Centre for International
Governance Innovation

Policy Brief No. 236 — May 2026

Investment Treaties as Catalysts for Technology Transfer in Africa

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Key Points

- Technology transfer is a critical driver of Africa's structural transformation and is central to achieving Africa's long-term socio-economic goals.
- African investment treaties play a pivotal role in shaping the legal framework for technology transfer but vary in their approach to regulation. Some explicitly prohibit host states from imposing technology transfer obligations, while others promote or encourage it. Many treaties remain silent, creating ambiguity and heightened legal risk for African states seeking to mandate such transfers.
- Express and implied restrictions in African investment treaties that relate to technology transfer can, in some instances, constrain policy space and expose African states to investor-state disputes, thereby limiting their ability to leverage foreign investment for technological advancement.
- Ultimately, strong institutional capacity and harmonized legal frameworks, alongside complementary measures, are essential for effective technology absorption, as relying solely on technology transfer provisions in African investment treaties will be insufficient to catalyze development.

Introduction

The slow pace of Africa's development, despite its abundant human and natural resources, is a cause for concern. Weak industries, governance deficit, inadequate infrastructure, environmental degradation and insecurity have significantly constrained the continent's advancement (Mukasa and Simpasa 2024). These multifaceted challenges have created an urgent need for a more direct and innovative approach toward the development of African states. This policy brief highlights the role of technology transfer in Africa's quest for overall development. Specifically, it examines how foreign investment treaties signed by African states (in other words, African investment treaties), one of the primary legal instruments regulating foreign investment in Africa, support or constrain technology transfer and its implications for the development of African states.

This analysis is particularly important in the context of the continent's initiatives, such as the bedrock of Africa's long-term development, the African Union (AU) *Agenda 2063*. This agenda positions foreign investment as a pathway for African states to access advanced technology and technical expertise, as well as to enable the application of innovation within local contexts.

About the Author

Stanley U. Nweke-Eze is a legal scholar and practitioner focusing on key areas of global governance, including the legal architecture of cross-border trade, investment relations and international dispute settlement. Among other themes, his research explores the evolving dynamics of Africa-Canada and Africa-China economic engagement, analyzing how legal frameworks shape opportunities for inclusive and sustainable development. Stanley holds a Ph.D. in international investment law from the University of Hong Kong, an LL.M. in international economic law from Harvard Law School, an LL.M. in commercial law from the University of Cambridge and a first-class LL.B. from Nnamdi Azikiwe University, Nigeria. He is admitted to practise law in England and Wales, New York and Nigeria, and has more than a decade of practical experience representing sovereigns, multinational corporations, financial institutions and local communities in cross-border disputes and transactions across diverse sectors, including technology.

To achieve its objectives, this brief

- examines the role of technology transfer in Africa's development;
- analyzes African investment treaties as a primary legal framework for regulating foreign investments in Africa; and
- assesses the relevant policy implications for Africa, and provides recommendations before offering concluding thoughts.

The Role of Technology Transfer in Africa's Development

African states face multiple development challenges that exist across economic, environmental, political, institutional and social spheres (Assogbavi 2025). For instance, many African states heavily depend on natural resources as a major source of income, thereby crowding out the growth of other productive sectors (Mpuure and Mengba 2024). Limited access to education and skills gaps, unemployment, poverty and limited access to health care persist. According to the United Nations' regional commissions report in 2024, 36 percent of Africans in sub-Saharan Africa and 43 percent in Eastern and Southern Africa live below the extreme poverty line (United Nations 2025). Furthermore, investment in research and development (R&D) is critically low, with most African states allocating less than one percent of their GDP to R&D (United Nations Educational, Scientific and Cultural Organization 2021). This limits the innovation and adoption of advanced technology.

The underutilization of Africa's technology potential is mainly due to limited technological expertise and insufficient R&D activities. Beyond renewable energy, other sectors with significant economic potential, such as telecommunications, agriculture and mining, are also underutilized but would blossom with adequate technology infusion and continuous R&D activities. Overall, Africa's development is constrained by multiple and interconnected challenges including technological stagnation, deindustrialization, weak governance, and persistent patterns of

exploitative leadership and mismanagement of natural resources (Osuigwe 2023). These combined factors continue to limit inclusive growth, leaving resource wealth underleveraged instead of utilized for broad development and reinforcing cycles of poverty and underdevelopment.

Foreign investment is generally viewed as one of the solutions to these challenges (Osano and Koine 2016). The influx of foreign investment into African states is typically characterized by the importation of capital, improved access to markets, expertise, increased employment opportunities and, most importantly, technology transfer. Through foreign investment, investors introduce R&D techniques and new production methods, as well as knowledge-sharing skills and tools. Put differently, foreign investment usually involves technology transfer, either as its primary purpose or as a byproduct of the operational needs of the investment.

Technology transfer refers to the movement of technology and related expertise from regions where it is highly advanced to regions where it is lacking (Anderson and Woroner 2020). It is a comprehensive term encompassing mechanisms for transferring information across borders and its effective dissemination into recipient economies. Technology transfer is a complex process that involves multiple components, including the transfer of both tangible and intangible elements such as patents, technical know-how, information, expertise and capabilities to adapt and sustain technology. Thus, it ranges from innovation and international marketing of technology to its absorption and imitation (Maskus 2004; Nwokolo et al. 2024). Technology transfer directly relates to these developmental priorities and creates a path for addressing these structural challenges. It has the capacity to generate employment opportunities and foster skills and human capital development through education and knowledge sharing. In addition, it could promote the upgrade of local industries through advanced production methods, supporting economic diversification. Also, the introduction of sustainable technology to sectors such as agriculture and renewable energy contributes to and strengthens environmental protection, facilitating a clean energy transition.

The need for technological gains is recognized by the AU *Agenda 2063*, which articulates Africa's long-term socio-economic goals aimed at transforming Africa into a thriving economy, driven by Africans but attainable through cross-border investment, among other factors (AU Commission 2015). Notably, aspirations 1 and 2 of the agenda emphasize industrialization, inclusive growth and technology-driven structural transformation, while aspiration 7 reinforces sustainable energy access and climate resilience. In general, the AU *Agenda 2063* identifies science, technology and innovation as key drivers of inclusive growth and long-term development in Africa, and calls for the development of regional innovation, enhanced R&D capacity, and a strengthened technological base through partnerships and knowledge sharing.

Furthermore, the AU *Science, Technology and Innovation Strategy for Africa 2024* outlines the strategies necessary to achieve economic transformation in support of the AU *Agenda 2063* (AU Commission 2024). These strategies include fund generation, infrastructure development, entrepreneurship, strengthening institutional arrangements, bilateral and multilateral cooperation, and the development of African civil society organizations dedicated to policy debates and awareness and knowledge diffusion. The vision is to reduce dependency on foreign experts and create a reliable system and a self-sustaining economy capable of addressing challenges from within. In this framework, technology is seen not only as a tool for importing foreign innovations into the continent but also as a pathway for enhancing local capacity building and developing sustainable systems. The overall objective is the development of the African economy through the construction of local systems that equip the citizenry with competitive skills to thrive in the global market. Realizing this potential requires an effective legal and institutional framework that supports and governs the mode of technology transfer and the process of its usage within African economies. In essence, Africa recognizes that foreign investment — which can, among other things, lead to the transfer of technology — is key to its long-term transformation.

In addition to these continental strategies, the African Continental Free Trade Area (AfCFTA) plays an increasingly important role in shaping Africa's technological and industrial ambitions. Although primarily a trade integration instrument, the AfCFTA incorporates comprehensive development objectives, including industrialization, innovation and the creation of regional value chains that rely on technological upgrading. The AfCFTA Investment Protocol, adopted by the AU

Assembly of Heads of State in February 2023, reinforces these goals by promoting cooperation, capacity building and policy coherence across member states. Its emphasis on sustainable development and innovation situates technology transfer within a broader regional integration agenda, underscoring that Africa's technological transformation is supported not only by foreign investment but also by robust intra-African institutional frameworks, including investment facilitation and cooperation commitments.

Against this backdrop, it becomes pertinent to examine how African investment treaties, as the key legal instruments governing foreign investment in Africa, address the transfer of technology and align with the continent's developmental aspirations.

African Investment Treaties Vis-à-Vis Technology Transfer Obligations

The foreign investment landscape in Africa is shaped by bilateral investment treaties (BITs), regional investment treaties, other trade and investment treaties, investment contracts, and national and regional codes and initiatives. However, African investment treaties are the primary legal instruments that regulate foreign investment in Africa. To date, African states have signed more than 1,000 investment treaties, with approximately half of these treaties currently in force.[1] Originally, these investment treaties were primarily signed between developing and developed states. More recently, however, African investment treaties have been concluded between developing states, including intra-African agreements such as the Morocco-Nigeria BIT (2016), the Mauritius-Senegal BIT (2002) and the Ghana-Burkina Faso BIT (2001).

To liberalize the African economy through foreign investment, the core objectives of these investment treaties are focused on the promotion and protection of foreign investments that will foster development, as evidenced in the preamble sections of these treaties. To illustrate, in its preamble the China-Tanzania BIT (2013) provides that the treaty is for the "reciprocal encouragement, promotion and protection of [foreign] investment on the basis of equality and mutual benefit" that will, in turn, "increase economic prosperity in both States."[2] Similar provisions are contained in the Nigeria-United Kingdom BIT (1990) and the Italy-Senegal BIT (2000), among many others. In furtherance of these objectives, the provisions in African investment treaties generally provide substantive protections to foreign investors, thereby reducing political risk and uncertainty and boosting investor confidence. For example, these treaties guarantee foreign investors that their investments will enjoy fair and equitable treatment (FET), as well as full protection and security. In addition, foreign investors are guaranteed that their investments will be protected against direct and indirect expropriation, among other guarantees.

More recent African investment treaties contain substantive provisions geared toward promoting the development of the contracting parties. For example, in article 15(3), the Morocco-Nigeria BIT (2016) expressly recognizes that it is inappropriate to "encourage investment by relaxing domestic labour, public health or safety" and encourages the contracting parties to adopt measures geared toward preventing and combating corruption regarding matters covered by the BIT.[3] As it relates to technology transfer specifically, some African investment treaties contain express provisions in that regard (known as express African investment treaties) while others do not (known as silent African investment treaties).

Express African Investment Treaties

Some African investment treaties contain substantive provisions relating to technology transfer. Express African investment treaties can be further divided into two categories: those that

1 See https://investmentpolicy.unctad.org/international-investment-agreements/advanced-search.

2 *Agreement Between the Government of the People's Republic of China and the Government of the United Republic of Tanzania Concerning the Promotion and Reciprocal Protection of Investments*, 24 March 2013 (entered into force 17 April 2014), online: <https://investmentpolicy.unctad.org/international-investment-agreements/treaty-files/5488/download>.

3 *Reciprocal Investment Promotion and Protection Agreement Between the Government of the Kingdom of Morocco and the Government of the Federal Republic of Nigeria*, 12 March 2016, art 15(3) (not entered into force), online: <https://investmentpolicy.unctad.org/international-investment-agreements/treaty-files/5409/download>.

prohibit host states from imposing technology transfer obligations, and those that actively promote or encourage such transfers. Each carries distinct legal and policy implications, as discussed below.

While some of these treaties encourage technology transfer, others prohibit states from imposing performance requirements that compel technology transfer. In particular, article 7 of the Japan-Kenya BIT (2016), article 9 of the Canada-Senegal Foreign Investment Promotion and Protection Agreement (FIPA) (2014) and article 6 of the Japan-Mozambique BIT (2013) explicitly prohibit Kenya, Senegal and Mozambique, respectively, from imposing certain performance requirements, including state-imposed obligations that would compel technology transfer. Hence, these African host states generally cannot compel technology transfer, as doing so would be in breach of the terms of the relevant investment treaty.

That said, even though some of these treaties prohibit technology transfer, some contain carve-outs. For instance, even though article 9(1) of the Canada-Nigeria FIPA (2014) provides that a host state cannot require the other party to "transfer technology, a production process or other proprietary knowledge to a person in its territory," article 9(4) provides that such prohibition would not apply if the measure "is imposed or the commitment or undertaking is enforced by a court, administrative tribunal or competition authority to remedy an alleged violation of domestic competition law."[4] This underscores the importance of carefully analyzing treaty language rather than assuming a blanket prohibition.

Conversely, some African investment treaties support or promote the transfer of technology. As an example, the draft Pan-African Investment Code, though non-binding, provides guidelines for facilitating technology transfer, including policies and cooperation to promote international technology flows. Specifically, article 29 provides that African states should undertake to cooperate and facilitate the international transfer of technology by various measures, such as establishing or strengthening technology transfer centres. Similarly, the Southern African Development Community Model BIT affirms the host state's right to pursue development goals and enhance productivity through technology transfer (articles 20 and 21). In addition, the Economic Community of West African States (ECOWAS) Supplementary Act on Investments (2008) and the ECOWAS Common Investment Code (2018) mandate member states to provide incentives for technology transfer, while obliging investors to ensure alignment with national science, innovation and technology policies.

Silent African Investment Treaties

Some African investment treaties do not contain an express provision relating to technology transfer obligations. This class of treaties primarily contains substantive provisions aimed at promoting or protecting foreign investment. A case in point is the preamble of the Egypt-United Kingdom BIT (1975) emphasizes the promotion and protection of foreign investment but does not contain provisions on technology transfer. Similar treaties include the China-Kenya BIT (2001), the Ethiopia-Netherlands BIT (2003), the Egypt-Germany BIT (2005) and the United Arab Emirates-Zimbabwe BIT (2018). Even though there is a temptation to assume that the relevant African host states that signed these treaties can compel investors to transfer technology or meet related obligations without violating the relevant treaties, that is not always the case. Indeed, other general provisions in the African investment treaties could be interpreted as barring compelled technology transfer measures, even in the absence of express provisions on the subject. Typical examples include the FET clause, expropriation clause and national treatment clause. The purpose of the FET clause, for instance — a common substantive provision in African investment treaties — is to, inter alia, guarantee foreign investors that they will be protected from arbitrary or discriminatory actions and be treated fairly and equitably in all circumstances. Whether the conduct of a host state is "fair" and "equitable" depends on fact-specific assessments. Given the broad and flexible nature of the standard, it could be interpreted as prohibiting certain technology transfer requirements, for example, where a compelled disclosure of proprietary information undermines legitimate expectations or effects an uncompensated taking. This aligns with observations that compelled technology transfer can be characterized as unfair or inequitable treatment,

4 *Agreement Between Canada and the Federal Republic of Nigeria for the Promotion and Protection of Investments*, 6 May 2014, arts 9(1), 9(4) (not entered into force), online: <https://investmentpolicy.unctad.org/international-investment-agreements/treaty-files/3151/download>.

or even as a form of indirect expropriation, depending on the treaty's structure (Sykes 2021).

While there are no known publicly reported investor-state arbitration cases directly contesting compelled technology transfer obligations under African investment treaties, this absence does not signal a lack of legal friction. Instead, it may, at least in part, indicate a deterrent effect: African states may pre-emptively avoid imposing such requirements to escape costly arbitration and potential treaty breaches. Furthermore, arbitral practice shows that broad standards — such as FET, national treatment and indirect expropriation — are often interpreted in ways that shrink a host state's regulatory space. Consequently, the legal risks remain significant, necessitating a cautious and precisely defined approach during treaty drafting.

Having reviewed the provisions of African investment treaties as they relate to technology transfer, the following section outlines the policy implications arising from the presence or absence of technology transfer provisions in these treaties.

Policy Implications and Recommendations

The inclusion or exclusion of technology transfer provisions in African investment treaties has varying implications. Where such treaties expressly prohibit performance requirements that compel technology transfer, the African host state risks exposure to investor-state disputes if it attempts to enforce such obligations under local law. However, where the relevant African investment treaty contains provisions that promote technology transfer, the African host state would have a legal basis for mandating or incentivizing technology transfer without necessarily exposing itself to dispute, provided that the express terms of the investment treaty are respected. If an African investment treaty is silent on technology transfer, whether the relevant African host state can impose technology transfer obligations will depend on the interpretation of other substantive provisions of the investment treaty, including the FET, national treatment and expropriation clauses. Against the foregoing background, the following considerations are essential:

- African states should carefully weigh the implications of including or excluding technology transfer provisions in treaty negotiations, as this may be the difference between their right to impose technology transfer obligations on foreign investors and their inability to do so. This is admittedly more challenging for smaller African economies with limited negotiating leverage vis-à-vis major capital-exporting states, underscoring the value of coordinated regional positions in treaty negotiations. Clarity on scope, definitions and exceptions can preserve regulatory space while ensuring predictability for investors. Indeed, the promotion of technology transfer in African investment treaties may discourage foreign investment if the provisions are too restrictive or burdensome for the investors; carefully calibrated and transparent provisions, with safeguards for intellectual property and competition policy, can mitigate these concerns. Should an African state wish to include technology transfer provisions in an investment treaty, it is essential that such provisions include clear definitions, preserve intellectual property rights and avoid a scenario of forced transfer. It bears noting that technology-holding investors may resist transfer obligations precisely to protect their competitive advantage; well-crafted provisions that incentivize rather than compel disclosure are therefore more likely to achieve the desired outcome. It is also important to ensure consistency between the provisions of investment treaties and national laws regarding technology transfer as a mechanism for leveraging foreign investment to achieve structural transformation. In essence, African states must assess their treaty commitments in light of their long-term development objectives.
- African states should build institutional capacity to overcome barriers to technology transfer and domestic innovation, thereby enhancing their ability to absorb new technologies. To date, many African states have been unable to adapt new technologies due to their weak infrastructure, limited human capital and inadequate investment in R&D (Kariuki, Mutimura and Kadzamira 2023). By way of example, Africa accounts for less than one percent of global R&D expenditure, with average spending at about 0.45 percent of GDP, well below the global average of roughly 1.7 to 1.95 percent (United Nations Educational,

Scientific and Cultural Organization 2021). Egypt leads the continent at approximately 1.03 percent (as of 2023), while sub-Saharan countries remain far below the AU's target of one percent of GDP.[5] The implication is persistent underdevelopment, which acts as a barrier to the realization of the continent's innovative potential. Therefore, merely fostering technology transfer in African investment treaties is not enough. While the AU *Agenda 2063* emphasizes technology as a catalyst for growth and sustainability, institutional capacity, coherent regulatory frameworks and harmonized treaty obligations with domestic laws are essential for enhancing predictability and enabling technology transfer to contribute meaningfully to Africa's industrialization agenda. Without these foundational elements, technology transfer provisions are unlikely to yield transformative outcomes, whether they are permissive or restrictive. While treaty reform and institutional capacity building are both essential, the latter is a longer-term structural undertaking that must proceed in parallel with, rather than sequentially to, improvements in treaty design.

Conclusion

While technology transfer holds transformative potential for local expertise and economic stimulation, its success is contingent upon the strength of Africa's regulatory environment. The AU *Agenda 2063*'s aspirations for integration and prosperity cannot be realized through capital influx alone; they necessitate coherent legal structures designed for technology absorption. To mitigate the risk of investor-state disputes, African nations must ensure that their investment treaties are articulated with precision — including calibrated exceptions and interpretive guidance that safeguard development policy space while maintaining investor protections. Absent these robust frameworks, the continent may struggle to translate foreign investment into the structural technological upgrading required to overcome systemic developmental hurdles.

5 See https://tradingeconomics.com/egypt/research-and-development-expenditurepercent-of-gdp-wb-data.html.

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