



Intellectual Property Rights and Industrialization

Factsheet

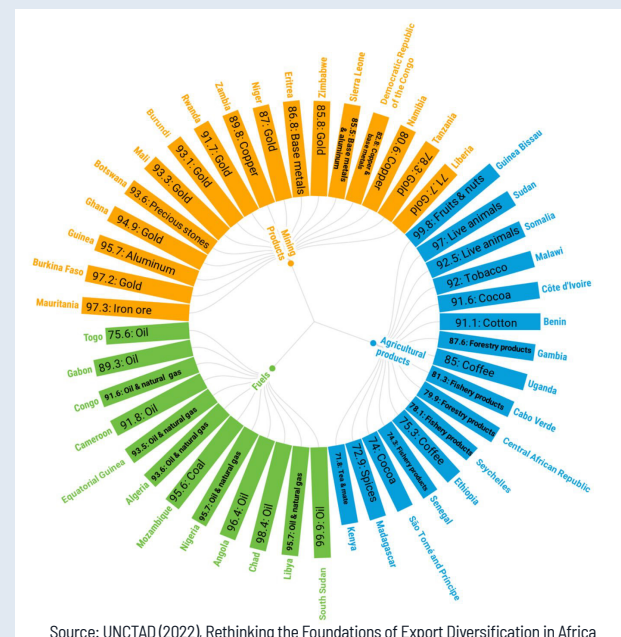
1. Promote scientific and technological innovation to diversify the economy and foster industrialization

Industrialization is central to Africa's development prospects, whereas the region is the least industrialized in the world with a narrow industrial base. Within the continent, South Africa is the only country categorized as industrialized,¹ and 45 out of the 54 countries depend on exports of agricultural (16 countries), mining (17 countries), and extractive industries – mainly fuels (12 countries).²

The above indicates an urgent need for economic diversification by promoting scientific and technological innovations, including through intellectual property (IP) rights protection. The advancement of science, technology, and innovation (STI) leads to industrialization because industrial development can be defined as “a process of accumulating technological capabilities as the primary determinant of structural change.”³

Comparing African countries' rankings of international and regional indexes on industrialization and innovation, namely UNIDO's Competitive Industrial Index (CII)⁴ 2024, WIPO's Global Innovation Index (GII) 2024,⁵ and African Development Bank's African Industrialization Index

Commodity exports as a share of total merchandise exports (%)



International and regional indexes on industrialization and innovation⁷

Ranking in Africa	Competitive Industrial Index (CII), Scores and world ranking			Global Innovation Index (GII), Scores and world rankings			African Industrialisation Index (AII)-Scores	
1	South Africa	0.048	51	Mauritius	30.6	55	South Africa	0.8404
2	Morocco	0.038	60	Morocco	28.8	66	Morocco	0.8327
3	Egypt	0.034	68	South Africa	28.3	69	Egypt	0.7877
4	Tunisia	0.029	70	Tunisia	25.4	81	Tunisia	0.7714
5	Eswatini	0.019	85	Egypt	23.7	86	Mauritius	0.6685
	World Average	0.059	153 countries			133 Economies	Median score of 52 countries	0.5144

As indicated in the table (left), Southern African countries, including Mauritius and Northern African countries, dominate the top rankings on industrialization and innovation in Africa.

However even the leading African country on the Competitive Industrial Index (South Africa, 0.048) remains below the global average score of 0.059.

2. Leverage IP rights to advance innovation for further industrialization

According to a common measurement framework, STI comprises indicators organized along five dimensions: Research and Development (R&D), human resources, patents, innovation, and the technology balance of payments.⁸

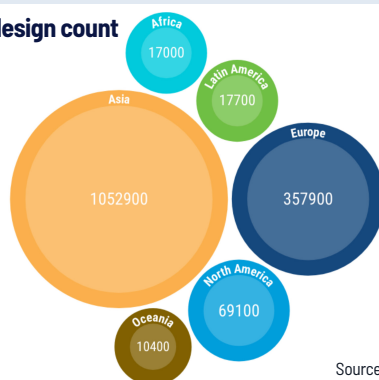
IP rights protection is closely linked to promoting scientific and technological innovations and, thus, is highly relevant for industrial development in various aspects. Among different varieties of IP rights, patents (chemicals, drugs, plastics, engines, and electronics), industrial designs (clothing, automobiles, electronics, furniture, etc.), and utility models or petty patents (mechanical industry) are likely to be the most relevant modalities in relation to industrial policies.⁹

Further, it is crucial for countries willing to advance in their industrialization process to explore how to design their patent regimes to expand the opportunities for access to and diffusion of technology.¹⁰

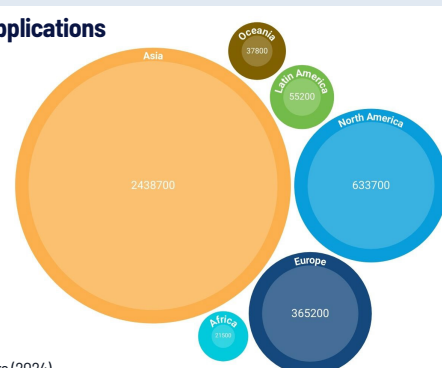
In 2023, Africa accounted for only 0.6 per cent of the world's patent applications, compared to 68.7 per cent for Asia, 17.8 per cent for North America and 10.3 per cent in Europe.¹¹ Furthermore, the number of applications from residents constituted only 19.5 per cent,¹² indicating that most of the applications were submitted by non-residents and/or residents did not use patents to protect their innovations. Hence, there is huge untapped potential for African countries to leverage their patent regimes to promote industrialization.

Application design count and the number of patent applications (2023)

Application design count



Patent applications



Source: World Intellectual Property Indicators (2024)

As for industrial design, Africa only accounted for 1.1 per cent of the world's industrial design applications in 2023, compared to 69 per cent in Asia, 23.5 per cent in Europe, and 4.5 per cent in North America. Among industrial design applications, while 64.8 per cent were lodged by African residents, this remains below the world average residential share of 85 per cent.¹³

Further examining the number of patent and industrial design applications in relation to industrialization within the African continent, similar countries, such as Egypt, Morocco and South Africa position high in the ranking in Africa, indicating a close relation between these IPs, particularly patents, and industrialization progress and vice-versa.

Utility models or petty patents,¹⁴ and design patents¹⁵ have a greater potential for Least Developed Countries (LDCs) to encourage local

technological activity than the implementation of the provisions of the Trade Related Aspects of Intellectual Property Rights (TRIPS).¹⁷ The absence of protection for minor inventions through utility models or petty patents could affect LDCs' ability to convert knowledge and new ideas into economic benefit, but 14 of the 33 African LDCs do not have legislation on utility models or petty patents.¹⁸

Once ratified, the IP protocol of the African Continental Free Trade Area (AfCFTA) will also help promote a harmonized approach to the existing complex regional and sub-regional IP frameworks. The protocol incorporates the principles of national treatment and Most Favoured Nation (MFN) treatment¹⁹ that would avoid discrimination of other member states. It also provides a comprehensive framework for IP protection, including those not covered by existing international IP agreements, such as emerging technologies and other emerging issues.²⁰

Africa's top 5 applicant countries on patents and industrial design (2023)¹⁶



3. Recommendations

- African countries should explore how to design their IP ecosystems, particularly patent regimes, to expand the opportunities for access to and diffusion of technology to promote industrialization.
- African LDCs that do not provide utility models or petty patent protection should consider adopting relevant legislation to protect minor inventions effectively.
- African countries should urgently promote economic diversification by advancing scientific and technological innovations through leveraging IP protection.
- African countries should strengthen the capacities of their IP offices to promote STI information sharing and provide effective IP protections. They should also strategically utilize the AfCFTA IP protocol and its annexes, once fully adopted and ratified, to take advantage of IP policy space opportunities.

End notes

1. UNIDO, if its adjusted MVA per capita exceeds 2,500 international dollars (PPP) (<https://stat.unido.org/portal/storage/file/publications/country-classif-report-2024.pdf>)
2. UNCTAD (2022), "Rethinking the Foundations of Export Diversification in Africa," page 7. Nine (9) non-commodity-dependent African countries are Comoros, Djibouti, Egypt, Eswatini, Lesotho, Mauritius, Morocco, South Africa, and Tunisia.
3. UNIDO (2021), the Role of STI policies in the industrialization of developing countries.
4. CIP index aims to capture the ability of countries to produce and export manufactures competitively in a single, intuitively appealing measure. CIP index ranks 153 countries based on their manufacturing capabilities and other factors. (United Nations, <https://www.un-ilibrary.org/content/books/9789211562934s015-c005>)
- UNIDO (2024), International Yearbook of Industrial Statistics, (<https://stat.unido.org/publications/international-yearbook-industrial-statistics-2024>)
5. GII is a ranking of the innovation capabilities and results of 133 world economies. It measures innovation based on criteria that include institutions, human capital and research, infrastructure, credit, investment, linkages; the creation, absorption and diffusion of knowledge; and creative outputs. (WIPO: <https://www.wipo.int/gii-ranking/en/about>)
- WIPO (2024), Global Innovation Index 2024, (<https://www.wipo.int/web-publications/global-innovation-index-2024/en/>)
6. All mirrors AfDB's understanding of the components of successful industrialization based on a comprehensive set of available relevant and comparable data. It builds up from three sub-indices: Performance: How well are African countries generating manufacturing output and exports? Direct determinants: How well do they direct their endowments (capital and labor) towards industrial development? and Indirect determinants: How well are they creating an enabling environment for industrialization, including macroeconomic stability, sound institutions, and infrastructure?
- African Development Bank (2022), Africa Industrialization Index 2022, (AfDB, <https://www.afdb.org/en/documents/africa-industrialization-index-2022>)
7. Source: UNIDO CIP country profile (https://stat.unido.org/analytical-tools/country-analytics?country=840&codes=IND_%2CHI_IND), WIPO GII 2024, and AfDB Africa Industrialization Index 2022
8. UNCTAD (2010) "Science, technology and innovation indicators for policymaking in developing countries: an overview of experiences and lessons learned" (TD/B/C.II/MEM.1/CRP.1), p.4. (https://unctad.org/system/files/official-document/ciimem1crp1_en.pdf)
9. Correa, Carlos M (2015). Intellectual property: how much room is left for industrial policy? UNCTAD Discussion paper, No. 223. Geneva, 2015. (https://unctad.org/system/files/official-document/osgdp20155_en.pdf)
10. Ibid. page 5.
11. The World Intellectual Property Organization (WIPO) (2024), World Intellectual Property Indicators 2024. Available at <https://www.wipo.int/web-publications/world-intellectual-property-indicators-2024-highlights/en/index.html>
12. Ibid. page 26.
13. Ibid. page 123.
14. In some countries, a utility model (petty patent) system provides protection of so-called "minor inventions" through a system similar to the patent system. WIPO: https://www.wipo.int/en/web/patents/topics/utility_models
15. A design patent protects "a new design, which creates an aesthetic appeal and is fit for industrial application." WIPO: https://www.wipo.int/patent-judicial-guide/en/full-guide/china/4_8
16. WIPO (2024), Intellectual Property Fact Sheet 2023 - https://www.wipo.int/edocs/statistics-country-profile/en/_list/11.pdf
17. Rai, Munmun, Singh Love Kumar, Sharma, Aarti (2009), IP: A strong determinant of economic growth. page 3 - https://www.researchgate.net/publication/40542662_Intellectual_property-A_strong_determinant_of_Economic_Growth
- TRIPS - The WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) is the most comprehensive multilateral agreement on intellectual property (IP). It plays a central role in facilitating trade in knowledge and creativity, in resolving trade disputes over IP, and in assuring WTO members the latitude to achieve their domestic policy objectives. (WTO, https://www.wto.org/english/tratop_e/trips_e/trips_e.htm)
18. UNCTAD, 2023. Revisiting development innovations in least developed countries: A practical review of selected intellectual property rights measures, annex 3. https://unctad.org/system/files/official-document/aldc2023d3_en.pdf
19. Most-Favored Nation (MTN) Treatment and National Treatment (NT) are stipulated under Articles 5 and 6 respectively, of the Protocol to the Agreement establishing the African Continental Free Trade Area on Intellectual Property rights. MFN is an economic position which aims to ensure that any advantage extended to one Member state is equally enjoyed by all the other member states.
- NT stipulates that all member states should follow the set standards and give protection to foreign businesses the way it protects that of its nationals.
- Lex Africa, "The role of Intellectual Property rights in the success of the African Continental Free Trade Agreement (AFCFTA)": <https://lexafrica.com/2023/05/the-role-of-intellectual-property-rights-in-the-success-of-the-african-continental-free-trade-agreement-afcfta/>
20. Emerging Technologies are stipulated under Article 17 of the Protocol to the Agreement establishing the African Continental Free Trade Area on Intellectual Property rights.