- Strengthen local entrepreneur readiness and bankability by pairing African innovators with Italian and EU-based accelerators and business development services to support product-market fit, scale-up strategies and cross-border expansion.

- Strengthen digital inclusion across Africa by investing in digital governance and capacity-building initiatives that leverage local talent and institutional capacities. Empower institutional actors like the African Union Development Agency (AUDA-NEPAD) to enhance social protection systems through integrating digital technologies and tools.

Updated 15 July 2025

[39] The Digital for Development (D4D) Hub is a strategic platform that aims to strengthen digital cooperation between the European Union and its member states (Team Europe) and partners in Africa, Asia-Pacific, Latin America and the Caribbean and the EU neighbouring countries.

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Digital Transformation in Africa: The Role of International Cooperation and the Mattei Plan

by Marianna Lunardini

Ministry of Foreign Affairs and International Cooperation

ABSTRACT

Digital transformation is playing a growing role in development cooperation. Africa, expected to have 25 per cent of the world's population by 2050, should be at the centre of the global digital transformation. Digitalisation could boost innovation and youth entrepreneurship on the continent, helping to create more jobs. Nevertheless, infrastructure gaps, regulatory fragmentation and social impact must be considered by digital cooperation together with unequal balance between the so-called Global North and South. Italy's flagship initiative towards Africa, the Mattei Plan, has put a strong emphasis on digital cooperation. The success of the Mattei Plan will depend on its ability to foster effective private-sector partnerships and build a more coordinated approach with international and national actors, including civil society.

keywords

Africa | Digital policy | G7 | European Union | Italian foreign policy

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Digital Transformation in Africa: The Role of International Cooperation and the Mattei Plan

by Marianna Lunardini*

Introduction

Digital transformation and digitalisation[1] are playing a growing role in development cooperation and international partnerships and are widely perceived as a "catalyst for change".[2] At the global level, the last decades have seen an increase in the diffusion of digital technology: products, procedures, services have been progressively permeated with digital tools.[3] Digital cooperation needs a shared understanding of common principles and a solid governance to tackle the related risks. This paper analyses developing digital cooperation in Africa, focusing on

[1] Digitalisation is "a sociotechnical process of applying digitizing techniques to broader social and institutional contexts that render digital technologies infrastructural." See David Tilson, Kalle Lyytinen and Carsten Sørensen, "DigitalInfrastructures: The Missing IS Research Agenda", in *Information Systems Research*, Vol. 21, No. 4 (December 2010), p. 748-759 at p. 749, DOI 10.1287/isre.1100.0318. Digitalisation must be kept distinct from digitisation and digital transformation. The former is the process of converting analogue information into a digital format, the latter is a process in which digital technologies play a central role both in creating and strengthening disruptive changes taking place in industry (sector) and in society. See Alina Kozarkiewicz, "General and Specific: The Impact of Digital Transformation on Project Processes and Management Methods", in *Foundations of Management*, Vol. 12, No. 1 (January 2020), p. 237-248, https://doi.org/10.2478/fman-2020-0018; Alan Amory et al., *Enhancing TVET through Digital Transformation in Developing Countries*, Paris, UNESCO, 2023, https://unesdoc.unesco.org/ark:/48223/pf0000385988.

[2] Thanh Nguyen Hai, Quang Nguyen Van and Mai Nguyen Thi Tuyet , "Digital Transformation: Opportunities and Challenges for Leaders in the Emerging Countries in Response to Covid-19 Pandemic", in Emerging Science Journal, Vol. 5 (2021), p. 22-36, DOI 10.28991/esj-2021-SPER-03.

[3] Youngjin Yoo et al., "Organizing for Innovation in the Digitized World", in *Organization Science*, Vol. 23, No. 5 (September-October 2012), p. 1398-1408, DOI 10.1287/orsc.1120.0771.

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the case study of the Mattei Plan – Italy's flagship initiative of cooperation in Africa. It assesses the Mattei Plan's potential contribution to digital transformation in Africa and its synergies with the EU's cooperation efforts. The first section describes the challenges of Africa's digitalisation. The second examines the role of international cooperation in the domain. The third and final addresses the role of Italy's cooperation policy and the Mattei Plan focusing on four countries: Ghana, Mozambique, Senegal and Ivory Coast.[4]

1. Challenges of digitalisation in Africa

Africa is expected to have a population of about 2.5 billion – 25 per cent of the world's population – by 2050.[5] As a result of this "youthquake", the continent will have the world's largest workforce.[6] Digital transformation and digitalisation could boost innovation and youth entrepreneurship, helping to close structural gaps and enhance job creation.[7] A 2020 joint report by International Finance Corporation (IFC) and Google reckoned that Africa's internet economy had the potential to reach 712 billion dollars by 2050.[8]

However, the unbalanced power relationship between states and companies providing technologies, mostly from the so-called Global North, and the countries on the receiving end, the so-called Global South,[9] remains a daunting challenge. Some authors have denounced the risk of "digital colonialism",[10] emphasising the need to ensure local ownership and transparency in digital transformation processes. These are characterised by a strongly competitive dynamic involving a variety of players: states, multilateral development banks, non-governmental organisations but also private companies such as China's Huawei and Tecno

[4] In drafting the paper, a mixed methods approach combining in-depth desk research and interviews with Italian stakeholders from academia, civil society, institutions and international organisations was adopted. Moreover, a high-level expert workshop was organised by IAI in Rome on 9 May 2025. It brought together international experts, diplomats, representatives of civil society organisations providing further insightful inputs and feedback.

[5] Saurabh Sinha and Melat Getachew, "As Africa's Population Crosses 1.5 Billion, the Demographic Window Is Opening; Getting the Dividend Requires More Time and Stronger Effort", in *UNECA Blog*, 12 July 2024, https://www.uneca.org/node/9200.

[6] Declan Walsh, "The World Is Becoming More African", in *The New York Times*, 28 October 2023, https://www.nytimes.com/interactive/2023/10/28/world/africa/africa-youth-population.html.

[7] Tania Begazo, Moussa P. Blimpo and Mark A. Dutz, *Digital Africa. Technological Transformation for Jobs*, Washington, World Bank, 2023, https://hdl.handle.net/10986/39491.

[8] Google and International Finance Corporation (IFC), *e-Conomy Africa 2020. Africa's $180 Billion Internet Economy Future*, 10 November 2020, p. 17, https://www.ifc.org/en/insights-reports/2020/google-e-conomy.

[9] Richard Heeks, "Digital Inequality beyond the Digital Divide: Conceptualizing Adverse Digital Incorporation in the Global South", in *Information Technology for Development*, Vol. 28, No. 4 (2022), p. 688-704, https://doi.org/10.1080/02681102.2022.2068492.

[10] Toussaint Nothias, "An Intellectual History of Digital Colonialism", in *Journal of Communication*, 13 March 2025, https://doi.org/10.1093/joc/jqaf003.

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Mobile, Hong Kong-based Infinix, South Korea's Samsung[11] and the United States' Google, Meta and Amazon.[12]

Digitalisation could provide innovative solutions to complex challenges, including access to healthcare, education and finance. Three elements need to be considered when examining the prospect of digital cooperation in Africa: infrastructure gaps, regulatory fragmentation and use of digital tools and Internet.

1.1 Infrastructures

The infrastructure that gives access to Internet depends on three steps, starting from the 'first mile' made up of tools such as submarine cables, satellites, data centres, international gateways.[13]

Submarine cables represent a crucial element for global telecommunications. They are vulnerable to disruptions, as shown by the recent cuts suffered by five African undersea cables in 2024,[14] which caused big economic damages. Cables cuts are estimated to have cost Nigeria over 590 million dollars in a couple of days.[15] Out of the 38 African countries with a coastline, all except Eritrea have at least one submarine cable landing; 20 of these 37 countries have more than three subsea cables. Private actors have a key role in the development of submarine cables;[16] a major example is the Equiano subsea cable system, a 12,000 km Google-owned system from Portugal to South Africa with branches reaching Nigeria, Togo and Namibia.

Another crucial infrastructure are data centres. Low- and middle-income countries are eager to establish data centres on their territories for such reasons as progressive internet penetration, expanding needs and data sovereignty concerns.[17] Africa's

[11] Laura Schelenz and Kerstin Schopp, "Digitalization in Africa: Interdisciplinary Perspectives on Technology, Development, and Justice", in *International Journal of Digital Society*, Vol. 9, No. 4 (December 2018), p. 1412-1420, https://infonomics-society.org/wp-content/uploads/ijds/published-papers/volume-9-2018/Digitalization-in-Africa.pdf.

[12] Jane Munga, "Beneath the Waves: Addressing Vulnerabilities in Africa's Undersea Digital Infrastructure", in *Carnegie Papers*, March 2025, https://carnegieendowment.org/research/2025/03/beneath-the-waves-addressing-vulnerabilities-in-africas-undersea-digital-infrastructure.

[13] Then, there is a 'middle mile' providing domestic connectivity (landing stations, mobile base stations); and a 'last mile' that connects the final users (individuals and households) to the Internet. See Joël Cariolle, "International Connectivity and the Digital Divide in Sub-Saharan Africa", in *Information Economics and Policy*, Vol. 55 (June 2021), Article 100901, DOI 10.1016/j.infoecopol.2020.100901.

[14] Jane Munga, "Beneath the Waves", cit.

[15] Abdullah Ajibade, "Nigeria Loses over $593.6 Million amid Undersea Cable Repair", in *Techpoint Africa*, 18 March 2024, https://techpoint.africa/?p=264932; Emma Okonji, "Subsea Cable Cut: 35 Networks Restored, Full Restoration of Cables to Gulp $8m", in *Arise News*, 26 March 2024, https://www.arise.tv/?p=119084.

[16] See Submarine Networks website: *Stations: Africa*, https://www.submarinenetworks.com/en/stations/africa.

[17] UN Conference on Trade and Development (UNCTAD), *Digital Economy Report 2021. Cross-*

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data centre capacity remains disproportionately low, representing less than 1 per cent of the global total: sub-Saharan Africa owns just 0.1 data centres per million people. South Africa currently dominates the continent's data centre market, accounting for over two-thirds of the total capacity, with Ghana, Kenya and Nigeria as secondary hubs. Industry projections suggest strong growth ahead: the African data centre market is expected to expand by 12 per cent annually to reach 3 billion dollars this year. However, this expansionary trend faces substantial challenges, particularly energy reliability and environmental risks.[18]

1.2 Regulatory fragmentation

Many African countries lack essential laws on data protection, cybersecurity and consumer rights for digital transactions, highlighting a critical gap in data governance that hinders cohesive regional integration.[19] The Digital Transformation Strategy for Africa (2020-2030) unveiled by the African Union (AU) in 2018 set the twin objectives to "build a secured Digital Single Market in Africa by 2030" and "harmonize policies, legislations and regulation" for digital economy.[20] Africa faces significant data governance challenges, despite the landmark adoption of the African Continental Free Trade Area (AfCFTA) Digital Trade Protocol. Implementing this framework remains difficult due to fragmented and inconsistent regulatory environments across the continent.[21] The AfCFTA protocol involves eight annexes covering, amongst others, digital identities, cross-border data transfers, online safety, AI and financial technology.

At the multilateral level, the Joint Statement Initiative on E-Commerce of the World Trade Organisation (WTO) has set the goal of harmonising rules to regulate cross-border data flows, data localisation restrictions, consumer protection and cybersecurity and extending the moratorium on customs duties on electronic transmissions for five years.[22] However, while 91 WTO member countries participated in the discussions, the United States decided in 2023 to abandon the process and only nine African countries have signed off on it so far (Benin, Burkina Faso, Cabo Verde, Cameroon, Gambia, Ivory Coast, Kenya, Mauritius and

Border Data Flows and Development: For Whom the Data Flow, Geneva, United Nations, 2021, https://unctad.org/publication/digital-economy-report-2021.

[18] UNCTAD, *Digital Economy Report 2024. Shaping an Environmentally Sustainable and Inclusive Digital Future*, Geneva, United Nations, 2024, https://unctad.org/publication/digital-economy-report-2024.

[19] See UNCTAD website: *Data Protection and Privacy Legislation Worldwide*, https://unctad.org/page/data-protection-and-privacy-legislation-worldwide.

[20] African Union, *The Digital Transformation Strategy for Africa (2020-2030)*, Addis Ababa, May 2020, https://au.int/en/node/38507.

[21] Faith Tigere Pittet, "Designing AfCFTA E-Commerce Regulations for Africa's Development", in *SAIIA Policy Briefings*, No. 276 (July 2023), hhttps://saiia.org.za/?p=58639.

[22] The WTO's 13th Ministerial Conference in 2024 has extended the e-commerce customs duty moratorium for two years until 31 March 2026. The WTO Joint Statement Initiative, if approved, will extend it for another five years. Rashid S. Kaukab, "WTO Moratorium on Customs Duties on Electronic Transmissions", in *IISD Policy Analysis*, 30 October 2024, https://www.iisd.org/node/18468.

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Nigeria). Two absences stand out: Ghana and South Africa, both leaders in digital transformation.

1.3 Internet use

While Africa is experiencing widespread digital transformation, only a limited part of the population uses the Internet: around 40 percent according to a World Bank's estimate (compared with a global average of 68 per cent).[23] There also remains a large gender divide. Other gaps exist between urban and rural contexts and different areas of the continent. Sub-Saharan Africa is the region with the largest coverage and usage gaps.[24] The high cost of accessing the Internet is a major obstacle to larger digital consumption but other challenges persist. The high cost of broadband subscriptions and digital devices are an important factor in this regard. A basic two giga byte mobile data plan averages 6.5 per cent of a user's monthly income – triple the global average,[25] with important differences between countries: in Zimbabwe the cost is 43.75 dollars per giga while in Malawi is 0.38 dollars, for instance. Other critical elements are digital literacy, with many Internet users lacking the skills to mitigate risks;[26] and the "negative externality" weighing on those who do not own a mobile phone but live in connected areas, as they will face the rising cost of living while not receiving the possible benefits coming from the digital technology.[27]

2. International cooperation for Africa's digitalisation

The AU Agenda 2063 – Africa's strategic framework to turn the continent into a leading force on the global stage of the future – identifies digital transformation, well-developed ICT and digital economy as necessary infrastructures to make use of Africa's full potential. International cooperation in sectors such as infrastructure, agriculture and technology is crucial to support Africa's internal strengths, overcoming the so-called "resource curse".[28]

[23] World Bank, *From Connectivity to Services: Digital Transformation in Africa*, 27 June 2023, https://www.worldbank.org/en/results/2023/06/27/from-connectivity-to-services-digital-transformation-in-africa.

[24] GSMA, *The State of Mobile Internet Connectivity 2024*, October 2024, https://www.gsma.com/r/somic.

[25] Antonella Sinopoli, "Divario digitale: in Africa offline il 67% della popolazione", in *Nigrizia*, 15 December 2022, https://www.nigrizia.it/?p=56643.

[26] Ennatu Domingo et al., "The Geopolitics of Digital Literacy and Skills Cooperation with Africa", in *ECDPM Discussion Papers*, No. 369 (June 2024), https://ecdpm.org/work/geopolitics-digital-literacy-and-skills-cooperation-africa.

[27] Joël Cariolle and David A. Carroll, "From Phone Access to Food Markets: How Mobile Connectivity is Transforming Rural Livelihoods in West Africa", in *FERDI Working Papers*, No. P341 (February 2025), https://ferdi.fr/en/publications/68451994-d3ba-4c1f-ad04-321db6b5f3bc.

[28] Andrea Stocchiero, "The Mattei Plan: Opportunities, Ambitions, and Points of Debate", in *CeSPI Forum*, 9 September 2024, https://www.cespi.it/en/node/2833.

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Several international organisations have developed strategies and programmes for Africa's digitalisation to avert the risk of exacerbating inequalities and excluding vulnerable and disadvantaged groups. In 2019, the World Bank Group launched the Digital Economy for Africa (DE4A) initiative to support the AU's Digital Transformation Strategy 2020-2030. It aims to ensure that every individual, business and government in Africa is digitally enabled by 2030. The initiative is based on five pillars: digital infrastructure, digital public platforms, digital financial services, digital businesses and digital skills. The World Bank has undertaken seventy digitalisation investment projects since 2019, for a total of 9 billion dollars across 37 African countries.[29] These include 24 projects aimed at expanding network infrastructure and bridging the digital connectivity divide in 23 countries. In the four countries on which this research focuses the World Bank is supporting the following projects.

Country	Projects	Objectives
Ghana	Ghana Digital Acceleration Project (2023-2027) - $200 million	Ensure coverage of broadband networks, resilient digital services and institutional capacity; support modernising digital government services.
Ivory Coast	Côte d'Ivoire National Electricity Digitalization and Access operation (2023-2028) - $690 million	Increase access to electricity and improve the quality of electricity service, to enhance institutional capacity.
	Côte d'Ivoire Youth Employment and Skills Development Project - Phase 3 (2022-2026) - $150 million	Enhance labour market outcomes and digital skills.
Mozambique	Mozambique Digital Acceleration Project (2023-2028) - $200 million	Increase digital access and develops a robust digital infrastructure: better utilisation of data, improving trust and security of online transactions, leveraging digital connectivity.
Senegal	Senegal Higher Education Project: Espoir-Jeunes (2023-2028) - $150 million	Support digitisation in education.
	Senegal Digital Economy Acceleration Project (2023-2028) - $150 million	Support digital transformation and inclusion.

Another important initiative that the World Bank has undertaken jointly with the African Development Bank Group, Mission 300, addresses the continent's energy needs. Its declared aim is to "connect 300 million people in Africa to

[29] World Bank website: *Country Diagnostics: DE4A Country Diagnostics Status (Version October 2024)*, https://www.worldbank.org/en/programs/all-africa-digital-transformation/country-diagnostics.

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clean, affordable, and reliable electricity by 2030".[30] Electricity is a prerequisite for digitalisation. Other international organisations – such as the United Nations Educational Scientific and Cultural Organisation (UNESCO), International Telecommunication Union (ITU) and United Nations Development Programme (UNDP) – are supporting digital infrastructure, education and technical assistance to governments. In some cases, they partner with private actors. as for instance in the case of UNDP and the Danish cBrain.[31] The Denmark-based digital solutions provider collaborates with UNDP to foster digital public infrastructure, digital financial inclusion and capacity-building. While infrastructure development is crucial for the continent's digitalisation, a successful digital transformation requires a holistic approach that integrates all three dimensions: greater emphasis on digital inclusion, capacity-building and the resilience of local communities is key to preventing the exacerbation of inequalities between those who have access to digital services and those who do not.[32]

2.1 The G7, the EU and Italy

Initiatives such as the G7 Partnership for Global Infrastructure and Investment (PGII), EU's Global Gateway initiative and Italy's Mattei Plan are promoting international investments in various digitalisation plans in Africa.

Launched in 2022,[33] the G7's PGII aims to mobilise up to 600 billion dollars by 2027 through public-private collaboration. By the end of 2024, the US have declared the mobilisation of more than 60 billion dollars from their side.[34] The investments for large physical and digital connectivity infrastructures under PGII include the African Lobito Corridor, which involves Angola, the Democratic Republic of the Congo and Zambia. The corridor is meant to facilitate the transport of critical minerals to global markets, impacting key sectors such as energy, agriculture and digital access. The planned expansion of rail and road networks along the corridor is expected to support the creation of industrial hubs and investments in energy and digital infrastructure.[35] The EU and the United States are partnering in support of this project.[36]

[30] Valérie Levkov and Sarvesh Suri, "Mission 300: Powering Progress in Africa", in *IFC Audio Stories*, 23 January 2025, https://www.ifc.org/en/podcasts/audio-stories/2025/mission-300-powering-progress-in-africa.

[31] UNDP, *UNDP and cBrain Join Forces to Accelerate Africa's Digital Transformation*, 14 November 2024, https://www.undp.org/node/493686.

[32] African Union, *The Digital Transformation Strategy for Africa (2020-2030)*, cit., p. 7.

[33] White House, *Fact Sheet: President Biden and G7 Leaders Formally Launch the Partnership for Global Infrastructure and Investment*, 26 June 2022, https://bidenwhitehouse.archives.gov/briefing-room/statements-releases/2022/06/26/fact-sheet-president-biden-and-g7-leaders-formally-launch-the-partnership-for-global-infrastructure-and-investment.

[34] White House, *Fact Sheet: Partnership for Global Infrastructure and Investment at the G7 Summit*, 13 June 2024, https://bidenwhitehouse.archives.gov/briefing-room/statements-releases/2024/06/13/fact-sheet-partnership-for-global-infrastructure-and-investment-at-the-g7-summit-2.

[35] UN Economic Commission for Africa, "Potential Impact of the Lobito Corridor and Support to the Regional Transformation Agenda", in *UNECA Policy Briefs*, October 2024, https://hdl.handle.net/10855/50261.

[36] European Commission DG for International Partnerships website: *Connecting the Democratic*

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Launched in 2021, Global Gateway is the EU's strategy to promote development and connect the world through smart and sustainable investments in quality infrastructure.[37] In total, the commission expects 300 billion euro between 2021 and 2027 in investments to be mobilised based on the "Team Europe" approach, which aims to promote synergies from different sources of financing: EU institutions and member states, financial institutions and private actors. The Global Gateway's focus is on physical infrastructure to reinforce digital networks, transport and energy. With more than 200 projects having received funding by 2024, the efforts seem to have "spread too thinly" in its first years of implementation, according to internal EU briefing documents.[38]

In parallel with this external strategy, the EU has undertaken several legislative initiatives to boost AI and data governance and digital regulation. They include: regulation of online platforms and search engines through the Digital Services Act, the European Digital Media Observatory, AI regulation through the AI Act, the European Media Freedom Act, the Regulation on Transparency and Targeting of Political Advertising and lastly the European democracy shield initiative.[39] In the international competition to lead digital innovation at the global level the EU has championed a model that supports a value-based regulatory approach to emerging technologies such as AI. EU member states and the EU as a whole can play a prominent role in helping African partners the regulatory aspects of digitalisation, the digital divide and the negative externalities resulting from the digital transformation.

The EU's external action on digital and the Global Gateway strategy, which aim to promote a more sustainable and ethical alternative to the Chinese Belt and Road Initiative (BRI), emphasises respect for human rights and sustainable development. Competition with China has indeed intensified. The Chinese government has invested a lot in emerging technologies at the national and international level, such as high-speed rail, digital and 5G-enabled manufacturing, robotics, smart cities, smart ports, autonomous vehicles, digital payments, health tech, drones and satellites.[40] African countries are using Chinese digital surveillance technologies, mostly provided by the Chinese company Huawei, which has built 70 per cent of the Africa's 4G networks.[41] Unlike the EU, China has followed a policy of "no

Republic of the Congo, Zambia, and Angola to Global Markets through the Lobito Corridor, https://international-partnerships.ec.europa.eu/node/2801_en.

[37] See European Commission DG for International Partnerships website: *Global Gateway*, https://international-partnerships.ec.europa.eu/node/1750_en.

[38] Koen Verhelst and Eddy Wax, "Focus Harder to Rival China's Vast Global Investment Plan, Brussels Is Told", in *Politico EU*, 23 April 2024, https://www.politico.eu/?p=4637136.

[39] Naja Bentzen, "Information Integrity Online and the European Democracy Shield", in *EPRS Briefings*, December 2024, https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2024)767153.

[40] Robert D. Atkinson, "China Is Rapidly Becoming a Leading Innovator in Advanced Industries", in *China Innovation Series*, September 2024, https://itif.org/publications/2024/09/16/china-is-rapidly-becoming-a-leading-innovator-in-advanced-industries.

[41] Bulelani Jili, "The Spread of Chinese Surveillance Tools in Africa. A Focus on Ethiopia and

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political conditions"[42] when offering loans and technical support and assistance to African counterparts in several sectors,[43] such as mobile payment platforms and agricultural technologies.

2.2 The EU, Global Gateway and D4D Hub

The EU aims to support the development of governance and regulation of digital technologies that can guarantee individuals' rights and consumers' protection,[44] and hopes to inspire other countries to follow its model counting on the so-called 'Brussels effect', whereby external players tend to adopt regulations in line with the EU's ones in order to get greater access to the single market.[45] The EU also emphasises the close connection between digital strategies and industrial policies, that is, technology's dual role in strengthening Europe's economic position while addressing global sustainability challenges.[46]

The Global Gateway approach to Africa's digitalisation has promoted hard infrastructures in several countries, while at the regional level fewer projects are focused on data governance. There is little beside the Data Governance in Africa initiative[47] supporting the African Union, regional economic communities and states in developing data policy frameworks building on the AU Data Policy Framework (60 million euro under the Global Gateway); and the Africa-Europe Digital Regulators Partnership in Sub-Saharan Africa.[48]

The digital aspects of the Global Gateway are focused on the construction of fibre-optic cables (as for instance in the Democratic Republic of Congo, Zambia, Zimbabwe, Malawi and Mozambique), intercontinental submarine cable systems

Kenya", in Chux Daniels, Benedikt Erforth and Chloe Teevan (eds), *Africa–Europe Cooperation and Digital Transformation*, London/New York, Routledge, 2023, p. 32-49 at p. 37, https://doi.org/10.4324/9781003274322-3.

[42] As stated by Wang Yi, "Every cooperation we carry out has no political conditions attached to it, neither is it imposed on others from the so-called 'status of power', and it will not pose a threat to any country." See Amber Wang, "China Belt and Road 'Not Ideological' Foreign Minister Tells Conference", in *South China Morning Post*, 24 June 2021, https://www.scmp.com/news/china/diplomacy/article/3138562/china-belt-and-road-not-ideological-foreign-minister-tells.

[43] Ibid.

[44] Chux Daniels, Benedikt Erforth and Chloe Teevan, "Digitalisation for Transformation", in Chux Daniels, Benedikt Erforth and Chloe Teevan (eds), *Africa–Europe Cooperation and Digital Transformation*, London/New York, Routledge, 2023, p. 1-16 at p. 5, https://doi.org/10.4324/9781003274322-1.

[45] See Anu Bradford, *Digital Empires. The Global Battle to Regulate Technology*, Oxford, Oxford University Press, 2023.

[46] Georgiana-Alina Crisan, Anda Belciu and Madalina Ecaterina Popescu, "Digital Transformation—One Step Further to a Sustainable Economy: The Bibliometric Analysis", in *Sustainability*, Vol. 17, No. 4 (2025), Article 1477, https://doi.org/10.3390/su17041477.

[47] See Digital for Development (D4D) Hub: *Data Governance in Africa*, https://d4dhub.eu/initiatives/data-governance-in-africa.

[48] See European Commission DG for International Partnerships website: *Africa-Europe Digital Regulators Partnership in Sub-Saharan Africa*, https://international-partnerships.ec.europa.eu/node/2786_en.

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(the EU-Africa-India digital corridor), Green Data Centres (in Mauritania), or on implementing Digital Economy Packages to foster digitalisation in Kenya, Nigeria and the Democratic Republic of Congo. However, other initiatives of the Global Gateway, such as the D4D Hub, have the potential to develop a more integrated approach to EU-Africa partnership for development. D4D Hub is a platform to foster digital cooperation and promote inclusive and sustainable digital ecosystems launched in 2020.[49] The D4D Hub now comprises sixteen EU member states, private sector partners, civil society organisations and academic institutions, in line with the Team Europe approach, to partner with countries in the Global South.

Additional areas where partnerships could be fostered are agriculture and justice. The EU has financially supported the CAADP-XP4 project, an AU's initiative that aims to leverage the potential in African agritech,[50] but has not done much on justice systems. Digitalisation of judicial procedures could be seen by the EU as an opportunity to "align its digital priorities with its justice and rule of law priorities in Africa".[51] Some forms of digitalisation have been experimented after Covid-19. An Electronic Court Case Management Information System has been tested in several African countries, including Ghana. In addition to technical assistance to courts and judges, legal cooperation could include online legal assistance and justice-tech startups.[52]

3. Digitalisation in Italy: The state of play

Italy is engaged in its own domestic digitalisation, not an easy task for a country with an aging population and private companies that on average are markedly smaller than those of other countries. Italy's government hopes to be able to leverage best practices and lessons learned in the course of its domestic digital transformation to develop digital cooperation with African countries.

Italy has put a strong emphasis on digital transformation, with the aim to contribute to the EU's Digital Decade objectives; 27 per cent of the funds for its Recovery and Resilience Plan is allocated to digital transformation with a focus on the modernisation of public administration and the development of high-speed internet infrastructure.[53] In the last few years an important effort has been made

[49] European Commission DG for International Partnerships, *Team Europe: Digital4Development Hub Launched to Help Shape a Fair Digital Future across the Globe*, 8 December 2020, https://international-partnerships.ec.europa.eu/node/1122_en.

[50] See Joint Research Centre, *Comprehensive Africa Agriculture Development Programme*, 4 February 2025, https://knowledge4policy.ec.europa.eu/node/77498_en.

[51] Raul Okello, "Strengthening the EU-AU Digital Agenda: The Potential of e-justice", in *ECDPM Commentaries*, 13 June 2022, https://ecdpm.org/work/strengthening-eu-au-digital-agenda-potential-e-justice.

[52] See for instance the LEWUTI project in Uganda or the HiiL Justice Accelerator programme: https://www.hiil.org/?p=4416.

[53] See the official website: *Italia Digitale 2026*, https://innovazione.gov.it/italia-digitale-2026.

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on e-government, e-health and the diffusion of digital IDs, with two eIDAS digital identity schemes – SPID and CIE e-IDs. The use of digital IDs has reached in a very short time almost 40 million users for both SPID and CIE e-IDs, highlighting a good capacity for Italian authorities to spread a systematic use of digital identity with digital public infrastructures such as digital IDs.[54]

Ensuring digital public services for all citizens nonetheless remains a big challenge. Only 45.8 percent of Italy's population owns basic digital skills and ICT specialists are in short supply. Several programmes are fostering digital literacy education, including the National Coalition for Digital Skills and Jobs ('Digital Republic'), which brings together 180 organisations.

Italy shows a good level of adoption of key digital technologies – including AI, cloud computing and data analytics. The combined adoption rate is of 63.1 per cent, significantly above the EU average (54.6). However, its startup and innovation ecosystem faces big challenges. While Italy is home to seven unicorns and advanced scientific research capabilities, support for innovative startups remains inadequate. This is exacerbated by an economic structure dominated by micro and small enterprises with limited capacity to support high-growth startups.[55] In addition, implementation of e-justice strategies is marking time (Italian courts have recently suspended the use of the app due to malfunctions).[56]

3.1 The Mattei Plan and synergies with Italy's partners

Adopted on 11 January 2024, the Mattei Plan reflects the effort of the Giorgia Meloni-led government to establish a new model of strategic partnership with Africa to reinforce economic and social development of African countries and, at the same time, address some of Italy's domestic concerns concerning energy and migration. The Mattei Plan draws inspiration from the policy of equal partnership with African partners pursued by Enrico Mattei as head of the national energy company Eni in the 1950s and 1960s. The four-year plan, which focuses on six main areas – education/training; health; water; agriculture; energy; and infrastructures (physical and digital) – has initially mobilised 5.5 billion euros. These public

[54] "In Italy, in 2023 about 40% of individuals reported having used their e-IDs to access online public services, and 47% [...] for private purposes. Both these figures are above the EU average (36% and 41%, respectively). If coupled with the low level of digital skills in the country, these figures represent a remarkable achievement." European Commission DG for Communications, *Digital Decade Country Report 2024: Italy*, September 2024, p. 27, https://digital-strategy.ec.europa.eu/en/node/12900.

[55] Anitec-Assinform, *Digitale: nel 2024 sempre più imprese (132.400 +2,1%) e occupazione (631.500 +3,4%) nel settore ICT ma ancora troppa frammentazione*, 24 March 2025, https://www.anitec-assinform.it/media/comunicati-stampa/digitale-nel-2024-sempre-piu-imprese-132-400-2-1-e-occupazione-631-500-3-4-nel-settore-ict-ma-ancora-troppa-frammentazione.kl.

[56] Claudio Maria Cardarello, "Processo penale telematico, troppi pasticci con APP: perché i tribunali l'hanno sospeso", in *Agenda Digitale*, 17 January 2025, hhttps://www.agendadigitale.eu/?p=223916.

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financial resources come from the Italian "revolving fund",[57] the Fondo 394,[58] the Italian climate fund and the revolving fund for venture capital operations.[59]

The Italian government has also supported private sector participation, necessary to top up public funds. Additional financial instruments to accelerate sustainable development in Africa developed through international partnerships include the Growth and Resilience Platform for Africa, the Plafond Africa, the Trust Fund Framework Agreement and the Rome Process Financing Facility together with the Italy-World Bank declaration of intent.[60] The Cassa Depositi e Prestiti (CDP), a financial institution that supports strategic investments drawing from postal savings, plays a pivotal role in partnership with the African Development Bank.[61]

Pilot projects involving nine countries (Egypt, Tunisia, Morocco, Algeria, Kenya, Ethiopia, Mozambique, Ivory Coast and the Democratic Republic of Congo) were launched in 2024. Other projects in cooperation with Ghana, Angola, Mauritania, Senegal and Tanzania were announced in early 2025. Among the 21 projects listed, several have a relevant digital component. In Algeria a project on agricultural production has been announced, involving an Italian leading company (BF Group – Bonifiche Ferraresi). Another project foresees the creation in Algeria of a training centre for high-tech start-ups, with mixed Italian-Algerian financing.[62] BF Group recently signed a memorandum with Leonardo (the leading company in the aerospace, defence and security sector) to promote agricultural and technological development in Africa. It foresees the use of smart agriculture techniques (including satellites and digital technologies) to monitor crops and water management.[63] Sparkle, the first international service provider in Italy and among the top ten global operators, announces its collaboration with Google and others to build Blue and Raman Submarine Cable Systems, whose branches will connect Eastern Africa to EU and India.

[57] According to Law 227/1977 the Revolving Fund, now managed by CDP, has the scope to subsidise financial credits intended to improve the economic and monetary situation of beneficiary countries.

[58] A fund for the granting of loans to support the internationalisation of Italian companies, primarily small and medium-sized enterprises, managed by SIMEST (CDP). See SIMEST, *SIMEST: riparte il Fondo 394 per l'internazionalizzazione delle PMI*, 1 June 2021, https://www.simest.it/media/comunicati-stampa/simest-riparte-fondo-internazionalizzazione-pmi.

[59] A fund managed by SIMEST intended for venture capital operations in countries outside the European Union, according to Law 296/2006.

[60] Banca d'Italia, *Italy and the World Bank Group: Partnering for Africa's Prosperity*, 7 November 2024, https://www.bancaditalia.it/media/notizia/italy-and-the-world-bank-group-partnering-for-africa-s-prosperity-8-november-2024.

[61] African Development Bank, *Italy's National Promotional Institution CDP and African Development Bank to Invest €400 Million in Africa's Private Sector Growth*, 29 July 2024, https://www.afdb.org/en/node/73036.

[62] Italian Government, *Relazione sullo stato di attuazione del Piano Mattei, aggiornata al 30 giugno 2025*, 8 July 2025, https://www.senato.it/service/PDF/PDFServer/DF/443840.pdf.

[63] Paolo Marelli, "Piano Mattei, la potenza dei satelliti per la smart agricolture in Africa", in *SpaceEconomy360*, 21 January 2025, https://www.spaceconomy360.it/?p=235679.

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In Morocco, the creation of a training centre for renewable energy and energy transition with the aim to support local start-ups has been announced, along with a telemedicine project which envisions the development of remote monitoring systems to assist patients.[64] Other relevant initiatives regard the Democratic Republic of Congo, where digital water management systems could be used to improve drinkable water access in Brazzaville, and Tunisia, where a centre for training and technological acceleration for innovative companies in the energy sector is set to be created with the help of Terna, the leading Italian company operating in electricity transmission networks.[65]

With a regional perspective, the Mattei Plan supports the institution of an "AI Hub for Sustainable Development" in collaboration with UNDP. The centre, which will be based in Rome, aims to improve access to high-quality, locally relevant datasets; bridge the gap in specialised technical skills; reduce barriers to computing capacity and create an enabling environment to inspire and scale high-impact innovations. Being in its initial phases, three pilot programmes have been defined: the Startup Acceleration Pilot, the Local Language Partnerships Accelerator Pilot and the Green Compute Coalition. With a clear orientation to enhance a multi-stakeholder collaboration, the AI Hub relies on the four-pronged 'GROW' approach: Guide, Renew, Orchestrate and Weave. The so-called GROW approach is designed "to create a unified approach towards developing a pioneering African AI system". While promising, the approach has not progressed beyond the first step, Guide, which focusses on research and advocacy for strengthening private sector engagement.[66] As for the AI Hub, Italy launched another collaboration with UNDP in November 2024: the "Italy's Digital Flagship with Africa Initiative" which aims to improve connectivity, develop public digital systems and catalyse innovative ecosystems in key sectors such as agriculture, e-justice, health, climate and e-commerce. This initiative focuses on four countries – Ivory Coast, Senegal, Ghana and Mozambique – and is in the first evaluating phase of the different needs and possibilities.[67]

A stronger role to foster Italian and EU synergies could be played by the Italian Agency for Development Cooperation (AICS). Since 2018, AICS has been responsible for indirect management of EU funding. In 2023 AICS joined the D4D Hub secretariat together with other national agencies such as GIZ (Germany), Enabel (Belgium), Expertise France (France) and AECID (Spain). AICS's participation in the D4D hub projects related to Africa can help advance the digital dimension of the Mattei Plan.

[64] Ibid. The project is implemented by Dedalus, leader in the hospital and diagnostic software sector.

[65] Ibid.

[66] G7 and UNDP, *AI Hub for Sustainable Development. Strengthening Local AI Ecosystems through Collective Action*, July 2024, https://www.undp.org/node/474651.

[67] UNDP, *Launch of Italy's Digital Flagship with Africa Initiative Aims to Close Africa's Sustainable Financing Gap*, 15 November 2024, https://www.undp.org/node/493966.

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Italy alone cannot match the political and economic influence of competing powers in Africa.[68] As suggested by the collaboration with UNDP, the digital strategy of the Mattei Plan can succeed only if closely integrated in multilateral frameworks, such as UN, of which Italy has traditionally been a strong supporter. Though being a national-driven strategy, both the effectiveness and legitimacy of Italy's initiatives are largely predicated on its capacity to cooperate with and receive support from international organisations and to foster a European strategy rooted in shared values, such as democracy, rule of law and sustainable development, even in time of crisis. Italy can also leverage its traditional horizontal and holistic approach that aims not only to build economic partnerships but also to promote a human-centred development. This implies careful feasibility analyses of the various digital initiatives and an assessment of their social impact. This more comprehensive approach could represent a comparative advantage over other competitive models of development such as the BRI one promoted by China.

3.2 Italian digital cooperation: What role for CSOs and academia

Some Italian stakeholders view the digital pillar of the Mattei Plan as a valuable opportunity for strengthening Italy's role in development cooperation and paving the way to new forms of partnership with African countries.[69] Nevertheless, several critical aspects are worth considering. The Plan's chances of success will depend on Italy's capacity to make full use of the characteristics of its engagement in Africa such as the strong pre-existing network of civil society organisations working in several countries and its decentralised and multi-level approach that emphasises inclusiveness. Notable examples are the initiatives aimed at digital skills training and knowledge transfer such as the agreement recently signed with Ethiopia for creating a High-Tech Innovation Business Incubation Centre to strengthen digital services which includes 4.5 million euro in funding for startup training, smart kiosks for digital services and related job creation, and the Local Language Partnership Accelerator Pilot, part of the AI Hub, which focuses on underrepresented African languages in the digital world.

The Mattei Plan can build on the role of civil society organisations and academia, based on their expertise, and coordinate partnerships in the digital sector. Italian CSOs, like Oxfam, Coopi, Soleterre for instance, have a long-lasting experience in building partnerships and planning projects, and in adapting their activities to local structures and needs.[70] Some development projects have already integrated ICT and

[68] Filippo Simonelli, Maria Luisa Fantappié and Leo Goretti, "The Italy-Africa Summit 2024 and the Mattei Plan: Towards Cooperation between Equals?", in *IAI Commentaries*, No. 24|11 (March 2024), https://www.iai.it/en/node/18220.

[69] Vincenzo Del Monaco, Eva Spina and Keyzom Ngodup Massally, "Italy and UNDP: How the New AI Hub for Sustainable Development Will Strengthen the Foundations for Growth in Africa", in *New Atlanticist*, 4 October 2024, https://www.atlanticcouncil.org/?p=797111.

[70] Marianna Lunardini, Clarisa Nelu and Benedetta Pescetto, "Development Cooperation, Human Rights and Emerging Technologies. Does AI Support a Right-Oriented Development?", in *CeSPI Policy Briefs*, September 2024, https://www.cespi.it/en/node/2852.

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AI in development cooperation in Africa, especially in Kenya and Mozambique. In Mozambique AICS has implemented a project on digital transformation managing directly funding from EU (so-called "cooperazione delegata").

Civil society and universities can play a role in the design and implementation of initiatives under the Mattei Plan by sharing expertise and innovative methods to measure the social impact. They can help foster African digital skills and, at the same time, address negative externalities that digital transformation can generate. The Mattei Plan could take advantage of with Italian initiatives such as the AfricaConnect 2021-2025 (University of Sant'Anna),[71] the GLOBEC (University of Pavia), the Center of Data and Complexity for Society from Sapienza University[72] or with projects such as LIFT LAB (Save the Children), a global innovation hub supporting projects in twenty countries.[73]

Conclusion

While Africa faces growing digitalisation needs, persistent structural gaps – such as the lack of digital infrastructure, weak data governance and insufficient digital skills – remain critical hurdles to sustainable and equitable progress. Several actors, such as the AU, the New Partnership for Africa's Development Agency and the African Development Bank, are already engaged in development cooperation across the continent. But the EU and Italy are also invested in the continent's digital development. EU has made significant efforts to strengthen the partnership with Africa, notably through the Global Gateway initiative, which emphasises the pivotal role of the private sector. Within this framework, Italy's Mattei Plan can catalyse infrastructure investment, energy transition and skills transfer under a horizontal partnership model. Though still in its early stages, the plan has generated important synergies not only with key international partners like the UNDP but also with other G7 and EU initiatives focused on infrastructure needs, with strong participation of leading Italian companies.

The success of the Mattei Plan depends not only on its ability to foster effective private-sector partnerships. Stronger coordination with Italian and African civil society organisations and academic centres can maximise its impact. To avoid exacerbating divides or reinforcing imbalances, a multifaceted approach is essential, one where public and private actors work together to enhance digital skills and promote local ownership.

Updated 4 August 2025

[71] See Scuola Superiore Sant'Anna website: *AfricaConnect*, https://www.santannapisa.it/en/africaconnect.

[72] See the official website: https://cdcs.di.uniroma1.it.

[73] Save the Children, *LIFT Labs Annual Report 2024*, https://resourcecentre.savethechildren.net/document/lift-labs-annual-report-2024.

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Digital Transformation: Aligning Italy's Piano Mattei with African Development Priorities

by Darlington Tshuma

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ABSTRACT

Africa's digital landscape is undergoing rapid transformation driven by a surge in entrepreneurial activity and widespread adoption of digital technologies. The Digital Flagship – a strategic partnership between the Italian government, UNDP and four African countries – builds on this progress by leveraging Africa's digital transformation to build climate-neutral, cyber-resilient digital infrastructure, strengthen digital public platforms and accelerate technology adoption to improve the accessibility and delivery of public services. However, the success of Africa's digital transformation depends on overcoming key structural barriers including Africa's widening digital infrastructure gaps, digital skills shortages, underdeveloped financing mechanisms and fragmentation caused by overlapping and uncoordinated digital initiatives. These structural bottlenecks risk undermining coherent regulatory frameworks and the long-term viability of Africa's digital sector. Bridging these gaps is crucial to strengthening Italy-Europe-Africa digital partnership.

Africa | Digital policy | Italian foreign policy

keywords

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Digital Transformation: Aligning Italy's Piano Mattei with African Development Priorities

by Darlington Tshuma*

Introduction

The world's digital landscape is marked by profound disparities – both within and across societies shaped by geography, gender, income, race, ethnicity, education and age. While global connectivity has expanded from one billion people with access to the internet in 2002 to over 5.3 billion in 2024, the digital divide remains stark.[1] In Europe, 89 per cent of the population is online, compared to just 44 per cent in sub-Saharan Africa.[2] In many low-income countries, limited connectivity and unreliable energy supply, inadequate data centres and poor infrastructure have led to over 1 trillion dollars in economic losses.[3] Affordability remains a critical barrier to universal internet access. For example, in sub-Saharan Africa, where internet penetration is the lowest globally, the cost of a smartphone exceeds 40 per cent of the average monthly income and data prices remain nearly three times the global average. Recognising the transformative potential of digitalisation, African countries and regional economic communities (RECs) have established or are in the process of establishing national and sub-regional digital policy

[1] United Nations, "A Global Digital Compact - an Open, Free and Secure Digital Future for All", in *Our Common Agenda Policy Briefs*, No. 5 (May 2023), p. 2, https://doi.org/10.18356/27082245-28.

[2] GSMA, *The Mobile Economy Sub-Saharan Africa 2024*, November 2024, p. 11, https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-economy/wp-content/uploads/2024/11/GSMA_ME_SSA_2024_Web.pdf; Eurostat, *Access to Internet in Urban and Rural Areas in 2023*, 22 November 2024, https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20241122-1.

[3] World Bank, *Well Maintained: Economic Benefits from More Reliable and Resilient Infrastructure*, May 2021, p. 27, https://ppp.worldbank.org/node/5580.

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frameworks to inform Africa's digital transformation. For instance, both the Digital Transformation Strategy for Africa (2020-2030)[4] of the African Union (AU) and the AU's Continental AI Strategy[5] underscore the continent's demographic dividend as a growth frontier. Both policy documents aim to harness the transformative power of digital technologies to stimulate innovation and job creation, address skills shortage, reduce inequalities, improve public service delivery and promote economic integration. With an estimated three-hundred million Africans expected to come online by 2025,[6] urgent, coordinated action from governments, development partners, academia, civil society and the private sector is needed to ensure that Africa's digital transformation is both inclusive and equitable, and that it compliments national, sub-regional and continental efforts to drive sustainable socio-economic development.

This paper examines key trends, emerging opportunities and structural challenges shaping digital transformation and digital infrastructure ecosystems in Côte d'Ivoire, Ghana, Mozambique and Senegal – the four African partner countries participating in Italy's Digital Flagship initiative. It explores how the Digital Flagship initiative can be leveraged to build climate-neutral and cyber-resilient digital ecosystems, advance Africa's digital public infrastructure and accelerate technological adoption to improve access to and delivery of public goods and services. The concluding section offers policy recommendations and identifies action areas to further strengthen Italy-Europe-Africa digital partnership.

1. The spirit driving Africa's technological revolution

From the bustling streets of Nairobi to the vibrant tech hubs of Lagos and Kigali, and the towering skylines of Cape Town and Johannesburg, African innovators and techprenuers are harnessing the power of AI and digital technologies to drive innovation and develop transformative solutions to pressing challenges. Digital fintech start-ups in Rwanda and Nigeria, mobile money innovations in Kenya, Lesotho and Zimbabwe, and pay-as-you-go solar innovations in Kenya and Ghana attest to ingenuity of Africa's techprenuers and its dynamic digital and technology landscape.[7] An example is CF Grower, a tech start up in Ghana which uses AI technology to help reduce barriers to entry for new and aspiring farmers.[8] The platform enables new and aspiring farmers to hire highly experienced farm managers to oversee day-to-day farm operations. AgroCenta – a platform that

[4] African Union, *The Digital Transformation Strategy for Africa (2020-2030)*, 18 May 2020, https://au.int/en/node/38507.

[5] African Union, *Continental AI Strategy. Harnessing AI for Africa's Development and Prosperity*, July 2024, https://au.int/en/node/44004.

[6] African Union, *The Digital Transformation Strategy for Africa*, cit., p. 3.

[7] Mike Bruton, *Harambee. The Spirit of Innovation in Africa*, Cape Town, HSRC Press, 2022.

[8] CF Grower website: *Farm with Confidence as a First-Time Farmer*, https://www.completefarmer.com/products/grower/new-farmer.

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enables rural based smallholder farmers in Ghana to directly access markets and finance by bypassing middlemen, is another.[9] A further example is Danaya in Côte d'Ivoire – an information security management systems firm that enables clients to verify the identity of individuals and businesses by examining authenticity of documents. The firm specialises in mitigating financial losses and managing risks related to fraud and identity theft which are estimated to cost businesses and individuals millions of dollars annually.[10] These innovations demonstrate Africa's commitment to leverage digital technologies to drive socioeconomic development and build a digitally inclusive future for all. Currently, there are more than 440 technology hubs in 93 cities across 42 African countries.[11] The AI Hub for Sustainable Development Start-Up Accelerator Pilot[12] – an initiative between the Italian government and the United Nations Development Programme (UNDP) – aims to support Africa's entrepreneurs to harness the potential of AI to drive human progress and accelerate achievement of Sustainable Development Goals (SDGs).[13] Between 2018 and 2020, more than 130 new technology hubs opened in Africa representing a four-fold yearly increase in total funding received for start-ups.[14]

In 2023, African start-ups secured over 3.5 billion dollars in total funding (both equity and debt), with the number of funding deals almost doubling. Total transactions and funding breached the twenty-billion-dollar mark in just ten years - 68 per cent of it in the last three years alone.[15] Across the continent, many African governments continue to demonstrate strong ambition to leverage digital technologies for sustainable development. This is reflected in continental policy documents and attempts at country and sub-regional levels to develop digital policy frameworks. For instance, the four pilot countries under Italy's Digital Flagship project[16] – Côte d'Ivoire, Ghana, Mozambique and Senegal – have each established national digital strategies and policies to inform implementation and guide roll-out of digital infrastructure ecosystems. However, despite these efforts, several constraints including infrastructure and financing gaps hinder sustainable investment in the digital sector, limiting the sector's long-term impact and scalability.

[9] AgroCenta website: https://agrocenta.com.

[10] Danaya website: https://docs.danaya.africa/documentation.

[11] Maxine Bayen, "Africa: A Look at the 442 Active Tech Hubs of the Continent", in *GSMA Blog*, 10 April 2024, https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/blog/africa-a-look-at-the-442-active-tech-hubs-of-the-continent.

[12] AI Hub for Sustainable Development website: *About*, https://www.aihubfordevelopment.org/about; UNDP website: *AI Hub for Sustainable Development Co-Design*, https://www.undp.org/node/479016.

[13] UNDP, *Launch of Italy's Digital Flagship with Africa Initiative Aims to Close Africa's Sustainable Financing Gap*, 15 November 2024, https://www.undp.org/node/493966.

[14] African Union, *The Digital Transformation Strategy for Africa*, cit.

[15] Partech, *Presenting the 2023 Partech Africa Report: A Rough Year for the Ecosystem*, 23 January 2024, https://partechpartners.com/news/presenting-the-2023-partech-africa-report-a-rough-year-for-the-ecosystem.

[16] UNDP, *Launch of Italy's Digital Flagship with Africa*, cit.

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2. Africa's digital infrastructure for inclusive growth and service delivery

As African countries work towards a digitally secure and inclusive future, the need for robust regulatory and institutional mechanisms and policy frameworks to address cybersecurity threats, safeguard data protection and privacy, ensure affordable connectivity and foster strategic partnerships has never been greater. From pioneering digital and AI innovations in healthcare to breakthrough treatments for deadly diseases and innovative solutions for tackling climate change or improving educational outcomes for millions of people on the continent, Africa's digital future holds great promise. The World Bank estimates that digital technologies and AI have the potential to contribute up to 15.7 trillion dollars to the global economy, with Africa expected to generate approximately 1.2 trillion dollars – equivalent to a 5.6 per cent increase in the continent's GDP.[17]

In countries with fragile and weak governance systems, digitalisation of public services and goods can enhance stability and security by improving transparency and accountability, enhancing responsiveness and accessibility in the delivery of public goods and services. This is particularly true in contexts where causal linkages can be drawn between deficiencies and chronic incapacity in service provision and conflict, instability and insecurity or where the social contract is weak.[18] Research shows that absence of life-enhancing opportunities (such as access to health, education, employment) and sustainable livelihoods remain significant drivers of fragility and growing insecurity in Africa.[19] Poor service delivery (a manifestation of weak state presence) exacerbates horizontal inequalities which, when paired with perceptions of marginalisation, reinforce concerns about state neglect that erode trust in public institutions. For instance, lack of justice, pervasive impunity and perceived bias within judicial systems – often exacerbated by corruption and nepotism can serve as drivers of instability and insecurity.[20] One of the primary functions of a state is its ability to deliver public goods and services. It is one of the fundamental ways by which citizens and ordinary people interact with the state – and these interactions shape overall perceptions of the state and the legitimacy of its institutions. In countries with weak governance systems, skewed coverage and uneven distribution of public services can undermine long-term stability by elevating risks of instability and insecurity.

[17] Oyebola Okunogbe and Fabrizio Santoro, "Increasing Tax Collection in African Countries: The Role of Information Technology", in *Journal of African Economies*, Vol. 32, Supplement 1 (March 2023), p. 57-83, https://doi.org/10.1093/jae/ejac036.

[18] UNDP, "Journey to Extremism in Africa: Pathways to Recruitment and Disengagement", in *UNDP Reports*, February 2023, https://www.undp.org/node/385896.

[19] UNDP, "Journey to Extremism in Africa: Drivers, Incentives and the Tipping Point for Recruitment", in *UNDP Reports*, September 2017, https://www.undp.org/node/5966.

[20] UN Secretary-General, *Promotion of Durable Peace and Sustainable Development in Africa* (A/78/234-S/2023/553), 26 July 2023, https://www.un.org/osaa/node/1329.

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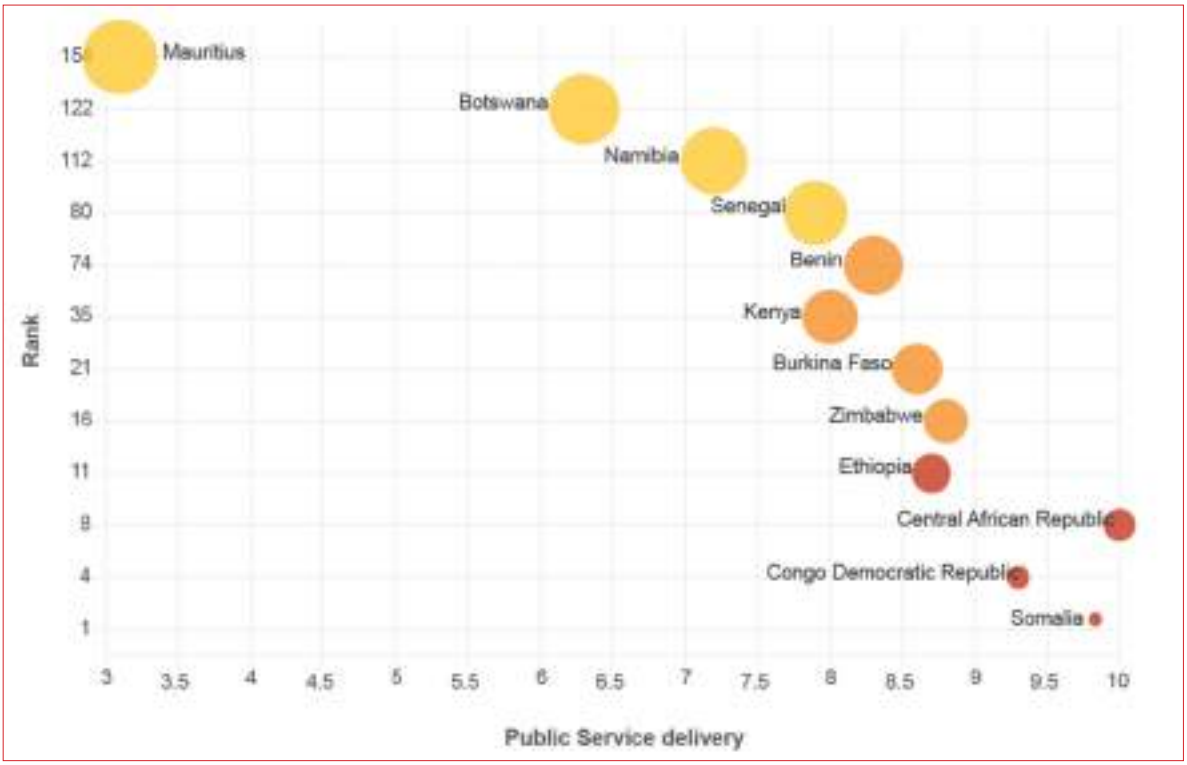
Figure 1 | Public service delivery in African countries with varying levels of fragility



Source: UN Office of the Special Advisor on Africa, *Home-Grown School Feeding: From Hot Meal to Macroeconomic Tool - A Low-Hanging Fruit for Africa's Urgent Challenges*, New York, United Nations, September 2024, p. 8, https://www.un.org/osaa/content/home-grown-school-feeding-hot-meal-macroeconomic-tool-for-africas-challenges.

Dissatisfaction and discontent with poor service delivery is linked to a rise in violent protests and riots (see Figure 1). Countries with weak and fragile governance systems face significantly heightened risks of insecurity and instability. Digital technology solutions and AI powered innovations that bridge digital divides and improve delivery of public goods and services can help build stable and more secure communities.

In Ghana, recent technological advancements have substantially lowered the cost of integrating identity data across government functions. The introduction of the national identification system, the "Ghana Card" in 2021 marked a shift in public sector efficiency. As a result, the number of registered tax filers rose from fewer than four million to nearly 6.6 million. Importantly, the Ghana Revenue Authority reported that it could now identify and trace approximately 85 per cent of the population, compared to just 4 per cent under the previous system – significantly enhancing the country's capacity for tax compliance and domestic resource mobilisation.

Similarly, the adoption of digital technologies has significantly enhanced the capacity of tax authorities to identify and rectify inconsistencies in taxpayer

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data in Kenya. This has contributed to stronger domestic resource mobilisation efforts. Improving tax compliance can positively impact the tax-to-GDP ratio. Between 2016 and 2017, the Kenyan Revenue Authority increased VAT collection by more than one billion dollars – thanks to M-PESA.[21] Digitalisation of public sector services affords users the flexibility to conduct transactions on the go and settle trade payments with ease. For those with internet connectivity and access, digitalised and automated systems are more efficient and are easier to track and monitor.

Figure 2 | GovTech Maturity Index (GTMI)[22] in 2022

Glossary

GTMI score no of countries
Blue (A) - 4
Green (B) - 10
Light blue (C) - 19
Red (D) - 15
Total 48

Source: World Bank, *GovTech Maturity Index (GTMI) Data Dashboard*, 15 November 2022, https://www.worldbank.org/en/data/interactive/2022/10/21/govtech-maturity-index-gtmi-data-dashboard.

3. Ghana's e-justice project

Ghana's e-justice project is underpinned by the country's Digital Transformation Agenda (2018).[23] It is integral to global governance efforts and for sustainable development and Ghana's own efforts to achieve SDG 16: peace, justice and strong institutions. With a history dating back decades, Ghana's e-justice project is

[21] M-PESA is Africa's largest mobile money platform that does not require a traditional bank account and is credited with facilitating financial inclusion among previously unbanked populations in Kenya.

[22] GTMI measures key aspects of 4 GovTech focus areas – supporting core government systems, enhancing service delivery, mainstreaming citizen engagement, and fostering GovTech enablers. Countries with lower scores (A=highest, D=lowest) have lower adoption for digitalisation for public service delivery.

[23] According to the UNDP's *E-Government Development Index*, Ghana advanced 15 places globally, rising from 123rd position in 2014 to 108th in 2024 – a reflection of the country's sustained investment in digital governance and public sector innovation.

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intended to ensure that justice delivery is effective, transparent and efficient by replacing old manual systems characterised by inefficiency, delays and allegations of corruption.[24] According to an Afrobarometer survey, the judiciary in Ghana is viewed in largely negative terms. Public trust is dented with a 32 per cent distrust and 30 per cent minimal trust.[25] Allegations of corruption, missing documents, delays in court proceedings and duplication continues to dent public trust in judiciary processes. Established in 2017 by the Ministry of Trade and Industry with technical assistance from the ACP-Friendly Programme, Ghana's Business Regulatory Reform (BRR) Unit leverages digital platforms to enhance citizen engagement and participation in public policy processes.[26] A key component of this project is the roll-out of Ghana's "virtual court rooms" (e-justice project) to facilitate speedy resolution of legal disputes. Ghana's e-justice project is expected to expedite justice delivery by eliminating the need for in-person court appearances, thereby reducing costs and time associated with traditional court hearings, particularly for people residing in remote areas and low-income households where physical court appearances can lead to additional financial burdens.

Globally, an estimated four billion people live outside the protection of the rule of law because of their marginal positions in society. In Africa, this was most visible during the Covid-19 pandemic when "lockdowns" created additional bureaucratic layers by restricting non-essential physical mobility and by extension access to justice and the efficient resolution of legal matters. A survey conducted by Afrobarometer across 36 African countries found that 54 per cent of citizens reported difficulties in accessing justice.[27] For example, the Kenyan court system had backlogs of up to one million cases in 2012 while Zimbabwe's High Court processes less than half of all cases brought before it per year.[28] Ghana's e-justice project that integrates modern technology illustrates how digital innovation can enhance inclusive governance and accelerate the delivery of justice. By improving user experience, increasing transparency and strengthening responsiveness, accountability and accessibility, Ghana's e-justice project has reduced case backlogs and alleviated pressure on judicial systems.

[24] Maame Efua Addadzi-Koom, *Positioning E-Justice in Ghana's E-Governance Agenda for Sustainable Development: Post-Pandemic Reflections*, paper presented at the 5th African Governance Seminar Series, Addis Ababa, 2022, https://www.researchgate.net/publication/375921843.

[25] Afrobarometer and Ghana Center for Democratic Development, *Summary of Results for the Afrobarometer Round 9 Survey in Ghana in 2022*, 24 October 2022, p. 50, https://www.afrobarometer.org/?p=17727.

[26] Jean Arlet and Madelynne Grace Wager, "Transforming Governance in Ghana: A New Regulatory Service Model for Africa", in *Africa Can End Poverty Blog*, 26 March 2024, https://blogs.worldbank.org/en/africacan/transforming-governance-in-ghana-a-new-regulatory-service-model.

[27] Carolyn Logan, "Ambitious SDG Goal Confronts Challenging Realities: Access to Justice Is Still Elusive for Many Africans", in *Afrobarometer Policy Papers*, No. 39 (March 2017), p. 3, https://www.afrobarometer.org/?p=6528.

[28] Logan Finucan, Erika Barros Sierra and Namita Rajesh, *Smart Courts: Roadmap for Digital Transformation of Justice in Africa*, London, Access Partnership, March 2019, https://accesspartnership.com/?p=2113.

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4. Unlocking Africa's agricultural potential: Harnessing AI for a climate-resilient future

African techprenuers and innovators are leveraging AI and digital technological solutions to build climate resilience, revolutionise and transform agriculture. According to a report published by the African Development Bank, Africa holds 65 per cent of the world's uncultivated arable land. The agriculture sector contributes approximately 30 per cent of the continent's GDP and employs more than 50 per cent of its current workforce.[29] Despite its vast potential, Africa's agricultural sector grapples with significant challenges, including water scarcity, food insecurity, environmental degradation and unpredictable weather patterns.

In response, African agritech entrepreneurs are harnessing AI-driven solutions to enhance resource efficiency, optimise yields and build resilience against climate-related shocks, driving a more sustainable and technology-enabled agricultural transformation. In Ghana, Senegal, Côte d'Ivoire and Mozambique, AI-powered precision agriculture is transforming resource management by optimising the use of scarce inputs such as water while enhancing crop quality and yields. In Ghana, where technological infrastructure is relatively advanced, cutting-edge tools, including satellite imagery, high-resolution drone sensors and geographic information systems enable real-time monitoring of crop and soil health, and nutrient levels. These innovations are empowering smallholder farmers to carry out their activities more efficiently and effectively – from applying fertilizers, water and pesticides to significantly lowering production costs and minimising post-harvest losses (PHLs) and reducing environmental impact. A notable example is TechShelta, a tech start-up in Ghana that provides specialised greenhouse services to smallholder farmers.[30] The company integrates technology with agriculture, allowing for automation for efficient remote operational monitoring and control. Another is Senegal's e-Tolbi, an AI-powered tool that provides farmers with yield forecasting information and field management platform to monitor plant health, fertilisation and water requirements.[31]

Conservative projections estimate that the use of AI in agriculture will grow at an annual growth rate of 23 per cent between 2023 and 2028, rising from 1.7 billion to 4.7 billion dollars in investments.[32] In sub-Saharan Africa, the agri-food tech sector has experienced remarkable expansion, with private investments surging from under 10 million dollars in 2014 to nearly 600 million dollars by 2022.[33] The highest adoption of AI is in fintech followed by crop monitoring (see Figure 3).

[29] African Development Bank, *Feed Africa*, May 2019, https://www.afdb.org/en/node/28532.

[30] Ghana Techshelta: https://ghanacic.ashesi.edu.gh/ventures/techshelta-limited.

[31] Tolbi website: https://tolbi.ai/fr.

[32] Chakib Jenane, "Is Artificial Intelligence the Future of Farming? Exploring Opportunities and Challenges in Sub-Saharan Africa", in *Agriculture & Food Blog*, 12 March 2025, https://blogs.worldbank.org/en/agfood/artificial-interlligence-in-the-future-of-sub-saharan-africa-far.

[33] Ibid.

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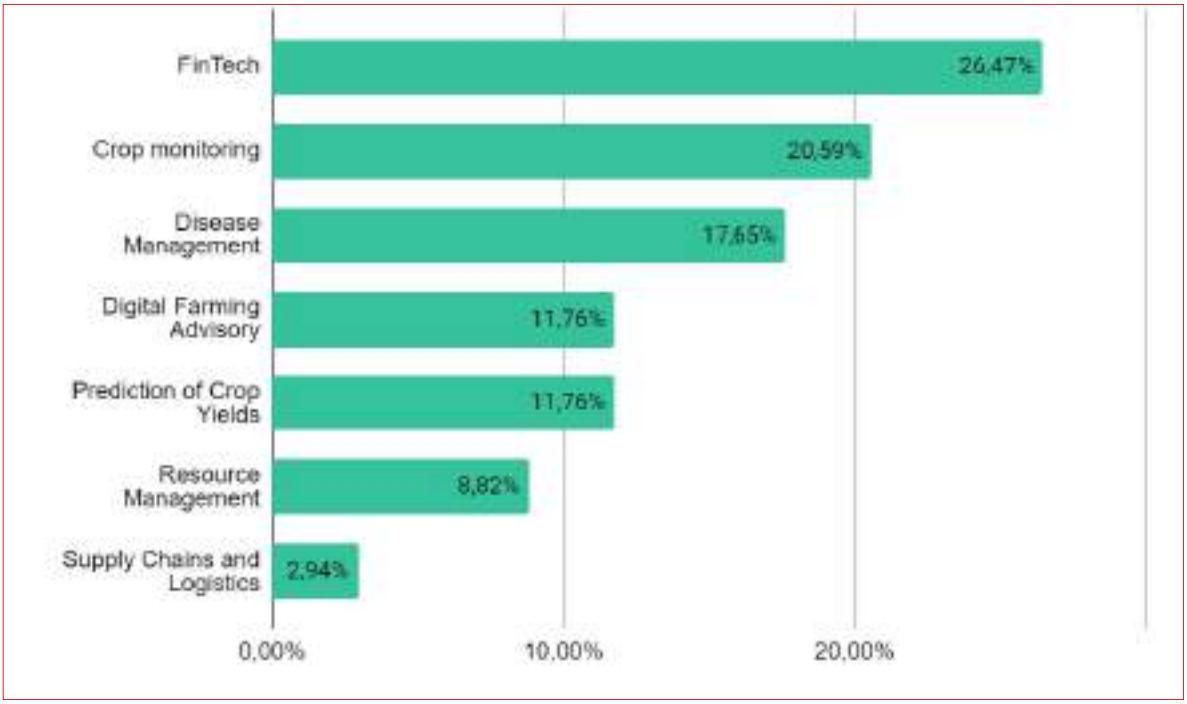
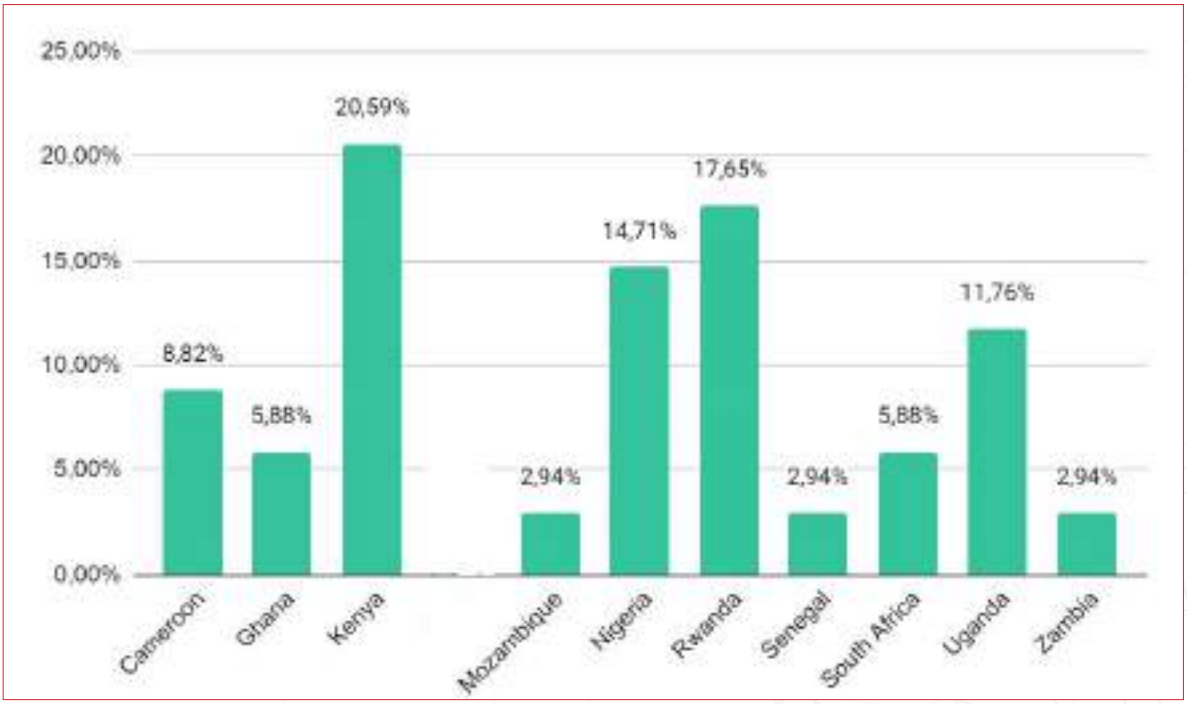
Figure 3 | Deployment of AI across the agriculture value-chain in Africa



Source: Thomas Hervé Mboa Nkoudou, *State of AI in Agriculture in Sub-Saharan Africa*, International Centre of Expertise in Montreal on Artificial Intelligence (CEIMIA), 2024, p. 37, https://zenodo.org/records/13144813.

Figure 4 | Most active countries in developing AI solutions in agriculture



Source: Thomas Hervé Mboa Nkoudou, *State of AI in Agriculture in Sub-Saharan Africa*, cit., p. 38.

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5. Plugging Africa's digital infrastructure and skills gaps

Innovation and digitalisation are key to transforming African societies and economies and promote regional and continental integration, generate inclusive economic growth and stimulate job creation to absorb the ever-growing number of Africans joining the labour force every year. It is estimated that by 2050, Africa will have added nearly eight hundred million people to its labour force.[34] Partnerships and investments that help build the necessary digital skills, regulatory environment and infrastructure base can help unleash the continent's true economic potential. For instance, global digital trade (largely dominated by US and Chinese technology firms) represents a multi-billion-dollar industry. The US Department of International Trade and Administration estimates that the value of e-commerce globally will reach six trillion dollars in 2025.[35] In 2017 alone, e-commerce accounted for 12 per cent of global trade in goods - with Africa accounting for a small slice of global e-commerce revenues.

Supporting existing initiatives like the African Continental Free Trade Area (AfCFTA) that aim to create a single digital market has the potential to create economies of scale with a combined GDP of 2.5 trillion dollars – large enough to jump-start African economies and unlock economic opportunities for millions of young people. In countries with advanced digital infrastructure, e-commerce channels are increasingly being used by governments for the delivery of public services through for example visa processing and issuance, civil registration, tax payments and tendering.[36] Between 2012 and 2020, Africa's digital economy grew by 3.4 per cent of GDP and is expected to reach 5.2 per cent in 2025 and 8.5 per cent by the middle of the century.[37] With the appropriate infrastructure in place and an enabling regulatory framework, Africa's contribution to the global economy is expected to reach 720 billion dollars of GDP, far exceeding current contribution of 180 billion dollars.[38]

Building a secured digital market characterised by free movement of persons, goods, capital and services is critical to ensure that people and businesses can seamlessly access and engage in online activities in line with AfCFTA. To achieve this, African countries need to build necessary digital skills, cross border and transnational data infrastructure and capabilities to unleash this potential. At the moment, limited and unreliable energy and connectivity, inadequate data centres and poor infrastructure remain significant challenges to the creation of an African digital market. It is estimated that nearly three hundred million Africans live more

[34] David McNair (ed.), *Why Europe Needs Africa*, Washington, Carnegie Endowment for International Peace, 2024, https://carnegieendowment.org/research/2024/07/why-europe-needs-africa.
[35] US Department of Commerce International Trade and Administration, *2024 eCommerce Size and Sales Forecast*, 2024, https://www.trade.gov/ecommerce-sales-size-forecast.
[36] African Union, *The Digital Transformation Strategy for Africa*, cit.
[37] Ibid.
[38] Ibid.

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than fifty kilometres from a cable or fibre broadband connection,[39] hence the lack of widespread availability of high-speed and reliable broadband and connectivity remains a significant hurdle to connectivity and infrastructure roll outs. According to a report published by the International Finance Corporation (IFC), Africa needs about half a million kilometres of fibre-optic cable construction to provide continent-wide coverage.[40]

Despite these gaps, significant gains have been achieved in recent years. For instance, between 2019 and 2022, over 160 million Africans gained broadband access[41] – thanks to initiatives such as the "All Africa Digital Economy Moonshot" – a World Bank backed facility that aims to improve digital connectivity in Africa by 2030. As data costs drop and infrastructure gaps narrow, digital trade in Africa will continue to rapidly grow and is expected to constitute a growing share of intra-continental trade by the middle of the century. To support the roll out of digital services and skills, tech innovators and entrepreneurs are forming communities of practice to share experiences, learn from each other's successes and brainstorm new innovations to meet the needs of the industries and sectors they work with. Unlocking Africa's digital economy potential will involve closing infrastructure gaps, promoting data sovereignty, expanding internet connectivity, reducing connectivity costs and building a cohort of trained professionals with high-level digital skills. To achieve this, collaboration between governments, development partners and the private sector is crucial.

Access to affordable and reliable energy is a cornerstone of sustainable socioeconomic development, and a stable energy supply is essential to underpin the large-scale deployment of digitalisation initiatives across sectors. While the continent has abundant energy sources including 7.2 per cent and 13 per cent of global oil and natural gas reserves respectively, over half of the population lacked access to electricity in 2023.[42] Furthermore, Africa's energy consumption is disproportionately low, accounting for less than 4 per cent of global energy use, with just 1.1 per cent of electricity generation and 3 per cent of industrial energy consumption worldwide.[43] Specifically, sub-Saharan Africa has the lowest electricity consumption per capita globally, averaging around 600 kWh annually. In some countries, such as Niger, this figure drops to just 54 kWh per year, starkly

[39] European Commission AU-EU Digital Economy Task Force, *New Africa-Europe Digital Economy Partnership. Accelerating the Achievement of the Sustainable Development Goals*, June 2019, https://digital-strategy.ec.europa.eu/en/node/1744.

[40] International Finance Corporation (IFC), *Fiber-Optic Cables Connect Africa to the Digital Economy*, 27 August 2019, https://www.ifc.org/en/stories/2010/fiber-optic-cables-connect-africa-to-digital-economy.

[41] World Bank, *Digital Transformation Drives Development in Africa*, 18 January 2024, https://www.worldbank.org/en/results/2024/01/18/digital-transformation-drives-development-in-afe-afw-africa.

[42] International Energy Agency (IEA) website: *Africa: Energy Mix*, https://www.iea.org/regions/africa/energy-mix.

[43] IEA, *Africa Energy Outlook 2022*, June 2022, https://www.iea.org/reports/africa-energy-outlook-2022.

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contrasting with the global average of 3,000 kWh per year.[44]

Similarly, investments in Africa's Renewable Energy sector are low, potentially stalling the expansion of decentralised energy infrastructures and limiting the adoption of energy intense technologies like AI, cloud computing, e-commerce and others. According to Data Center Map, Africa, home to over 1 billion people, hosts just 183 data centres across 33 countries.[45] In contrast, Canada has 264, Japan 182 and the United States boasts more than 3,600 data centres. These disparities highlight the continent's significant infrastructure gaps. As African countries scale up investments in AI-driven technologies amid rapid population growth – projected to exceed 2.5 billion by 2050 closing energy access gaps and building resilient, future-ready energy systems will demand bold, forward-looking policy interventions. Innovations in energy infrastructure, backed by smart regulation and strategic planning, is essential to meet the rising demand while enabling inclusive, low-carbon energy development.

6. Navigating geopolitical competition: Strengthening Italy's digital partnerships with Africa

Unless urgently addressed, geopolitical competition over Africa's digital future will likely lead to fragmented digital initiatives, disjointed regulatory frameworks and overlapping projects that may further entrench structural disparities and exacerbate the digital divide.[46] For instance, by 2020, China had concluded cooperation agreements with at least sixteen African countries under the Digital Silk Road Initiative (DSR).[47] DSR is China's global digital infrastructure undertaking involving Chinese technology companies building telecommunications networks, AI capabilities, cloud computing, e-commerce, surveillance technologies and other high-tech innovations around the world.

Similarly, the United States, EU and other powers are deploying a combination of financial investments, strategic policy frameworks and geopolitical engagement aimed at securing technological, economic and normative leadership on the continent. With financial backing of 150 billion dollars for Africa alone,[48] the EU's Global Gateway in combination with initiatives like the AU-EU Digital4Development

[44] Ibid.

[45] Data Center Map website: https://www.datacentermap.com/datacenters.

[46] Ennatu Domingo et al., "The Geopolitics of Digital Literacy and Skills Cooperation with Africa", in *ECDPM Discussion Papers*, No. 369 (June 2024), https://ecdpm.org/work/geopolitics-digital-literacy-and-skills-cooperation-africa.

[47] US Congress, *China's Strategic Aims in Africa*, Hearing before the U.S.-China Economic and Security Review Commission, 8 May 2020, https://www.uscc.gov/sites/default/files/2020-06/May_8_2020_Hearing_Transcript.pdf.

[48] European Commission DG for International Partnerships website: *EU-Africa: Global Gateway Investment Package*, https://international-partnerships.ec.europa.eu/node/2530_en.

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(D4D) Hub and #TeamEurope Initiatives like Digital Health) are aligning development assistance, private capital, technological aid and research cooperation to shape Africa's digital transformation agenda. In 2022, the US Administration of President Joe Biden (2021-25) launched its Digital Transformation with Africa Initiative (DTA) backed by an 800-million-dollar financial package. International financial institutions like the World Bank, European Investment Bank, International Monetary Fund and African Development Bank are involved in joint or leading parallel initiatives across the digital spectrum. To harness global digital competition for their own development, African countries need to institutionalise policy and regulatory frameworks and harmonise strategies – ensuring that initiatives are demand-driven and that investments align with and complement national development efforts and continental priority needs.

Individual EU member states are also developing their own digital partnerships with Africa – and a notable example is Italy's Digital Flagship with Africa – part of its Piano Mattei.[49] Italy is pursuing a hybrid approach that blends traditional development cooperation with external policy objectives, leveraging a mix of financing instruments including loans, grants and private capital to shape Africa's digital policy landscape.[50] This strategy is operationalised through centring digital transformation in the "six thematic pillars" of the Mattei Plan. As African countries navigate geopolitical competition and craft their own digital strategies and identify priority areas to secure long-term technological, economic and data sovereignty, the end goal must be to achieve maximum impact with technology as an enabler of sustainable development and human progress. Initiatives like the AI Hub for Sustainable Development Start-Up Accelerator Pilot, a project between the Italian government and UNDP, has attracted over three hundred applications from cutting edge start-ups from the 14 priority countries of the Italy-Africa Mattei Plan. The programme is designed to assess effective, ethical and necessary partnerships to accelerate the development and adoption of Language AI technologies. It prioritises support for sustainable, locally driven innovations that incorporate enhanced safeguards such as advanced content moderation mechanisms, prompt filtering and improved reinforcement learning protocols to ensure responsible and trustworthy AI development.

The successful roll out of such initiatives largely depends on development of several elements that are critical to building reliable data infrastructure ecosystems. Africa's energy access gaps, skills shortage and poor energy infrastructure needs to be bridged through tailored trainings and innovative financing models for scalable infrastructure development in the energy, fibre connectivity and water sectors. Projections estimate that data centre energy consumption needed to

[49] Italian Chamber of Deputies Research Department, *D.L. 161/2023 - Disposizioni urgenti per il «Piano Mattei» per lo sviluppo in Stati del Continente africano*, 10 January 2024, https://temi.camera.it/leg19/provvedimento/disposizioni-urgenti-per-il-piano-mattei-per-lo-sviluppo-in-stati-del-continente-africano.html.

[50] Ibid.

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power AI driven technologies could reach 1,580 terawatt hours by 2034 – roughly equivalent to India's total energy consumption. Data centres alone are projected to be the world's third-largest consumer of energy, consuming more energy than the whole of EU put together. Due to their high energy intensity, data centres require substantial cooling systems, often consuming thousands of litres of water per hour to maintain optimal operating temperatures and ensure uninterrupted performance. These are critical sectors that require urgent interventions and investments. Italian firms aiming to deepen partnerships with African countries should prioritise investments in decentralised renewable energy systems to enhance energy access in areas underserved by national grids and physical infrastructure. In parallel, investments in rehabilitating wastewater infrastructure for agricultural and industrial use can improve resource efficiency in water stressed regions where resource scarcity could ignite new conflict dynamics. These interventions are critical enablers for the deployment of digital infrastructure ecosystems that support Africa's growth efforts.

7. Policy recommendations

Action in several areas would have a beneficial impact to strengthen Itay-Europe-Africa digital partnership across infrastructure development, skills training and policy frameworks:

- Align public and private sector investments and contributions with regional and sub-regional development strategies and priorities. A harmonised demand-driven-approach as opposed to a supply-driven-approach will mitigate the risk of disjointed digital development initiatives led by competing external actors.

- Prioritise targeted investments in strategic sectors that enhance fiscal capacity including scaling up investment in regional and transnational digital infrastructure such as interoperable payment systems, digital identity frameworks and cross-border e-governance platforms that facilitate economic integration, integrate informal economy and enhance domestic resource mobilisation.

- Private lending for Africa's digital infrastructure sector faces volatility and uncertainty, particularly during periods of economic or political crisis. This unpredictability drives up borrowing costs and delay or derail project implementation. Italian and European private lenders should explore risk-mitigation measures such as local currency lending to reduce exposure to risks and exchange-rate volatility. This will lower borrowing costs, stabilise project implementation and enhance the long-term viability of digital infrastructure investments in Africa.

- Scale up digital skills training aligning with labour market demands and the digital economy by investing in digital infrastructure that supports e-learning

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and remote education delivery, particularly in rural and underserved communities.

- Invest in large scale transformative development projects that impact socioeconomic outcomes and lead to improved quality of life. For example, investments in decentralised energy and water systems to support both sustainable growth while bridging digital divides.

- Consider the creation of coordination platforms (private sector, civil society, academia, governments) where public and private sector investments and contributions are reviewed and aligned with regional and sub-regional digital and development strategies. This will ensure that investments are aligned with the Digital Flagship Project goals and are effectively contributing to the development of regional and sub-regional frameworks in pilot countries.

- Support local value creation mandates by ensuring that private digital investments contribute to skills development, local content creation and infrastructure sharing. This will enhance digital adoption and relevance.

- Digital transformation is only impactful when paired with human capital development. Integrating digitalisation with education and training implies continuous monitoring and reporting to minimise harm, eliminate algorithmic bias and surveillance risks.

- Italy's bilateral and fiscal reach in Africa is limited; therefore, an EU-coordinated approach addresses Italy's limited fiscal capacity and reach. Through #TeamEurope and existing programmes, including EU-AU digital partnerships, Italy can offer a harmonised package of investment, regulation and capacity support. A unified EU voice helps avoid fragmented offers and strengthens Africa's digital sovereignty goals.

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