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Research article

CHALLENGES OF INDUSTRIAL GROWTH IN AFRICA: SEARCHING FOR NEW OPPORTUNITIES

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Abstract. Industry is a key factor in the structural shifts in the economy that are necessary for enhancing the economic development in African countries. In the rapidly changing global landscape, industrialization, mainly focused on developing the domestic market, is once again becoming the primary way to overcome the growing lagging behind of African countries. This aligns with the essence of Goal 9 ("Promote inclusive and sustainable industrialization and foster innovation") of the UN Sustainable Development Goals, as well as the main directions of the industrialization strategy outlined in Goal 4 ("Transforming the economy") of the "Agenda 2063," developed by the African Union (AU) in accordance with the contemporary challenges of strengthening the economies of Africa's countries. The lack of significant results in establishing an industrial base in most of them, after three declared decades of industrial development for Africa by the UN (Industrial Development Decade for Africa: 1980–1990, 1993–2002, 2016–2025), requires a certain revision of commonly accepted models of industrialization, as well as increasing state support for the implementation of the most promising among them. Based on the analysis of classical models of industrialization, as well as programs and actual results of the manufacturing industry development in Africa, the authors of the article propose an assessment of African countries' industrial potential and the possibilities for them to implement innovative technologies, as well as the creation of production clusters (special economic zones), including through the expansion of cooperation with Russia in the field of modernization of existing and construction of new industrial facilities, primarily in high-tech sectors of the manufacturing industry.

Keywords: Africa, manufacturing industry, models of industrialization, industrial development programs, special economic zones, innovative technologies, Russian-African cooperation

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Amid the reformatting of the global economy in the 2020s, the issue of industrialization in Africa is reaching a new level, exacerbating the continent's need for structural changes in order to sustain economic growth, with industry becoming a key factor in this process. At the same time, the main guideline for the industrialization strategy of African countries remains Goal 9 of the UN's Sustainable Development Goals for 2016–2030[1] (SDGs), which provides for the promotion of inclusive and sustainable industrialization, as well as the creation of appropriate infrastructure and the acceleration of innovation[2].

In this connection, according to the African Development Bank experts, at country level, bold structural reforms are needed to improve the business environment and upgrade labor and entrepreneurship skills as well as production technology[3]"

In these conditions, African countries lacking developed technology face contradictory tasks. For more developed economies such as Egypt, Nigeria, and South Africa, this involves seeking opportunities for the sovereign development of national economies based on the advancement of massive digitalization that accelerates global processes, the introduction of innovations, the restructuring of production management methods, science and professional education, the search for appropriate sources of financing, etc. Less developed African countries, primarily the least developed countries (LDCs), which constitute the majority on the continent, are facing an increasingly urgent need to adapt to the consequences of these processes.

The subject of this study is an analysis of a number of preliminary results of industrialization on the African continent, new challenges in advancing this process, and opportunities for implementing certain models of industrial development in modern Africa.

EVOLUTION OF INDUSTRIAL DEVELOPMENT MODELS IN AFRICA

Following the UN-declared Industrial Development Decades for Africa: IDDA I (1980–1990), IDDA II (1993–2002) and IDDA III (2016–2025), as well as the adoption of the Plan of Action for the Accelerated Industrial Development of Africa (AIDA) by the African Union (AU) in 2008, there is a need to rethink the model of industrialization in Africa, taking into account the multidimensional nature of the structural transformation

[1] The Sustainable Development Goals Report, 2016. *UN*. https://unstats.un.org/sdgs/report/2016/the%20 sustainable%20 development%20goals%20report%202016.pdf (accessed: 12.06.2025)

[2] Goal 9: Industry, Innovation and Infrastructure. Sustainable Development Goals. *United Nations Development Programme*. https://www.undp.org/sustainable-development-goals/industry-innovation-and-infrastructure (accessed: 04.04.2025)

[3] Why does Africa's Industrialization Matter? Challenges and Opportunities? *African Development Bank*. 20.11.2017. https://am.afdb.org/2018/en/news/why-does-africas-industrialization-matter-challenges-and-opportunities (accessed: 04.04.2025)

process, which is directly linked to the development of energy and transport infrastructure, the availability of human and financial capital, the introduction of technological innovations, the simplification of trade procedures, and a number of other factors [Morozenskaya 2023: 499–500].

In the 1990s, economic liberalization policy, or Structural Adjustment Programs, implemented with the support of the World Bank (WB) and the International Monetary Fund (IMF), which primarily involved reducing the state's role in industrial development, undermined efforts to diversify industry and led to the levelling of the industrial base created in a number of African countries during the period of import substitution industrialization after independence (mid-1960s–1980s). The closure of enterprises was observed in many countries, including Nigeria, Ghana, and Zambia, which were the most advanced in industrial development. The share of manufacturing in the GDP of African countries fell from 15.3% in 1990 to 10.5% in 2008[4]. These processes gave rise to talk of deindustrialization.

In the late 1990s, the *Poverty Reduction Strategy* prioritized the development of agro-industrial sectors, but this was complicated by the financial and economic crisis of 2008–2009. This led to a further decline in the average annual growth rate of industrial production across the continent, from 5.2% in 2000–2006 to 2.6% in 2009[5]. Consequently, in 2008, the heads of government of African states approved the aforementioned *AIDA* action plan.

These processes have been examined in detail in the scientific literature, including in studies by Soviet and Russian Africanists [Aleksandrovskaya 1986; Babintseva 1982; Bragina 1971; Goncharov 1983; Tyulpanov 1969]. Decades later, in the 21st century, the process of deindustrialization on the continent accelerated again, characterized as "premature deindustrialization" [Rodric 2016] (see below for more details), which forces most African governments to choose between restoring/modernizing previously created industrial facilities and organizing new enterprises based on the use of modern technologies. Additional opportunities for both options are opening up in Africa as a result of steadily growing domestic demand, supported by rapid population growth, the expansion of regional markets, primarily within integration associations, and the emergence of new opportunities for including African production in international value chains.

In this regard, it is inevitable that new problems will emerge. These include the lack of a sufficiently developed public policy and regulatory framework in the changing economic conditions of *Industry 4.0*, increasing energy supply needs, as well as rising energy and transportation costs, the need to create digital infrastructure and provide digital services, the transformation of the labor market and the shortage of highly qualified personnel and skills in the management of technological production, the intensified competition in the global market and the modernization of global value chains under the influence of automation and artificial intelligence (AI), the resolution of growing environmental problems, etc. This necessitates the implementation of reforms in state industrial policy, particularly in the investment sphere. Accordingly, when developing national and regional plans for the creation and development of the manufacturing industry, various models of interaction between technological, institutional, economic, and environmental factors can be applied.

[4] Economic Development in Africa Report 2011. Fostering Industrial Development in New Global Environment. *UN*. New York and Geneva. 2011. P. 15

[5] Ibid. P. 4.

These models are generally based on the postulates of classical principles of manufacturing industry development, starting with Rostow's theory of the five stages of economic growth (Africa is characterized by the 3rd and 4th stages, the "take-off" and the "drive to maturity") and Lewis's dual-sector model, which divides the economies of countries with high population density, capital shortages, and limited natural resources (using Egypt and a number of other countries as examples) into two sectors: traditional agriculture and modern industry. While Rostow acknowledged the pivotal role of infrastructure, technology, and human capital development for industrialization [Rostow 1960], Lewis considered the flow of surplus workers from agriculture into industry, as well as the accumulation of capital, to be the driving force behind industrial development [Lewis 1955].

Historically, economies have developed based on the transition of workers from agriculture to export-oriented manufacturing, which also uses low-skilled labor but is more productive. However, this pattern is interrupted as the manufacturing sector becomes sufficiently automated and requires increasingly more skilled workers. This leads to labor flows being redirected back to agriculture or low-productivity service sectors (such "premature deindustrialization" has, for example, hampered productivity growth in some Latin American countries). Furthermore, the associated risks are not purely economic and may contribute to political conflicts within the country[6].

To date, the Global Value Chain (GVC) theory remains the most popular, describing the fragmentation and international distribution of industrial production of goods (assembly, component manufacturing, etc.), allowing developing countries to gradually move from low value-added activities to high value-added activities [Bair 2005; Gereffi, Humphrey, Sturgeon 2005].

Among the models of state-led industrialization is Alexander Gerschenkron's theory of late industrialization, which states that countries that embark on industrialization later than others can "leapfrog" certain stages of development by introducing advanced technologies and institutions with the decisive participation of the state and financial institutions in mobilizing resources for industrialization [Gerschenkron 1962].

Erik Reinert, a modern proponent of the ideas of mercantilists Friedrich List and Joseph Schumpeter, also supports active state intervention in economic life, including industrial development and protectionist policies. In his opinion, the practical significance of an economic theory depends on a country's level of development and its ability to escape poverty through industrialization by diversifying manufacturing, introducing protective tariffs, establishing inter-sectoral links, investing in infrastructure, and forming regional markets. With the successful creation of a sustainably functioning industrial sector, a country has the opportunity to enter the global market and compete for profitable positions [Reinert 2008].

Contemporary concepts of socio-economic development in Africa emphasize either strict state control over the economy (Developmental State, DS) or improving the well-being of the population and increasing its involvement in the reproduction process (Inclusive Development, ID) [Morozenskaya 2018]. In the first case, the basis for growth and subsequent development is considered to be an increase in production efficiency in key sectors (industries), while in the second case, a large-scale increase in employment and

[6] Alqali A. When industrialization became a centrepiece of Africa's agenda. *African NewsPage*. 24.12.2022. https://african-newspage.net/2022/12/when-industrialization-became-a-centre-piece-of-africas-agenda/ (accessed: 15.06.2025)

labor intensity of production in all spheres of the economy. It can be said that the concept of the DS echoes the concept of "Infant Industry" (a newly created industry in need of state support), successfully used in newly industrialized countries, primarily in Southeast Asia [Stiglitz 2002], and the concept of ID echoes the concept of human capital.

When applying the DS concept, it is necessary to revive the export-oriented model but with a focus on industrial modernization. This model was implemented in the newly industrialized countries (NICs) and, to a certain extent, in China, enabling them to occupy an advantageous position in the global economy. Meanwhile, in African countries, this model, although seemingly modernizing, may not achieve this. In essence, it is a modified version of the catch-up development strategy, which was popular in the 1960s and 1970s. However, rather than emulating the economies of industrially developed countries, the model is based on the NICs and China. In fact, the only thing the African economy has in common with the Chinese economy of the 1990s is cheap labor, while the second most important component of the Chinese model—massive state capital investment—is absent. Therefore, while it is apparently possible to modify such a model for Africa, this can only be achieved through the flexible use of foreign investment to establish and develop industrial export production [Morozenskaya 2013].

In the coming years, the enhancement of competitiveness in many African countries could be based on the extractive industries, provided that revenues from expanded raw material exports enable them to expand processing and establish medium- and high-tech manufacturing industries (e.g., electrical and telecommunications equipment, medical and measuring instruments, chemical and automotive assembly industries[7]). At the same time, they may well join the process of transition to low-carbon, resource-efficient "green industrialization" within the framework of regional and international cooperation, for example, by developing nuclear energy with the participation of Russia.

INDUSTRIAL DEVELOPMENT PROGRAMS AND RESULTS

At the 2022 African Union Extraordinary Summit on Industrialization, Economic Diversification and Development of the African Continental Free Trade Area (AfCFTA) in Niamey, Niger, attended by heads of state and government from 20 African countries[8], it was noted that there had been no significant progress in establishing an industrial base on the continent. This is evidenced, first and foremost, by the structure of the economies of African countries, most of which have not yet embarked on active industrialization, which is usually characterized by the growth in the secondary sector of the economy. In 2022, the African continent's share of manufacturing value added (MVA) in the global manufacturing sector amounted to only 2%, and its contribution to Africa's total GDP (10.3%) was lower than that of agriculture and mining, as well as being significantly lower than the service sector's share. In sub-Saharan African countries (SSA), manufacturing's share of total GDP fell by almost 5% between 1990 and 2020, dropping from 16.0% to 11.2%[9].

[7] Africa's Development Dynamics. *African Union*. 06.11.2019. P. 60. https://au.int/sites/default/files/documents/37662-doc-2019_africa_development_dynamics-en.pdf (accessed: 05.06.2025)

[8] Alqali A. When Industrialization Became a Centrepiece of Africa's Agenda. *African Newspage*. 24.12.2022. https://africannewspage.net/2022/12/when-industrialization-became-a-centre-piece-of-africas-agenda/ (accessed: 22.05.2025)

[9] International Yearbook of Industrial Statistics. *UNIDO*. 2024. https://stat.unido.org/portal/storage/file/publications/yb/ 2024/YB-core-2024-regfacts-afr-pdf.pdf (accessed: 03.05.2025)

Table 1. **Indicators of manufacturing development in African countries*, 2010–2023**

Country	MVA**, $ billion		MVA share in GDP, %		MVA growth rate, %	Share of manufacturing products in commodity exports, %		Share of high-tech products*** in manufacturing exports, 2022	
	2015	2023	2015	2023	2010–2023	2010	2023	$ million	%
Algeria	13.3	18.7	7.1	7.8	5.0	0.8	…	…	…
Angola	8.2	6.8	5.7	8.0	2.8	…	1.0	77	22.1
Benin	1.1	2.0	10.0	10.1	5.0	4.7	4.2	1	4.2
Burkina Faso	1.4	2.1	11.7	10.7	4.1	5.0	5.0	3	1.9
Gabon	2.4	4.4	16.7	21.6	2.8	3.5	17.8	40	1.5
Ghana	5.5	8.6	11.1	11.2	4.1	7.3	6.0	10	1.1
Guinea	1.1	2.7	12.1	11.4	5.6	…	…	…	…
DRC	6.5	12.0	17.1	18.0	4.7	…	…	18	0.7
Egypt	55.0	59.8	16.7	15.1	2.0	41.7	52.2	639	2.8
Zambia	1.6	2.3	7.5	8.3	4.8	8.1	12.8	11	0.9
Zimbabwe	2.4	3.7	11.9	13.8	-2.2	18.8	7.5	8	1.5
Cameroon	4.7	6.4	14.4	13.3	3.8	6.9	…	6	2.2
Kenya	7.0	8.4	10.0	7.8	2.9	33.9	30.7	47	2.3
Côte d'Ivoire	5.2	11.7	11.4	14.9	8.5	16.1	13.6	58	3.6
Lesotho	0.4	0.3	15.1	14.0	0.8	77.5	79.2	1	0.1
Mauritius	1.6	1.6	13.0	11.2	0.4	60.1	47.1	17	2.0
Madagascar	1.0	1.5	8.5	9.5	2.0	53.8	25.7	6	0.6
Morocco	16.4	20.5	14.9	14.5	2.0	63.4	74.7	1268	4.1
Mozambique	1.3	1.8	8.3	8.5	1.5	2.0	7.3	18	3.2
Namibia	1.3	1.4	11.4	11.2	-0.2	43.8	32.6	1	0.1
Nigeria	46.3	55.9	9.4	15.4	3.7	6.7	2.8	76	2.4
Rwanda	0.6	1.4	6.8	9.9	6.1	8.4	…	7	4.8
Senegal	3.0	4.8	17.1	15.4	3.8	37.7	26.4	37	2.3
Tanzania	3.7	6.7	7.9	8.4	6.6	18.1	11.9	17	1.7
Togo	0.9	1.2	14.9	12.7	8.0	64.9	36.0	1	0.3
Tunisia	6.4	7.3	14.0	15.1	0.2	76.0	77.7	1041	7.2
Uganda	5.7	7.7	17.6	15.6	3.7	22.8	19.0	18	2.3
CAR	0.3	0.5	19.7	18.0	0.0	3.1	10.4	16	37.3
Eswatini	1.3	1.3	31.7	27.6	2.4	65.4	59.8	…	…
South Africa	43.3	48.7	12.5	12.9	-0.4	48.7	40.5	2476	5.5

* Countries with MVA share in GDP exceeding 7.5% in 2023

** Manufacturing Value Added

Compiled from: World Development Indicators 2024. *World Bank*. https://wdi.worldbank.org/tables/ 4.1-4.4, 5.13 (accessed: 20.03.2025)

In African countries, growth in a number of manufacturing industry indicators has been insignificant over the past decade. As shown in Table 1, the share of manufacturing

value added between 2015 and 2023 did not exceed 15% in most countries on the continent, and in a number of countries it did not even reach 10%. About 80% of the total MVA is accounted for by the 12 leading countries on the continent. Of these, Algeria, Benin, Côte d'Ivoire, Rwanda, Tanzania, Togo demonstrated the highest growth rates in manufacturing in 2010–2023. At the same time, in South Africa, which has one of the most developed manufacturing sectors on the continent, as well as in the Republic of Congo, Libya, Namibia, and Zimbabwe, the growth rate indicator was negative.

In international trade, exports of African manufacturing products account for only 1.3% of the global total. In the export structure, highly processed products play a significant role in the economies of South Africa, Morocco, Tunisia, and Egypt (see *Table* 1).

Unlike industrialized countries, developing countries in Africa have begun the process of deindustrialization without achieving high per capita income levels, and the flow of labor from the agricultural sector often goes directly to the service sector, bypassing the industrial sector. This process exacerbates the problems of rapid labor market growth and its low skills in Africa, since such service sectors as banking, finance, and insurance require educated and qualified employees. In 2022, the manufacturing industry employed 7.6% of the continent's working-age population, predominantly men (60%). The highest employment rates in the service sector (10% to 15% of total employment) were observed in North African countries: Algeria, Egypt, Morocco, Tunisia, as well as Benin, Burkina Faso, Ghana, Lesotho (22.6%), Mauritius, Nigeria, the Republic of Congo, Senegal, Somalia, Togo, and Eswatini[10].

Table 2. **Top 10 countries by the African Industrialization Index**

Country	2010		2021	
	Position	Index	Position	Index
South Africa	1	0,89	1	0,84
Morocco	3	0,78	2	0,83
Egypt	4	0,76	3	0,78
Tunisia	2	0,80	4	0,77
Mauritius	5	0,68	5	0,68
Eswatini	6	0,64	6	0,64
Senegal	14	0,55	7	0,61
Nigeria	10	0,58	8	0,605
Kenya	11	0,57	9	0,603
Namibia	7	0,61	10	0,601

Compiled from: African Development Bank. Africa Industrialisation Index 2022. *African Development Bank Group*. 24.11.2022. https://www.afdb.org/en/documents/africa-industrialization-index-2022 (accessed: 06.05.2025)

According to the Industrialization Index of 52 African countries prepared by experts from the African Development Bank (AfDB), the AU, and UNIDO based on 19 key indicators, including productivity, capital stock, labor force size, the level of institutional

[10] International Yearbook of Industrial Statistics. *UNIDO*. 2024. https://stat.unido.org/portal/storage/file/publications/ yb/2024/YB-core-2024-regfacts-afr-pdf.pdf (accessed: 03.05.2025)

and business environment development, infrastructure provision, and macroeconomic stability, the highest results (maximum = 1.0) in the period 2010–2021 were recorded in South Africa, Morocco, and Egypt, while Senegal, Nigeria, and Kenya improved their performance (Table 2). Countries such as the Central African Republic, Sierra Leone, Guinea-Bissau, Burundi, and the Gambia are at the bottom of the ranking.

As was the case in the 2010s, low-tech industries predominate in the manufacturing sector: the processing of agricultural products, the production of textiles, clothing, leather goods and footwear, construction materials, and woodworking [Kalinichenko 2013: 85–102]. These are mostly small and medium-sized enterprises (SMEs) with low productivity, which generally belong to the informal sector of the economy. They encounter difficulties in obtaining loans, organizational and operational difficulties due to the imperfections in the legal, primarily tax, system, and their products are mainly oriented towards the domestic market and, much less frequently, the regional market. In West Africa, for example, SMEs generate up to 30–50% of GDP, thereby playing a significant role in job creation and consequently reducing unemployment and mitigating acute social problems [Morozov 2016].

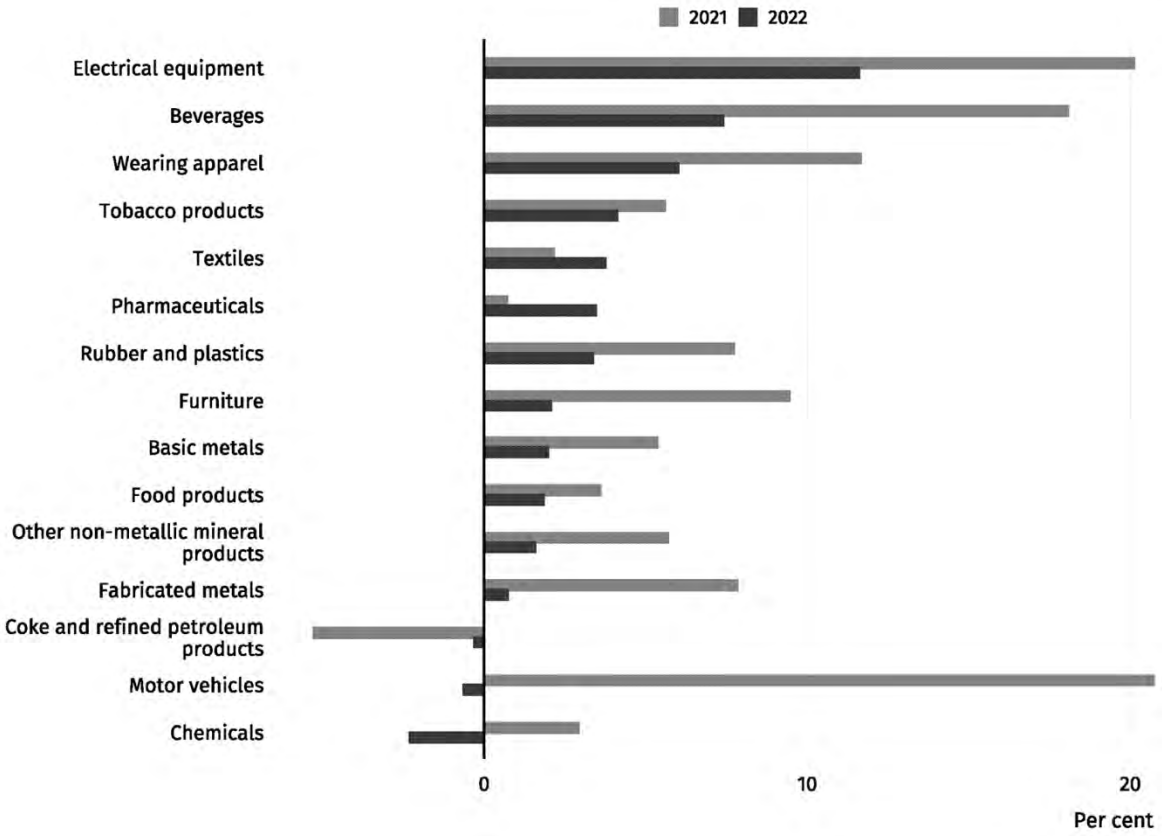

Fig. 1. **Growth rates of value added in Africa's manufacturing industries, %.**
Source: International Yearbook of Industrial Statistics. *UNIDO*. 2024.
https://stat.unido.org/portal/storage/file/publications/yb/2024/YB-core-2024-regfacts-afr-pdf.pdf
(accessed: 03.05.2025)

At the same time, the majority of private producers in African countries are small and medium-sized enterprises that lack the financial and technical capabilities to implement the technologies of the Fourth Industrial Revolution. In some cases, the state seeks to provide such support. For example, in order to boost the competitiveness of locally

manufactured goods, the Kenyan Ministry of Industrialization, Trade, and Entrepreneurship, with the support of the World Bank, is implementing the *Kenya Industry and Entrepreneurship Project* (KIEP) aimed at supporting innovation in small and medium-sized enterprises through financial grants and technical assistance, as well as participation in business diagnostic scanning and coordination of productivity improvement plans[11].

Currently, highly processed products play a significant role in the economies and export structures of a limited number of African countries. This is reflected in their positions in the UNIDO's Competitive Industrial Performance Index (CIP), in which South Africa, Morocco, Egypt and Tunisia in 2022 ranked highest among African countries, at 52nd, 60th, 67th, and 70th, respectively[12].

However, there has been a trend towards expanding the medium- and high-tech segment in a number of other countries on the continent, primarily through establishing enterprises that produce electrical and telecommunications equipment, medical and measuring instruments, and the automotive assembly industry. According to UNIDO, in 2021–2023, it was precisely the production of electrical equipment and pharmaceuticals that were the high-tech industries with the highest growth rates, making them key potential drivers of technological modernization on the continent (Fig. 1). At the same time, by the early 2020s, along with the spread of the concept of a "green economy" on the continent, which emphasizes the creation of "clean production and a modern service sector," alternative models of economic development emerged, focusing on the experience of other developing countries, as well as an "African model" [Degterev 2024].

POSSIBILITIES FOR APPLYING NEW FORMS OF INDUSTRIAL PRODUCTION ORGANIZATION IN AFRICA

Creation of industrial clusters. The theory of creating and developing clusters based on the territorial concentration of interrelated firms, suppliers, and specialized institutions [Porter 1998] states that government support in the areas of infrastructure, education, and socio-political incentives is crucial for industrialization and increasing the competitiveness of industry.

Clusters as territorial-production structures in the form of special economic zones (SEZs), agro-industrial parks, technology parks, etc. have already demonstrated their practical feasibility in Africa for creating manufacturing enterprises and developing regional trade and exports. Once the necessary conditions have been met and various bureaucratic barriers have been overcome, SEZs become conduits for industrial development, attracting investment, creating jobs, promoting innovation, and disseminating knowledge [Kalinichenko, Morozenskaya 2021: 164–175]. However, they have to constantly adapt to the impact of external factors and internal socio-economic shifts, whether it be the COVID-19 crisis, climate change, or the proliferation of digital technologies [Oqubay 2025: 136].

In recent years, many African countries have adopted the policy of establishing SEZs as part of their national economic development strategy. According to UNIDO, there were 237 such zones in Africa in 2020 (compared to 20 in 1990), located in 37 countries,

[11] Industrial Development Report 2024. *UNIDO*. https://unido.org/sites/default/files/unido-publications/2024-06/Industrial%20Development%20Report%202024.pdf (accessed: 11.05.2025)

[12] International Yearbook of Industrial Statistics. *UNIDO*. 2024. https://stat.unido.org/portal/storage/file/publications/yb/2024/YB-core-2024-regfacts-afr-pdf.pdf (accessed: 03.05.2025)

which is only about 4% of the global total. Furthermore, it is estimated that only about half of these are fully functioning. The most active in establishing SEZs are Kenya (61), Nigeria (38), Ethiopia (18), Egypt (10), as well as Ghana, Senegal, and Rwanda[13].

The vast majority of African SEZs (89%) are multi-sectoral and host a variety of industries. For example, all nine operating SEZs in Cameroon fall into this category, with a range of enterprises from agribusiness to steel mills in the Douala-Bonaberi industrial zone or from wood processing to oil refining in the Yaoundé-Sud zone. Examples of narrow-profile zones can be found in Morocco, where Tanger Automotive City specializes in the automotive industry, Casablanca Midparc FZ in aeronautics, and Rabat Technopolis and Oujda Technopolis in the development of start-ups engaged in the research and development of innovative technologies and training in these areas. A significant part of SEZs is associated with labor-intensive industries, such as the agro-industry and textile manufacturing (the enterprises created within them provide more than 500,000 jobs), but in a number of countries they have also emerged in high-tech sectors (for example, in Morocco in the automotive industry and in Nigeria in the oil and gas chemical industry)[14].

The most effective special economic zones, in terms of the number of companies attracted and the number of enterprises and jobs created, operate in countries on the continent with the best investment climate and fiscal and institutional opportunities (Egypt, Morocco, Kenya, Mauritius, South Africa, Rwanda). Many African countries form zones jointly with foreign partners, which allows them to attract their technologies and experience, as well as obtain additional financing opportunities. At the same time, projects to create such zones without appropriate conditions in a number of African countries may pose certain risks to the existing economic structure. Consequently, the most prevalent export-processing zones on the continent are enclave-type zones (31%), which have emerged due to preferences for duty-free access of their products to US markets in accordance with the *African Growth and Opportunity Act* (AGOA), face barriers to growth due to the intensification of regional integration processes in Africa, especially against the backdrop of the creation of the AfCFTA [Rodríguez-Pose et al. 2022].

Equally important is the expansion of infrastructure in agro-industrial zones. In partnership with the African Export-Import Bank (Afreximbank), the Islamic Development Bank, and Arise Integrated Industrial Platforms, the African Development Bank has launched the Special Agro-Industrial Processing Zones (SAPZ) program, which aims to transform underdeveloped rural areas into agro-industrial corridors. In this regard, Africa's rich agricultural resources are being used to boost food production and address the continent's dependence on imports. One of the countries participating in the program is Senegal, where the Ministry of Industrial Development and Small and Medium Industry is implementing a program to create five agricultural processing centers (agropoles)—in the north of the country (Saint-Louis, Matam, and Louga), in the south (Ziguinchor, Kolda, and Sédhiou), in the center (Kaolack, Kaffrine, Fatick, and Diourbel), in the east (Tambacounda, Kédougou), and in the west (Sandiara, Malicounda, and N'Guéniène). These centers are intended to become centers of agro-industrial development and promote cooperation between all stakeholders in the value chain[15].

[13] Handbook of Special Economic Zones in Africa. Towards Economic Diversification across the Continent. *UNCTAD*. 2021. https://unctad.org/system/files/official-document/diaeia2021d3_en.pdf (accessed: 14.05.2025)
[14] Ibid. Pp. 34–50.
[15] Industrial Development Report 2024. *UNIDO*. P. 107. https://www.unido.org/sites/default/files/unido-publications/2024-06/Industrial%20Development%20Report%202024.pdf (accessed: 11.05.2025)

Leaders of AU member states have noted the necessity to increase budgetary investment in the development of industrial projects and the creation of appropriate energy and transport infrastructure in order to achieve the development goals set out in Agenda 2063. The industrialization and structural transformation of African economies still depend on the inflow of foreign investment, which requires reforming the conditions for access of the Organization for Economic Cooperation and Development (OECD) to export credits by easing lending rules, which will increase the volume of financing for development projects, including those based on public-private partnerships[16].

Implementation of innovative technologies. A pressing issue for Africa is the structural transformation of industrial production, which will help contribute to the increase of added value of products through the use of the latest technologies and innovations. It is within the framework of industrialization that African countries will be able to implement digital production and distribution technologies, allowing them to "leapfrog" outdated technologies [Kalinichenko 2019].

However, only nine African economies were among the top 100 in the 2024 Global Innovation Index (GII), ranking in the second half of the list: Mauritius (55th), Morocco (66th), South Africa (69th), Tunisia (81st), Egypt (86th), Botswana (87th), Cape Verde (90th), Senegal (92nd), and Kenya (96th). Egypt, South Africa, Morocco, and Nigeria are leading the continent in creating a network of science and technology clusters engaged in implementing advanced developments[17].

Various innovative industrial production models are being tested in African countries, for example, eco-industrial parks based on clean, closed-loop technology, which have seen some development in Ethiopia, whose government has invested more than $1 billion in their creation. The aim of this project was to demonstrate how industrialization can generate new jobs and improve people's living conditions without causing environmental harm [Hai 2019: 38–41].

African countries are trying to find their niche in innovative manufacturing processes, but the implementation of projects is being delayed for years. For example, the introduction of advanced technologies in Uganda, where the Kiira Vehicle Plant for the production of hybrid electric vehicles was built in the Jinja Industrial Park in Kampala, has been underway since 2016 in collaboration with Kiira Motors Corporation and the state-owned National Enterprise Corporation. The start of production of locally assembled electric buses was officially announced in March 2025, with 65% of parts and components expected to be supplied by domestic companies (Tondeka Metro, RentCo Africa, Golden Dragon) by 2030. The project was developed in collaboration with Makerere University in Uganda with the support of the Ugandan government, but due to funding issues, the launch of the enterprise has been constantly delayed. It is expected that Chinese car brands will also be assembled there, but for now, the country continues to import several thousand cars annually, mostly used ones[18].

[16] Alqali A. When Industrialization Became a Centrepiece of Africa's Agenda. *African Newspage*. 24.12.2022. https://www.africannewspage.net/2022/12/when-industrialization-became-a-centre-piece-of-africas-agenda/ (accessed: 22.05.2025)

[17] Global Innovation Index 2024 rankings. Unlocking the Promise of Social Entrepreneurship. *WIPO*. P. 18. https://www.wipo.int/web-publications/global-innovation-index-2024/assets/67729/2000%20Global%20Innovation%20Index%202024_WEB3lite.pdf (accessed: 22.05.2025)

[18] See: Mass Bus Production Officially Commences at Kiira Vehicle Plant. *The Insider*. 10.03.2025. https://theinsider.ug/index.php/2025/03/10/mass-bus-production-officially-commences-at-kiira-vehicle-plant/ (accessed: 22.05.2025); Inadequate Funds Delay Completion of Kiira Vehicle Plant. *Nilepost*. 13.10.2022.

Currently, a number of countries on the continent are focusing on the production of medical products among the high-tech industries, as this can act as an industry multiplier and a conduit for technological innovation. In some cases, plans for the development of the sector have been formulated at the subregional level, such as the East African Community (EAC) Second Regional Action Plan for Pharmaceutical Manufacturing for 2017–2027[19].

The pharmaceutical industry in Egypt is a priority sector with special tax incentives. The government has amended the 2017 New Investment Law to provide additional incentives for both foreign and domestic investment. In 2021, the government opened Gypto Pharma City, a state-of-the-art industrial zone 30 km north of Cairo, specifically designed for the pharmaceutical and medical sectors, which has become one of the largest drug manufacturing centers in the Middle East. In May 2023, the Sovereign Fund of Egypt (TSFE) and the private investment company B Investments announced the establishment of EZ International, which will collaborate with local pharmaceutical chain El-Ezaby Pharmacy. According to 2023 results, 170 manufacturing enterprises provided the highest market volume in the Middle East and North Africa region ($56.6 billion)[20].

Despite some positive trends in the creation of a technological ecosystem, entrepreneurs, developers, and investors still face a number of challenges, including power outages, high internet connection costs, limited infrastructure, insufficient private capital funding, a lack of sustainable interaction with scientific and educational institutions, and a shortage of professional developers. In turn, universities and research institutes often have limited funds to improve the quality of education and conduct modern-level research.

Expanding industrial cooperation with Russia. African governments are seeking new ways to attract investors to industrial development by implementing strategies that involve targeted investments in infrastructure, including regional integration projects and the creation of special economic zones for priority sectors. As industrial clustering is an effective spatial model for both Russian and African economies, this path opens up opportunities for cooperation and the exchange of experience. This is already happening with the implementation of the Russian Industrial Zone project in Egypt, led by the Russian Ministry of Industry and Trade in conjunction with the State Development Corporation *VEB.RF*. Following the signing in May 2025 of an agreement on the right to use land for the construction of the Russian Industrial Zone within the Suez Canal economic zone, work has begun on establishing Russian industrial enterprises there. Priority sectors include chemicals, pharmaceuticals, metallurgy, food, and construction materials. In the future, Russian companies plan to enter the markets of Africa and the Middle East[21].

Similar cooperation with other countries on the continent is possible, such as Zimbabwe. During his visit to Moscow in January 2019, the Zimbabwean president,

https://nilepost.co.ug/business/144946/inadequate-funds-delay-completion-of-kiira-vehicle-plant (accessed: 22.05.2025)

[19] Nazeem M. East African Pharmaceutical Sector: Opportunities and Challenges. *UNIDO*. 2018. https://unido.org/sites/default/files/files/2018-03/Nazeem%20Mohamed_FEAPM_East%20Africa_Inside%20the%20Pharma%20Market_ 01032018%20Bonn.pdf (accessed: 20.04.2025)

[20] Industrial Development Report 2024. *UNIDO*. P. 109. https://www.unido.org/sites/default/files/unido-publications/2024-06/Industrial%20Development%20Report%202024.pdf (accessed: 11.05.2025)

[21] Russian Industrial Zone in Egypt. *Southern Regional Export Support Center*. 30.04.2025. https://exporteram.ru/rossijskaya-promyshlennaya-zona-v-egipte/ (accessed: 25.05.2025)

Emmerson Mnangagwa, offered his country's territory for the implementation of the Russian industrial zone project [Abramova, Fituni 2019]. The stages of development of industrial production and technology transfer, as well as those of supplies of agricultural machinery and equipment and mineral fertilizers, were outlined. At the end of 2024, at the 5th session of the Intergovernmental Commission on Trade, Economic, Scientific, and Technical Cooperation between Russia and Zimbabwe, the expansion of cooperation with the Russian company *PJSC KAMAZ*, in such areas as technology transfer, skills development, and the creation of manufacturing or assembly plants in Zimbabwe, was discussed among other topics. This would contribute to the economic growth and industrialization of the African country[22].

The Nigerian government's decision to resume work on commissioning the full-cycle metallurgical plant of *Ajaokuta Steel Company Limited* in Ajaokuta also provided a positive impetus for cooperation. Built by the Soviet (now Russian) consortium *Tyazhpromexport* (1979–1994), the plant has a design capacity of 5 million tons of steel per year and includes an agglomeration plant, a coke and blast furnace shop, and 16 rolling mills. The plant was planned to operate using the nearby Itakpe ore deposits and Lafia-Obi coking coal deposits. Despite being almost complete and its products being in demand for the industrial development not only in Nigeria but also in the neighboring countries, the plant was not launched due to political instability and delayed financial payments. In order to complete the work by August 2024, Russian specialists have begun auditing the dilapidated complex, according to Nigeria's Minister of Steel Development, Audu Shuaibu. In addition, in accordance with Nigerian President Bola Ahmed Tinubu's The Renewed Hope Agenda, the light rolling mill for producing reinforcement bars for infrastructure projects, including roads and bridges, will be restarted at the Ajaokuta plant in the near future, saving foreign currency that would otherwise be spent on importing these products[23].

Nigeria also has aluminum smelting capacity that has been idle since 2013. At the Second Russia-Africa Summit in St. Petersburg in 2023, a representative of the Nigerian Ministry of Petroleum Resources, Gabriel Aduda, announced that negotiations were underway with the Russian company RUSAL regarding the resumption of operations at ALSCON (Aluminum Smelter Company of Nigeria). RUSAL owns 85% of ALSCON, with the Nigerian government owning the remaining 15%. Located in Ikot-Abasi, the ALSCON complex with a capacity of 193,000 tons of primary aluminum per year includes not only the plant itself and a thermal power station but also a port on the Imo River, through which alumina can be imported from Guinea, where RUSAL owns an alumina plant[24].

Russia's experience, technology, and specialists can assist African partners in both modernizing existing industrial facilities and constructing new ones. Russia and African countries are united by the shared goal of expanding and modernizing the complex of processing industries, including the development of high-tech sectors of the economy. Cooperation in innovative areas, such as the development of biotechnology,

[22] Zimbabwe and Russia Strengthen Economic Cooperation. *FurtherAfrica*. 06.12.2024. https://furtherafrica.com/2024/12/06/zimbabwe-and-russia-strengthen-economic-cooperation/ (accessed: 23.05.2025)

[23] Ajakuota Steel Plant to Open After All. Russia Set to Modernize and Launch Unfinished Plant in Nigeria. *About Metal*. 21.08.2024. (In Russ.) https://dzen.ru/a/ZsWu0mx0UDKRWB6- (accessed: 16.05.2025)

[24] Aluminum plant in Nigeria may resume operations with support from Rusal. *Neftegaz.* 29.07.2023. (In Russ.). https://neftegaz.ru/news/Oborudovanie/788492-alyuminievyy-zavod-v-nigerii-mozhet-vozobnovit-rabotu-pri-podderzhke-rusala/ (accessed: 05.02.2025)

petrochemicals, robotics and artificial intelligence, the improvement of telemetry and optical systems, the development of devices for space exploration, and the training of highly qualified specialists in these fields, appears to be both possible and important. This is confirmed by the fact that more than 20 Russian companies participated for the first time in the International Exhibition of Information Technologies and Innovations GITEX Africa Morocco 2025 (April 14–16, 2025, Marrakesh), demonstrating advanced developments for smart cities, including modern solutions for transport services, as well as high-tech software and AI solutions in the fields of medicine, cybersecurity, and water supply[25].

* * *

The member states of the African Union continue to view industrialization as one of the key tasks that will ensure structural transformation in Africa's economy in the coming decades. They are striving to implement the main directions of the industrialization strategy outlined in Goal 4 ("Economic Transformation") of the African Union's Agenda 2063 and Goal 9 ("Promoting inclusive and sustainable industrialization and fostering innovation") of the UN SDGs until 2030[26], developed on the basis of previous experience in establishing industrial production and in accordance with current conditions and the tasks of strengthening the economy. National and regional industrial development strategies and plans based on these fundamental documents include the following relevant tasks:

– Transforming the economy by expanding the manufacturing industry (MI) to create added value through processing raw materials. Diversifying the production base and increasing the share of high value-added products in GDP;

– Strengthening the institutional framework for the implementation of industrial policy, unifying industrial standards and regulations in countries in order to effectively support manufacturers;

– Expanding the R&D base, introducing technologies and innovations, including the digitalization of production processes, to promote the modernization and structural transformation of industry;

– Increasing the share of manufacturing exports in total exports of goods and reducing dependence on raw material exports. Expanding intra-regional trade in manufacturing products, simplifying trade procedures, and reducing tariff barriers to strengthen the single market for goods;

– Transforming micro, small, and medium-sized enterprises, which play a key role in job creation, into viable and sustainable business structures capable of contributing significantly to the added value in the manufacturing industry;

– Organizing special economic zones and technology parks to attract investment and stimulate production by simplifying regulatory procedures and providing tax incentives for doing business within them;

[25] Russian companies to present their IT solutions at GITEX Africa Morocco. *RIA Novosti*. 14.04.2025. (In Russ.). https://ria.ru/20250414/rets-2011214646.html (accessed: 15.05.2025)

[26] Goal 9: Industry, Innovation and Infrastructure. Sustainable Development Goals. *United Nations Development Programme*. https://undp.org/sustainable-development-goals/industry-innovation-and-infrastructure (accessed: 04.04.2025); Assessing Progress after the First Decade (2014–2023) of Agenda 2063. *Mo Ibrahim Foundation*. 26.02.2024. https://mo.ibrahim.foundation/news/2024/assessing-progress-after-first-decade-2014-2023-agenda-2063 (accessed: 07.04.2025)

– Training a skilled workforce through educational programs and professional training, as well as collaborating with universities and research centers to promote innovation;

– Providing manufacturing enterprises with the required level of energy, transportation infrastructure, and logistics.

Consequently, sustainable economic growth in African countries, accompanied by job creation, can be achieved by strengthening their productive capacity, promoting industrialization, and embracing innovations that enable producers to bring new products to market and improve the efficiency of enterprises and product competitiveness.

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Научная статья

ПРОБЛЕМЫ ПРОМЫШЛЕННОГО РОСТА В АФРИКЕ: ПОИСК НОВЫХ ВОЗМОЖНОСТЕЙ

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Аннотация. Промышленность является ключевым фактором структурных изменений в экономике, необходимых для повышения уровня хозяйственного развития стран Африки. В быстро меняющейся картине мира главным способом преодолеть растущее отставание стран Африки вновь становится индустриализация, ориентированная прежде всего на развитие внутреннего рынка. Это соответствует сути Цели 9 («Содействие инклюзивной и устойчивой индустриализации и поощрение инноваций») ЦУР ООН, а также основным направлениям стратегии индустриализации, указанным в Цели 4 («Трансформация экономики») «Повестки дня 2063», разработанной Африканским союзом (АС) в соответствии с современными задачами укрепления экономики стран континента. Отсутствие значимых результатов в создании индустриальной базы в большинстве из них по прошествии трех объявленных ООН десятилетий промышленного развития Африки (*Industrial Development Decade for Africa*: 1980–1990 гг., 1993–2002 гг., 2016–2025 гг.) требует определенного пересмотра общепринятых моделей индустриализации, а также усиления государственной поддержки для реализации наиболее перспективных из них. Основываясь на анализе классических моделей индустриализации, а также программ и фактических итогов развития обрабатывающей промышленности в Африке, показатели

вклада которой в экономику являются индикаторами уровня индустриализации, авторы статьи предлагают оценку промышленного потенциала стран континента и возможностей внедрения ими инновационных технологий, а также создания производственных кластеров (особых экономических зон), в том числе на основе расширения сотрудничества с Россией в сфере модернизации действующих и строительстве новых промышленных объектов, прежде всего в высокотехнологичных отраслях обрабатывающей промышленности.

Ключевые слова: Африка, обрабатывающая промышленность, модели индустриализации, программы промышленного развития, особые экономические зоны, инновационные технологии, российско-африканское сотрудничество

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Research article

TOWARDS POST-NEOCOLONIAL INDUSTRIALIZATION AND ECONOMIC SOVEREIGNTY OF THE AFRICAN NATIONS

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Abstract. This article explores the strategic necessity of sovereign industrialization as a means for African states to overcome the structural legacies of neocolonial exploitation and break the cycle of chronic underdevelopment. The African experience demonstrates that imported models based solely on deregulation and liberalization fail to address the root causes of underdevelopment and instead reproduce the colonial economic architecture under new ideological banners. By analyzing the intersection of development theory, exploitative neocolonial heritage, and the extractive effect of the contemporary global value chains, contrasted to the earlier Soviet-led approach successes, it argues that industrialization, grounded in the sovereign economic development doctrine, national independence, and self-determination, is essential for resisting Western economic domination and achieving long-term development beneficial to African people.

The article, based on the identified barriers to industrial development and inherited weakness of the neoliberal governance, advocates for a new, sovereign economic developmental model and industrial policies. Without a deliberate strategy of industrialization rooted in sovereign control over national resources and production systems, African states will remain trapped in a neocolonial matrix of dependency. Industrialization is not merely a path to higher GDP; rather, it is the foundation for reclaiming political and economic sovereignty in Africa. With such a revival of the industrial policy approach to sovereign economic development, with a new wave of development thinking imbuing their governments, and with the help of the key nations and institutions of the multipolar order, the African states will be able to exit the vicious cycle of external domination and internal stagnation.

Keywords: industrialization, Africa, economic development, sovereign doctrine, neocolonialism, industrialization, industrial policy

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THE TWO HISTORICALLY COMPETING DEVELOPMENTAL MODELS IN AFRICA

The persistent underdevelopment of African states is deeply rooted in the structural legacies of colonialism that brought about externally imposed boundaries and monocultural economies. European imperial powers left a LEGACY AND HISTORY OF IMPOSED UNDERDEVELOPMENT THAT designed African economies for extraction only[1], imposing systems that disrupted local governance and forcibly integrated African territories into the global capitalist system as exporters of raw materials and importers of manufactured goods [Degterev 2023].

Colonial extraction, the dismantling of indigenous production structures, and deliberate suppression of the development of local industry rendered African states dependent on external markets and technologies [Rodney 1972]. Furthermore, the imposition of arbitrary borders, drawn without regard for ethnic, linguistic, or economic continuities, exacerbated fragmentation, undermining the foundation for integrated national economies and coherent development planning [Amin 1976]. The result was a continent of monocultural economies tied to extractive industries or agriculture (minerals, cotton, cocoa, oil, etc.) and trapped in a neocolonial matrix of dependency[2].

This is in contrast to the Soviet-aided era of industrialization in Africa implemented in the immediate post-independence era, where a large number of African states sought to reverse these structural constraints through industrialization, often turning to the Soviet Union for support [Kobishchanov, Kubbel, Sledzevskiy 1974]. The USSR, motivated by ideological solidarity and geopolitical competition during the Cold War, became a crucial actor in the industrial and technological development of countries like Ghana, Mali, Guinea, Ethiopia, and Angola [Davidchuk, Degterev, Korendyasov 2022].

This support was marked by the construction of infrastructure, factories, and educational institutions, as well as the provision of technical training for thousands of African specialists in Soviet universities [Iandolo 2022]. For example, in Guinea and Mali, Soviet engineers assisted in building hydroelectric power plants, mining sites, and textile mills, while in Angola and Ethiopia, they supported metallurgical and military-industrial complexes. Unlike Western donors, Soviet development assistance often avoided the conditionalities of the Bretton Woods institutions and emphasized state-led planning, nationalization, and industrial self-reliance [Mkandawire 2001].

In the neocolonial model of the post-Soviet period as of the 1990s, despite nominal GDP growth, the industrial sector started to decline, marked by weak diversification and export dependence on raw materials. The revived and now neocolonial dependence reinforced the structural mono-economies of the earlier direct colonialism, once again

[1] St. Louis M., Philipson K. Unmasking the IMF: The Post-Financial Crisis Imperative for Reform. *Jubilee USA.* 2010. https://d3n8a8pro7vhmx.cloudfront.net/jubileeusa/legacy_url/340/IMF_Report.pdf?1501806096 (accessed: 23.07.2025)

[2] Van de Walle N., Titlow K.S., Pengl Y., Philip R., Robert M. Extractive colonial economies and legacies of spatial inequality: Evidence from Africa. *CEPR/VoxEU.* 02.12.2020. https://cepr.org/voxeu/columns/extractive-colonial-economies-and-legacies-spatial-inequality-evidence-africa (accessed: 23.07.2025)

limiting opportunities for technological leaps and sustainable industrialization. The data in *Table* 1 demonstrate how the Soviet-supported industrialization (the 1960s and 1970s) enabled many African countries to break free from the pre-independence colonial cycle of raw material dependency and increase the added value by moving into manufacturing sectors, compared to the later outcomes of the liberal-oriented and purely extractive structural adjustment programs (the 1990s).

Table 1. **Industry Share in GDP. Industry, value-added (% of GDP) for the "Soviet-era" (~1975) period and the neocolonial/post-1990 benchmark (~2000), approximate**

Country	Soviet-era (~1965–75) Industry, value-added %	Post-Soviet/Neocolonial (~1990–96) Industry, value-added %
Ghana	~19% (1970)	~14% (1990–95)
Zambia	~50–62% (late 1960s peak)	~24–36% (1990–97 average ~29%)
Kenya	~20% (1970)	~20% (1990)
Mauritius	~28% (mid-1960s)	~33% (1997)
Zimbabwe	~34% (1975)	~28% (1997)
Tanzania	~23% (1990)	~21% (1997)
Gabon	high (~50 – 60 %) in 1970s	~50 % by 2000

Source: Compiled by the author based on data from: IMF, World Bank, UN, Index Mundi

During the 1970s, countries like Zambia or Gabon had significantly higher industry shares in national economies (~60%), often boosted by state-led resource extraction and industrial projects under the Soviet-aligned model. By 2000, most of these countries saw either declining or only modestly increased industry shares, with manufacturing weakened and the sector overtaken by mining, construction, and extractives in many cases. Exceptions like Kenya and Mauritius are rare in the broader African context. Overall, the neocolonial Structural Adjustment Programs (SAP) era failed to replicate the higher structural industrial integration seen in the Soviet-supported periods [Mkandawire 2015; Akyüz 2017].

Soviet industrialization models demonstrated how industrial policy, strategic planning, infrastructure investment, and sovereign resource processing could foster industrial sector growth in particular and economic development in general [Degterev 2023]. This confirms the need for industrial policies and strategies tailored to African realities rather than adherence to Western neoliberal market orthodoxy in which Africans did not have any say[3]. While not without limitations, this cooperation had laid important foundations for national capacity-building and symbolized a model of development outside the Western neoliberal paradigm [Sumkoski 2016].

The Soviet-African partnership demonstrated that industrialization rooted in national sovereignty, regional cooperation, and alternative development models could offer

[3] Calling for Global Financial Reforms, Urgent Climate Action, Secretary-General Tells Meeting of Ministers for Group of 77 and China 'We Are Moving Backwards'. *United Nations.* 23.09.2022. https://press.un.org/en/2022/sgsm21486.doc.htm (accessed: 23.07.2025)

African nations a partial escape from the structural traps of colonial capitalism. Beyond the years of the direct comparison of the Soviet 1970s and the neoliberal 1990s in *Table* 1, the recent boom of the 2010s and early 2020s in the extractive industries is mostly based on the Chinese Belt and Road program, and it still brings less than needed value added or additional input and linkages with national economies.

Revisiting this history is essential today, as contemporary African states confront similar challenges under new forms of global dependency and search for pathways to authentic economic liberation[4]. The new multipolar world now offers, through the BRICS+ and the New Development Bank (NDB), both a new development paradigm and practical aid in achieving sovereign development outcomes[5].

CONTEMPORARY NEOCOLONIALISM: UNEQUAL INTEGRATION IN THE GLOBAL VALUE CHAINS AND THE TRAP OF DEPENDENCY IN AFRICA

Despite gaining political independence from their colonizers after World War II, the structure of African economies remains deeply embedded in neocolonial patterns of dependency, shaped by the global organization of trade, production, and finance [Wengraf 2016]. Neocolonialism today operates not through direct political control but through economic mechanisms such as trade dependency, debt regimes, and foreign direct investment (FDI), which tie African states into unequal global value chains (GVC) [Nkrumah 1965]. The GVCs position the African countries overwhelmingly as providers of raw materials and low-value-added goods[6], while high-value-added production and technological innovation remain concentrated in the Global North [Reinert 2007].

This unequal integration of African economies into the global capitalist system reinforces the historical asymmetries created under colonialism and reifies the division of labor where Africa exports commodities and imports manufactured goods. For instance, over 80% of Africa's exports are still primary goods such as oil, minerals, and agricultural products, subject to volatile prices and external demand [Oyelaran-Oyeyinka 2020]. Such integration into the global capitalist system is not neutral, and it rather structurally disadvantages African economies, as it denies them opportunities for industrial upgrading and technological learning [Kaplinsky 2005].

FDI, widely promoted as a development solution[7], often perpetuates these patterns, introducing dependence on primary exports and investments without technology transfer. In the absence of indigenous, legitimate national institutions and policy coordination, foreign investment flows into resource extraction or low-wage assembly

[4] D'Ouezzan H.C. Africa's economic sovereignty: The time is now for African-led solutions. *UN. Africa Renewal*. 05.06.2024. https://africarenewal.un.org/en/magazine/africas-economic-sovereignty-time-now-african-led-solutions-0 (accessed 01.09.2025)

[5] Annual Report: Expanding Our Reach and Impact. *New Development Bank*. https://www.ndb.int/annual-report-2021/pdf/NDB_AR_2021_complete.pdf (accessed: 23.07.2025)

[6] African Economic Outlook 2014: Global Value Chains and Africa's Industrialization. *OECD*. 19.05.2014. https://www.oecd.org/en/publications/african-economic-outlook-2014_aeo-2014-en.html (accessed: 23.07.2025)

[7] FDI Flows to Developing Economies Drop to Lowest Level Since 2005. *World Bank*. 16.06.202. https://www.worldbank.org/en/news/press-release/2025/06/16/foreign-direct-investment-in-retreat (accessed: 23.07.2025)

sectors, with limited linkages to domestic firms or innovation systems [Cheru, Obi 2011]. Technology transfer, a key promise of globalization, rarely materializes in African contexts, where patents, know-how, and high-skill jobs remain concentrated in the investor countries. Consequently, economic growth in many African states remains externally driven and unsustainable, reproducing the dependency cycle of the earlier decades [Amin 1976].

Table 2. **Negative and Positive Impacts Comparison Table**

Country	Neocolonial Era (~2000)	Soviet Era (~1975)
Ghana	High dependency on gold & cocoa exports; limited technology spillover from FDI focused on extractives; weak local value chains	Soviet aid funded Volta projects and Valco aluminium plant, expanding industrial capacity and some know-how transfer
Zambia	Dominated by copper exports; FDI in mining brought limited tech transfer; lack of downstream processing	Under nationalization/state-led industry with Soviet technical support, Zambia developed refineries and rail infrastructure
Mali	Export dependence on gold and cotton; agro-processing minimal; almost no local industrial linkages	Soviet-aligned planning envisioned steel and agro-industrial facilities (Kalana, Gouina), though many remained unrealized
Kenya	Tea and horticulture export driven; FDI concentrated in resource and low value-added agriculture; minimal industrial tech spillovers (~9.5% FDI–GDP)	Some limited industrial capacity in textiles and agro-processing via intra-Africa trade, though under private/colonial remit, not Soviet-led
Tanzania	Export of raw minerals and agricultural goods; poor integration in GVCs; limited technology transfer; weak domestic linkages	Early socialist-led Ujamaa period had state-led development and cooperation with socialist bloc; infrastructure and industrial attempts albeit small-scale
Ethiopia	Continued commodity export dependence; FDI in extractives and infrastructure with low technological transfer	Under Soviet-aligned Derg era, Ethiopia pursued state industrial and agro projects; some technology-direct support in sugar and industrial plants
Guinea	Heavily reliant on bauxite and minerals export; extractive FDI predominant; limited local industry growth	Post-independence Soviet-aligned Guinea pursued mining infrastructure with limited industrial base
Gabon	Oil dependency (~97% exports); FDI from multinationals with near-zero technology transfer; domestic value-adding largely absent	Relatively small, nascent industrial diversification; Soviet involvement minimal but state-led resource management existed

Country	Neocolonial Era (~2000)	Soviet Era (~1975)
Botswana	Diamond-based economy; FDI-driven extraction with some value-added in cutting/polishing; modest linkage policies	Soviet ties were limited; industry built with strong state policy and domestic reform, less neocolonial dependency
Mauritius	Moved toward export-oriented textiles & services with local value-add; still reliant on GVCs but more diversified	Postcolonial era minimal Soviet support; industrialization came later with state planning, not directly comparable
Nigeria	Dominated by petroleum exports (~70% of exports by 2019); FDI in oil with minimal tech spillover; manufacturing stagnated	Some state-owned industrial efforts post-independence, Soviet assistance modest; heavy reliance on agriculture before oil boom

Source: Compiled by the author, based on data from: ACET, UNCTAD, IMF, World Bank, Africa Monitor, UNIDO

The comparison in *Table* 2 summarizes the negative impacts across 10 African countries on the industry, including mining, manufacturing, construction, and utilities, from the three interrelated factors: neocolonialism/global value chains, unequal integration into the global capitalist system, and dependency on primary exports and FDI without technology transfer, contrasting the Soviet-era industrial projects and policies (circa 1975) with those of the neocolonial era (circa 2000). *Table* 2 illustrates the broad pattern of deindustrialization as economies became more FDI- and export-driven, especially in raw commodities, while failing to develop resilient domestic manufacturing capacity.

In the neocolonial era, most countries are deeply embedded in global value chains as raw-material exporters, with minimal technology transfer and weak domestic industrial linkages, reinforcing dependency and underdevelopment. The Soviet-supported periods in the 1960–1970s generally featured planned industrial projects, nationalization in resource sectors, and infrastructure development with technology transfer, though often limited in scale and sustainability.

The contrast underscores how neocolonial integration into global capitalism deepened dependency on extractive exports and multinational FDI, with low absorptive capacity and limited value capture, compared to earlier models of sovereign industrialization. Manufacturing value added (MVA) across the entire Africa dropped from over 16 % of GDP in the early 1980s to around 11 % by the late 2000s and early 2020s[8].

For the West, manufacturing's share has also declined over recent decades, even though from a higher starting point than in Africa (the US manufacturing share was

[8] Share of manufacturing in gross domestic product (GDP), 2023. *Our World in Data.* https://ourworldindata.org/grapher/manufacturing-value-added-to-gdp (accessed: 26.08.2025)

approximately 10–11% of GDP in 2023), with global averages also showing a modest fall of MVA, from around 19% in the late 1990s to around 16% by 2022[9]. The limited manufacturing recovery in certain countries was overwhelmed by the rise of extractive industries, global value chain marginalization, and weak industrial policy frameworks.

Table 3. **Current status of the Soviet-assisted industrial projects in Africa**

Country	Industry / Sector	Established with USSR Help	Current Status (Privatized / Collapsed / Other)
Algeria	Metallurgical plant in Annaba	Built with Soviet technical aid, design/assistance in the 1960s	Privatized (2001, 70% to Ispat/ArcelorMittal). Renationalized (2016)
Angola	Capanda hydropower dam on the Kwanza River	Construction with Soviet Tekhnopromexport, started in 1987	State/public, operating (520 MW by 2004–2007)
Egypt	Egyptian Iron & Steel Company plant in Helwan	Soviet technical/equipment links in the 1960s	Liquidated in 2021
Somalia	Fishing cooperatives; sugar factory; petroleum refinery	Established early 1970s during M.S. Barre government with Soviet-supplied technology	Collapsed after fall of Barre; many are no longer operational
Nigeria	Ajaokuta Steel Company	Started construction in 1979 by Soviet contractor Tyazhpromexport	Multiple privatization attempts; $496m settlement with Global Steel in 2022
Guinea	Kindia Bauxite Mine (Compagnie des bauxites de Kindia, CBK); machinery projects; coal plants, refining	Industry constructed in Kindia in 1974 with Soviet assistance; state SBK (Société des Bauxites de Kindia) legacy	Transferred as a concession to RUSAL (2001) → private operation (CBK, Compagnie des Bauxites de Kindia), others projects collapsed

Source: Compiled by the author

Most Soviet-era industrial projects in Africa ended up collapsed or abandoned due to political instability. *Table* 3 presents a set of representative case studies (Guinea, Egypt, Nigeria, Angola, Algeria, and Somalia), showing state-owned industries and their

[9] Gowder C. The US lags behind other top countries in its proportion of manufacturing value added to GDP, World Bank data reveals. *The State Science and Technology Institute (SSTI)*. 26.10.2023. https://ssti.org/blog/us-lags-behind-other-top-countries-its-proportion-manufacturing-value-added-gdp-world-bank (accessed: 26.08.2025)

previous, circa the late-1980s, and current situation, after the broad IMF/WB-induced reforms.

By the 1980s, the IMF/World Bank country diagnostics repeatedly flagged poor SOE (state-owned enterprises) performance as a "drag on budgets and macro stability," and the Bretton Woods institutions sought SOE reform via Structural Adjustment Programs (SAPs) [Begga, Merghit 2014]. SAPs pushed privatization/commercialization and fiscal tightening. Successful partial privatizations/restructurings involved mainly cash cows such as telecoms and banking, while real industry was forced into failures. Large, capital-intensive projects could not be privatized easily; some remained stalled or collapsed [Ugorji 1995]. Resource-rich sectors (oil and gas) often remained under state control (e.g., Sonatrach in Algeria) or were partially reasserted by states later on.

To break out of this pattern, African states must not only reform their positions within global value chains and seek alternative GVCs and Regional Value Chains (RVCs) but also actively restructure their economies through industrial policy, regional cooperation, and the building of sovereign capacities. This requires a paradigm shift, from passive acceptance of their insertion into global markets to independent strategies for sovereign economic development.

SOVEREIGN INDUSTRIALIZATION CONCEPT: THE CORNERSTONE OF ECONOMIC EMANCIPATION AND SOVEREIGNTY IN AFRICA

The persistent structural weaknesses of African economies and the failure of externally imposed development models have renewed interest in dependency and postcolonial development theories [Gebremariam 2025]. These frameworks exposed how Africa's integration into the global economy has consistently favored core capitalist countries at the expense of peripheral, postcolonial societies [Amin 1976]. According to these scholars, development was never merely a matter of capital accumulation or market efficiency but a deeply political process rooted in global power asymmetries [Amin 1976; Rodney 1972].

This critique remains relevant in light of the continued failure of neoliberal policies promoted under the Washington Consensus. Structural adjustment programs imposed by the IMF and World Bank in the 1980s and 1990s dismantled state institutions, liberalized trade prematurely, and privatized strategic sectors, often resulting in deindustrialization, higher inequality, and weakened domestic production [Mkandawire 2005]. Far from generating self-sustaining growth, these reforms left many African economies more exposed to external shocks, dependent on aid, and trapped in low-value segments of the global economy [Stiglitz 2002].

In parallel with these critiques, sovereign economic development models and doctrines produced by governments, practitioners, and scientists in countries and institutions of the Global South offer a contemporary alternative rooted in sovereigntist and decolonial thinking. According to it, African states will reassert sovereignty over their development pathways by rejecting externally dictated reforms, emphasizing

sovereign development, and rebuilding the institutions necessary for long-term industrial transformation, exercising strategic control over key industries, and restoring national planning and implementing capacities. This vision advances a 21st-century doctrine that incorporates economic sovereignty, industrial policy, technological sovereignty, regional cooperation, and protection against extractive foreign capital practices [Sumkoski 2022].

The case for sovereign industrialization as both economic and political emancipation represents more than a pathway to economic growth, as it is a means of asserting national sovereignty and achieving political and economic emancipation. For post-colonial African states, the imperative to industrialize is rooted in the need to break free from a century-long pattern of externally dictated development.

Sovereign industrialization allows states to reclaim control over production, employment, and value creation, liberating them from commodity dependence and the volatility of global markets [Oyelaran-Oyeyinka 2020]. More fundamentally, it underpins national autonomy by enabling countries to build strong internal capacities in strategic sectors, such as energy, agriculture, manufacturing, information and communication technologies (ICT), which form the backbone of resilient indigenous, sovereign, and socio-politically sustainable economies.

Within this industrialization drive, energy sovereignty is particularly vital, as it ensures that industrial and technological ambitions are not constrained by unreliable, expensive, or externally controlled power sources. Agriculture and agro-processing, likewise, serve both as a base for food security and as a springboard for broader industrial development, especially in rural areas. ICT, AI, digital infrastructure, meanwhile, provide tools for leapfrogging traditional development barriers, expanding access to markets, finance, and education. These sectors, if protected and supported through coherent policies, can act as transformative growth poles in Africa's structural transformation.

Historical experience from East Asia reinforces the case for state-led industrialization. Economies such as South Korea, Taiwan, and later mainland China achieved rapid industrial growth not through free-market liberalization, but through carefully sequenced policies of strategic protectionism, technology absorption, and institutional coherence [Amsden 2001; Chang 2002]. These nations and regions protected infant industries, developed industrial policies, nurtured domestic firms, and demanded technology transfer from foreign investors. Crucially, their states possessed high-capacity bureaucracies and clear development visions.

These lessons are particularly relevant for African countries seeking to escape neoliberal policy traps. Such a Sovereign Economic Development model for resisting global economic coercion and advocating for Africa-specific industrial strategies, rooted in national planning, sovereign control over resources, endogenous technological capacity, and country-specific tailored industrialization, aligns closely with these lessons and principles from East Asia[10].

[10] Sumkoski G. Multipolar World Needs an "Economic Wagner". *Katehon.* 07.11.2023. https://katehon.com/en/article/ multipolar-world-needs-economic-wagner (accessed: 26.08.2025)

While industrialization remains a strategic imperative for African states, its realization is consistently obstructed by a constellation of entrenched barriers. Chief among these is debt dependency, reinforced by conditionalities imposed by international financial institutions (IFIs) such as the IMF and World Bank. In exchange for financial support, these institutions have historically demanded austerity, privatization, and trade liberalization, which have weakened state capacity, undermined national industries, and constrained public investment in infrastructure and innovation [Stiglitz 2002; Mkandawire 2005]. The prioritization of fiscal discipline over development has, in many cases, delayed or reversed industrial progress, locking countries into low-value commodity export models.

Another structural constraint is intra-African fragmentation, both economic and political[11]. The postcolonial legacy of arbitrary borders and externally imposed national frameworks has left African states isolated from each other economically, leading to small domestic markets, duplicative industrial policies, and weak cross-border infrastructure. This fragmentation hampers the formation of regional value chains (RVC) and limits the scalability needed for competitive industrial growth.

Equally problematic is political capture by domestic elites who are often aligned with external interests of Western neocolonial globalism. Many African political and business elites have historically served as intermediaries for foreign capital and influence, facilitating resource extraction and rent-seeking at the expense of national development strategies [Burgis 2015]. This alliance between comprador elites and multinational actors distorts policy agendas, undermines democratic accountability, and blocks structural transformation.

In such environments, industrialization is sidelined in favor of short-term gains tied to raw material exports and offshore finance. Overcoming these barriers requires a deliberate rejection of externally imposed models and the building of autonomous national development institutions. Only by reclaiming control over fiscal space, infrastructure investment, and strategic policymaking can African nations escape the institutional traps of underdevelopment and chart sovereign paths to industrial transformation.

POLICIES FOR RECLAIMING SOVEREIGNTY THROUGH INDUSTIALIZATION

Based on the analysis of barriers to industrial development and on identified weaknesses brought by the neoliberal governance in the last 30 years, in order to achieve sovereign industrialization, African states should adopt a decisive policy framework that prioritizes structural transformation, endogenous capacity-building, and insulation from exploitative external dependencies. *First and foremost*, fiscal and

[11] Mumbere D. Why African nations close borders: Nigeria, Sudan, Rwanda, Kenya, Eritrea. *AfricaNews*, 09.12.2019. https://africanews.com/2019/10/18/why-african-nations-close-borders-nigeria-sudan-rwanda-kenya-eritrea// (accessed: 22.07.2025)

monetary policy autonomy must be re-established[12]. African governments need to renegotiate debt structures, reject conditionalities that undermine domestic priorities, and mobilize domestic resources, through progressive taxation, public banking, and national savings schemes, to finance infrastructure, innovation, and industrial upgrading [Akyüz 2017].

Second, states must develop coherent national industrial policies and strategies that identify and support strategic sectors such as agro-processing, energy, pharmaceuticals, digital infrastructure, and light manufacturing. These strategies should be backed by targeted subsidies, public procurement, import substitution, and protective tariffs where appropriate. Lessons from East Asia highlight the importance of policy coherence, institutional capacity, and political will in implementing such long-term visions [Wade 2018; Chang 2002].

Third, technology transfer and local capacity-building must become central policy goals. This requires designing investment laws and trade agreements that mandate joint ventures, domestic content requirements, and compulsory licensing in key technologies. African universities, technical institutes, and research centers must be aligned with industrial policy objectives to generate a skilled workforce and innovation ecosystem [Oyelaran-Oyeyinka 2020].

Fourth, alternative sovereign global and regional networks must be deepened and operationalized, going beyond tariff reductions to include industrial coordination, shared infrastructure projects, and new multipolar and regional development banks. Mobilizing domestic capital and South-South cooperation through BRICS+, NDB, and other alternative global and regional organizations offers a unique opportunity to create economies of scale and alternative GVCs and RVCs if implemented alongside synchronized investment in transport, energy, and digital infrastructure.

Finally, rebuilding state capacity and planning institutions, political accountability, and insulation from comprador elite capture are essential. Governments must reform a system of state financing, increase transparency, and empower domestic civil society to oversee industrial policy implementation. Applying Sovereign Economic Doctrine in strategic and operational plans and sovereign industrialization requires not only economic but also political transformation to ensure that development serves national interests rather than external or comprador elites [Burgis 2015; Degterev 2024]. *Table* 4 gives some examples of such policy levers:

The benefits of such transformation can be approximated by the forecast of job creation and quality of life increase (2025–2035) of up to a 1% annual rise in industrial output, by the author's estimates based on previous research. Beyond country-specific data, the cumulative projections for all 11 countries from *Table 2* combined show ~8.3–10.7 million total new jobs (direct + indirect) created and an additional ~35–45 million

[12] Escobar P. Russia's Sergey Glazyev Introduces the New Global Financial System. *Janata Weekly*. 24.04.2022. https://www.janataweekly.org/russias-sergey-glazyev-introduces-the-new-global-financial-system (accessed 26.08.2025)

people lifted out of poverty by 2035. Not only in jobs and productivity but also in dignity and equality, such as improved access to electricity by 20–30%[13] in rural areas and extended average life expectancy gains across countries[14].

Table 4. **Strategic Policy Levers Enhancing Impact**

Transformation Area	Policy Action
Monetary Sovereignty	Reform central banks, decouple from inflation-targeting orthodoxy, set up bilateral agreements for national currency trade [Akyüz 2017; Gadha et al. 2022]
National Industry Plans	Invest in industry, agro-tech, pharma, energy [Wade 2018; Chang 2002]
Technology and Skills	Enforce local R&D, vocational partnerships [Oyelaran-Oyeyinka 2020]
Trade Sovereignty	Reorient from current GVC dependency to alternative RVC and GVC [Sumkoski 2024]
Sovereign Economic Development Doctrine	Sovereign economic & policy and strategy design and implementation [Ramose 2003; Chasi 2014]

Source: Compiled by the author

Now, the multipolar world and its key states provide real models and opportunities for such sovereign development [Dugin 2015]. Countries such as China and Russia provide to governments of African countries practical elements, models, and concrete support in the implementation of such sovereign economic models based on mutual economic benefits. Based on this vision and strategy, institutions such as BRICS+ and the New Development Bank (NDB) can help diagnose, analyze, and support practical operational areas of intervention and implementation of the structural elements of a nation's sovereign development. Unlike the World Bank and IMF, which are dominated by Western powers, BRICS+ members advocate multipolarity and respect for national sovereignty in global affairs and emphasize mutual cooperation, solidarity, and respect for different and varied development paths [Sumkoski 2022]. Hence, the assistance of BRICS+ and the NDB is of paramount importance to provide to existing and future states in order to meet their expectations and needs. It falls into several broad areas: diagnostics, recommendations, financing, transfer of best practices, and training provision.

[13] Africa Energy Outlook 2022. *IEA.* https://www.iea.org/reports/africa-energy-outlook-2022 (accessed 05.08.2025)

[14] Several long-term health studies (e.g., [Pritchett, Summers 1996; Renton, Wall, Lintott 2012; Bloom, Canning, Fink 2005; WHO/Europe 2019], show a "compound effect" multiplier of ~2x to 4x over 10–15 years in developing countries from sustained +1% annual industrial output growth.The basic elasticity underestimates the nonlinear, cumulative effects of industrial growth: it boosts tax revenues, enables infrastructure and healthcare spending, and improves access to care, sanitation, and education. Female employment increases child survival and family health investments.

For such an industrialization campaign to be successful, there is a need for a comprehensive and coordinated approach to it, embedded in countries' National Development Strategies and other key development documents and visions encompassing cross-cutting and specific areas of the sovereign economic development. There is a need for capable institutions for the governance and administration of Sovereign Economic Development, that will design it and then implement it.

Then the focus will be on implementing through public and private investment policy and generation; developing sectoral economic policy; sovereign financial system for development; infrastructure development—transport, energy, communications; skills, know-how, and knowledge development; increasing productive and service capacity; micro, small, and medium enterprises (MSME) development; natural and mineral resources; trade and export promotion; marketing and branding; technology, innovations, digitalization, e-governance, blockchain, AI.

Outcomes of implementing a sovereign economic development for industrialization and development of a real economy in Africa depend heavily on designing and implementing fiscal sovereignty, effective industrial strategies, technology transfer, and regional integration to overcome historical structural limitations and neocolonial dependencies [Sumkoski 2024]. The risks are that without insulation from external conditionalities and elite capture, as well as without political accountability, benefits may be uneven, exacerbating inequalities despite GDP growth. Ultimately, historical and contemporary development theories and models agree on one fact: that without sovereign control over economic levers, resources, finance, and production, no genuine development is possible.

CONCLUSION

The post-independence era in Africa has largely failed to deliver on its promises of economic autonomy and industrial development. Despite formal sovereignty, most African economies remain structurally dependent on commodity exports, foreign aid, and Western-led development frameworks. While the decades of post-independence Soviet-assisted industrialization had shown significant results, the 1990s reintroduced the same exploitative Western neoliberal policies, this time under the banner of neocolonialism. This brought again about the straitjacket of cheap raw materials exports and lack of real economic development that would bring the countries on the continent into the category of developed nations.

However, now, in the current multipolar world, there are alternative paths to development, and all countries in Africa that suffered the most from the imposed underdevelopment by the globalist neoliberal institutions now have a possibility to engage in real sovereign economic development, industrialization, and development of real economic sectors, bringing benefit and welfare to their nations. The theoretical doctrines, practical strategies, and operational plans are now becoming available, and governments and institutions of the multipolar world could provide help towards

achieving such development that will break the chains of the exploitative neoliberal globalist model.

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Научная статья

НА ПУТИ К ПОСТНЕОКОЛОНИАЛЬНОЙ ИНДУСТРИАЛИЗАЦИИ И ЭКОНОМИЧЕСКОМУ СУВЕРЕНИТЕТУ АФРИКАНСКИХ СТРАН

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Аннотация. В данной статье исследуется стратегическая значимость суверенной индустриализации как инструмента преодоления структурного наследия неоколониальной эксплуатации и выхода африканских стран из состояния постоянно догоняющего развития. Африканский опыт показывает, что импортированные модели, основанные исключительно на дерегулировании и либерализации экономических отношений, не способны устранить коренные причины, лежащие в основе хозяйственной отсталости. Вместо этого они зачастую воспроизводят колониальную экономическую архитектуру, но уже под новыми идеологическими лозунгами. Анализируя взаимосвязь между теориями развития, эксплуататорским наследием неоколониализма и современными глобальными цепочками создания стоимости, ориентированными на экстракцию природных ресурсов, автор противопоставляет современное положение дел успехам прежнего подхода к экономическому развитию, реализовывавшегося при поддержке СССР, и приходит к выводу, что индустриализация, основанная на принципах суверенного экономического развития, национальной независимости и самоопределения, имеет решающее значение для реализации долгосрочного развития, выгодного для африканских народов, и противодействия западному экономическому доминированию.

В статье анализируются унаследованные от неолиберальной модели управления проблемы и способы преодоления препятствий на пути к промышленному росту. Предлагается новая, более суверенная модель экономической и промышленной политики. Утверждается, что без продуманной стратегии индустриализации, основанной на суверенном контроле над национальными ресурсами и производственными системами, африканские государства останутся в ловушке неоколониальной матрицы зависимости. Индустриализация – это не просто путь к росту ВВП; это основа для укрепления политического и экономического суверенитета государств Африки. Обновление подхода к суверенному экономическому росту, принятие новых идей развития правительствами африканских стран, а также поддержка ключевых стран и институтов многополярного миропорядка помогут африканским государствам вырваться из замкнутого круга внешнего господства и внутренней стагнации.

Ключевые слова: индустриализация, Африка, экономическое развитие, суверенная доктрина, неоколониализм, индустриализация, промышленная политика

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Research article

ASSESSING THE LEVEL OF INNOVATIVE DEVELOPMENT OF AFRICAN COUNTRIES: TRADITIONAL INDICATORS AND ALTERNATIVE APPROACHES

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Abstract. Innovation plays a key role in the socio-economic development of Africa, but its measurement faces unique methodological and contextual challenges. This article addresses the problem of assessing the level of innovative development of African countries, which remains highly relevant in the context of globalization and digitalization of the world economy, and also highlights the limitations of classical approaches, including an insufficient statistical base and low comparability of data across countries. Traditional indicators, such as the number of patents, R&D expenditures, and publication activity, often do not take into account the specifics of African ecosystems, where informal innovations, adaptive technologies, and local solutions prevail.

The author assesses the level of innovative development of African countries and proposes approaches that take into account the unique economic, infrastructural, and cultural characteristics of the continent. Particular attention is paid to the development of successful innovative ecosystems in individual African countries (Kenya, Nigeria), where a combination of traditional and alternative indicators allows for a more accurate assessment of the development dynamics. The results demonstrate the need to adapt existing metrics to the African context, as well as the potential of alternative approaches in forming a more objective picture of the region's innovative progress. By providing a detailed understanding of African innovation processes, this study aims to help policymakers, international organizations, and investors develop strategies that take into account local specificities. The article contributes to the global debate by rethinking approaches to measuring innovation and challenging Eurocentric paradigms and metrics, forming a basis for studying and building unique models of innovation development in African countries.

Keywords: innovation, assessment of the level of innovative development, research and development costs, results of intellectual activity, global innovation index, adaptive innovation, Africa

Conflict of interest: The author declared that there is no conflict of interest.

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In recent years, the innovative development of African countries has become increasingly dynamic and is characterized by a unique combination of rapid technological progress with persistent systemic problems. Countries such as Kenya, Nigeria, and Rwanda have received worldwide recognition for creating the Silicon Savannah innovation ecosystem in Nairobi, the development of FinTech in Lagos, and innovative Kigali Smart City solutions, respectively. However, the continent's innovation landscape remains uneven. Many countries are faced with limited access to finance and education, infrastructure shortages, climate challenges, and political instability, which hamper sustainable innovation development.

Nevertheless, despite these difficulties, the ingenuity of innovators flourishes at the local level, exemplified by the mobile payment platforms such as M-Pesa, Airtel Money, MTN Mobile Money, Orange Money; Zipline unmanned aerial vehicles for the delivery of medicines; M-KOPA Solar solar energy solutions for remote areas; and green building materials from recycled plastic by Gjenge Makers. These successfully implemented projects highlight Africa's opportunities to use local creative approaches to build unique models of innovative development.

Innovation is increasingly seen as the cornerstone of Africa's prosperous socio-economic future. Since the adoption of the Lagos Plan of Action for the Economic Development of Africa in 1980–2000 and the ongoing long-term strategic program of the African Union, Agenda 2063, science, technology, and innovation have been identified as key tools for achieving the continent's strategic goals.

The Oslo Manual, in its special appendix Innovation Survey in Developing Countries, notes that "the design and planning of innovation surveys in developing countries needs to take into account the relative weakness of statistical systems" [Oslo Manual 2005: 145].

This fact greatly complicates the analysis process, as the available data are incomplete and do not allow us to obtain relevant and representative results, including those necessary for making decisions about investments in science and innovation in African countries and the development of international cooperation.

A correct and reliable assessment of the level of innovative development in Africa, which forms a scientifically sound understanding of science, technology, and innovation, is becoming extremely relevant.

In international practice, a set of absolute and relative indicators is used to assess and analyze the innovative development of an individual state or region, including cost and in-kind indicators reflecting public and private spending on research and development, the number of researchers and the quantitative results of their activities, as well as the position of countries in global rankings.

RESEARCH AND DEVELOPMENT COSTS

One of the most common indicators used to assess innovative development is gross domestic expenditure on research and development, expressed as a percentage of national Gross Domestic Expenditure on Research and Development (GERD) [1].

The GERD calculation takes into account the costs of commercial enterprises, higher education institutions, as well as public and private non-profit organizations for fundamental and applied research and development (R&D), as well as the costs of

[1] Sustainable Development Goals. *UN*. https://www.un.org/sustainabledevelopment/ru/about/development-agenda/?ysclid=mcucunmvtv739970426 (accessed: 08.07.2025)

experimental development (ED), including pilot testing of innovations, as well as activities related to their subsequent implementation and scaling.

According to statistics from recent years, the leaders in total research and development spending have traditionally been the United States and China. The average *GERD* value in the world in 2021 was 1.9% of GDP, in high-income countries according to the World Bank classification, 2.7%. It should be noted that spending on research and development in the world has been on an upward trend over the past two decades (*Fig.* 1).

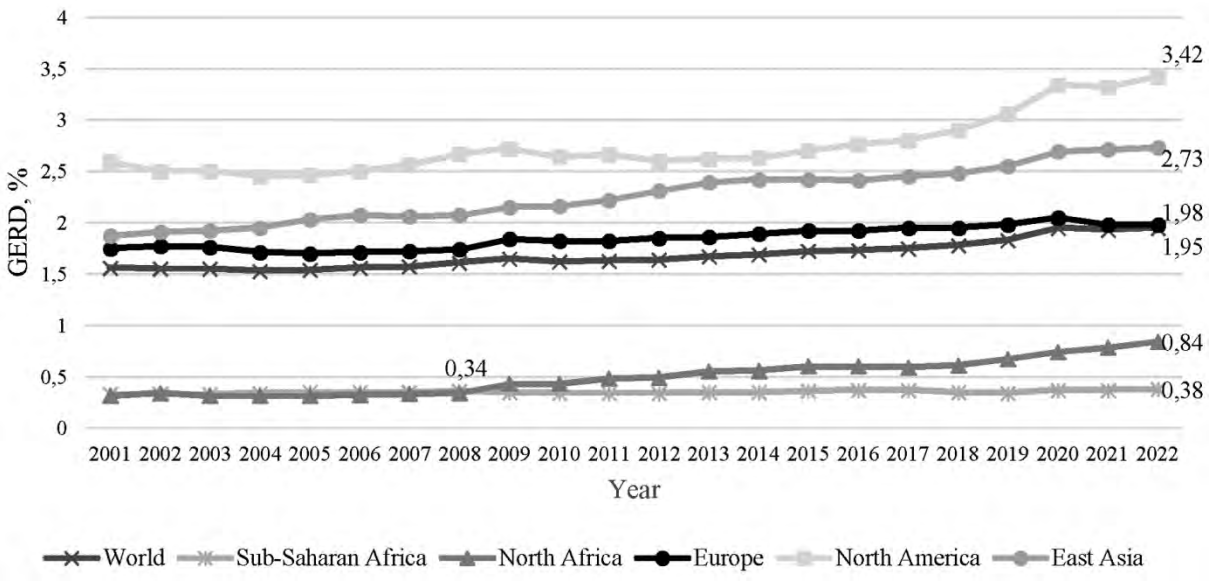

Fig. 1. ***GERD* dynamics in relative terms.**
Compiled by the author on the basis of *UNESCO* statistics: SDG9 Monitoring. Science, Technology and Innovation. *UNESCO.* https://databrowser.uis.unesco.org/browser/SCIENCE_TECHNOLOGY_INNOVATION/UIS-SDG9Monitoring (accessed: 10.05.2025)

African countries have one of the lowest GERD values in the world. Due to the lack of their own domestic savings and foreign aid, as well as the excessive dependence of the revenue side of government budgets on the volatility of commodity prices, African governments cannot provide sufficient funding for science and technology.

An analysis of the macro-regions of Africa reveals the following feature: in 2008, the *GERD* of the countries of North Africa and Sub-Saharan Africa was the same and amounted to slightly more than 0.3%, but from 2009 to 2022, this indicator increased to 0.8% in the countries of North Africa, while in the countries of Sub-Saharan Africa, the indicator remained at the same level, which characterizes the uneven innovative development of the continent.

L.L. Fituni, a leading Russian Africanist, noted that when analyzing innovations in Africa, it should be borne in mind that not all indicators can be applicable and provide objective assessments, while the effectiveness of the analysis increases significantly with the transition to the national level [Fituni 2021].

The country analysis should take into account that UNESCO statistics contain information on GERD for only 36 out of 54 African countries. Outdated data and irregular innovation surveys in countries such as Uganda, Nigeria, Morocco, Algeria, and Ghana should also be noted.

When analyzing the relative values of GERD, the available statistical data for 2021–2023 were systematized for Egypt, the Republic of the Congo, Burkina Faso, Kenya, Mali, Mauritius, Namibia, Rwanda, and South Africa. For the rest of the countries, the analysis includes the values for the nearest previous year according to the corresponding indicator (*Table* 1).

Egypt is the continent's leader in research and development costs. GERD growth in this country has been observed over the past twenty years. It is also noteworthy that in 2022, for the first time, the indicator exceeded the target value of 1% set out in the pan-African and national strategies for science and innovation [Olaoye et al. 2020], including the Science, Technology and Innovation Strategy for Africa 2024 (STISA-2024). In 2023, Egypt's *GERD* also exceeded 1%, which can be described as a steady trend. The high value of the indicator is also typical for other countries in North Africa.

Table 1. **GERD analysis of some African countries in relative and absolute terms**

Percentage interval	*GERD*, %	Country	Year	Rank in the continent	Region	*GERD*, billion US dollars
>1.00%	1.03	Egypt	2023	1	North Africa	21.85
>0.50%	0.81	Kenya	2023	2	East Africa	2.82
	0.79	Rwanda	2023	3	East Africa	0.38
	0.75	Tunisia	2019	4	North Africa	1.11
	0.66	Morocco	2010	5	North Africa	1.49
	0.65	Namibia	2022	6	South Africa	0.20
	0.62	Republic of South Africa	2022	7	South Africa	5.69
	0.58	Gabon	2009	8	Central Africa	0.13
	0.58	Senegal	2015	9	West Africa	0.25
	0.56	Botswana	2013	10	South Africa	0.16
	0.51	Tanzania	2013	11	East Africa	0.53
0.25 – 0.50%	0.48	Algeria	2017	12	North Africa	2.69
	0.41	Democratic Republic of the Congo	2015	13	Central Africa	0.28
	0.38	Republic of the Congo	2022	14	Central Africa	0.15
	0.38	Ghana	2010	15	West Africa	0.37
	0.31	Uganda	2023	16	East Africa	0.47
	0.31	Mauritius	2022	17	East Africa	0.10
	0.31	Mozambique	2015	18	East Africa	0.09
	0.30	Chad	2016	19	Central Africa	0.07
	0.28	Nigeria	2019	20	West Africa	3.20
	0.28	Zambia	2008	21	East Africa	0.10
	0.27	Ethiopia	2017	22	East Africa	0.60
	0.27	Eswatini	2015	23	South Africa	0.03
	0.25	Burkina Faso	2021	24	West Africa	0.14
0.00 –	0.21	Burundi	2018	25	East Africa	0.02

Percentage interval	*GERD*, %	Country	Year	Rank in the continent	Region	*GERD*, billion US dollars
0.25%	0.20	Seychelles	2016	26	East Africa	0.01
	0.19	Togo	2014	27	West Africa	0.03
	0.17	Mali	2021	28	West Africa	0.09
	0.07	The Gambia	2018	29	West Africa	0.004
	0.07	Republic of Côte d'Ivoire	2016	30	West Africa	0.08
	0.07	Republic of Cabo Verde	2011	31	West Africa	0.002
	0.05	Lesotho	2015	32	South Africa	0.003
	0.03	Angola	2016	33	Central Africa	0.06
	0.01	Madagascar	2017	34	East Africa	0.01
	0.01	Mauritania	2018	35	West Africa	0.002

* Data for 2023 or the nearest previous year according to the corresponding indicator.

Compiled by the author on the basis of UNESCO statistics. Science, Technology and Innovation. *UNESCO*. https://databrowser.uis.unesco.org/browser/SCIENCE_TECHNOLOGY_INNOVATION/UIS-SDG9Monitoring (accessed: 11.05.2025)

Research and development expenditures in Kenya are showing rapid growth in 2023, from 0.4% to 0.8% of national GDP, due to a set of factors reflecting the government's strategic priorities in the long term [Ngigi et al. 2024]. The reverse trend is observed in South Africa, where, from 2017 to 2022, there was a decrease from 0.8% to 0.6%.

The GERD value of less than 0.25% is typical for the least economically developed countries in Africa, which indicates the need to review national policies and strategies of governments in the field of innovation in these countries.

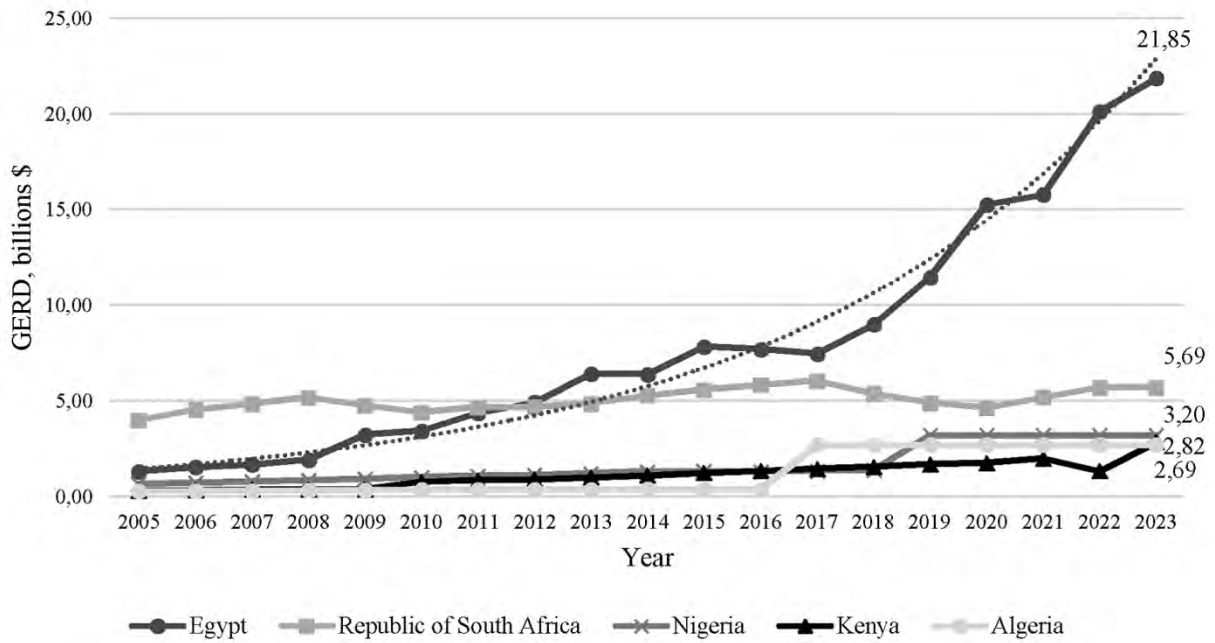

Fig. 2. **GERD dynamics for some African countries in absolute terms.**

Compiled by the author on the basis of *UNESCO UIS* statistics. Science, Technology and Innovation. *UNESCO*. https://databrowser.uis.unesco.org/browser/SCIENCE_TECHNOLOGY_INNOVATION/UIS-SDG9Monitoring (accessed: 12.05.2025)

Soviet and Russian economist V.K. Pospelov pointed out that the analysis of international relative indicators characterizing the level of innovative development of African countries should be supplemented with absolute values of these indicators in order to make the analysis more informative [Pospelov 2022].

In terms of absolute values of the GERD indicator, Egypt is also an undisputed leader in Africa. Its figure has been growing exponentially since 2007, reaching more than $20 billion by 2023. (*Fig.* 2). The leading countries in terms of GERD in absolute terms also include South Africa, Nigeria, Kenya, Algeria, and Morocco, as research and development costs in these countries have been increasing over the analyzed period.

The total GERD of African countries in 2023 amounted to more than $40 billion, which is comparable to the value of the indicator for the Russian Federation, equal to $36 billion in 2023. Given the current dynamics and the fact that some African economies have experienced high economic growth rates in recent years [Saidi et al. 2024], it can be assumed that the GERD value for the leading African economies in relative and absolute terms will increase over the long term, and, in some cases, outstrip the GDP growth rate. This trend will be typical for such growing economies as Ethiopia and Kenya, for which GDP growth in 2024 was 7.3% and 4.5%, respectively[2].

GERD growth will be caused not only by an increase in government spending on fundamental and applied R&D but, to a greater extent, by the spending associated with ED aimed at introducing innovations. The stage of commercialization of innovative products and technologies is usually the most expensive in the innovation lifecycle [Dudić et al. 2016], and across the globe it is largely organized and funded by private business.

In most of the economically developed countries, the contribution of the private sector to the financing of ED exceeds 50%. For example, in Japan, the share of non-public sector sources reaches 80%. Similar percentages are typical for the economies of China, Germany, Sweden, and France[3].

On the African continent, government allocations are the dominant source of funding for research and development. ED is publicly funded for more than 90% in Nigeria, more than half in Mauritius and Ghana, and more than a third in Rwanda and Mali. The share of private national sources is extremely low, with the exception of South Africa and Zambia, where they account for more than 35% of the total investment in science per year. At the same time, it should be noted that the financing of ED in the Republic of South Africa from private sources has significantly decreased over the past decade against the background of the ongoing economic crisis, which can be considered a negative trend[4].

Increasing the role of private national capital in financing scientific and technological activities is a reserve (an untapped opportunity) to increase *GERD* for African countries, especially in terms of the costs associated with the direct introduction of technologies, commercialization of intellectual property deliverables (IPD) obtained as a result of fundamental and applied research, including through crowdfunding investments [Chao et al. 2020].

[2] World Bank Open Data. *World Bank*. https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=ZG (accessed: 12.05.2025)

[3] Naidu E. Africa's article output grows, but R&D funding is lacking. *University World News*. https://universityworldnews.com/post.php?story=20231122073213618 (accessed:12.05.2025)

[4] South Africa's science spending drop is about more than just R&D. *ResearchProfessionalNews*. https://www.researchprofessionalnews.com/ (accessed: 10.07.2025)

The development of infrastructure and the creation of conditions for the promotion of innovation by national governments will contribute to the active involvement of private business entities in the innovation process, which will increase the value of GERD in the future. At the same time, national governments will be more likely to increase investments in basic and applied research in an environment where there are guarantees that the private sector will contribute to the commercialization of the results of such research.

NUMBER OF RESEARCHERS

According to UNESCO statistics, Africa has a relatively low share of researchers in relation to its population (*Fig.* 3). In Europe and North America, the figure in 2022 exceeded 4,000 people per 1 million, and the global average was 1,420 people, while in North Africa, this figure was 893 people, and in Sub-Saharan Africa, 95 researchers.

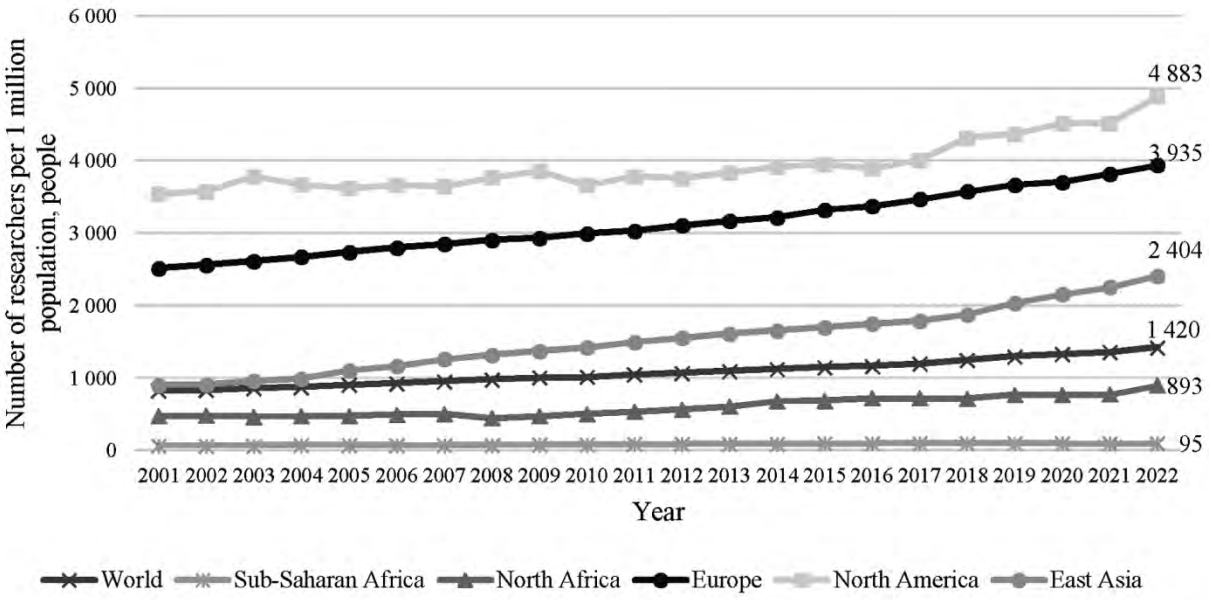

Fig. 3. **Dynamics of the number of researchers per 1 million population.**
Compiled by the author on the basis of *UNESCO UIS* statistics. Science, Technology and Innovation. *UNESCO*. https://databrowser.uis.unesco.org/browser/SCIENCE_TECHNOLOGY_INNOVATION/UIS-SDG9Monitoring (accessed: 06.05.2025)

The indicator reflecting the number of researchers per million inhabitants has shown positive dynamics for North African countries over the past twenty years, with an increase of more than 80%, due to improved access to higher education and the development of universities and research centers [Meyer et al. 2023].

An analysis of the number of researchers in relative and absolute terms in Africa at the national level (*Table* 2) also demonstrates significant differences between individual regions and countries. For Tunisia, the number of researchers per 1 million population in 2022 was 1,671, which is higher than the global average. The same indicator had an extremely low value for Nigeria: about 20 people per 1 million inhabitants. Egypt, Morocco, Algeria, South Africa, Tunisia, Ethiopia, Kenya, and Senegal occupy the leading position on the continent in absolute terms.

The relationship between *GERD* and the number of researchers in African countries is non-linear; however, there is a direct correlation: the higher the spending on science,

technology, and innovation, the more researchers are involved in research and development. In countries where GERD exceeds 0.5%, there is a noticeable increase in the number of researchers.

In turn, economic risks and low R&D budgets, political instability in a number of countries, and the active recruitment of African researchers by Western companies lead to a high level of brain drain [Adeyemi et al. 2018], which largely determines the dynamics of the number of researchers in Africa.

Table 2. **Analysis of the number of researchers in some African countries per 1 million population**

No.	Country	The number of researchers per 1 million population, people	Year	Number of researchers, people*	Rank on the continent by total number of researchers	Region
1	Tunisia	1671.99	2022	20,581	5	North Africa
2	Morocco	1080.71	2016	37,709	2	North Africa
3	Egypt	845.32	2023	94,547	1	North Africa
4	Algeria	832.42	2017	33,912	3	North Africa
5	Senegal	580.95	2015	8,227	8	West Africa
6	Mauritius	569.01	2022	739	22	East Africa
7	Republic of South Africa	469.47	2021	27,763	4	South Africa
8	Namibia	251.45	2022	641	24	South Africa
9	Kenya	200.85	2023	10,957	7	East Africa
10	Botswana	173.95	2013	382	29	South Africa
11	Seychelles	152.46	2005	13	35	East Africa
12	Eswatini	139.10	2015	157	31	South Africa
13	Rwanda	131.85	2023	1,837	11	East Africa
14	Republic of the Congo	128.25	2022	774	20	Central Africa
15	Republic of Cabo Verde	117.87	2014	64	33	West Africa
16	Zimbabwe	99.44	2012	1,305	12	East Africa
17	Ethiopia	90.24	2017	9,632	6	East Africa
18	Ghana	86.98	2015	2,482	10	West Africa
19	Republic of Côte d'Ivoire	67.65	2005	1,269	13	West Africa
20	Chad	58.76	2016	843	18	Central Africa
21	Malawi	50.47	2010	732	23	East Africa
22	The Gambia	49.98	2018	121	32	West Africa
23	Burkina Faso	46.75	2010	742	21	West Africa
24	Togo	44.40	2022	5	36	West Africa
25	Mozambique	43.95	2015	1,162	14	East Africa
26	Zambia	42.45	2008	536	27	East Africa

No.	Country	The number of researchers per 1 million population, people	Year	Number of researchers, people*	Rank on the continent by total number of researchers	Region
27	Madagascar	33.73	2018	894	17	East Africa
28	Mali	29.32	2021	632	25	West Africa
29	Uganda	28.73	2014	1,028	16	East Africa
30	Niger	26.76	2013	490	28	West Africa
31	Lesotho	23.57	2015	50	34	South Africa
32	Burundi	23.20	2018	262	30	East Africa
33	Nigeria	22.83	2019	4,584	9	West Africa
34	Tanzania	19.15	2013	929	16	East Africa
35	Angola	18.95	2016	543	26	Central Africa
36	Democratic Republic of the Congo	10.42	2015	806	19	Central Africa

* Data for 2023 or the nearest previous year according to the corresponding indicator.

Compiled by the author on the basis of *UNESCO UIS* statistics. Science, Technology and Innovation. *UNESCO*. https://databrowser.uis.unesco.org/browser/SCIENCE_TECHNOLOGY_INNOVATION/UIS-SDG9Monitoring (accessed: 07.05.2025)

INTELLECTUAL PROPERTY DELIVERABLES

One of the indicators characterizing the level of national science, especially in the field of fundamental research, is **publication activity**, including books, articles, and conference materials.

The publication activity of African scientists increased by 60% from 2018 to 2022, crossing the threshold of 160,000 publications, with a global growth rate of 22.0% (*Table* 3). In recent years, Africa's contribution to global science has increased from 1.0% to 4.0%, despite both objective factors, related to the lack of funding and underdeveloped infrastructure, and also subjective ones, such as the language barrier for researchers from French-speaking and Lusophone countries, the bias of reviewers, as well as the "tyranny of the impact factor" [Marincola, Kariuki 2020: 24156]. In modern conditions, the scientific significance and quality of the conducted research are largely determined by the level of the journal in which its results are published. Overcoming this "tyranny" requires a radical revision of scientific productivity assessment systems at the global level.

Publication activity in African countries is uneven, with about 48% of the continent's scientific output produced in Egypt and the Republic of South Africa. Another 46% is made up of scientific products from Nigeria (10.8%), Morocco (7.7%), Ethiopia (7.2%), Algeria (6.6%), Tunisia (6.3%), Ghana (4.0%), and Kenya (3.4%). The remaining 6% is accounted for by the remaining 45 countries in Africa, mostly located in Sub-Saharan Africa.

The predominance of international collaborations is typical for scientific products in Africa: up to 70% of articles by African scientists are written with foreign co-authors, mainly from the EU, USA, and China [North, Hastie, Hoyer 2020]. It can also be noted that "analysis of Africa's key partners indicated how important other countries are rather than Africa for them" [Sooryamoorthy 2023].

Table 3. **Publication activity in some African countries**

Name	Period of time, year					Growth rate (2022/2018), %
	2018	2019	2020	2021	2022	
World	3,332,974	3,546,452	3,721,635	3,995,987	4,065,230	22.0
African Union (AU)	104,565	117,183	134,328	153,745	166,915	59.6
% of the world	3.1	3.3	3.6	3.8	4.1	–
Algeria	8,539	8,427	8,586	9,948	11,070	29.6
% of the AU	8.2	7.2	6.4	6.5	6.6	–
Egypt	22,645	26,080	32,477	38,948	44,188	95.1
% of the AU	21.7	22.3	24.2	25.3	26.5	–
Ethiopia	3,764	4,962	6,770	9,160	11,944	217.3
% of the AU	3.6	4.2	5.0	6.0	7.2	–
Ghana	3,141	3,751	4,551	5,487	6,732	114.3
% of the AU	3.0	3.2	3.4	3.6	4.0	–
Kenya	3,471	3,989	4,662	5,532	5,668	63.3
% of the AU	3.3	3.4	3.5	3.6	3.4	–
Morocco	7,773	8,926	10,337	11,677	12,823	65.0
% of the AU	7.4	7.6	7.7	7.6	7.7	–
Nigeria	10,194	12,916	15,263	17,887	18,001	76.6
% of the AU	9.7	11.0	11.4	11.6	10.8	–
Tunisia	8,561	8,488	8,706	9,413	10,488	22.5
% of the AU	8.2	7.2	6.5	6.1	6.3	–
Republic of South Africa	27,442	30,071	32,376	34,560	35,378	28.9
% of the AU	26.2	25.7	24.1	22.5	21.2	–

Compiled and calculated by the author on the basis of African Innovation Outlook IV (AIO 2024). AUDA-NEPAD African Union Development Agency. *NEPAD*. https://nepad.org/publication/african-innovation-outlook-iv-aio-2024 (accessed: 20.05.2025)

It should also be noted that scientific articles are not always objective quantitative indicators characterizing IPD and may not reflect a real contribution to science. Some scientists may publish many articles with low significance and repetitive research results, or publish fewer of their papers due to high fees from journals indexed in the international databases, such as Scopus and the Web of Science, or not publish at all for privacy reasons, in order to create and protect their intellectual property later.

Patent activity analysis. In Africa, the total number of patent applications has increased by more than 40% over the past decade to 21,500 applications[5]. At the same time, their share in global statistics is still small and amounts to 0.6%.

South Africa held the leading position in terms of the number of patent applications filed until 2022, but in 2023 there was a 2.5-fold decrease to 1.2 thousand applications.

[5] WIPO statistics database. *WIPO*. https://www3.wipo.int/ipstats (accessed: 16.02.2025)

At the same time, the number of patent applications in Algeria tripled to 1.4 thousand (*Fig*. 4).

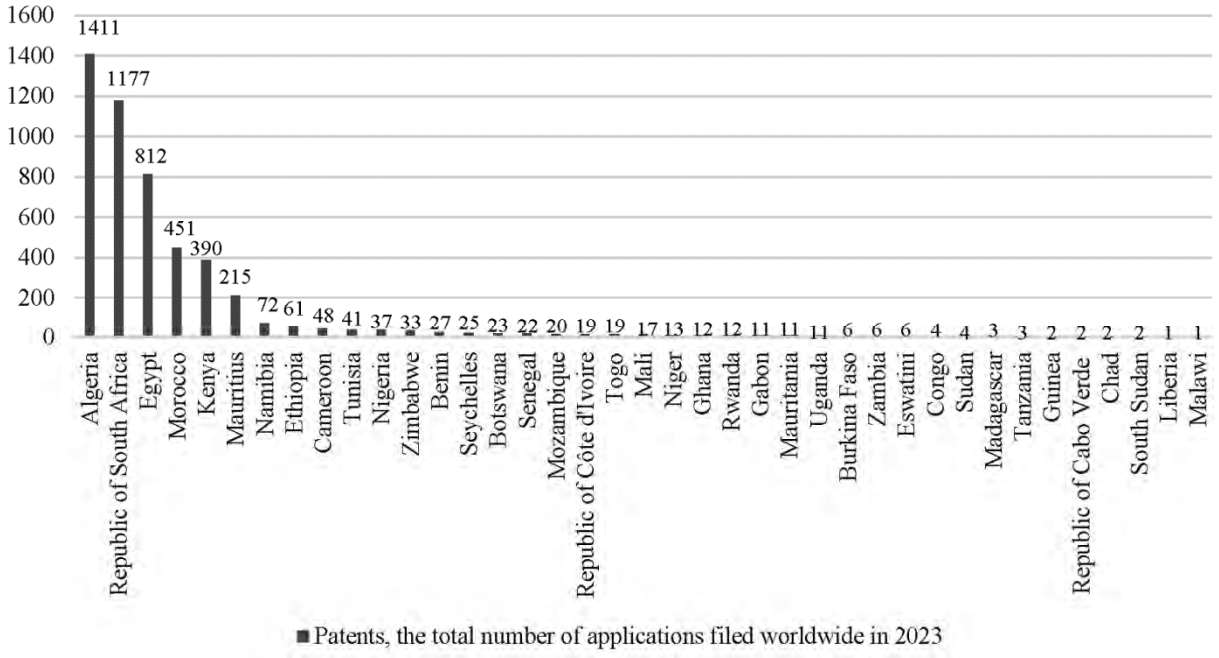

Fig. 4. **The number of patent applications filed worldwide by applicants from some African countries in 2023.**

Designed by the author according to the World Intellectual Property Organization (WIPO). WIPO statistics database. *WIPO*. https://www3.wipo.int/ipstats (accessed: 17.02.2025)

The continental patent landscape is uneven, with notable contributions from applicants from Egypt, Morocco, Kenya, and the Republic of Mauritius, while inhabitants of many other AU states register fewer than 15 patent applications per year.

The growth of patent applications is mainly driven by non-residents, reflecting the increased interest of foreign companies in African markets. According to WIPO statistics, in the Republic of South Africa, more than 80% of applications are submitted by non-residents; in Morocco, this figure exceeds 75%, and in Egypt, 65%. A low proportion of non-residents is observed only in Kenya (less than 50%) and Nigeria (less than 30%) due to the growing activity of local startups in the field of digital technologies and FinTech.

The low patent activity of African researchers is primarily determined by systemic barriers associated with the high cost of filing patent applications, as well as the level of patent fees that must be paid during its validity period. The filing of a patent application in the Republic of South Africa by the profiled company *Smit & Van Wyk*[6] costs more than $1.5 thousand, which is not always affordable for startups and small businesses. Patent fees for maintaining a patent effective in large geographical regions are measured in hundreds of thousands of dollars [Porter et al. 2023].

The extremely long period of application review by national patent offices, ranging from three to five years, also has a significant impact on patent activity[7]. Many African innovators, especially in the informal sector, prefer immediate commercialization to

[6] Patent costs. *Smit and Van Wyk.* https://www.svw.co.za/south-africa-patent-costs/ (accessed: 13.05.2025)

[7] Moreira V.S. Africa: patenting against the clock. *INVENTA.* 29.11.2021. https://inventa.com/ip-news-insights/opinion/africa-patenting-against-clock (accessed: 13.05.2025)

patenting. In these circumstances, trademark registration is becoming a more popular way to protect intellectual property rights.

According to WIPO, in Africa, about 300,000 trademarks are registered annually with national patent offices, which is about 2% of the total number of applications in the world. In terms of the number of trademark applications, Egypt is the undisputed leader on the continent (*Fig.* 6), occupying a fairly high 27th place in the global ranking, ahead of such countries as Hong Kong, Portugal, and Israel.

At the same time, the share of non-residents is about 10%, which indicates a significantly greater activity of local innovators in using more flexible and affordable tools to protect intellectual property rights. For example, M-Pesa mobile payment systems were protected by trademarks rather than patents [Foster 2021].

Trademarks are registered by Africans 50 times more often than patents for inventions, while globally this ratio is five to one. However, it should be noted that trademarks do not provide a sufficient level of legal protection, especially in terms of the substantive elements of the invention (device) and the features of the patented method.

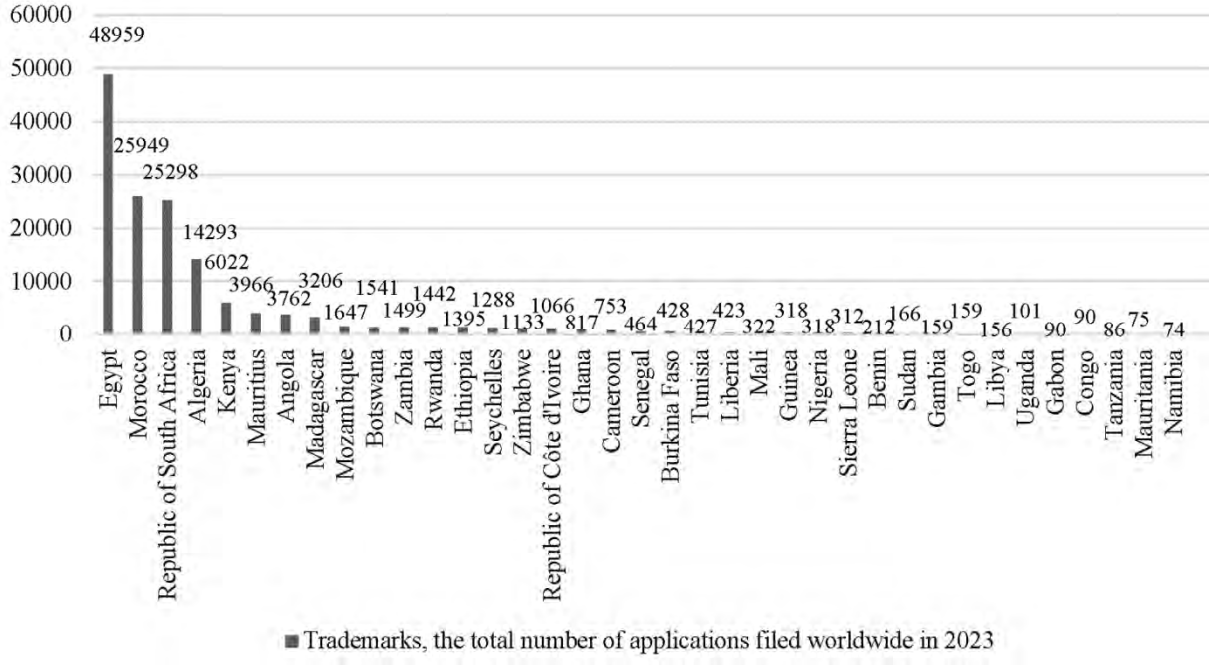

Fig. 6. **The number of trademark applications filed worldwide by applicants from some African countries in 2023.**
Designed by the author according to the WIPO statistics. WIPO statistics database. *WIPO*. https://www3.wipo.int/ipstats (accessed: 13.05.2025)

In addition to national patent offices, there are also two regional organizations on the continent that promote the registration and protection of patent rights: the African Intellectual Property Organization (Organisation Africaine de la Propriété Intellectuelle, OAPI) and the African Regional Intellectual Property Organization (ARIPO).

The OAPI comprises 17 French-speaking countries of the African continent: Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Congo, Republic of Côte d'Ivoire, Equatorial Guinea, Gabon, Guinea, Guinea-Bissau, Mali, Mauritania, Niger, Senegal, Togo, Comoros. The absence of national patent offices in the member states is a distinctive feature of this organization, which determines the need for the OAPI to perform the full range of functions for accepting patent applications, conducting an

examination, and issuing a single security document. This organization annually registers more than 500 patent applications and more than 10 thousand trademarks[8].

In order to stimulate and support innovators, OAPI offers individuals a 90% discount on the fees for filing an application for an invention, as well as a 100% reduction of fees for publication of application, correction of the priority claim by a notice submitted and additional claims [Ildyakov 2024].

Currently, ARIPO consists of 22 African countries, mostly English-speaking ones: Botswana, the Republic of Cabo Verde, The Gambia, Ghana, Zambia, Zimbabwe, Kenya, Lesotho, Liberia, Malawi, Mauritius, Mozambique, Namibia, Rwanda, São Tomé and Príncipe, Sierra Leone, Seychelles, Somalia, Sudan, Tanzania, Uganda, Eswatini. Every year, ARIPO registers more than 800 patent applications and about 1,000 trademarks[9]. The patent procedure at ARIPO provides for a formal examination of patent applications and, if the necessary requirements are met, their transfer to the national offices of the participating countries for substantive examination and further registration of intellectual property rights.

The main task of national patent offices and regional organizations is to develop patent protection in Africa: an essential aspect of intellectual property rights that supports innovation, technological progress, and economic development.

A number of initiatives have been implemented in this area in recent years. The Nigeria Startup Act, adopted in 2022, significantly simplified the procedure for international patent registration for small technology companies, which facilitated their entry into global markets [Okolie, Akwiwu 2023]. ARIPO, in order to simplify the procedure for filing patent applications, is actively developing and implementing an online platform (ARIPO e-Filing).

By aligning the policies of national patent offices and regional organizations with Africa's unique innovation ecosystems, in terms of simplifying the patent registration procedure and effectively securing patent rights, the continent will be able to transform patents from a marginal indicator into a driver of technological progress.

GLOBAL RANKINGS

International indexes reflecting the level of innovative development include the Global Innovation Index (GII), the Bloomberg Innovation Index, the European Innovation Scoreboard, and others.

The most complete picture of the innovation status of the world's countries is provided by the Global Innovation Index (GII), which is an annual ranking of more than 130 countries published jointly by WIPO, Cornell University, and the European Institute of Business Management (*L'Institut européen d'administration des affaires, INSEAD*). This ranking evaluates the degree of innovative development of countries based on more than eighty indicators divided into two groups. When calculating the index, both indicators reflecting innovative resources (human capital, R&D costs, infrastructure, institutions, and the environment for innovation development) and indicators characterizing the results of innovative activities (knowledge, technology, patents, and creative products) are taken into account.

Switzerland, Sweden, the United States, Singapore, and the United Kingdom have been leading the GII over the past decade. The leading regions in the global innovation landscape are Western Europe and North America.

[8] WIPO statistics database. *WIPO*. https://www3.wipo.int/ipstats (accessed: 11.05.2025)
[9] WIPO statistics database. *WIPO*. https://www3.wipo.int/ipstats (accessed: 14.05.2025)

The most innovative economies of the African continent according to the GII are: Mauritius (55th place), Morocco (66th place), the Republic of South Africa (69th place), Tunisia (81st place), Egypt (86th place), Botswana (87th place), the Republic of Cabo Verde (90th place), Senegal (92nd place), Kenya (96th place), Ghana (101st place).

Mauritius tops the ranking among African countries due to the largest venture capital transactions, while also having a positive trend in the number of trademark applications submitted, the volume of imports of information and communication technology services, and the number of newly established small innovative enterprises[10]. Tax advantages, reliable legal regulation, and a well-developed financial infrastructure have helped transform the island state into a key participant in venture capital transactions, with about 40% of foreign direct investment in Africa being carried out through Mauritius[11].

The North African countries of Morocco, Algeria, and Egypt are showing marked improvements in the innovation ranking. Morocco has achieved the greatest success in advancing in the ranking, moving from 84th to 66th place in the GII in ten years due to digitalization and increased spending on education. Algeria is among the top twenty in the world in terms of the number of graduates in technical fields, and progress has been made in intellectual property-related indicators, including patents, trademarks and industrial designs, which allowed the country to take 115th place in the ranking in 2024. Egypt ranks 86th, and Cairo was included in the GII's Top 100 science and technology clusters for the first time in 2024[12].

The Republic of South Africa leads the region in terms of business development and the level of knowledge and technology. Its high level of innovation performance (3rd place in Africa) is due to the highest market capitalization on the continent. The Republic of South Africa is also among the countries that recorded the highest rates of labor productivity growth in the world between 1970 and 2020[13].

Botswana was the sixth most innovative country on the continent in 2024, having made a significant leap from 106th to 86th place in 2022. Increased spending on education, an increase in research and development spending and an increase in payments for intellectual property have become the main drivers of growth [Bosupeng 2015].

The Republic of Cabo Verde and Senegal have improved their positions in the ranking, becoming the most innovative economies in West Africa. Nigeria, despite being a country with one of the largest economies on the continent and a developed ecosystem for startups [Umar et al. 2022], ranked only 113th in the ranking in 2024.

An analysis of the GII over the past decade shows that the countries of the Global North are increasing their innovation potential, while the countries of the Global South are experiencing difficulties. Eight of the twenty-seven countries in Sub-Saharan Africa included in the GII in 2024 have improved their rating, but countries such as Angola, Cameroon, Mozambique, Niger, Burkina Faso, and Mali are not yet able to ensure sustainable and long-term growth in most innovation indicators.

It should be noted that the GII does not take into account informal innovations typical of developing countries. In addition, indicators reflecting the availability of

[10] Global Innovation Index 2022: What is the Future of Innovation-driven Growth? *WIPO*. 2022. https://wipo.int/publications/ru/details.jsp?id=4622 (accessed: 05.05.2025)

[11] World Investment Report 2023. *UNCTAD*. 2023. https://unctad.org/publication/world-investment-report-2023 (accessed: 05.05.2025)

[12] Global Innovation Index 2024 Unlocking the Promise of Social Entrepreneurship. *WIPO*. 2024. https://www.wipo.int/web-publications/global-innovation-index-2024/en/ (accessed: 05.05.2025)

[13] Global Innovation Index 2022: What is the Future of Innovation-driven Growth? *WIPO*. 2022. https://www.wipo.int/publications/ru/details.jsp?id=4622 (accessed: 06.05.2025)

innovative resources and indicators characterizing the results of innovation activities are combined into a comprehensive index with subjective weights. The subjective nature of the indicators included in the index, the values of which are formed on the basis of expert assessments and the results of surveys of executives (mainly Western companies), as well as the problem of incomplete and outdated statistical data on innovation in Africa, distort the real value of GII for a number of countries on the continent. High-income countries gain an advantage in GII due to their well-developed infrastructure, even if their innovation systems are less effective in modern conditions.

ALTERNATIVE ASSESSMENT APPROACHES

Innovation in Africa is becoming increasingly important in the context of the fight against poverty, climate change, and digitalization of all spheres of public life. However, their assessment remains a difficult task due to the uneven development of the continent's countries, weak institutional structures, and the predominance of "invisible" innovation processes.

Traditional indicators such as investments in research and development, the number of patents, or the position in global rankings discussed earlier do not take into account the specifics of the continent's ecosystems, especially for Sub-Saharan Africa, where informal innovations, adaptive technologies, and local solutions that lack adequate patent protection prevail.

The informal sector remains a key element of the African economy, generating up to 60% of GDP in individual countries [Etim 2020], as well as up to 75% of employment [Allard 2017], but its contribution to innovation is ignored. For the analysis of the level of innovation development to take into account the contribution of the informal sector, it can be complemented by a quantitative assessment of the social effects of the development and implementation of innovations in Africa that affect poverty, access to education, digital competence, the number of rural clinics using telemedicine or schools with digital educational materials.

It is also important to include innovations in the analysis that involve the reuse of open technologies that are not included in patent registries to solve specific problems of the continent. For example, the Nigerian startup Zipline uses unmanned aerial vehicles to deliver medicines to rural areas, but its activities are not reflected in traditional innovation indicators due to the lack of patents.

In African countries, when introducing new products and technologies, there is usually not a progressive advancement but a *leapfrogging* over several levels of technological development at once, bypassing the intermediate stages (see *Fig.* 1).

Mobile payments in Africa have become a global phenomenon and have ensured the continent's global leadership in this area due to a combination of technological innovations, high rates of mobile communications, investments in FinTech with the specific features of the continent, namely weak banking infrastructure, expressed in an insufficient number of bank branches and ATMs, problems with their constant replenishment with cash, and the high demand of the population for financial services. This has become a vivid example of the development of adaptive innovations—creative solutions implemented in conditions of lack of resources, limited infrastructure, and institutional gaps typical of the continent. As a result of this innovation, more than 570 million Africans, most of whom have never had bank accounts or used plastic cards to make payments, have gained access to banking transactions, the volume of which

exceeded $850 billion in 2024[14]. At the same time, these transformations did not affect the position of Kenya and Nigeria in the GII—their ranking has only worsened over the past ten years, dropping from 85th to 96th place and from 110th to 113th place, respectively, which raises the question of the relevance of global metrics for the African context.

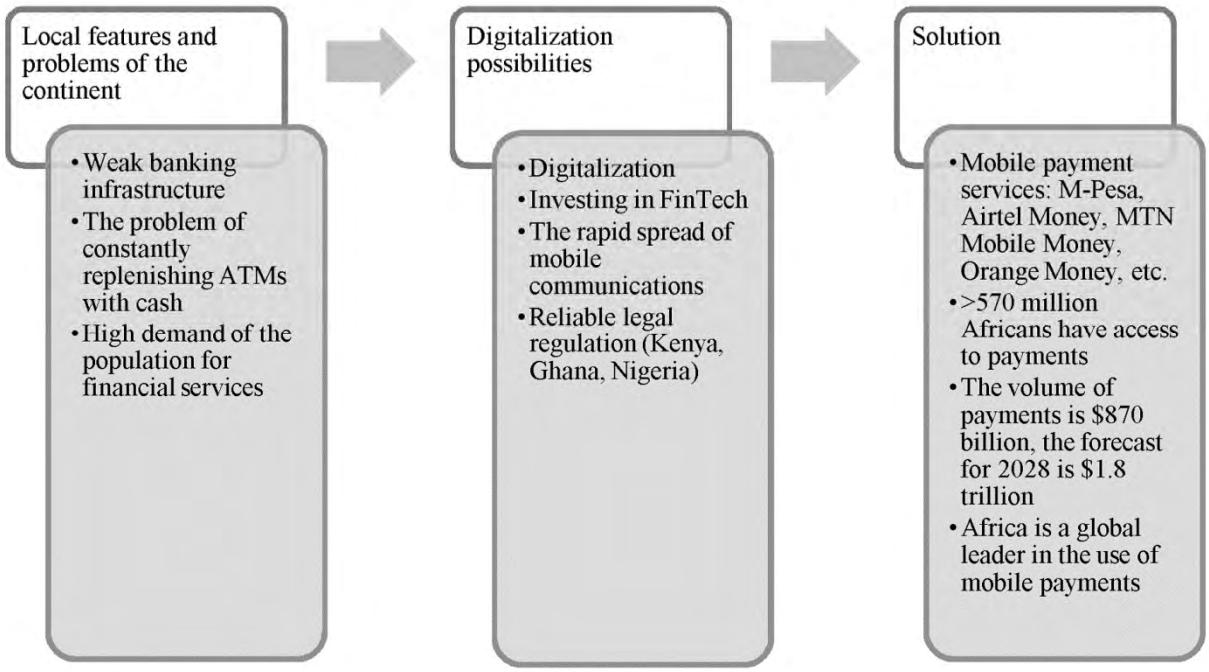

Fig. 1. **Mobile payment market development in Africa.**
Designed by the author.

The African continent is also one of the most dynamic and fastest-growing regions for the introduction and use of cryptocurrencies. Nigeria, Kenya, the Republic of South Africa, and Ghana occupy a leading position in the world in terms of *peer-to-peer* transactions and the level of ownership of cryptocurrencies by the population, which is due not only to limited access to traditional financial services in these countries and the need for cheaper and faster channels for cross-border money transfers but also due to high inflation and devaluation of national currencies. At the same time, there is a massive use of global cryptocurrencies, as well as central banks' own digital currencies (CBDC), for example, *eNaira* in Nigeria and *e-Cedi* in Ghana.

The estimated proportion of the population with access to banking services through mobile services, the level of use of crowdsourcing platforms and the volume of crowdfunding investments, as well as the possibility of making payments through cryptocurrencies, can also become quite informative indicators characterizing the level of innovative development in African countries.

However, when analyzing it, it should be borne in mind that the rapid "spread of financial technologies is a serious blow to the financial sovereignty of the countries of the continent" [Degterev 2024]. The concentration of critical financial infrastructure and cash

[14] Vorniceanu D. Mobile money: paving the way to the 1.4 bln African consumer market. *The Paypers*. 23.09.2024. https://thepaypers.com/payments/thought-leader-insights/mobile-money-paving-the-way-to-the-14-bln-african-consumer-market (accessed: 11.05.2025)

flows from foreign corporations limits the ability of African states to fully control their financial ecosystem, regulate capital flows, ensure cybersecurity and protection of citizens' data, as well as pursue independent monetary policy. The experience of Western countries imposing illegal sanctions related to restrictions on the further use of previously introduced innovative technologies turns technologies and innovations into instruments of political pressure that can be used against any state.

Colonialism had a significant impact on the trajectory of innovative development in Africa. The colonialists introduced technologies that primarily served their own economic interests. The concept of "technology transfer," which became widespread in the 1980s, also did not lead to significant changes in the socioeconomic development of the African continent. This technology was often *intermediate* or *appropriate*, not in the progressive sense of the concept of E. Schumacher [Schumacher 1973], as "adapted to local conditions and resources," but in the sense of being limited and insufficient for integrated industrial development, creating dependence on maintenance and further technological updates from the metropolises, without stimulating deep localization or the development of their own engineering competencies. Traditional African knowledge and local technological practices were systematically devalued and suppressed by the colonial administration and educational systems oriented towards European standards. This had a significant impact on the development of endogenous innovation systems.

Innovation surveys conducted on the continent, in terms of IPD analysis, in addition to accounting for patents and trademarks, should be complemented by know-how developed by African inventors, since local innovations not only solve current problems but also create the basis for sustainable development of the continent. Such innovations include the Cardiopad[15], a portable heart disease diagnostic device created by Cameroonian inventor Arthur Zang from improvised tools; the iCow[16], a mobile cattle management application developed in Kenya; and the MamaOpe[17], a smart jacket for early diagnosis of pneumonia in children in Uganda. These solutions, although effective, rarely meet the criteria of classical innovation indexes, but they contribute to the development of endogenous innovation systems and the formation of innovative potential in African countries.

In addition, the conventional innovation models imported from other regions often do not take into account the environmental realities of Africa. The eco-friendly criterion is not a limitation for the continent's innovators but rather a source of opportunity. Innovations, initially developed as environmentally sustainable, make it possible to solve the most pressing problems of the continent and, at the same time, create world-class competitive technologies. Innovations that ignore the environmental factor risk becoming unviable in the face of climate change and the global shift towards sustainability.

In the context of the development of the African Continental Free Trade Area, the assessment of the number of cross-border startups, as well as innovative projects being implemented in several African countries, is very relevant.

Unlike in developed countries, where innovation is often associated with high technology, in Africa, such trivial things as the access to electric energy and 4G/5G

[15] Harris E. Cardiopad: Reaching the Hearts of Rural Communities in Africa. *WIPO Magazine*. 22.09.2014. https:/wipo.int/web/wipo-magazine/articles/cardiopad-reaching-the-hearts-of-rural-communities-in-africa-38958 (accessed: 11.05.2025)

[16] Nsehe M. The Best African Mobile Apps: iCow. *Forbes*. 02.08.2011. https://forbes.com/sites/mfonobongnsehe/2011/08/02/the-best-african-mobile-apps-icow/ (accessed: 11.05.2025)

[17] Engels Z. Uganda: MamaOpe Smart Jacket for Pneumonia. *TheBorgenProject*. 29.09.2020. https://borgenproject.org/mamaope-smart-jacket/ (accessed: 11.05.2025)

mobile network coverage outside large cities, which characterizes the level of mobile Internet penetration in rural areas, are also important in terms of analysis and forecasting.

CONCLUSION

The innovative development of the African continent is progressive but uneven. North African countries are increasing their innovation potential in terms of GERD, patents, and position in global rankings, which in many ways contrasts with most sub-Saharan African countries.

The undisputed leader of the continent is Egypt, which has exponentially increased research and development spending over the past decade to 1% of GDP, as outlined in the pan-African and national science and innovation strategies.

The total GERD for African countries currently exceeds $40 billion, and given that the economic growth rates of the continent's leading economies exceed the global level, it can be assumed that the indicator's value will increase over the long term and in some cases outstrip the GDP growth rate.

In the coming decades, investments in science and technology are expected to increase on the continent, not only from public sources but also from private national capital and the development of crowdfunding platforms.

The relationship between GERD and the number of researchers in African countries is non-linear; however, there is a direct correlation: the higher the spending on science, technology, and innovation, the more researchers are involved in research and development.

The patent landscape of the continent is uneven, with applicants from Egypt, Morocco, Kenya, and the Republic of Mauritius making a significant contribution, while the growth of patent applications is mainly driven by non-residents. The low patent activity of African researchers is primarily determined by systemic barriers associated with the long period of consideration of patent applications and the high cost of filing applications for patent registration. Most African innovators prefer more expeditious and low-cost ways to protect intellectual property rights by registering trademarks or keeping IPD in the know-how mode.

The GII, as well as other international ratings reflecting the level of innovative development, is subjective and does not take into account informal innovations typical of developing countries. The situation in Africa, despite the growth of innovative indicators, has remained virtually unchanged over the past decade and is deteriorating for individual states such as Nigeria and Kenya. High-income countries gain a priori an advantage in GII due to their well-developed infrastructure, even if their innovation systems are less effective in modern conditions. This contradiction highlights the need to develop more flexible criteria that take into account the unique ways of African innovation.

The problem of measuring innovation in Africa requires a revision of established paradigms, the abandonment of Eurocentric criteria, and the harmonization of methods for collecting data on innovation at the AU level, as well as the development of a special pan-African index or indicator system. The continent's success lies not so much in the field of breakthrough technologies but rather in the ability to adapt solutions to local realities.

In order to improve the effectiveness of the analysis of the level of innovative development of African countries, it is necessary to supplement the conventional metrics, which often ignore the unique socio-economic, cultural, and infrastructural features of the continent, with alternative assessment approaches that take into account informal

innovations and adaptive technologies. Research in this area will form the basis for studying and building unique models of innovative development in African countries and will identify the most promising partners for expanding scientific and technical cooperation.

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Научная статья

ОЦЕНКА УРОВНЯ ИННОВАЦИОННОГО РАЗВИТИЯ СТРАН АФРИКИ: ТРАДИЦИОННЫЕ ИНДИКАТОРЫ И АЛЬТЕРНАТИВНЫЕ ПОДХОДЫ

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Аннотация. Инновации играют ключевую роль в социально-экономическом развитии Африки, однако их измерение сталкивается с уникальными методологическими и контекстуальными вызовами. В статье рассматривается проблема оценки уровня инновационного развития стран Африки, которая остается актуальной в условиях глобализации и цифровизации мировой экономики, а также приводятся ограничения классических подходов, включая недостаточную статистическую базу и низкую сопоставимость данных между странами. Традиционные индикаторы, такие как количество патентов, расходы на научные исследования и разработки и публикационная активность, часто не учитывают специфику африканских экосистем, где преобладают неформальные инновации, адаптивные технологии и локальные решения. Автором проводится оценка уровня инновационного развития стран Африки и предлагаются подходы, учитывающие уникальные экономические, инфраструктурные и культурные особенности континента. Особое внимание уделяется развитию успешных инновационных экосистем в отдельных африканских странах (Кения, Нигерия), где сочетание традиционных и альтернативных показателей позволяет более точно оценить динамику развития. Результаты демонстрируют необходимость адаптации существующих метрик для африканского контекста, а также потенциал альтернативных подходов в формировании более объективной картины инновационного прогресса региона. Предоставляя детальное понимание африканских инновационных процессов, данное исследование призвано помочь политикам, международным организациям и инвесторам в разработке стратегий, учитывающих локальную специфику. Статья вносит вклад в глобальную дискуссию, переосмысливая

подходы к измерению инноваций и бросая вызов европоцентристским парадигмам и метрикам, формируя основы для изучения и построения уникальных моделей инновационного развития стран Африки.

Ключевые слова: инновации, оценка уровня инновационного развития, затраты на исследования и разработки, результаты интеллектуальной деятельности, глобальный инновационный индекс, адаптивные инновации, Африка

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Research article

THE DEVELOPMENT OF ALGERIA'S ICT NFRASTRUCTURE IN THE CONTEXT OF DIGITAL TRANSFORMATION

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Abstract. The development of the information and communication technology (ICT) industry, which is at the core of the digital economy, is of particular importance in Algeria in light of the global transition to so-called Industrialization 4.0 and the plans of the Algerian leadership to make Algeria, which currently ranks third in Africa in terms of economy, a regional leader in digital transformation. In August 2024, the Algerian parliament approved the concept of "Digital Algeria 2030," whereby significant state funding was allocated for the implementation of ICT infrastructure projects. The purpose of this paper is to assess the state of the ICT infrastructure in Algeria and the degree of its readiness to implement the national concept of digital transformation. In the course of the research, the strategy "Digital Algeria 2030," published in May 2025, was examined, international rating data was critically summarized, and a comparative characterization of Algeria's ICT sector in the regional context was provided. The qualitative characteristics of the ICT market in Algeria, its peculiarities and structure were also analyzed. The conclusion made by the author is that in recent years, Algeria has demonstrated relative progress in developing its ICT infrastructure and is fundamentally ready, in a year or two, to accomplish a quantum leap in the field of technology (to implement widely complex AI technologies, cloud computing, and Big Data). The paper also identifies promising areas of Russian cooperation with Algeria in the field of ICT. These include specialized personnel training, financial digital technologies, smart city and e-government concepts, automation of agriculture and industry using AI, development and transfer of software and equipment (data centers, servers, infrastructure for 5G networks). The active policy of the Algerian government in the ICT sector allows for potential economic dividends from digital transformation in the future and an expected increase in the contribution of the ICT sector to the national GDP.

Keywords: ICT, Algeria, digitalization, Fourth Industrial Revolution, Internet, public policy, digital society, digital economy

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In its broadest sense, the term "digital economy" encompasses all economic activity reliant on, or significantly enhanced by, the use of digital inputs, including digital

technologies, digital infrastructure, digital services, and data[1]. In turn, digital transformation, as interpreted by the Organization for Economic Co-operation and Development (OECD), refers to the shift towards information processing and communication by electronic means, a digital economy, and a digital society[2]. Undoubtedly, digital economy transformation is not limited to the development of ICT infrastructure. Assessments of the level of digital transformation take into account elements such as the qualifications of specialists in the ICT field, the size of the e-commerce market, the presence of electronic document management systems, the accessibility and security of online services and databases for citizens, as well as the degree of utilization of social networks, the Internet of Things[3], artificial intelligence (AI), and Big Data, etc. Nevertheless, a transition to a digital economy is unfeasible without a well-developed ICT infrastructure [Tatarinov, Ustinova 2021]. Therefore, in the initial stages of digital transformation, this component experiences the most dynamic development.

The aim of this study is to evaluate the readiness of ICT infrastructure to practically implement the "Digital Algeria 2030" strategy. The methodological foundation includes an interdisciplinary approach, content analysis, comparative analysis, and SWOT analysis[4]. During the research process, the "Digital Algeria 2030" strategy, released to the public in May 2025, was examined, related international ranking data was critically consolidated, and a comparative characterization of Algeria's ICT sector in a regional context was presented. The study also analyzed the qualitative characteristics, formation features, and structure of the ICT market in the republic.

THE ALGERIA DIGITAL 2030 STRATEGY

Plans for the digital transformation of Algeria's economy have been under development since the early 2000s [Zakaria, Benchohra 2024: 16]; however, this process accelerated following the inauguration of President Abdelmadjid Tebboune in 2019[5]. In August 2024, "The National Strategy for Digital Transformation: For A Digital Algeria 2030"[6], was approved by the Algerian Parliament. The strategy notably emphasizes Algeria's ambition to become "an [African] continental leader in digital transformation". The document outlines 25 key objectives to be achieved between 2025 and 2030,

[1] A Roadmap Toward a Common Framework for Measuring the Digital Economy: Report for the G20 Digital Economy Task Force. *OECD*, 2020. P. 34. https://www.itu.int/en/ITU-D/Statistics/Documents/publications/OECDRoadmapDigitalEconomy2020.pdf (accessed: 07.03.2025)

[2] Ibid. P. 36–45.

[3] The Internet of Things (IoT) is a concept of a data transmission network between physical objects ("things") equipped with built-in tools and technologies to interact with each other or with the external environment. It is assumed that the organization of such networks can transform economic and social processes and eliminate the need for human involvement in some actions and operations.

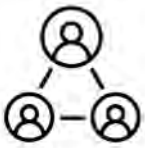
[4] SWOT analysis is a method for assessing internal and external factors that influence a company, project, or idea. The goal is to identify strengths and weaknesses, as well as opportunities and threats for the development of the subject.

[5] The coronavirus pandemic has acted as an accelerator for the digitalization process. The first digital transformation strategy, "Electronic Algeria 2013", adopted in 2008, did not achieve its objectives on time. It was then extended until 2018, but this also did not lead to the realization of digitalization and digital economy transformation. [Sari, Aouaidjia 2024: 2827], [Khalfallah, Bendjelloul 2023: 782]. This necessitated a revision of the strategy, resulting in the development of the "Digital Algeria 2030" strategy.

[6] Stratégie Nationale de la Transformation Numérique en Algérie. Pour une Algérie Numérique 2030. *Haut-Commissaire à la Numérisation.* Algérie, 2024. Published on May 13, 2025. https://hcn.dz/SNTN-Fr.pdf (accessed: 20.05.2025)

distributed across five sections. The first two, “Basic ICT Infrastructure” and “Human Capital & Training,” are recognized as the “essential” pillars for establishing a digital economy, while the remaining three—“Digital Governance,” “Digital Economy,” and “Digital Society”—are framed as ultimate goals. The section “Digital Economy” is the most comprehensive, comprising eight objectives. Slightly less detailed are the sections “Basic ICT Infrastructure” and “Digital Governance,” each encompassing six objectives. The “Human Capital & Training” (two objectives) and “Digital Society” (three objectives) sections appear more abstract in their wording (see *Table* 1).

Table 1. **“Digital Algeria” Strategy Map**

Digital Society 	1. Equitable and inclusive access to ICT services and technologies for citizens 2. Citizens’ participation in public life and decision-making processes through digital space 3. Promoting national digital content that reflects Algeria’s identity and cultural values
Digital Economy 	1. Minimize cash transactions 2. 80% of small and medium-sized enterprises utilize digital systems 3. The contribution of ICT sector to Algeria’s GDP no less than 20% by 2030 4. 100,000 Algerian companies operating in ICT domain 5. Entry of 50 Algerian ICT leaders into the global market 6. Exports of ICT products and services 7. Attracting $1 billion in foreign investment to the ICT sector 8. Host 10 international ICT leaders
Digital Governance 	1. 100% public services digitized 2. 100% administrative operating digitized 3. Reducing departure of professionals involved in digitalization projects 4. Digital identification for individuals and legal entities 5. “Interoperability” among the public sector, private sector, and civil society 6. Development of the framework for data governance
Human Capital & Training 1. 500,000 local ICT specialists 2. Reducing ICT skills departure abroad by 40% 	**Basic ICT Infrastructure** 1. 100% Internet access for households 2. 100% of public institutions and enterprises with high-speed connectivity 3. Extending the fiber-optic Internet network to sub-Saharan African countries optimizing profitability 4. Over 5 national data centers 5. Exported cloud services 6. 500,000 (.dz) domain names 

Source: Copmiled by the author on the base of: Stratégie Nationale de la Transformation Numérique en Algérie. Pour une Algerie numerique 2030. *Haut-Commissaire à la Numérisation.* Algérie, 2024. https://hcn.dz/SNTN-Fr.pdf (accessed: 20.05.2025)

According to the strategy document, the establishment of core ICT infrastructure entails achieving access to the Internet for 100% of households and organizations, ensuring high-quality connectivity between institutions, extending the fiber-optic Internet

network to sub-Saharan African countries to facilitate the export of cloud services via viable investments, creating over five national data processing centers aligned with international standards, transitioning to exporting cloud services, and increasing the number of second-level domain names[7] (.dz) to 500,000.

The section on human capital succinctly identifies two primary objectives: increasing the number of local ICT specialists to 500,000 and reducing their departure abroad by 40%.

The transition to digital governance is identified in the strategy as a 100% shift to a digital format for government services and administrative procedures. This will be achieved through the implementation of digital identification for individuals and legal entities, the establishment of efficient interconnectivity among the public sector, private sector, and civil society, as well as the creation of regulatory frameworks for data management. The strategy also emphasizes the integration of advanced technologies such as artificial intelligence (AI) and the Internet of Things (IoT) into governance practices. Furthermore, the section "Digital Governance" includes measures to maintain the number of ICT specialists in the public sector by offering incentives and reducing their outflow by 20%.

According to the strategy, the development of a digital economy in Algeria will require minimizing cash transactions, integrating ICT systems into the internal management of small and medium-sized enterprises (SMEs), and increasing the number of Algerian ICT companies to 100,000. Additionally, the strategy envisions the entry of 50 Algerian ICT corporations into the global market and attracting to the country 10 leading international digital companies. The "Digital Economy" section also outlines the goal of attracting $1 billion in foreign investment to the ICT sector. It is projected that by 2030, the ICT sector will contribute no less than 20% to Algeria's GDP.

The section on "Digital Society" includes important objectives aimed at ensuring comprehensive access to ICT services and technologies for citizens, fostering their digital participation in public life and decision-making processes, and promoting digital content that reflects Algeria's national identity and cultural values.

At the same time, in December 2024, a Strategy for the Development of Artificial Intelligence[8] was adopted. It aims to create local AI projects and integrate them into various fields to reduce reliance on imported technologies. Its key provisions include encouraging AI research, establishing infrastructure such as high-performance data centers and cloud storage optimized for AI, forming partnerships with universities and research centers specializing in AI, enhancing local government capabilities in this field, and supporting relevant startups. It is projected that by 2027, the AI industry will account for 7% of Algeria's GDP[9].

[7] *Second Level Domain (SLD*) is a part of a domain name that is located in front of the top-level domain and is separated from it by a dot. For example, in the address of *www.sonatrach.dz* (Algeria's largest oil and gas company, *Sonatrach*), the second-level domain is "*sonatrach"* and "*.dz*" is the country-code top-level domain (ccTLD) for Algeria. The increase in the number of second-level domains is aimed at strengthening the national presence in the Internet space.

[8] 3e Conférence africaine des start-up: l'Algérie adopte une stratégie nationale de l'intelligence artificielle. *Radio Algérienne*. 08.12.2024. https://news.radioalgerie.dz/fr/node/56441 (accessed: 30.04.2025) The strategy was not released to public at the time of publication of this article.

[9] Intelligence artificielle : un objectif de contribution de 7% au PIB de l'Algérie d'ici 2027. *Algérie Presse Service*. 17. 02. 2025. https://www.aps.dz/sante-science-technologie/183125-intelligence-artificielle-un-objectif-de-contribution-de-7-au-pib-de-l-algerie-d-ici-2027 (accessed: 03.06.2025)

Regarding financial allocations for the ICT sector, between 2015 and 2019, $22 billion worth of related equipment was imported[10]. Between 2010 and 2019, the government invested over $3.7 billion in ICT infrastructure development[11]. In 2021, under the Algeria Startup Fund established a year earlier, leaders of 390 technological projects managed to attract $4 million[12], and for the 2025–2029 period, the projected figure is significantly higher: as much as $600 million ($150 million annually)[13]. In the 2025 budget, approximately $520 million (64 billion dinars, 0.4% of the budget) has been allocated to the ICT sector for telecommunications, scientific research, technological development, knowledge economy creation, and startup support[14]. A list of 500 ICT projects approved in January 2025 and slated for implementation within two years primarily consists of basic ICT infrastructure projects[15].

Thus, after the adoption of the national digital strategy in 2024, the process of digital transformation in Algeria gained significant momentum[16]. According to the state program, to achieve the ultimate goals of creating a digital economy, a digital society, exporting ICT services, and establishing Algeria as a regional technological hub, the republic needs to complete the foundational stages of digitalization [Gribanov 2019: 12][17] in a short timeframe. The objectives of these stages are outlined in the first two sections of the "Digital Algeria 2030" strategy: "Basic ICT Infrastructure" and "Human Capital & Training". Currently, government funding is focused on infrastructure projects, software procurement and development, and relevant scientific research.

ALGERIA IN INTERNATIONAL DIGITAL TRANSFORMATION RANKINGS

To evaluate the state of Algeria's ICT sector in comparison with other North African countries, international rankings offer valuable insights. This study highlights three authoritative indices related to the assessment of digital transformation levels: the UN E-Government Development Index, the Global Innovation Index, and the Network Readiness Index.

According to the UN E-Government Development Index (*EGDI*), which integrates data from the International Telecommunication Union, UNESCO, and the United Nations Department of Economic and Social Affairs, Algeria was ranked closer to the bottom in

[10] Algeria's Evolving Telecom Landscape. *Telecom Review Africa.* 06.03.2023. https://telecomreview africa.com/articles/features/3269-algeria-s-evolving-telecom-landscape/ (accessed: 05.04.2025).
[11] Ibid.
[12] Country Report. Algeria. Digital Wellbeing Index 2024. *ITHRA*, 2024. https://dwi-api.ithra.com/uploads/ Algeria_country_profile_bdb6c09692.pdf (accessed: 28.02.2025)
[13] L'Algérie investit 600 millions de dollars pour faire émerger mille start-ups d'ici 2029. *Maghreb Emergen*t. 01.06.2025. https://maghrebemergent.news/fr/lalgerie-investit-600-millions-de-dollars-pour-faire-emerger-mille-start-ups-dici-2029/ (accessed: 15.06.2025)
[14] Calculated by the author based on: Loi n° 24–08 du 22 Joumada El Oula 1446 correspondant au 24 novembre 2024 portant loi de finances pour 2025. *Le Journal Officiel de la République Algérienne*, No. 84, 26.12.2024.
[15] Njoya S. L'Algérie prévoit plus de 500 projets numériques d'ici 2026. *WeAreTech.* 26.12.2024. https://www.wearetech.africa/fr/fils/actualites/tech/l-algerie-prevoit-plus-de-500-projets-numeriques-d-ici-2026 (accessed: 25. 02.2025)
[16] It is planned to accelerate the implementation of the goals set back in the "Electronic Algeria 2013" program, partially repeated in the "Digital Algeria 2030" strategy, but not realized over the course of a previous decade.
[17] The digital transformation is conventionally divided into four stages: digital data stage, digital infrastructure stage, digital models' stage, and the digital economy stage [Gribanov 2019: 12]. Algeria is simultaneously overcoming the first two stages.

2024, occupying the 116th position out of 135 countries[18]. It lagged behind all other North African nations except Libya. Algeria's *EGDI* score of 0.5956 was below the global average (0.6382) but above the African continental average (0.4054). The country was surpassed both by the continent's leader, South Africa (0.8616), and the North African leader, Tunisia (0.6935). Some components of the index revealed a stark imbalance: while Algeria matched global standards in ICT infrastructure, it significantly lagged behind other North African and African nations in the provision of all kinds of internet services.

In the Global Innovation Index (*GII*) ranking, which included 133 countries, Algeria was ranked 115th in 2024. This position illustrates a significant gap when compared to Morocco (66th), Tunisia (81st), Egypt (86th), and other African nations (such as South Africa, Botswana, Cabo Verde, Senegal, Nigeria, etc.)[19]. However, the index highlighted Algeria's substantial investments in the education sector (10th globally), an excellent level of knowledge among STEM[20] graduates (20th place), and an increase in the number of patents registered with local patent offices for inventions compared to previous years (65th place in 2024, see *Fig.* 1).

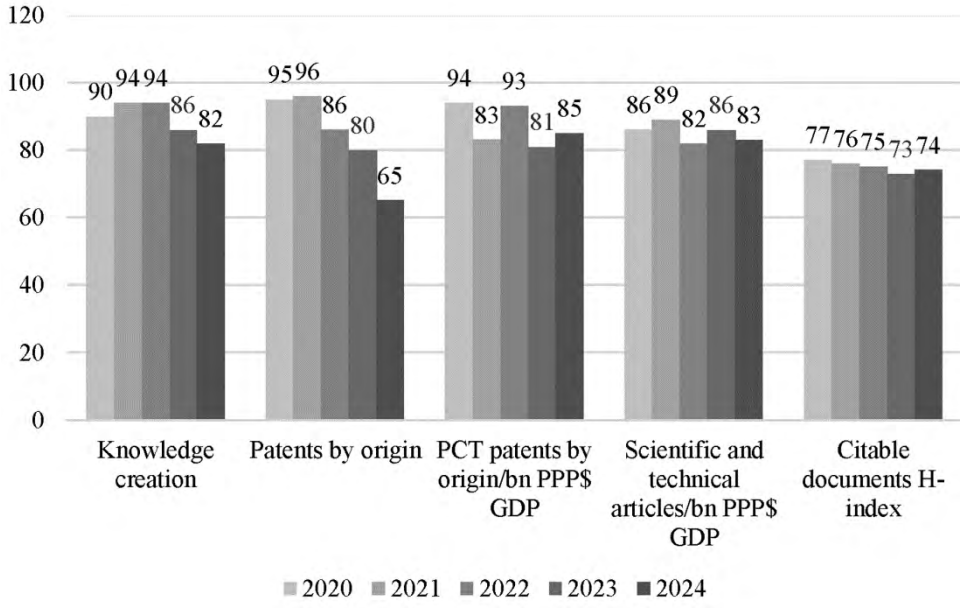


Fig. 1. **Algeria's position in the Global Innovation Index for the indicator "6.1. Knowledge creation" and its sub-indices, 2020–2024.**

Source: Global Innovation Index 2020: Who Will Finance Innovation? *Cornell University, INSEAD, World Intellectual Property Organization*. 2020. P. 216; Global Innovation Index 2021: Tracking Innovation through the COVID-19 Crisis. *World Intellectual Property Organization*. 2021. P. 43; Global Innovation Index 2022: What is the future of innovation-driven growth? *World Intellectual Property Organization*. 2022. P. 93; Global Innovation Index 2023: Innovation in the face of uncertainty. *World Intellectual Property Organization*. 2023. P. 81; Global Innovation Index 2024: Unlocking the Promise of Social Entrepreneurship. *World Intellectual Property Organization*. 2024. P. 117.

[18] E-Government Survey 2024 Accelerating Digital Transformation for Sustainable Development. With the addendum on Artificial Intelligence. *United Nations*. 2024. P. 96. https://desapublications.un.org/sites/default/files/publications/2024-09/(Web%20version)%20E-Government%20Survey%202024%201392024.pdf (accessed: 23.02.2025)

[19] Global Innovation Index 2024: Unlocking the Promise of Social Entrepreneurship. *World Intellectual Property Organization*. 2024. P. 117. The data on Libya is not available in the index.

[20] STEM is an umbrella term that groups: Science; Technology; Engineering; Mathematics.

In the Network Readiness Index (*NRI*), deemed one of the most informative aggregate indicators of ICT development, Algeria ranked 100th in 2024 (two positions lower than its rank in 2019)[21]. The index assessed 133 countries, including the impact of digital transformation on economic development and citizen welfare. According to the *NRI*, Algeria's profile in terms of the people pillar (the application of ICT across three facets: individuals, enterprises, and public sectors) and the technology pillar (access to ICT infrastructure, content, and future technologies) approached normative indicators for countries with high middle-income levels. However, in terms of the governance pillar (trust, regulation, inclusion) and the impact pillar (economic repercussions, quality of life, the Sustainable Development Goals contribution), Algeria demonstrated a regression compared to its 2019 ratings[22] (see *Fig.* 2).

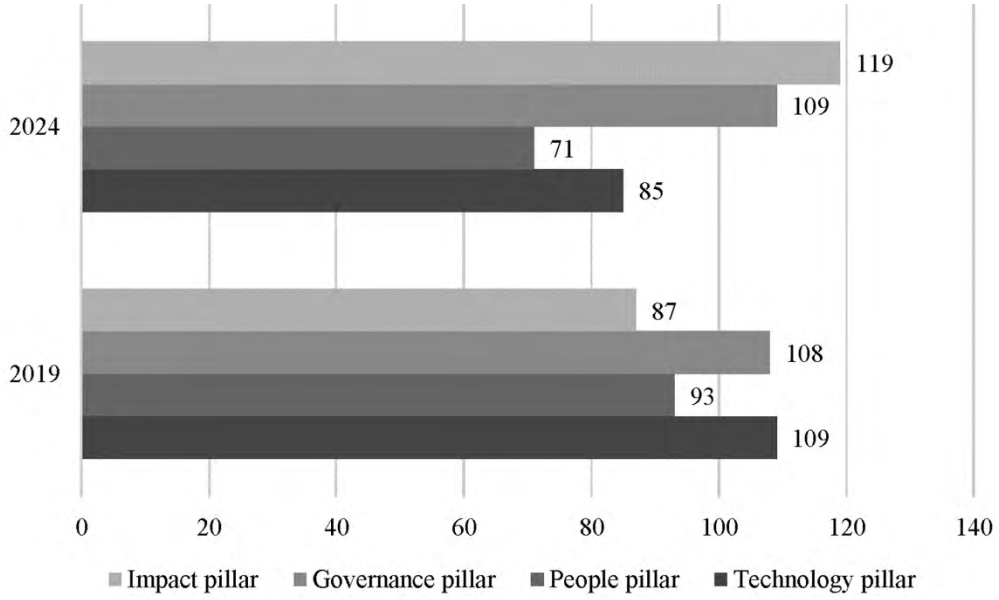


Fig. 2. **Algeria's position according to the main pillars of the Network Readiness Index, 2019 and 2024.**
Source: Network Readiness Index 2024. Building a Digital Tomorrow: Public-Private Partnerships for Digital Readiness. *Portulans Institute, Oxford University Press, Saïd Business School*. 2024. P. 85; The Network Readiness Index 2019: Towards a Future-Ready Society. *Portulans Institute*. 2019. P. 51.

Nevertheless, the "sub-pillars" of the last two indicators reveal that Algeria ranked 3rd in bridging the urban-rural divide in digital payments, 33rd in prevalence of the gig economy, and excelled in working on legislative frameworks for e-commerce.

These positive factors highlighted by the ranking have a contradictory basis. Regulatory acts in the field of e-commerce were adequately present in all North African countries except Tunisia, according to the ranking. However, their actual content was not assessed.

The accessibility of digital payments in Algeria was mainly guaranteed by postal transfer services [Cherki, Seffih 2023: 136] rather than by the use of electronic payment terminals or online platforms. In 2022, approximately 13 million plastic cards [Amrane,

[21] Network Readiness Index 2024. Building a Digital Tomorrow: Public-Private Partnerships for Digital Readiness. *Portulans Institute, Oxford University Press, Saïd Business School*. 2024. P. 85; The Network Readiness Index 2019: Towards a Future-Ready Society. *Portulans Institute*. 2019. P. 51.
[22] Ibid.

Damene 2023: 220] were in circulation, connected to electronic payment services through online applications and marketplaces. In other words, the number of Algerians with bank accounts ready to make online payments was not especially high. Moreover, unlike countries where money transfers via mobile wallets (which do not require having a bank account) are primarily facilitated by telecommunications operators [Novikova 2019: 86–87], in Algeria, banks held the leading position.

Table 2. **Key Indicators of North African Countries Related to ICT Sector Development, 2024**

Country/Indicator	Algeria	Egypt	Libya	Morocco	Tunisia
Population, million people	46.2	**114.5***	N/A	37.7	12.2
GDP, $ million	629	**1809**.4	N/A	385.3	162.1
GDP per capita, $ PPP	13.682	**17.123**	N/A	10.408	13.249
ICT contribution to GDP, %	4.7	5.8	1.7	1.5	**11**
EGDI Index	0.5956	0.6699	0.5466	0.6841	0.**6935**
ICT Infrastructure Index	0.8129	0.6946	**0.9639**	0.8827	0.8357
Human Capital Index	0.6418	0.6150	0.5951	0.6078	**0.6497**
Online Services Index	0.3320	**0.7002**	0.0808	0.5618	0.5951
GII ranking	115	86	N/A	**66**	81
ICT Usage Index	75.4	67.7	N/A	**77.1**	75.9
Government Online Services Index	30.8	52.8	N/A	41.7	**56.1**
E-Participation Index	20.9	33.7	N/A	25.6	**53.5**
ICT Services Export, %	0.2	2.0	N/A	**3.2**	1.7
ICT Services Import, %	0.3	**0.9**	N/A	**0.9**	0.6
Technical Profile Graduates, %	29.9	16.9	N/A	27.2	**37.9**
NRI Index	39.24	44.42	N/A	**45.93**	41.56
Fixed Internet Connection Index	35.74	**46.92**	N/A	36.86	26.32
International Internet Bandwidth Index	76.86	**82.86**	N/A	79.74	72.43
Online Commerce Index	8.78	2.62	N/A	10.50	**18.86**
Cybersecurity Index	33.92	**95.50**	N/A	82.42	86.25
Gender Digital Gap	31.53	39.36	N/A	**63.34**	42.99

* The highest/best indicators in the considered group of countries are highlighted in bold to visualize the leader.

Compiled by the author based on: E-Government Survey 2024 Accelerating Digital Transformation for Sustainable Development. With the addendum on Artificial Intelligence. *UN*. 2024. P. 96; Global Innovation Index 2024: Unlocking the Promise of Social Entrepreneurship. *World Intellectual Property Organization*. 2024. P. 117. 153. 195. 236; Network Readiness Index 2024. Building a Digital Tomorrow: Public-Private Partnerships for Digital Readiness. *Portulans Institute. Oxford University Press. Saïd Business School*. 2024. P. 85. 120. 165. 203.

A high share of part-time and freelance employment, which is the basis of the gig economy[23], could also be explained by the noticeable role of the informal economy and violations of labor laws. Problematic points noted directly by the ranking included

[23] The gig economy is a labor market model in which work is performed through short-term contracts, assignments, or projects rather than on a permanent basis. Workers (gig workers) choose when, how much, and for whom to work, while companies receive a flexible resource without hiring full-time employees.

relatively low spending on software imports, lack of online access to financial accounts, imperfect ICT regulation tools, a digital gender gap, weak economic opportunities for women, small volumes of ICT service exports, and low freedom of life choice (ranked 130th globally)[24].

Drawing upon the data from international indices. it is evident that Algeria. at the point of adopting its National Digital Transformation Strategy. possessed the minimum necessary conditions for the development of its ICT sector. These included. most notably. telecommunications infrastructure. a well-trained pool of technical specialists. and the capacity to sustain relatively high budgetary expenditure on education and science. However. none of the cited 2024 indices positioned Algeria as a regional leader in the ICT domain. Algeria lagged behind other North African countries in key metrics such as the e-participation index. government online services. ICT service exports. cybersecurity. and digital gender parity (see *Table* 2). In terms of a crucial metric for becoming a future regional technological hub. namely international Internet bandwidth. Algeria was surpassed by Egypt and Morocco. The findings from these indices confirm the fact that Algeria was in the initial basic stages of digital transformation [Gribanov 2019: 12]. whereas neighboring countries had progressed further. For a comprehensive understanding of the developmental trends within Algeria's ICT sector. its priorities. and its outlook. a qualitative analysis of elements within its ICT infrastructure is essential.

MOBILE TELEPHONY IN ALGERIA

The advent of the Internet is widely considered to have been a catalyst for digital transformation globally. as it fostered the creation of industrial clusters around major urban centers and reshaped market structures. However. in Africa. it was the proliferation of mobile telephony that played the most significant role as a driver of such transformations [Williams et al.. 2011: 26]. Since the 1990s. mobile phones—and subsequently. mobile Internet—have become indispensable tools for communication. information access. and economic growth across the continent [Adam. 2019: 240].

In Algeria. the mobile telephony boom commenced in the early 2000s [Loucif. 2023: 236]. In 2002. only 450.000 Algerians (representing 1.4% of the population) utilized mobile services. but this figure surged to 4.8 million (15% of the population) by 2004[25]. marking a tenfold increase in absolute terms within a few years. By 2010. mobile coverage extended to 90% of the population. amounting to 35.6 million users[26]. Following the transition to 3G standards in 2013. the number of mobile subscribers began to exceed the total population. suggesting the prevalence of multiple SIM cards issued by different carriers per individual[27].

[24] Network Readiness Index 2024. Building a Digital Tomorrow: Public-Private Partnerships for Digital Readiness. *Portulans Institute, Oxford University Press, Saïd Business School*. 2024. P. 85; The Network Readiness Index 2019: Towards a Future-Ready Society. *Portulans Institute*. 2019. P. 51.

[25] L'Algérie en Quelques Chiffres. Résultats 2005. Algérie: *Office national des statistiques*. N°36. 2006. P. 44.

[26] L'Algérie en Quelques Chiffres. Résultats 2009-2011. Algérie: *Office national des statistiques*. N°42. 2012. P. 52

[27] L'Algérie en Quelques Chiffres. Résultats 2012-2014. Algérie: *Office national des statistiques*. N°45. 2015. P. 56.

The Algerian mobile market is characterized by competition among the three major operators: *Mobilis*. *Djezzy*. and *Ooredoo Algeria*. *Mobilis*. which controls 44%[28] of the market. and *Djezzy* (31%) are state-affiliated entities[29]. while *Ooredoo Algeria* (25%) is a subsidiary of the Qatari multinational corporation *Ooredoo Q.P.S.C*. *Mobilis* is the most popular operator. largely owing to its affordable tariffs. which cater to subscribers in both urban and rural areas. Conversely. while the services of *Djezzy* and *Ooredoo* are more expensive. they are perceived as offering superior quality. *Djezzy* seeks to expand its subscriber base by actively investing in innovation and providing cloud services and IT solutions targeted at businesses. Meanwhile. *Ooredoo* attracts a younger audience by offering high-speed Internet suitable for gaming applications and video sharing[30].

Although button mobile phones remain in use across Africa (accounting for up to 46% of subscribers)[31]. Algeria demonstrates a markedly different trend. with only 5% of mobile users relying on GSM connections without 3G/4G support[32]. This figure was significantly higher. at 19%. five years ago[33]. Consequently. a substantial proportion of Algerians now own smartphones. with Samsung and Xiaomi emerging as market leaders in Algeria. Among active subscribers. an overwhelming majority—94.5%[34]—use their phones primarily to access the Internet. implying universal digital engagement among all but button-phone users.

According to data provided by Algeria's Ministry of Post and Telecommunications. the number of active mobile connections exceeded 54 million in 2024[35]. representing 113% of the population. The proliferation of mobile telecommunications in Algeria is regarded as an indicator of economic growth. with a 10% increase in mobile subscribers correlating to an average economic growth rate of 0.8% [Choutri. Bounihi 2023: 420].

Calculations carried out a few years ago at the continental level demonstrated that the mobile industry contributed $56 billion to the African economy. accounting for 3.5% of the region's total GDP [Usacheva. 2014: 148]. To advance its telecommunications infrastructure. Algeria aims to implement 5G networks by the end of 2025[36]. Initially. fifth-generation mobile networks will be established in densely populated and industrial zones. However. this development is contingent upon the availability of high-capacity fiber-optic infrastructure. Does Algeria possess the requisite Internet network to support such advancements?

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[28] Algérie: le parc d'abonnés de Djezzy a augmenté de 6,2% à 17 millions d'abonnés en un an. *L'Agence Ecofin.* 06.05.2025. https://www.agenceecofin.com/actualites-numerique/0605-128135-algerie-le-parc-d-abonnes-de-djezzy-a-augmente-de-6-2-a-17-millions-d-abonnes-en-un-an (accessed: 07.06.2025)

[29] *Mobilis* belongs to *Algérie Télécom*, while *Djezzy* belonged previously to an Egyptian operator before it was in 2022 transferred into the ownership of National Investment Fund of Algeria (*Fonds National d'Investissement*).

[30] Algeria. Mobile Network Experience Report. *Opensignal*. 2025, April. https://www.opensignal.com/reports/2025/04/algeria/mobile-network-experience

[31] African smartphone market poised for 4% growth in 2024, despite economic instability. *Canalys*. 12.06.2024. https://www.canalys.com/newsroom/african-smartphone-market-q1-2024 (accessed: 07.06.2025)

[32] Observatoire du marché de la téléphonie mobile du 4ème trimestre 2024. *L'Autorité de Régulation de la Poste et des Communications Electroniques*. Algérie, 2024. P.5.

[33] Observatoire du marché de la téléphonie mobile en Algérie 4éme trimestre 2019. *L'Autorité de Régulation de la Poste et des Communications Electroniques*. Algerie, 2019. P.3.

[34] Improving the Quality of Mobile Telephony Services. *Ministry of Post and Telecommunications.* Algeria, 2025. https://www.mpt.gov.dz/improving-the-quality-of-mobile-telephony-services/ (accessed: 07.04.2025)

[35] Observatoire du marché de la téléphonie mobile du 4ème trimestre 2024. *L'Autorité de Régulation de la Poste et des Communications Electroniques*. Algérie, 2024. P.1.

[36] Algeria: 5G Deployment Planned for Second Half of 2025. *AL24 News.* 14.04.2025. https://al24news.dz/en/algeria-5g-deployment-planned-for-second-half-of-2025/ (accessed: 18.05.2025)

INTERNET INFRASTRUCTURE IN ALGERIA

The introduction of the Internet in Algeria dates back to 1994. yet. until the early 2000s. access was limited primarily to 800 governmental institutions and select private users [Salem. Benmessahel 2021: 114]. By 2006. only 2.6% of Algerians had Internet access [Salem. Benmessahel 2021: 114]. As of 2025. the penetration rate of Internet services in Algeria reached 76.9%[37]. representing 36.2 million individuals. This figure aligns with the average Internet penetration across North African nations (73%) but remains marginally lower than that observed in Western Asia (75.9%)[38]. Nonetheless. approximately 10.9 million Algerians. accounting for 23.1% of the population. remained without Internet connectivity. This discrepancy largely mirrors the country's urbanization rate of 75%[39]. demonstrating a persistent "digital divide" between urban centers and rural regions. Investment in Internet infrastructure has concentrated on Algeria's coastal cities. where urban conglomerations such as Oran. Constantine. Annaba. and the capital. Algiers. boast the fastest Internet speeds[40]. Conversely. achieving connectivity for the last 20–25% of the population residing in remote areas of Algeria—the largest country in Africa by geographical extent—remains challenging. Factors contributing to this include mountainous terrains and southern desert landscapes. as well as the substantial costs associated with technological deployment.

In regions characterized by limited fiber-optic and ADSL network coverage. fixed 4G/LTE connections have played a critical role in bridging the connectivity gap by offering wireless-based home Internet solutions. Alternatively. the Alcomsat-1 satellite. launched in 2017. has provided services such as communications. broadcasting. and broadband Internet. often catering to corporate requirements[41]. Nevertheless. mobile Internet continues to dominate as the preferred mode of connectivity nationwide.

The more widespread adoption of mobile Internet in Algeria. compared to fixed broadband. was largely influenced by its affordability and superior data transmission speeds. Monthly broadband tariffs ranged between €14 and €25 for unlimited access with speeds varying from 20 Mbps to 1 Gbps[42]. The cost of a router amounted to approximately €50 [Loucif 2023: 236]. while the minimum wage stood at only €140[43]. creating significant barriers for fixed Internet users. Moreover. the average download speed for fixed connections remained at a modest rate of 21.09 Mbps[44]. For

[37] Digital 2025: Country Headlines Report. *Datareportal*. 05.02.2025. P. 41. https://datareportal.com/reports/digital-2025-local-country-headlines (accessed: 19.04.2025)

[38] Global internet penetration rate as of February 2025, by region. *Statista*. https://www.statista.com/statistics/269329/penetration-rate-of-the-internet-by-region/ (accessed: 19.04.2025); Digital 2025: Country Headlines Report. *Datareportal*. 05.02.2025. Pp. 25, 30. https://datareportal.com/reports/digital-2025-local-country-headlines (accessed: 19.04.2025)

[39] Digital 2025: Country Headlines Report. *Datareportal*. 05.02.2025. P. 41. https://datareportal.com/reports/digital-2025-local-country-headlines (accessed: 19.04.2025).

[40] Algeria Median Country Speeds Updated April 2025. *Speedtest Global Index*. https://www.speedtest.net/global-index/algeria (accessed: 07.04.2025)

[41] Frąckiewicz M. Internet Access in Algeria. *Digital Divide, Internet Access, Technology*. 30.05.2025. https://ts2.tech/en/internet-access-in-algeria/ (accessed: 07.06.2025)

[42] Kassouwi I.K. High-Speed Networks: Algeria to Phase Out Copper, Switch to Fiber by 2027. *WeAreTech.Africa*. 02.05.2025. https://www.wearetech.africa/en/fils-uk/news/telecom/high-speed-networks-algeria-to-phase-out-copper-switch-to-fiber-by-2027 (accessed: 09.06.2025)

[43] For comparison: the cost of mobile Internet is $0.48 per 1GB [Zakaria, Benchohra 2024: 11].

[44] Algeria Median Country Speeds Updated April 2025. *Speedtest Global Index*. https://www.speedtest.net/global-index/algeria (accessed: 07.06.2025)

comparison. Russia reported an average speed of 88.32 Mbps[45]. although mobile Internet speeds in both Algeria and Russia were comparable at 35.06 Mbps and 36.02 Mbps. respectively[46].

Unlike the mobile telecommunications sector. which is characterized by competition. the Internet service provider market in Algeria operates under a monopoly held by the state-owned corporation *Algérie Télécom*[47]. This entity exerts substantial control over Internet-related infrastructure and tariff policies. presenting certain obstacles to market development. Nonetheless. significant state investments have been directed toward expanding Algeria's fiber-optic networks. Between 2018 and 2024. the country achieved a notable increase in its international Internet bandwidth. growing from 1.5 Tbps to 9.8 Tbps[48]. This expansion was facilitated by the deployment of two major submarine fiber-optic cables: one connecting Marseille (France). Annaba (Algeria). and Abu Talat (Egypt) in 2019. and another linking Algiers and Oran (Algeria) to Valencia (Spain) in 2020.

Additionally. Algeria has engaged in the Trans-Saharan Fiber Optic Backbone project. supported by the African Union under the New Partnership for Africa's Development (*NEPAD*). By July 2024. a 2.600-km segment of the cable connecting Algiers to In Guezzam (on the Niger border) and Tindouf (on the Mauritanian border) had been completed. Ultimately. this network will integrate Algeria with Niger. Nigeria. Chad. Mali. and Mauritania.

Further domestic advancements include the establishment of fiber-optic infrastructure between Adrar and Tindouf in southern Algeria in 2019. By 2024. the total length of fiber-optic lines exceeded 200.000 km[49]. facilitating increased access to fixed broadband Internet services. The number of subscribers rose from 3.7 million in 2020 to 6 million in 2024. representing 27% of households[50]. Among these users. 44% continued to rely on outdated ADSL connections. which are being gradually replaced by high-speed FTTH connections. Consequently. subscriptions to high-speed broadband services experienced rapid growth. increasing from 53.400 in 2020 to 1.7 million in 2024[51]. On a per capita basis. Algeria outperformed Morocco in 2023. boasting 12 subscribers per one hundred people compared to 6–7 subscribers in Morocco[52]. The Algerian government has declared

[45] Russia Median Country Speeds Updated April 2025. *Speedtest Global Index*. https://www.speedtest.net/global-index/russia (accessed: 07.04.2025)

[46] Ibid.

[47] Provides Internet services in the market under the brand *Idoom*.

[48] The equipped capacity of our country's international telecom network reaches 9.8TB/s. *Ministry of Post and Telecommunications.* Algeria. 29.01.2024 https://www.mpt.gov.dz/the-equipped-capacity-of-our-countrys-international-telecom-network-reaches-9-8tb-s/ (accessed: 03.06.2025)

[49] Generalization of optical fiber. *Ministry of Post and Telecommunications.* Algeria. https://www.mpt.gov.dz/major-files/generalization-of-optical-fiber/ (accessed: 01.06.2025)

[50] Improving the Quality of Mobile Telephony Services. *Ministry of Post and Telecommunications.* Algeria. https://www.mpt.gov.dz/improving-the-quality-of-mobile-telephony-services/ (accessed: 07.04.2025)

[51] *Uptime TIER-III* certification is an international standard that confirms the high level of reliability and quality of data center operation. The standard assumes that the data center guarantees nonstop operation of servers and equipment (99.982% uptime), each critical element of the infrastructure has at least one redundant component (N+1 redundancy) and there is the ability to carry out planned maintenance without affecting the ICT environment.

[52] Morocco: Internet subscribers, per 100 people. *The Global Economy.com.* https://theglobaleconomy.com/Morocco/Internet_subscribers_per_100_people/ (accessed: 10.06.2025); Algeria: Internet subscribers, per 100. *The Global Economy.com.* https://www.theglobaleconomy.com/Algeria/Internet_subscribers_per_100_people/ (accessed: 10.06.2025)

its intention to achieve comprehensive broadband coverage nationwide within the next one to two years[53].

DATA CENTERS

The enhancement of high-speed Internet has laid the groundwork for the establishment of data centers (DCs). which are essential for storing. processing. and safeguarding information. as well as supporting cloud services and platforms. In 2022. Algeria's largest national oil and gas company. *Sonatrach*. inaugurated the country's first DC certified under the *Uptime TIER-III*[54] standard[55]. Similarly. the first National Data Processing Center in Constantine was completed in February 2023 in collaboration with the Chinese company *Huawei*. which has been involved in numerous projects across Africa [Deych. Tsvetkova. Kravtsov. 2022: 12]. This facility. currently the largest in Algeria. was followed by the second National Data Processing Center in Blida.[56] the construction of which is almost finished. Other significant developments include the establishment of a data center for the People's National Assembly in Algiers in 2024 and a data center in Oran in 2025. designed specifically for AI applications. The latter forms part of the national program for AI development and seeks to promote technological independence. support startups. and foster research institutions.

To create a comprehensive data center architecture. the network of national data centers must. in time. be supplemented by a system of regional and smaller local data centers. Currently. a limited number of regional DCs exist. varying in scale and function. that are primarily located in coastal urban areas such as Algiers. Oran. and Cheraga. These facilities cater to local hosting companies but are not yet integrated into a cohesive network. The data center market in Algeria is in a dynamic phase. with projected revenues expected to reach $426 million in 2025 and $519 million by 2029[57].

Thus. the establishment of centralized data centers in Algeria represents a critical phase in the development of ICT infrastructure required for digital transformation. In its present state. this infrastructure enables shifts towards e-governance and inter-agency integration (e.g.. transitioning public services to online platforms. synchronizing government services. and adopting cloud computing). It also facilitates technological advancement in areas such as complex digital financial operations. AI. and the IoT.

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[53] Algeria Telecom launches online survey to identify FTTH gaps. *Developing Telecoms*. 29.05.2025. https://developingtelecoms.com/telecom-technology/optical-fixed-networks/18546-algeria-telecom-launches-online-survey-to-identify-ftth-gaps.html (accessed: 03.06.2025)

[54] *Uptime TIER-III* certification is an international standard that confirms the high level of reliability and quality of data center operation. The standard assumes that the data center guarantees nonstop operation of servers and equipment (99.982% uptime), each critical element of the infrastructure has at least one redundant component (N+1 redundancy) and there is the ability to carry out planned maintenance without affecting the ICT environment.

[55] Sonatrach's Datacenter receives ''Uptime Tier 3 design'' certification. *Algeria Press Service*. 02.10.2022. https://www.aps.dz/en/economy/45149-sonatrach-s-datacenter-receives-uptime-tier-3-design-certification (accessed: 04.04.2025)

[56] Coup d'envoi de l'installation du deuxième Centre national des données à Blida. *Algérie Eco*. 07.03.2025. https://algerie-eco.com/2025/03/07/coup-denvoi-de-linstallation-du-deuxieme-centre-national-des-donnees-a-blida/ (accessed: 15.04.2025)

[57] Data Center – Algeria. *Statista*. https://www.statista.com/outlook/tmo/data-center/algeria (accessed: 15.04.2025)

THE STRUCTURE OF THE ICT SERVICES MARKET

Statistics regarding the structure of the ICT industry in Algeria are not readily available in the official Algerian sources. The sector encompasses more than one thousand companies. approximately three hundred of which are directly engaged in the production of software or the provision of ICT services[58]. Prominent entities within this domain include Engisoft. Cetelex. ARES Algérie. and Arcan-networks. According to the Russian trade mission in Algeria. the country's ICT market is valued at approximately $2.9 billion. with services constituting the majority (52%) of the sector[59]. This predominance is linked to restrictive trade policies and challenges in software importation. which necessitate complex licensing processes. Software development (primarily startups and small businesses) accounts for 17% of the market. while AI represents 11%. cybersecurity 6%. IoT 2%. and other segments 12%.

Ongoing ICT projects in Algeria span various domains. including government services. healthcare. education. finance. industrial sectors. and transportation. For instance. biometric ID cards (*CNIBE. La carte Nationale d'identité Biométrique Electronique*) have been implemented since 2015. and electronic signature technology is utilized in official documentation processes. In 2022. the government launched an electronic public services portal[60]. and by January 2025. the Information Resource Infrastructure and Electronic Network (*Réseau Souverain d'Échange d'Informations de l'État*) project was completed to facilitate secure inter-agency data exchange. Starting in 2024. Algerian citizens gained access to remote electronic medical records via the state-operated online platform and mobile application "E-Chifa". The COVID-19 pandemic accelerated the incorporation of ICT technologies within the education system. with 340.000 Algerian applicants submitting university applications through an experimental electronic system during the 2021/2022 academic year [Loucif 2023: 233].

E-commerce is also experiencing growth. with notable platforms such as Yasser Market (providing services similar to Yandex in Russia. including taxi services) and Webwins (similar to advertisement services like Russian Avito). By 2023. the total number of such marketplaces was estimated to be around 300 [Choutri. Bounihi 2023: 421]. The government actively promotes electronic payment methods. having established a reduced VAT rate of 9% (down from 19%) on goods and services sold through online platforms in 2019. as well as a 5% tax on e-commerce activities (compared to the 12% tax applied to professional activities) [Hashemi. Bozza 2021: 386]. Despite these efforts. Algerians still prefer cash transactions[61]. Following Tunisia. which became the flagship of the launch of the electronic national currency eDinar based on blockchain[62] technology

[58] ICT Channel in Algeria. *CompuBase*. 2025. https://en.compubase.net/ICT-Channel-in-Algeria_a399.html (accessed: 20.04.2025)

[59] There are no more than 30 companies licensed to import software. A license is usually issued for a specific project, and the processing time can take up to six months. (IT V Algire: Vozmojnosti I Vizovi Dlya Rossiyskih Kompaniy. (IT in Algeria: Opportunities and Challenges for Russian Companies.) Ministry of Industry and Trade of the Russian Federation. January 22, 2025. (In Rus.) https://rutube.ru/video/0743b804fc8f2d905cb73e3182cd39fe/ (accessed: 23.02.2025)

[60] *Portail Gouvernemental des Services Publics de l'Algérie*. https://bawabatic.dz

[61] IT V Algire: Vozmojnosti I Vizovi Dlya Rossiyskih Kompaniy. (IT in Algeria: Opportunities and Challenges for Russian Companies.) Ministry of Industry and Trade of the Russian Federation. January 22, 2025. (In Rus.) https://rutube.ru/video/0743b804fc8f2d905cb73e3182cd39fe/ (accessed: 23.02.2025)

[62] *Blockchain* is a secure method of storing and transferring data that guarantees the integrity of information and the transparency of all operations in the system. It is a decentralized digital ledger consisting of a continuous sequential chain of interconnected blocks, each of which stores information about transactions or other data.

in 2015 [Babenkova 2019: 25]. the Algerian authorities are preparing to introduce the electronic dinar (e-DZD)[63].

Algeria has demonstrated significant progress in the implementation of modern technologies within the oil and gas sector [Tkachenko 2022: 48]. The energy industry has increasingly adopted digital monitoring systems and smart meters for network condition assessments [Loucif 2023: 235]. Registered professional farmers engage in interactive data exchange regarding agricultural market trends through the *Ghorfati* platform [Loucif 2023: 235]. Furthermore. the construction of Algeria's fifth "smart city." Boughezoul. equipped with advanced eco-friendly technologies. is nearing completion[64].

The integration of ICT technologies across various economic sectors highlights Algeria's transition toward an advanced phase of digital transformation[65]. The contribution of ICT to Algeria's GDP was recorded at 2.9% in 2012 [Lahmar. Benzidane 2019: 158]. increasing to 4.7% by 2020. with projections suggesting a rise to 5.5% by 2040 [Kwasi. Cilliers 2020: 30]. Initially. during the early stages of digital transformation. the correlation between Internet coverage in Algeria and GDP growth per capita was relatively weak [Prikhodko. Sherov-Ignatiev 2024: 29]. However. it is anticipated that this correlation will strengthen as digital transition progresses. In Algeria's case. the dividends of digital transformation are expected to result not only in economic diversification but also in a reduced dependency on oil revenue.

SWOT-ANALYSIS

The findings presented in this analysis of Algeria's ICT infrastructure are encapsulated within the SWOT analysis matrix (refer to *Table* 3).

Table 3: **SWOT Analysis of ICT Infrastructure Development in Algeria**

Strengths:	**Weaknesses:**
– A well-thought-out and realistic national digitalization strategy; – Expansion of the network of international fiber-optic cables through Algeria; – High level of Internet penetration and mobile communication; – Presence of high-tech data centers; – Advanced knowledge among STEM graduates; – State financial support for technological startups and research initiatives; – Implementation of ICT solutions in certain sectors of the economy and social life.	– Accelerated digitalization; – Low competitiveness compared to other North African countries; – Uneven Internet coverage and a "digital gap" between urban and rural areas. "gender digital gap" (see *Table 2*); – Low Internet connection speeds; – Insufficient number of data centers; – Shortage of ICT specialists. with a need to prevent their emigration abroad; – Low levels of ICT literacy among the population; – Monopolization of the Internet market; – Complex administrative procedures (e.g.. software registration. ICT company licensing)

[63] Avec la publication de la loi monétaire et bancaire : L'Algérie lance le dinar numérique. *La Patrie news*. 29.06.2023. https://lapatrienews.dz/avec-la-publication-de-la-loi-monetaire-et-bancaire-lalgerie-lance-le-dinar-numerique/ (accessed: 19.05.2025)

[64] Nouvelles villes de Boughezoul et El Ménéa: Regards sur les enjeux et opportunités. *Horizon - Quotidien National D'Information*. 03.02.2024. https://www.horizons.dz/?p=77349 (accessed: 21.02.2025)

[65] According to Yu.I. Gribanov's terminology, the transition to the phase of "digital models" and ultimately to "digital technologies" [Gribanov 2019: 12].

Opportunities:	**Threats:**
– Strengthening international ties and regional stability through cooperation in the ICT sphere; – Integration into the international Internet space. enhancing horizontal regional integration; – Achieving a qualitative technological leap with the growth of the ICT sector's share in GDP; – Improving and optimizing social-economic management through high-tech ICT solutions; – Increasing economic transparency and growth of direct foreign investments; – Facilitating and reducing the timeframe of administrative procedures; – Long-term economic growth driven by skilled ICT personnel and a high proportion of youth among the working-age population; – Diversifying the economy.	– Terrorist threats in the region. risk of escalation into acute phases of regional conflicts (including around Western Sahara [Correale. Boulay 2018]); – Rollback of the digitalization program due to unfavorable conditions in the global hydrocarbon market and a sharp decline in budget revenues; – The probability of social upheavals with increased marginalization [Geoghegan. Lever. McGimpsey 2004: 109]; – Political instability and mass unrest due to forced liberalization amid the digital transition [Dobra 2012]. [Wheeler 2017]; – Widening of the “digital divide” (gender. income-based. and regional disparities); – The substitution effect of labor resources in the digital economy [Acemoglu 2021: 70]. which exacerbate the unemployment problem that. among young people in Algeria. already exceeds 30%[66]; – Cyber threats. spread of fake information. misuse of ICT technologies by fraudsters.

Source: Compiled by the author.

Most of the points outlined in the SWOT analysis have already been addressed. A significant aspect of the analysis involves exploring the potential for international collaboration within Algeria’s ICT sector.

The country hosts a diverse range of international providers of hardware and software. including Oracle. Symantec. SAP. Fortinet. Siemens. Cisco. Huawei. among others. Additionally. the Russian company “AO Kaspersky Lab” has established a presence in Algeria. Notably. the broader African market. including Algeria. hasn’t yet been penetrated by global platforms such as Apple. Amazon. Netflix [Maslov 2023: 126]. presenting ample opportunities for emerging startups. Given Algeria’s recent adoption of digital economic strategies. its market holds considerable promise. Key areas for international collaboration include specialized personnel training. financial digital technologies. smart city and e-government concepts. as well as the automation of agriculture and industry through AI. Furthermore. the transfer of software and hardware—such as high-tech data centers. servers. and infrastructure for fifth generation (5G) broadcasting—represents a critical area of development. Russian enterprises possess significant capabilities to share their expertise in these domains [Ildyakov 2024: 57].

The development of Algeria’s Information and Communication Technology (ICT) infrastructure has reached a foundational level that facilitates a technological leap through the adoption of advanced technologies. cloud computing. digital financial operations. AI. the IoT. etc.

CONCLUSIONS

The development of Algeria’s ICT infrastructure has reached a level that enables the adoption of digital models. the operation of e-government. and interagency integration—

[66] Unemployment, youth total (% of total labor force ages 15–24) (modeled ILO estimate) – Algeria. *World Bank*. https://data.worldbank.org/indicator/SL.UEM.1524.ZS?locations=DZ (accessed: 15.05.2025)

including transitioning public services to online platforms and synchronizing government services. In the future. this foundation will facilitate a technological and economic breakthrough with the implementation of advanced digital technologies. According to the "Digital Algeria 2030" strategy. the ultimate objective entails the establishment of a digital economy and digital society. coupled with the export of ICT services and Algeria's emergence as a regional technological hub.

However. international rankings currently indicate that Algeria has not yet attained a competitive position as a regional leader in the digital sector. A characteristic feature of Algeria's ICT infrastructure remains its concentration in major urban areas. Challenges such as vast geographical distances. governmental monopolies. organizational difficulties in deploying fiber-optic networks. and the relatively low speed of fixed Internet connections contribute to the prevalence of wireless Internet access technologies. Development trends in Algeria's ICT sector showcase expansion in broadband Internet coverage. the rollout of fifth-generation mobile communication technologies (5G). and the construction of high-tech data centers. Positive progress is also evident in the use of ICT technologies in various socio-economic projects. which correlates with a growing contribution of the ICT sector to Algeria's national GDP.

The process of digital transformation should be approached with caution. taking into account both economic factors (such as exacerbation of unemployment issues or the widening of the digital divide. etc.) and political considerations (including the potential for cyberattacks by terrorists. hostile nations. and other threats).

Algeria's progress in ICT development presents opportunities for economic dividends. improving citizens' welfare. and bolstering regional stability and integration through international collaborations in ICT. Notable areas of cooperation with Russia include specialized personnel training. financial digital technologies. smart city concepts. e-government frameworks. agricultural and industrial automation through AI. and the transfer of software and hardware such as data centers. servers. and 5G broadcasting infrastructure.

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Научная статья

РАЗВИТИЕ ИКТ-ИНФРАСТРУКТУРЫ АЛЖИРА В КОНТЕКСТЕ ЦИФРОВОЙ ТРАНСФОРМАЦИИ

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Аннотация. Развитие отрасли информационно-коммуникационных технологий (ИКТ), которая является ядром цифровой экономики, в Алжире приобретает особую важность в свете мирового перехода к так называемой Индустриализации 4.0. и планов алжирского руководства вывести Алжир, который занимает третье место в Африке по объему экономики, в региональные лидеры по уровню цифровизации. В августе 2024 г. алжирский парламент одобрил концепцию развития отрасли «Цифровой Алжир-2030», в рамках которой было запланировано выделение значительного бюджетного финансирования на реализацию инфраструктурных ИКТ-проектов. Цель данного исследования заключалась в оценке состояния ИКТ-инфраструктуры Алжира и степени ее готовности к воплощению национальной концепции цифровизации. Автором была изучена обнародованная в мае 2025 г. стратегия «Цифровой Алжир-2030», критически обобщены данные международных рейтингов и дана сравнительная характеристика ИКТ-отрасли Алжира в региональном срезе, проанализированы качественные характеристики, особенности формирования и структура ИКТ-рынка Алжира. В результате был сделан вывод об относительном прогрессе Алжира в развитии ИКТ-инфраструктуры, ее принципиальной готовности в ближайшие год-два обеспечить качественный технологический рывок (применение сложных технологий искусственного интеллекта, облачных вычислений, Больших данных), выделены перспективные направления сотрудничества России с Алжиром в сфере ИКТ. Это профильная подготовка кадров, финансовые цифровые технологии, концепции «умного города» и электронного правительства, автоматизация сельского хозяйства и промышленности с помощью ИИ, разработка и передача программного обеспечения и оборудования (центры обработки данных, серверы, инфраструктура для *5G*-вещания). Активная политика алжирских властей в ИКТ-сфере позволяет рассчитывать в будущем на экономический дивиденд от цифровой трансформации, ожидать увеличения вклада ИКТ-сектора в национальный ВВП.

Ключевые слова: ИКТ, Алжир, цифровизация, четвертая промышленная революция, Интернет, государственная политика, цифровое общество, цифровая экономика

Конфликт интересов: автор заявляет об отсутствии конфликта интересов.

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Research article

BEYOND YIELDS: STRUCTURAL FACTORS BEHIND THE GREEN REVOLUTION'S LIMITED IMPACT IN AFRICA

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Abstract. The Green Revolution in Africa has been mainly driven by international agencies such as the Food and Agriculture Organization (FAO), the Yara Foundation, and the International Fund for Agricultural Development (IFAD). Despite the billions of dollars invested the success of the movement in Africa has been limited. This paper critically examines why the Green Revolution model promoted by the Alliance for the Green Revolution in Africa (AGRA) has had limited impact in Africa, arguing that the movement's reliance on increased crop yields as a solution for poverty and hunger is overly simplistic and overlooks local conditions in Africa that make difficult for the Green Revolution to duplicate the successes of the Green Revolution in Asia and Latin America. It advocates for a paradigm shift toward ecologically sustainable and locally driven agricultural reforms that prioritize smallholder farmers and protects Africa's food sovereignty. The paper uses historical analysis to critique the adverse ecological, social, and economic consequences of borrowed, externally driven agricultural models that overlook the unique challenges of African farming systems, such as low irrigation potential, dependence on mono-cultures, and inadequate attention to local diets and practices. It highlights the disproportionate benefits that the green revolution in Africa is accruing to medium-scale male farmers, while increasing gendered inequalities in food production and distribution.

Keywords: green revolution, food security, structural poverty, AGRA, Africa, food sovereignty

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INTRODUCTION

At the time of independence, many African countries were largely food secure. Over the past four decades, however, this situation has deteriorated. The continent has shifted from being an exporter of basic food staples to relying heavily on food imports and international

food aid [Djurfeldt et al. 2005]. According to NEPAD[1], several African countries are currently food insecure and are unable to feed their growing populations. As a result, food security remains a pressing concern across the continent. In response to this challenge, African heads of state and government adopted the Comprehensive Africa Agricultural Development Programme (CAADP) as a framework for promoting agricultural growth, food security, and rural development. CAADP set a target of achieving a 6% annual growth rate in agricultural production in order to meet the first UN's Millennium Development Goal of halving poverty and hunger by 2015 [Bationo et al. 2011].

The term "Green Revolution" was coined in 1968 by William Gaud, then Director of the United States Agency for International Development (USAID), to describe an agricultural strategy that dramatically increased wheat, maize, and rice production in India and Southeast Asia. This strategy relied on a technology package that included inorganic fertilizers, herbicides, insecticides, laboratory-developed hybrid seeds, mechanization, and large-scale irrigation projects.

The Rockefeller Foundation played a central role in promoting this technological model, which became the foundation for international agricultural development aid at the time. Despite its serious ecological, social, and economic consequences, the Asian green revolution is still widely praised by its proponents for producing abundant and affordable food for the world's poor [Daño 2007].

This paper is organized into two main sections. The first section provides the historical context of the green revolution in Africa; it contrasts the success of the green revolution in Asia with its limited impact in Africa and addresses some of the initial concerns with the trajectory of the green revolution in Africa. The second section examines the political economy of African agriculture and the structural factors that have led to the limited success of the green revolution in Africa, suggesting a paradigm shift that puts the needs of the African farmer at the centre of the green revolution movement in Africa.

THE HISTORICAL CONTEXT OF THE GREEN REVOLUTION IN AFRICA

The movement to create a green revolution in Africa was an adaptation of the green revolution that had occurred earlier in Asian and Latin American nations and seemed to have bypassed Africa. According to Swedish researcher Göran Djurfeldt, the Asian green revolution was a state-led, market-mediated, and smallholder-focused approach to increasing food grain production beginning in the 1960s [Djurfeldt et al. 2005]. Agricultural technology development was not only central to this strategy but also one of its intended outcomes. Inspired by these perceived successes, international actors sought to implement a similar model in Africa, adjusting it to fit the continent's environmental and socio-economic conditions.

Proponents of the green revolution in Asia and Latin America argue that its achievements outweighed the negative consequences of its policies. In many Asian and Latin American countries that adopted the new technology packages, record harvests

[1] NEPAD (the New Partnership for Africa's Development), a socio-economic flagship program adopted by the African Union and later integrated into the AU Development Program (NEPAD-AUDA).

were reported. Between 1960 and 1985, total food production in the developing world had more than doubled. For example, rice production in Indonesia increased by 275% between 1966 and 2000, largely due to the adoption of high-yield varieties. Similarly, Chile recorded a sustained growth in maize yields of approximately 200 kg/ha per year after 1964—the highest for any cereal at the time. By the 1990s, approximately 75% of Asia's rice and nearly half of the wheat grown across Latin America and Asia came from improved varieties. These transformations were achieved with only a 4% increase in net cropped area, leading many to celebrate the Green Revolution as a model for doubling food supply without drastically expanding farmland [Patel 2013: 6]. The *Table* 1 shows how the Green Revolution in Asia led to increased growth rates in agricultural land in different Asian countries.

Table 1**. Indicators of input use during the Green Revolution in Asia**

Country	Irrigated Area (% of agricultural area)		Fertilizer (kg/ha)		Annual growth rate (%,1967–1982)	
	1970	1995	1970	1995	in agricultural work force	in agricultural land area
Bangladesh	11.6	37.6	15.7	135.5	1.07	0.05
China	37.2	37.0	43.0	346.1	1.92	0.03
India	18.4	31.8	13.7	81.9	1.59	0.19
Indonesia	15.0	15.2	9.2	84.7	1.41	0.00
Malaysia	5.9	4.5	43.6	148.6	0.57	1.03
Myanmar	8.0	15.4	2.1	16.9	1.93	-0.21
Nepal	5.9	29.8	2.7	31.6	1.82	1.56
Pakistan	67.0	79.6	14.6	116.1	2.41	0.33
Philippines	11.0	16.6	28.9	63.4	1.90	1.72
South Korea	51.5	60.8	251.7	486.7	-0.07	-0.38
Sri Lanka	24.6	29.2	55.5	106.0	1.69	-0.05
Thailand	14.2	22.7	5.9	76.5	2.17	2.52
Vietnam	16.0	29.6	50.7	214.3	1.58	0.54
TOTAL	25.2	33.2	23.9	171.1	1.76	0.28

Source: [Rosegrant, Hazell 2000]

It is important to note that as much as the green revolution had stabilized the food crisis in Asia, it was not without its share of problems. Several early studies on the impact of the Green Revolution concluded that the rural poor did not receive their fair share of the generated benefits. According to some of this early research, in most cases the large farmers adopted the new yield-increasing technology, leaving small farmers unaffected or worse off because the green revolution resulted in (a) downward pressures on the prices of the commodities they produced, (b) upward pressures on the prices of the inputs they purchased, (c) efforts by large farmers to either increase rents to tenants or force the tenants off the land, and (d) attempts by large farmers to increase land holdings by purchasing smaller farms, thus forcing small farmers into landlessness [Peter, Hazell

1985]. For example, the green revolution contributed to the depletion of water resources and widespread farmer indebtedness, as smallholders struggled to afford the required inputs. After an initial period of increased productivity, yields often declined due to soil degradation and overreliance on chemical fertilizers [Wise 2020].

The argument for a green revolution for Africa was inspired by the perceived success of the green revolution in Asia and Latin America. Many viewed it as an obvious solution to end the perennial hunger in Africa. Unfortunately, it did not have the same success in Sub-Saharan Africa, because the proponents of the Green Revolution in Africa failed to take into account local conditions in Africa, drastically different from the conditions that had made the revolution have its perceived success in Asia and Latin America [Bazuin, Azadi, Witlox 2011].

One of the earliest and most vocal proponents of this initiative was Gordon Conway, whose book "The Doubly Green Revolution: Food for All in the 21st Century" made a case for adapting the strategies used in Asia to the African context. Conway argued that the green revolution had improved food access for the world's poorest populations and believed Africa could achieve similar gains. However, he emphasized that any such efforts must be ecologically sound, sustainable, and socially equitable [Conway 1997]. The same sentiments were echoed by former UN Secretary-General Kofi Annan, who called for a "uniquely African Green Revolution" during a speech delivered at a high-level event on Innovative Approaches to Meeting the Hunger Millennium Development Goal in Africa: "Africa's Green Revolution: A Call to Action" in July 2004[2] [Daño 2007]. The idea of a Green Revolution for Africa also got the attention of international actors like the Bill and Melinda Gates Foundation and the Rockefeller foundation, who have played a significant role in the adoption and funding of the green revolution in Africa.

It can be said that the movement for the green revolution in Africa was based on a technocratic approach driven by external narratives that emphasized productivity and modernization but overlooked the social and political complexities of African agriculture, land systems, and the interests of smallholder farmers.

The Alliance for a Green Revolution in Africa (AGRA) was launched in 2006 by the Bill and Melinda Gates Foundation, with substantial financial backing from Warren Buffet and the Rockefeller Foundation. AGRA partnered with African governments to promote the production and distribution of high-yield commercial seeds suited to the continent's diverse soils and climates. The initiative also supported the supply of inorganic fertilizers and other commercial inputs to small-scale farmers, primarily through government programs and intermediary organizations [Wise 2020].

Another key actor in the green revolution movement in Africa was the Yara Foundation, the philanthropic arm of Yara International, a major fertilizer manufacturer. Established in 2005, the foundation's flagship initiative, *the Yara Prize for a Green Revolution in Africa,* recognizes African individuals or organizations that have made significant efforts to increase food production. However, the prize has attracted criticism for allegedly serving as a vehicle for advancing Yara's commercial interests. In 2005, for

[2] Secretary-General calls for 'Uniquely African Green Revolution' in 21st Century, to end continent's Plague of Hunger, in Addis-Ababa Remarks. *UN*. 06.07.2004. https://press.un.org/en/2004/sgsm9405.doc.htm (accessed: 10.09.2025)

instance, the foundation awarded the prize to Ethiopian Prime Minister Meles Zenawi. Within three months of the award, Yara International secured fertilizer supply contracts with the Ethiopian government worth approximately twelve million euros [Daño 2007].

From the onset, there was the concern that AGRA was trying to impose Western ideas and technologies on African farmers without consulting the farmers on what was going to work for the African environment. While some governments embraced AGRA's approach enthusiastically, others raised early concerns. Groups like the Alliance for Food Sovereignty in Africa (AFSA) warned African governments about the loss of food sovereignty that would result from the adoption of the green revolution policies: according to them, African communities would lose the ability to freely choose which crops that they wanted to grow since large firms would dominate local markets [Wise 2020]. AFSA also argued that food sovereignty in Africa would require addressing unequal land distribution and rejecting genetically modified organisms (GMOs), which carried the risk of placing seed control—and thus food systems—under the power of multinational corporations [Moseley 2017].

AGRA's own national-level data offers little evidence that the program has meaningfully benefited large numbers of poor farmers in Africa. Instead, most of the benefits appear to accrue to medium-scale farmers, predominantly male, who have better access to land and credit facilities, as well as established links to commercial markets. Meanwhile, the majority of farmers in sub-Saharan Africa engage in small-scale agriculture, and most of them are women who live in the rural areas. Most of these women cannot afford to purchase the fertilizers promoted by AGRA, and this has made the adoption of the green revolution technologies progress unevenly in most parts of Africa [Dawson, Martin, Sikor 2016]. This pattern undermines the initiative's stated goal of reducing poverty, especially given the disproportionate levels of poverty among women and their central role in ensuring household food security [Wise 2020].

In our opinion, there is a fundamental contradiction at the heart of the Green Revolution's rhetoric. While proponents publicly endorse "sustainable intensification," a strategy aimed at increasing productivity on existing farmland to minimize environmental impact, they often promote *extensification*, or the expansion of agriculture into new lands. This practice increases greenhouse gas emissions and places additional pressure on land and water resources, directly conflicting with national and donor commitments to climate mitigation. These contradictions are further confounded by the fact that industrial agriculture was unsuited to the climate, soils, and demands of emerging countries [Wise 2020].

Various green revolution initiatives also encourage farmers to plant monocultures. Over time, such single-cropping depletes soils, and while inorganic fertilizer temporarily boosts yields, it also can gradually undermine soil fertility, increasing its acidity. As a result, yields can plateau, initially increasing with inorganic fertilizer and commercial seeds but flattening out and even declining in the absence of increased fertilizer applications. Because most smallholders cannot afford unsubsidized fertilizers, they often lose what short-term gains they saw from the subsidized green revolution technology package. According to existing research, the Green Revolution's idea to promote the adoption of monocultures, especially with crops like maize, frequently involves the use of high-yielding varieties and chemical fertilizers to maximize output; however, such

actions are not sustainable long-term, as they make Africa's food system more vulnerable to climate change, diseases, and pests [Santpoort 2020].

According to Kenyan researcher Joy Asiema, the African environment is generally characterized by a number of serious impediments for agriculture, such as infertile soils, severe insect and disease issues, and a lack of water in many places. The Green Revolution's adoption of a narrow genetic base variety and monoculture practices significantly raises the risk of crops being destroyed by pests and diseases. The adoption of high-yielding dwarf rice varieties promoted by the green revolution has been hampered by water management issues. Irrigation is only used on about 3 to 5% of Africa's agricultural land, compared to 20% of India's agriculture. Only two imported rice types out of 2,000 tested performed as well as indigenous varieties after ten years of testing. Furthermore, some of the new types were not well received by the locals, who preferred the traditional varieties [Asiema 1994]. The same sentiments have been echoed by Roelf Voortman, an ecologist from the Netherlands, who has argued that Africa lacks the extensive flat alluvial plains found in Asia that make irrigation both feasible and efficient. As a result, the future of African agriculture will largely depend on improving productivity under rainfed conditions, rather than replicating irrigation-intensive models [Voortman 2013].

The green revolution in Africa has been focused on three main crops: maize, rice, and wheat. However, this emphasis on a narrow set of staple crops has been widely criticized. Kenyan scholar Joy Asiema contends that the green revolution's focus on rice, maize, and wheat ignored the traditional African diet, which is largely composed of millet, sorghum, and tuber crops such as cassava, yams, and sweet potatoes [Asiema 1994]. The failure to invest in improving these indigenous crops reflects a broader disconnect between imported agricultural models and local food systems.

The historical context of the green revolution in Africa indicates the ambitions and trajectories that led to the viewing of the Green Revolution in Africa as a purely technological exercise. However, to fully recognize the reasons for the limited success of the green revolution in Africa and understand why it has failed to achieve its intended objectives, it is imperative to look at the political economy under which the green revolution in Africa has unfolded.

THE POLITICAL ECONOMY OF ADVANCMENT OF EXTERNALLY-DRIVEN FOOD SECURITY MODELS IN AFRICA

As Elenita Daño, a researcher who specializes in the impact of climate change and agriculture in developing countries, argues, the principal architects of the New Green Revolution for Africa have largely been non-African actors. African institutions, such as NEPAD/AUDA and the African Union on the whole, have often played supportive roles, lending regional credibility to externally driven agendas [Daño 2007]. NEPAD, originally established to chart Africa's renewal, has identified agriculture as a strategic sector for achieving growth and sustainability. Within this framework, the Comprehensive Africa Agricultural Development Programme (CAADP) was launched to coordinate agricultural policies, attract investment, and promote productivity. CAADP emphasizes the need for strong agricultural innovation systems and investor confidence. To reinforce this vision,

the Framework for African Agricultural Productivity (FAAP) was developed to harmonize internal and external interventions in the sector [Vercillo et al. 2015].

Building on these continental initiatives, AGRA has emerged as a leading vehicle for promoting the Green Revolution in Africa. Yet AGRA is not the only actor influencing African food systems. Countries such as Russia, China, and the United States have also played significant roles through investments, food aid, fertilizer exports, and the manufacture and supply of hybrid seeds. While these global interventions differ in form from AGRA's donor-driven approach, they encounter similar structural constraints, although a detailed examination of them lies beyond the primary scope of this paper.

The Green Revolution is grounded in the assumption that increasing crop yields will eventually eliminate hunger in Africa. However, critics argue that this assumption is overly simplistic and ignores the structural roots of food insecurity. Many researchers contend that hunger in Africa is not primarily caused by insufficient food production but by poverty and inequality. People go hungry not because food is unavailable but because they are too poor to access it. In many cases, rural Africans who once fed their communities are now abandoning farming due to rising input costs, lack of credit, and unfair market conditions. Africa's farmers have the capacity to produce more food but are systematically excluded from the economic structures that would make food production viable [Holt-Giménez, Altieri, Rosset 2006]. The Green Revolution has failed to deliver on its promise of ending hunger in Africa, the AGRA model of high-input agriculture has not benefited the small-scale African farmer, and in the cases where it has reached the small farmer in Sub-Saharan Africa, it has been unable to boost productivity or incomes[3].

The proponents of the green revolution in Africa anticipated that the revolution would lead to agricultural growth through encouraging better access to mechanized farm inputs and agricultural support from government agencies. Countries such as Ghana, which had a comparative advantage in terms of a strong history of commercial agriculture, were seen as the perfect example of countries where the Green Revolution would lead to positive outcomes for the rural poor [Frankema 2014]. And initially, the green revolution in Ghana did seem to be having positive results as the government, in conjunction with AGRA and international donors, provided high-yielding seeds and farm inputs to farmers, which increased agricultural production. However, the positive results did not last for long, as the hybrid varieties that had been introduced became unpopular with small-scale rural farmers, who claimed that the inputs were too expensive for the rural households to afford long-term and that the chemical fertilizers that were meant to boost agricultural production were only viable to be used during one planting season, making them too expensive for most rural farmers [Boafo, Lyons 2021].

The same situation was witnessed in Rwanda, where the benefits of the Green Revolution seemed to have been accrued by wealthy large-scale farmers rather than the small-scale farmers who were the target of the programs. Just like in Ghana, the adoption of the green revolution technologies in Rwanda was initially perceived as successful. However, long-term studies indicate that they did not yield the anticipated positive results of alleviating poverty and hunger among the rural poor farmers. The majority of the

[3] Malkan S. Gates' failing Green Revolution in Africa. *The Ecologist*. 14.08.2020. https://theecologist.org/2020/aug/14/gates-failing-green-revolution-africa (accessed: 10.09.2025)

small-scale farmers in Rwanda were unable to participate in schemes to improve land management or diversification of crops due to the cost of the inputs, and the programs seemed to have benefited almost exclusively the wealthy landowners who were able to take advantage of their economic position to acquire more land from small-scale farmers forced to sell their land to finance household expenses [Dawson, Martin, Sikor 2016].

One of the differences between the Asian green revolution and the African green revolution led by AGRA and its international donors is that the hybrid seeds marketed by AGRA were developed and privatized by corporate breeders, unlike in Asia, where the seeds were developed for the public domain [Thompson 2012]. AGRA and its collaborators have been unable to convince the small-scale African farmer of the value of purchasing hybrid seeds that the farmers deem to be too expensive considering their one-time use. The hybrid seeds in Africa are mostly sold as a package deal, whereby the farmer is required to purchase the hybrid seeds, chemical fertilizers, and pesticides as one package. Furthermore, the hybrid seeds are protected and patented by international companies, which require the farmers to sign licensing agreements when buying the genetically modified hybrid seeds—the agreements making it illegal for farmers to either share the seeds among themselves or save the seeds for their own future use [Fischer 2021].

Farmers are also not allowed to use the fertilizers that they purchase as part of the hybrid seed package on the local varieties of crops that they grow traditionally. For example, a study done on the use of genetically modified seeds in Yala, Western Kenya, shows that the package that the farmers get includes fertilizers, the hybrid seeds, and the pesticides. The farmers are then required to only use the fertilizers and pesticides on the hybrid seeds, even though the local farmers have indicated that if the fertilizers could be used on certain local varieties of maize, they could produce better outputs. Nevertheless, the donors who give the farmers loans to purchase the packages, such as the One Acre Fund, refuse to acknowledge the benefits of allowing farmers to experiment with the use of their fertilizers on non-GMO maize varieties [Hebinck, Kiaka 2024].

Despite the green revolution's disappointing outcomes in Africa, valuable lessons can still be drawn for the continent from the experiences of Asia and Latin America. For example, Asiema emphasizes that technological solutions in agriculture can help address food insecurity in developing countries but only as part of a long-term process. Success requires more than importing new technologies; it demands investment in local capacity, including agricultural research, policy analysis, and institutional development [Asiema 1994]. These foundations allow countries not only to adapt foreign technologies to local contexts but also to generate innovations of their own.

It may indeed be the case that Africa needs its own version of a green revolution. However, this revolution must be ecologically sustainable and socially inclusive. Most importantly, it must prioritize the needs of smallholder farmers, who play a central role in feeding the continent. As was noted by some researchers, for the green revolution to achieve its intended objectives in Africa, African governments must invest more in agricultural extension services that promote bi-directional learning between scientists and farmers in Africa [Otsuka et al. 2024]. This paradigm shift would ensure that African agriculture provides a viable and dignified livelihood for farmers and empowers local communities.

CONCLUSION

While this paper has argued that the Green Revolution in Africa has largely failed to deliver on its promises, there remains a path forward. The significant resources already invested in agricultural transformation can still be redirected toward more inclusive, ecologically sound, and locally grounded strategies. The success of the revolution does not lie in increasing the farmers' access to fertilizers or hybrid seeds but rather in addressing the deeper structural factors that shape African agriculture. At the moment the ecological constraints, such as fragile soils, monoculture vulnerabilities, and dependency on foreign interventions, continue to undermine the effectiveness of the green revolution in Africa. These dynamics highlight the inadequacy of depending on increased yields alone to mitigate the effects of food insecurity in Africa.

To realize the goal of a food-secure Africa, a genuine paradigm shift is needed. The shift requires the transformation of the green revolution from being a technology-led intervention pushed by international donors to a movement that prioritizes the needs of the small rural African farmer. African farmers should not just be seen as the passive recipients of the benefits of the green revolution—they should be involved as the agents of the revolution and the drivers of the movement to create a more food-secure Africa.

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Научная статья

НЕ УРОЖАЙНОСТЬЮ ЕДИНОЙ. СТРУКТУРНЫЕ ОГРАНИЧЕНИЯ «ЗЕЛЕНОЙ РЕВОЛЮЦИИ» В АФРИКЕ

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Аннотация. Движущей силой «зеленой революции» в Африке стали главным образом международные организации, такие как Продовольственная и сельскохозяйственная организация Объединенных Наций (ФАО), Фонд *Yara* и Международный фонд сельскохозяйственного развития (МФСР). Несмотря на миллиарды долларов инвестиций, успех этого движения в Африке оказался ограниченным. В данной статье критически анализируется ограниченное влияние модели «зеленой революции», продвигаемой Альянсом за зеленую революцию в Африке (*AGRA*). Утверждается, что ставка на повышение урожайности как на решение проблемы бедности и голода является чрезмерно упрощенным подходом, который не учитывает местные условия в Африке, затрудняющие повторение успехов «зеленой революции» в Азии и Латинской Америке. В статье предлагается переосмыслить подход к сельскому хозяйству, сосредоточившись на экологически устойчивых инициативах, которые будут осуществляться на местном уровне.

Эти реформы должны в первую очередь учитывать интересы мелких фермеров и защищать продовольственный суверенитет Африки. Используя исторический анализ, статья критикует заимствованные сельскохозяйственные модели, продвигаемые внешними силами, за их негативные экологические, социальные и экономические последствия. Эти модели не учитывают уникальные особенности африканских аграрных систем, такие как низкий потенциал орошения, монокультурный характер и недостаточное внимание к местным традициям питания и методам ведения сельского хозяйства. Кроме того, в статье обращается внимание на то, что «зеленая революция» в Африке приносит непропорционально большую выгоду средним фермерам-мужчинам, одновременно усугубляя гендерное неравенство в производстве и распределении продовольствия.

Ключевые слова: «зеленая революция», продовольственная безопасность, структурная бедность, *AGRA*, Африка, продовольственный суверенитет

Конфликт интересов: автор заявляет об отсутствии конфликта интересов.

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SCHOOLS OF THOUGHT

Interview

DECOLONIZING SPATIAL DEVELOPMENT IN AFRICA

Interview with Dr. Tshilidzi Ratshitanga (South Africa)

Abstract. Tshilidzi Ratshitanga is a Mitchell Fellow and PhD graduate of the School of Public Policy and Administration, University of Delaware, United States of America. He holds an MPhil and Bachelor's degrees from the University of Port Elizabeth (currently Nelson Mandela University) and RAU (now University of Johannesburg), respectively. Dr. Ratshitanga is also Chairman and Founder of the New Cities New Economies Group and the African Global Consortium.

Dr. Ratshitanga previously worked as a senior manager at the South African government's Government Communications and Information System (GCIS) before joining the private sector and becoming involved with companies in the property development and mining industries. He currently serves on a number of boards, including that of the Mapungubwe Institute for Strategic Reflection (MISTRA). He previously served as the Chairman of both Bokamoso Barona Investment Trust and Kaborona Investment Holdings. He also served as the Chairman of the Housing Development Agency (HDA), Deputy Chairperson of the Gauteng Growth and Development Agency (GGDA), and Chairman of the Innovation Hub (TIH). Dr. Ratshitanga also served as the official Special Advisor to the current South Africa's Deputy President, Mr. Paul Mashatile, and still advises him in a private capacity.

Tshilidzi is a social activist. He is an active member of South Africa's ruling party, the African National Congress (ANC). He previously served as Secretary General of both the Congress of South African Students (COSAS) and the South African Students' Congress (SASCO), which are both ANC-aligned progressive student movements. Dr. Ratshitanga also served the African National Congress Youth League (ANCYL) in Gauteng Province and was also a Commissioner of the ANC's 2012 National Congress Elections Commission.

Dr. Ratshitanga is the author of the book "New Cities, New Economies: South Africa and Africa's Grand Plan, A Pan-African Economic Revolution." In his interview he tells his vision about "New cities. New economies" and his opinion on the decolonization of African spatial development.

Keywords: spatial development, urban development, spatial decolonization, industrialization, African economy, social development, South Africa

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– Dear Dr. Ratshitanga, your book on new cities and new economies [Ratshitanga 2019] is truly inspiring and thought-provoking. And although it primarily focuses on South Africa (which, in your terminology, has a special type of democracy (STD) and a special type of capitalism), I am interested in your views on the whole of Africa, albeit through a South African prism.

First of all, what is wrong with African cities founded during the colonial period? What function were they intended to fulfill, and why does this not correspond to modern, post-colonial realities?

– The fact that these cities were founded during the colonial period means that their ideological framework, the basis of their construct, was nothing other than colonialism. The colonial doctrine is a doctrine that was aimed at taking over countries, colonizing them, and ruling them in the best interests of the colonizers, not to develop them to become beaming successes of the local intent. Hence, the cities that were constructed during the colonial period in Africa were designed to extract minerals and other goods and products from African countries to feed the economic expansions and future of the colonizing countries, mainly those of the West.

Examining their locations and make-up, one quickly reveals that some of them were constructed to anchor the ports of logistics and distribution of the goods and products that were earmarked for shipping from these African locations to the West and other destinations where their exploitation would further the development of colonizing empires. The infrastructure was designed to master this intention for extraction; hence, infrastructure mostly in the internal parts of the African countries, away from the ports, remained poor and non-existent for decades. Others were located at the point of extraction of the minerals themselves, with transport connections to the port cities of export of the extracted minerals to the original countries of the colonizers. Few, if any at all, industries aimed at the processing of raw minerals were created at these inland cities.

There was also the intention to transplant the architectural imperatives and designs of foreign cities to these establishments in Africa. There was hardly any interest in incorporating local designs and architectural approaches in the development of African cities during colonial times [Hull 1977; MISTRA 2015]. This had the effect of undermining, at the very least, and annihilating, at worst, the impact of African cultures, traditions, heritage, histories, and customs on spatial configurations.

One of the affronts of post-colonial cities in Africa is the extreme inequality between races, classes, and genders. There are places in the current cities that were inherited from

colonial voyages in South Africa, which work well, are full of opulence, have high levels of security, great health facilities, schools and universities, and working spaces; while other spaces, sometimes a stone's throw from the opulent ones, are blighted, bear the stench of extreme poverty, unemployment, degradation, murderous crimes, and abuses of women and children, lack basic services, with sewage flowing down the streets, no electricity or water, and a general aura of hopelessness and failure all round [MISTRA 2013; MISTRA 2014; Piketty 2014].

The colonial structure of the economy, which designed these spaces as nothing more than feeder areas for the extraction of natural resources, means that those who are lucky enough to be involved in such extractive businesses and the civil servants working in government institutions, together with the entrepreneurs supplying goods and services to the state, are the ones most favored to afford a good quality of life in the opulent sections of these cities. The rest are trapped in the slums and blighted sections of the collapsing human settlements in the outskirts of the cities. This type of extreme inequality is a ticking time bomb that needs to be urgently defused with radical transformation of urban spaces in South Africa and the rest of the African continent.

– Africa's major social problem is the precariat, which is concentrated mainly on the outskirts of large cities, with a significant part living in slums. This is a consequence of urbanization without industrialization, or "false urbanization": people left their villages (sometimes several generations ago) and moved to the city in search of a better life but hardly found it. They are the most socially explosive part of society, and the majority of them work in the informal sector of the economy. What should be done? Encourage them to return to their villages? Provide them with social housing? Find them new jobs? Or invest in their education?

– African countries are still suffering from distorted migration patterns, given the limited number of economic magnets, in the form of large cities. For example, the reports on migration statistics show that the population of Gauteng has been growing by 400,000 people per year for the past 15 years, while the government of the Gauteng province has been delivering significantly less housing per annum [Maluleke 2025]. This is the reason why there are thousands of informal settlements that have sprung up around the Gauteng province, which have become hubs of urban poverty and social malaise that we are all grappling with.

The major problem is that, in the absence of multitudes of economic nodes to migrate to, hundreds of thousands of people are arriving and settling at the few existing cities, which were mainly inherited from colonial periods. This is the crux of the matter. It is exactly this phenomenon that has given rise to the argument for the need for African governments to plan and build new cities across their countries, which are anchored by new economic spaces. If the leaders of African countries become genuine about processing our minerals in our own countries instead of shipping them raw to other continents, this could support an industrial revolution and bring about thousands of

factories, providing employment for millions of people and improving urban living conditions [Cox 1987].

Given its good climate, Africa could scale up its agricultural production and not only export food to the rest of the world but also create processing industries to benefit from the value chains that are associated with agro-processing. Then again, many African countries have underdeveloped tourism destinations. If these were modernized with new infrastructure, safety measures, and quality services, they would see millions of visitors coming to spend their holidays there and create much-needed jobs as a result. Some countries, even those with modest tourism destinations to offer compared to many African countries, wholly rely on such tourism industries for their GDPs. African tourism is still virgin territory in many parts of the continent. Once developed and curated for holidaymakers, these areas, now lying dormant from a tourism perspective, could become alternative magnets for migration. They could offer an alternative to the current few cities that people flock to in their millions, even though there are not enough jobs available for everyone.

The indigenous African economy is another avenue for significant economic growth and development on the continent. There are hundreds of thousands of products and foods consumed by indigenous people that have never been developed to modern consumer standards and that could be in high demand in local and international markets. If African countries were to invest in the innovation, modernization, and quality packaging of most indigenous products and foods, a lot of new industries would emerge, boosting Africa's economies and creating new urban spaces.

– Can you cite any successful examples of postcolonial urban planning in Africa? You note that, of the 53 countries on the continent, 46 still use the former colonial capitals [Ratshitanga 2019: 46]. Might the remaining 7 capitals be precisely such success stories?

– It is hard to identify successful examples of postcolonial urban planning. African governments have attempted to manage urbanization challenges by patching new human settlements in and around colonially planned and developed spaces or establishing new settlements. However, their efforts sometimes contradicted their declared principles of inclusivity, sustainability, prosperity, peace, and security, mainly because these new settlements usually were unintegrated spaces. Their dislocation from economic heartlands, or their failure to become new economic nodes, makes them unworkable and sometimes unpleasant places to live.

Egypt, however, with its recently launched New Administrative Capital city, New Cairo City, and many other new cities in the other regions of the country, can be said to be providing good leadership in terms of the development of new urban planning settlements. Egypt's New Capital City is a modern development that has incorporated designs from Egypt's history. It has been designed and built as an integrated city that caters for the spatial needs of the Egyptian administration while at the same time providing massive housing for the hundreds of thousands of civil servants who will

relocate to this new city. Myriad entertainment spaces and social amenities have been woven into the New Capital City. The rail and road networks that connect the old cities with these new cities are an impressive infrastructure investment that will enable social and economic agglomeration across the country.

What has enabled Egypt to succeed is the political leadership that has been driving these new cities' developments and the upfront state investments in the areas of development. The government has literally led the creation of these new urban spaces by providing the land upon which the new cities are built, investing in the necessary infrastructure thereof, and then inviting the private sector to come on board with the rest of the developments. The provision of sufficient energy sources has also been the bedrock of success for Egypt's new cities. Hopefully, many other African countries will take heed of Egypt's leadership and follow suit to redefine their countries' urban landscapes.

Like true magnets, colonial cities in Africa have influenced migration patterns from the rural hinterlands as people escape ubiquitous poverty for the promise of a better life in the big cities. However, many of these migrants end up living in the slums that adorn the fringes of these big cities. No doubt, after independence from colonial rule, many colonial cities transformed and welcomed a lot of citizens who were previously prevented from living in those cities. However, the challenge is that such changes were not properly planned, resulting in many of these cities quickly becoming blighted and their infrastructure collapsing because of unplanned development and huge population growth.

Success must be based on prosperity. In other words, has the postcolonial urban planning in African cities spawned prosperity for the majority of African countries' citizens? Besides the few islands of extreme opulence for a minority of elites and middle-class citizens, there may be areas of stable living here and there, especially as occasioned by informal economies that have sprung up as a result of these postcolonial migration patterns and the transformation of spaces. However, more can be achieved by deliberately linking urban planning with economic planning, development, and growth, in ways that vastly contradict the colonial intent, which is much about economic domination and extraction. This means that industrialization must underpin the creation of newly transformed economic spaces, whether through the redevelopment of existing economic hubs or the construction of new ones, with new urban settlements planned and developed alongside them.

There is no doubt that the majority of people nowadays are living in urban spaces, and this will continue to be so for the foreseeable future. One of the key questions for the change that Africa requires to move forward as a functional and preferred home for millions of its citizens and the citizens of the world who wish to live in it is how such urban spaces are intertwined with economic growth and development intentions—planning and development that favor the prosperity of African nations.

– In recent years, IT has developed rapidly, and the 4th industrial revolution has begun. The agenda should include a new generation of cities, IT technopoles,

with the Internet of Things (5G and above), data centers, and electric transport. What progress has been made in this regard in Africa?

– African countries and leaders are well aware of the huge technological revolution that is sweeping through the whole world. Hopefully, Africa will not be left out from forming part of this huge change, as it was with the discovery of electricity and the invention of the steam engine. It took a very long time for African countries and people to benefit from those previous scientific revolutions.

This major change has already demonstrated its radical transformative power on economies. New economies are emerging because of the digital transformation of society. Devices are being equipped with abilities and services that will transform the physical ways we live our lives. The nature of work, the manner of movement, the nature of service provision, ways of studying, and even entertainment are all rapidly changing.

Indeed, new cities will emerge out of the evolution of economic patterns and processes that are being brought about by the digital revolution. In terms of the transport sector, although there is currently an emphasis on the emergence of electric cars, the new ways of working that will rely on remote jobs for millions of people mean that there will be actually fewer cars on the roads than currently—whether fuel-based vehicles or electric ones. Spaces that are currently the source of vehicle congestion, such as the roads, parking lots, and homes, will all be transformed in the near future when the car becomes less and less necessary because people will move less.

Of course, this will lead to the need to reimagine how cities are designed and constructed in the future. More emphasis will need to be placed on social relations, as people will spend less and less time at work or on the roads because a lot of things will be possible to do at home or in close proximity to it. As many jobs become obsolete because of this development, new opportunities will emerge, especially in content creation for service platforms and entertainment on gadgets. The disappearance of certain jobs will also spark revolutions in terms of study curriculums and cause misery for those unable to transition into new jobs.

With many things possible to be done from confined spaces, such as one's home, some social ills will also emerge. Digital crimes will skyrocket, alongside depression and an unhealthy lifestyle caused by these new confinements. African countries have a chance to interrogate these radical changes and their meanings for the societies. They can contribute to defining how life will be shaped by these lifestyle revolutions. There are many African technologies that never saw the light of day because of how Africans reacted to the changes of various epochs. Is this not the time when African citizens, scholars, and leaders should rise up and showcase Africa's greatness and thus help imagine the new urban settlements that will be brought about by these inevitable changes? *Good luck, Africa!*

– Don't you think that the existing transport system in Africa largely reflects the preferences of the colonial period, ensuring the "vertical integration" of individual countries of the continent into the world system as suppliers of natural resources?

Meanwhile, the widespread intra-continental routes of the pre-colonial period are still mainly used within the informal sector and are practically underdeveloped. What do you see as the optimal solution in this regard? In your monograph, you discuss the system of dry ports, as well as the concept of "One Africa, One Grid" [Ratshitanga 2019: 122–122; 143–146].

– Indeed, intra-continental trade routes are required to develop the new economies of African countries. One of the conspicuous features of the African continent is how there are too few economic nodes within African countries and thus few cities as a result. As it is known, cities are economic magnets, catalysts of economic activities across spaces. In most developed parts of the world, economic nodes are dispersed and multiplied across regions, thereby enabling people to settle wherever they choose, as economic activities are replicated wherever they settle, allowing them to live full lives without having to migrate to a few centralized city nodes.

The transport grids of such countries spread across the nations to facilitate the movement of goods, products, and people from city to city and from rural areas to cities. Even rural areas are far more economically developed than some of the towns in our continent's countries.

When one argues that economic activities need to be widespread across entire regions of our countries, one is confronted with questions about the kinds of economic activities and how unique they will be compared to the existing economic activities of the few large cities that currently exist. There is a lack of understanding that economic activities do not need to be wholly unique across the regions in order to anchor multiple cities across the country. Cities in developed nations around the world replicate activities from one place to the next and are fueled by infrastructure such as roads, electricity grids, and water and sanitation grids that enable an adequate quality of life across the nations. The decentralization of economic activities across nations is what makes the migration patterns more manageable in those nations.

Africa's population exceeds one billion. This is enough people to define sustainable trade markets that could spread across the continent. If African countries were to establish industries producing the goods and products consumed by this vast population, economic nodes would emerge across the continent, which could anchor new cities, not just in the coastal areas to facilitate trade with the rest of the world but also in the inland parts of the countries of the continent.

In this regard, Africa could be interconnected by a grid of economic nodes that is accompanied by the requisite infrastructure necessary to support it, thereby defining the *One Africa, One Grid* phenomenon. The African Continental Free Trade Area Agreement is a powerful instrument that could facilitate this advancement. What is required is its implementation.

– In your book, you argue that urban planning in Africa relies on Western-centric theories that do not meet the continent's needs. Could you provide some examples of these concepts and explain their shortcomings?

– “Urban renewal,” “urban redevelopment,” “urban regeneration,” “retrofitting of urban spaces,” and “connected cities” are Western concepts that are aimed at resolving the crises of Western cities [Barbera, Timpe 2025; Garcia 2004; Hersch 2018; Payre 2010]. However, there are vast differences between Western cities and African cities, as it has already been postulated that most African cities share the common image of being colonial cities, constructed simply to ship away African minerals, goods, and products [Bardinet 1977; Santos 1977], whereas Western cities were designed and constructed as economic engines, combining economic and residential spaces. If these concepts were applied in the exact manner as suggested for the resolution of Western urban crises, they would not be meaningful in the African context because the challenges of African cities require radical transformation, an entire overhaul of their make-up.

For example, the apartheid city model gave spatial expression to the Group Areas Act of 1950, legislation that was created to separate people in spaces according to racial groups. Thus, different racial groups were assigned to separate residential areas of the city, with black people especially located far away from the city core (the so-called townships), requiring them to have to travel long distances between their homes and the city cores. Moreover, the authorities ensured that services were unevenly provided, with a bias towards white residential areas.

We all know how incorrigible constructed spaces are. Hence, despite the repeal of the laws in South Africa after the attainment of democracy and political freedom, which allowed people to move freely between spaces, the majority of black people cannot afford to relocate from the so-called townships, where they had been trapped by apartheid laws and practices. Even those who have jobs in the cities still spend significant amounts of their salaries on transport between their “township” homes and their workspaces, just as it was during apartheid. The lack of ownership of land by the government within and around South African cities has also meant that where they have implemented housing development for the needy citizens, houses have been built far away from the cities, which has all but cemented apartheid spatial distortions.

In reality, it is not possible to rely on Western concepts designed for addressing Western city crises to easily address the myriad challenges of apartheid colonial cities without dealing with the fundamental structural fissures of apartheid-anchored spatial legacies.

Of course, one consequence of the transition to democracy was that a significant number of black people moved into the city centers, after what has been described as white flight took place, the phenomenon where white people move away from spaces when they become inhabited by their fellow black citizens. This has mainly led to the blighting of these city spaces, because unlike their erstwhile fellow white citizens who had lived in these areas, the black people who moved in could not afford the basic means to maintain their stay there, as most of them were unemployed. Coupled with the lack of enforcement of bylaws, this has led to a significant deterioration in the status and appearance of these areas. The solution lies in not merely fixing the broken infrastructure, as urban renewal may suggest, for instance, but in turning many of the spaces within

these cities into economic spaces where the citizens who have moved into them can find jobs to sustain their livelihood.

The argument here is not that these concepts are useless. Rather, the protest is against their uncritical application without consideration of the African context [Jones 2010]. These imported Western concepts need to address African realities rooted in the history of colonial spatial development and the lack of spatial changes after independence and the transition to democracy.

– Could you provide some examples of African concepts of urban planning that take into account African realities? What are the challenges in implementing these approaches?

– There are indeed African ways of imagining the kinds of spaces that need to be defined in new cities or how colonially built cities can be transformed into truly African ones. Part of this involves curating spaces in such a way that they assert what Africa truly is. Africa needs spaces that stand as edifices of the myriad realities and mythologies that make up its identity. This is not a novel idea. Many nations around the world construct spaces in the images of who they are. It is a way of asserting and reminding everyone what those spaces are about. It is a way of bringing the stories embedded deep inside books or folklore for the whole world to absorb with their eyes and minds and through the conversations they hold with the people of those places.

Why is this so important? Because African spaces have become a sort of structural palimpsest. The superimposition of colonial images on the existing African landscape has almost completely eradicated the Africa of the old, which is not old at all, because millions of Africans still hold it in their hearts and souls, without the pride to express themselves accordingly, as the spaces they live in heavily contradict this.

Therefore, part of the process involves delving into the histories, heritage, cultures, beliefs, customs, and traditions of the various corners of the continent to conceive designs of spaces and structures that resonate with the truths inherent in them. But history cannot be exclusive; it would be incomplete if it only reflected certain truths and not others. For example, the designs that do not reflect the terrible pains of slavery, colonization, imperialism, betrayal, and inherent conflicts would be incomplete, as these are also true expressions of Africa’s civilization and its tumultuous evolution.

What about the undeniable scientific fact that humanity emerged from Africa? That Africa is the cradle of humankind. If Africa neglects to incorporate the cosmopolitan views of the rest of humanity into the design of urban spaces, then the design will not be final, because Africa is clearly intertwined with the rest of the global community.

Most of Africa’s current architectural images are, in any case, already mimicking the images of the societies of other world nations. With slavery and imperialism also came the dispersal of people of African descent all over the world. There, they were forced to create new forms of lives, cultures, and overall expressions of their being. That, too, is now part of the African story and contains truths that need to be woven into the designs of our new settlements.

The need for a church was a defining feature of the center of colonial cities, as set out in the common classic plans. These religious monuments were built with the strongest materials so that even when many other buildings in erstwhile colonial cities have dilapidated, the colonial churches remain stubbornly erect. There was a huge effort to crush the belief systems of Africans during the period of colonial oppression in Africa. There are no structural signs of African religions and spiritual practices in many colonial cities in Africa[1]. It is very unfortunate that the new cities have continued this trajectory and failed to elevate the spiritual centers of African belief systems, even when they were constructed by a free and independent African government.

African people who wish to practice their spirituality do not have designated places to go and do so in the cities. They must navigate in painful ways around very rigid spaces that are not flexible enough to accommodate their needs. Some have to wait until they get a chance to go back to their rural areas to practice their spiritual beliefs freely, without being stigmatized and harassed. Even the rites of passage within the African family, which affect males, females, and children, cannot be fulfilled within the confines of current structures of cities, as the requisite environments are unavailable. These are some of the things that the new cities need to deal with in order to be truly African in character, form, and content.

In Africa, traditional authority is still respected, working side by side with the modern governments to meet the needs of the people. In previous African cities, the capitals of traditional authority—the palaces of kings and queens—were important landmarks. Current cities do not reflect this aspect of African people's lives, treating it as if it no longer exists. This is another element of the designs and architectural poetry of our cities that needs to be improved.

The above critique highlights the challenges posed by narrow definitions of some of the urban development concepts, such as the "connected city." While the concept of a connected city is sound in terms of the technological infrastructure and the transport systems that should connect people and businesses to facilitate smooth movement and transactions, it can also be defined more broadly in the African context. The above submissions have demonstrated that the new African city needs to also be connected to its people's ways of life, including their histories, cultures, heritage, traditions, customs, pains, contradictions, civilizations, and myriad other factors that have hitherto defined life in Africa.

– In your opinion, who should take the lead in decolonizing African spatial development? Should it be a developmental state or perhaps a nationally oriented, non-comprador business? As far as I can see, such a one is emerging in Africa, for example, the company of Aliko Dangote from Nigeria. What regulatory framework should the continent's governments form to make it profitable to implement spatial

[1] Issue 1 2025 of the Journal of the Institute for African Studies is devoted to religions of Africa / religions in Africa (*Editorial note*).

decolonization strategies? And how can they be implemented at the regional (for example, SADC) or continental (African Union) levels?

– The radical changes to spatial development in Africa have to come from a collective of different actors. The state has the leverage of creating laws, policies, and regulations that can be favorable for such radical spatial changes to African cities. As the book argues, for new cities or urban creations in Africa to be sustainable, they must be accompanied by new economic spaces. Human settlements that are not integrated with economic activities quickly mutate into crime-infested zones and unmanageable spaces where the quality of life is compromised. Hence, the private sector has to play a significant role in defining such economically integrated developments. Civil society must also be at the heart of the planning and evolving of these new spaces, as it is ultimately people who will live and interact with all else in these newly created settlements and economic spaces.

These new urban spaces are to be constructed on land that either belongs to the state, the private sector, or even the traditional authorities. All need to be involved in the process of releasing their lands for the developments to happen harmoniously. The African developmental state should take the lead [Reinert 2008]. Most of the spatial legacies of the past that are stubbornly refusing to wither were dreamed up, planned, and developed by the states of those times. The principles and laws of existence in those spaces were enforced by those states. Hence, the state has a pivotal role to play in coordinating a mutual spatial transformation in Africa.

While the state acts in the interest of all, businesses usually act in their own specific interests. It is not common for businesses to invest in and build large-scale infrastructure, such as roads, water supplies, sanitation systems, electricity networks, and social amenities such as hospitals, clinics, schools, and religious spaces for the benefit of larger communities beyond where their businesses are located. This responsibility is delegated by citizens and the businesses that pay taxes for this purpose to the state. The state must do its job, after canvassing the designs and plans of such new urban spaces with all affected, so that once the enabling infrastructure and amenities are in place, the rest can fall into place as it happens now in Egypt.

Indeed, the typical business leaders who will support the development of spaces in ways that radically redefine how the private sector does business in Africa will be the progressive and patriotic businessmen and women who understand that things must change. They must have their hearts etched in the pride of seeing an economically sustainable Africa, beyond making profits. Aliko Dangote is undoubtedly one such patriotic and progressive businessman, inspiring the rise of similar business leaders in various countries in Africa.

The African Free Trade Area has already paved the way for massive industrialization, which could anchor new trade areas and trade routes within the Southern Africa region and throughout the entire continent. Regional economic frameworks and nation-to-nation bilateral agreements also exist between African nations that can facilitate trade infrastructure investment at regional and continental levels. What

is needed are more effective collective planning processes so that what one country does by way of investment in industrial infrastructure and urban development matches with what the others are also doing, and the sharing of market offtakes and even collective funding of projects.

Patterns of consumption have to be thoroughly scrutinized to emerge with alternative supplies that are spawned by import substitution industrialization and the broadening of local markets to the rest of the continent. The point is not to boycott the world's products for the sake of it, but to come up with substitutes that are more relevant to the local markets, cheaper to produce and buy, and anchor employment and entrepreneurial opportunities for the millions of currently poverty-stricken people all over the continent.

Once Africa masters the development of quality products through efficient productive systems and processes, soon it will be exporting to the rest of the world and reverse the market domination curse. There are many countries around the world that have declared their commitment to partnering with African countries to achieve this new industrialization. All that African governments must do is to create the conducive environments for such sincere and genuine partnerships to thrive.

– In the approach outlined in your book, you seem determined not only to be an "organic intellectual," according to A. Gramsci, but also to act proactively, to change the world around you, implementing in practice the concept of "New cities. New economies." To what extent is this successful? Can an African intellectual successfully bring about social change?

– All over the world, it is ideas that have informed the development of things and, *inter alia*, the changes towards existing things. Certainly, intellectuals, organic ones and those trained within the walls of universities and colleges, have contributed significantly to the development of new things. However, it is not enough to develop new ideas, even if they are published, as they may easily waste away on the dusty shelves of libraries. The point is that of activism, to become active agents of change, to agitate and influence those with the powers to legislate new ways of life, new policies and regulations, as well as those who allocate budgets to new projects, to all support the paradigm shifts that are being postulated by such scholars and intellectuals.

The reality is that the world is changing rapidly, and Africa should proclaim its stake in such current and upcoming developments. African citizens need to demand of their leaders to become intellectually rigorous in terms of what they offer their countries and the world. Asking the simple question, "What is the African perspective on such and such a subject of discourse?" can unlock huge innovations in the minds of both citizens and leaders. The main requirement for leaders is to have the political will to embrace the diverse and varied perspectives that will arise as a result of entertaining dialogues of this nature.

– The Russian Federation is currently paying great attention to urban development, both at the level of world-class flagship cities (Moscow and

St. Petersburg) and, for example, at the level of new territories (Crimea and Donbass), some of which are being restored after fierce military actions (for example, Mariupol). In Moscow, large-scale reconstruction projects are being carried out in city blocks that were built back in Soviet times—people are being resettled into new social housing. What do you think is the most effective form of cooperation between the municipalities of the Russian Federation and South Africa, and more broadly—between municipalities and city mayors' offices of the Russian Federation and African countries?

– It is worth noting that both South Africa and Russia were the founding partners of the Brazil, Russia, India, China, South Africa (BRICS) global political and economic alliance, which has since expanded to include many other countries. It is correct for these countries to collaborate across many areas of mutual development to support one another as the global balance of power is rapidly shifting. South Africa is also well poised to collaborate with Russia because such cooperation is not contradicted by the pain of unhealing wounds of colonial oppression since Russia never colonized South Africa. The Soviet Union, the mother of Russia, in fact played a very crucial role in supporting the struggle against apartheid and colonization in South Africa. South Africa, thus, holds the dear and friendly people of Russia in great reverence for their contributions to its freedom.

The changes that are sweeping through the cities of Russia, both the older ones and more recent ones, bear important lessons for our own cities' transformation in South Africa. Harmony, prosperity, peace and security, ecologically friendly environments, economically viable and sustainable industrial nodes and human settlements are some of the issues both countries can grapple with together as they create better spaces for living, working, and entertainment of their citizens.

Russia has notably developed advanced knowledge systems and technologies in various sectors that can be beneficial for South Africa's own development. City-to-city and province-to-province exchange programs can, therefore, be arranged to facilitate mutual learnings on both sides. Economic diplomacy is the bedrock of sustaining long-lasting relations between friendly nations. Cultural diplomacy is similarly encouraged to cement the bonds of friendship between the citizens of both countries. Knowledge exchange programs can also be developed to match South African urban scholars with Russian scholars who can co-author journal papers that expand the body of knowledge on the development of existing cities, as well as the building of new cities *ex nihilo*.

Without discarding relations with other countries, South Africa and Russia have many threads with which to formidably weave their lasting relationships, sooner rather than later.

Spasibo!

Interviewed by Denis A. Degterev

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Интервью

ДЕКОЛОНИЗАЦИЯ ПРОСТРАНСТВЕННОГО РАЗВИТИЯ АФРИКИ

Интервью с профессором Тшилидзи Ратшитанга (ЮАР)

Профессор Тшилидзи Ратшитанга – стипендиат программы Джорджа Дж. Митчелла, доктор наук факультета государственной политики и администрирования Университета Делавэра (США), магистр Университета Порт-Элизабет (ныне Университет Нельсона Манделы), бакалавр Университета Ранд Африкаанс (ныне Университет Йоханнесбурга).

Профессор. Ратшитанга также является председателем и основателем группы «Новые города, новые экономики» и Африканского глобального консорциума.

Ранее профессор Ратшитанга занимал должность старшего менеджера в Правительственной системе коммуникаций и информации (*GCIS*) ЮАР, а затем перешел в частный сектор, где сотрудничал с компаниями в сфере девелопмента недвижимости и горнодобывающей промышленности. В настоящее время он входит в состав ряда советов директоров, в том числе Института стратегического анализа Мапунгубве (*MISTRA*) (ЮАР). Ранее он занимал посты председателя *Bokamoso Barona Investment Trust* и *Kaborona Investment Holdings*. Он также был председателем Агентства жилищного строительства (*HDA*) в правительстве ЮАР, заместителем председателя Агентства роста и развития южноафриканской провинции Хаутенг (*GGDA*) и председателем Инновационного центра (*TIH*) при этом агентстве. Тшилидзи Ратшитанга также занимал должность официального специального советника нынешнего вице-президента Южной Африки Пола Машатиле, которого он до сих пор консультирует в частном порядке

Профессор Ратшитанга является видным общественным деятелем. Он активный член правящей партии ЮАР, Африканского национального конгресса (*ANC*). Ранее занимал посты генерального секретаря Конгресса южноафриканских студентов (*COSAS*) и Южноафриканского студенческого конгресса (*SASCO*), которые являются прогрессивными студенческими движениями, связанными с Африканским национальным конгрессом. Ратшитанга также работал в Молодежной лиге Африканского национального конгресса (*ANCYL*) в провинции Хаутенг и был членом избирательной комиссии Национального конгресса в 2012 г.

Профессор Ратшитанга – автор книги «Новые города, новые экономики: Южная Африка и Великий план Африки, панафриканская экономическая революция». В интервью он рассказывает о своем видении «новых городов» и «новых экономик» и делится своим мнением о деколонизации пространственного развития Африки.

Ключевые слова: пространственное развитие, городское развитие, пространственная деколонизация, индустриализация, африканская экономика, социальное развитие, Южная Африка

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RUSSIA – AFRICA

Research article

CONCEPTUALIZING RUSSIA – AFRICA ENERGY COOPERATION

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Abstract. Energy sector is one of the key areas of Russia-Africa cooperation, along with the military, food, and industry. Over the past three decades, Russian companies have accumulated considerable experience in the energy sector in African countries, implementing projects in the exploration and production of natural resources, infrastructure construction, fuel supply, and the promotion of Russian nuclear technologies. However, the rapid shifts in international energy relations, the transformation of regimes, and the growing importance of non-Western institutions require a rethinking and adjustment of the conceptual foundations of this Russia-Africa interaction. The purpose of this article is to conceptualize the energy dimension of the Russia-Africa partnership and to identify the doctrinal and normative conditions in which this cooperation is unfolding. The article analyzes the theoretical and doctrinal framework of the Russia-Africa energy partnership, its institutional structure, and its relationship with the concepts of energy security and sovereignty. Particular attention is given to the role of the concept of self-reliance, traditionally important for political thought in African countries, and its compatibility with the Russian approach to energy cooperation. Not only the potential for cooperation but also the competitive elements in relations between Russia and African energy exporters have been analyzed. A systematic analysis of the texts of strategic and foreign policy documents of the Russian Federation has revealed a certain lack of synchronization between foreign policy and sectoral approaches in the field of Russia's energy cooperation with Africa. The author concludes that the main objectives of bilateral cooperation may lie in the creation of regional energy clusters and cross-border infrastructure, localization of production and training of personnel, as well as in overcoming institutional constraints—primarily the dominance of multinational corporations, lack of state control over export infrastructure, and weaknesses in the regulatory and technological base—may be the main goals of bilateral cooperation.

Keywords: Russia-Africa; energy security; self-reliance; Russia's energy strategy; regionalization

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CONTEXT OF RUSSIA-AFRICA COOPERATION IN THE ENERGY SECTOR

Energy, along with the export of arms and military equipment, food, fertilizers, and machines, is traditionally considered one of the main areas of Russia-Africa cooperation [Korendyasov, Konstantinova 2023: 177]. In the past 30 years, Russian companies accumulated considerable experience working in virtually all aspects of the energy sector in African countries: hydrocarbons and uranium production and exploration; construction of oil and gas pipelines, hydroelectric power plants (HPPs), thermal power plants (TPPs), and nuclear power plants (NPPs); supply of nuclear fuel, oil, oil products, liquefied natural gas (LNG), and coal. Amidst growing attention to Russia-Africa relations in scientific literature and analytical reports [Abramova 2021] and the development of interaction between Russia and African countries, there is a demand for a detailed approach—*inter alia*, for isolated industry-specific areas of cooperation. Moreover, the changes that took place in the energy markets in 2022–2025[1] increase the importance of Africa for the Russian energy companies, not only as a potential sales market and lucrative investment destination but also as a source of raw materials or even mutual investment. The dynamics of many years of cooperation between Russia and Africa in the energy sector need to be comprehended and systematized, in order to build a more effective dialogue better adapted to the new conditions.

In the studies of international relations, energy cooperation traditionally occupies an important place, especially after the 1973 oil embargo[2]. The key issue in the perception of the energy sector in the theory of international relations lies in the researchers' views on its confrontational potential [Borovsky 2015]. Studying the experience of Russia's interaction with African countries provides material for observing, on the one hand, potentially competitive relations (between Russia and African exporting countries) and, on the other hand, the process of the formation of interdependencies (between Russia and importing countries) and of the interweaving of these relations into the overall architecture of Russia-Africa relations. In this time, international economic systems are undergoing a period of significant change caused not only by the evolution of the world order but also by technological development and the transition of humanity from carbon-based to carbon-free energy. The architecture of world energy markets is also evolving: the trade flows are changing their directions and structure, and the role of non-Western institutions is growing, including the Organization of Petroleum Exporting Countries (OPEC), the OPEC+ format, and the Gas Exporting Countries Forum (GECF).

[1] These include sanctions against Russian energy companies, the "price cap" set by Western countries on Russian export products, and the Western energy companies leaving the Russian market.

[2] The 1973 oil crisis (also known as the "oil embargo"), which began on 17 October. On that day, all Arab member countries of the Organization of Arab Petroleum Exporting Countries, as well as Egypt and Syria, declared that they would not supply oil to countries (UK, Canada, Netherlands, USA, Japan) that supported Israel in its conflict with Syria and Egypt. Over the next year, the price of oil soared from 3 to 12 dollars a barrel. In March 1974, the embargo was lifted.

African countries play an important role in these processes, and Russia's interaction with them will make it possible to jointly develop a more inclusive and favorable framework of international regimes and the world order, which requires an understanding of the position of Russia and Africa in the world energy markets and their common interests.

Finally, the issue of *energy security*, *energy regionalization*, *energy justice*, and *energy sovereignty*, as well as the growing securitization of the energy sector, plays a key role in Africa's development. In Russia, both at the level of political rhetoric[3] and public policy[4] and in the expert and academic literature, the role of the Russian Federation as a player capable of contributing to the energy security of African countries is increasingly discussed. However, most of the above-mentioned terms in relation to Africa have not yet been properly understood either in academic or expert publications.

In this context, it seems timely to start a detailed discussion of these concepts and their correlation with the notion of *self-reliance* developed within African philosophical tradition [Degterev 2024] in the context of Russia-Africa relations. This article serves as one of the first attempts to begin a discussion of what *energy security* could mean for Africa and what role Russia could play in ensuring it. It is also important to note that the author's goal in this article was not to analyze the fate of individual energy projects of Russian companies in Africa and identify opportunities and risks but rather to comprehend the conceptual foundations of Russia-Africa energy cooperation and analyze the framework within which it is developing.

AFRICA'S PLACE IN RUSSIAN STRATEGIC DOCUMENTS ON ENERGY

Africa has traditionally not been a priority in the Russian energy strategy due to the geographical remoteness of African markets, their small (relative to European) capacity and volume, the low degree of trade complementarity, and the lack of awareness of government authorities and Russian business circles about the state of African markets and the opportunities they can provide.

Africa was not mentioned in the main conceptual documents of the energy sector adopted in the 1990s: the Concept of Russia's Energy Policy in New Economic Conditions (1992), the Basic Directions of the Energy Policy of the Russian Federation until 2010 (1995), and the Basic Provisions of the Energy Strategy of Russia until 2010. The Energy Strategy for the Period until 2020, adopted in 2003[5], which for the first time considers Africa along with other regions as a potential partner, states that "the markets of the Middle East, South America, and **Africa** are of interest primarily as potential

[3] Plenary session of the Russia-Africa Economic and Humanitarian Forum. *President of Russia*. http://en.kremlin.ru/events/president/news/71814 (accessed: 29.06.2025)

[4] Decree of the President of the Russian Federation of 31 March 2023 № 229 "On Approval of the Concept of the Foreign Policy of the Russian Federation." *Rossiyskaya Gazeta*. 31.03.2023. (In Russ.) https://rg.ru/documents/2023/03/31/prezident-ukaz229-site-dok.html (accessed: 29.06.2025)

[5] Order of the Government of the Russian Federation № 1234-r dated 28 August 2003 "On Approval of the Energy Strategy of Russia for the Period up to 2020" (As amended on 15 June 2009). *Electronic fund of legal and normative-technical documents*. 28.08.2003. (In Russ). https://docs.cntd.ru/document/901872984 (accessed: 29.06.2025)

consumers of the services of Russian energy companies, as well as importers of energy technologies and equipment for the fuel and energy complex."[6]

In the Energy Strategy for the Period up to 2030[7], adopted in 2009, despite the increased number of Russia-Africa energy projects [Borovsky 2012, Tomberg 2011], Africa remains without due attention: in the part "Strengthening the Positions of Leading Russian Energy Companies Abroad," among other measures, it only states, "Development and implementation of action plans <…> to strengthen Russia's position in regional energy cooperation with countries of the European Union, Asia-Pacific, Middle East, **Africa**, Central and South-East Asia, Latin America, China."

There was a sharp increase in the number of references to Africa in the Energy Strategy for the Period until 2035, adopted in 2020[8]. However, most of the references to Africa (5 out of 6) are in the sections on coal:

1. "Coal will remain one of the cheapest and most accessible sources of energy in the future, the backbone of energy in developing countries, primarily in Asia-Pacific and **African** states."

2. "Lower demand for coal in Europe will be offset by increased imports in South and Southeast Asia (where the need for high-quality coal will increase), as well as in the Middle East and **Africa**."

3. "In the future, prices are expected to rise for high-quality coking coals and coals for pulverized coal technology (pulverized coal injection) in blast furnace production; for the main nomenclature of energy coals, changes in the price environment will be associated with the development of coal generation in the Asia-Pacific region, the Middle East, and Africa."

4. "Diversification of export flows with increasing the share of presence in new markets of the Asia-Pacific region, the Middle East, and **Africa.**" (In the "Coal Industry" part).

5. "Development of railway and port infrastructure to ensure the supply of coal products to the world market, including expansion of throughput capacity, development, and renewal of the Trans-Siberian Railway and Baikal-Amur Mainline infrastructure, as well as port facilities in line with the projected growth in demand for Russian coal in Asia-Pacific, the Middle East, and **Africa**."

Outside of coal, Africa is mentioned only once, in the context of oil refining: "Some growth in primary refining is expected in **African** countries, where the construction of refineries may become an alternative to increasing imports of high-quality petroleum products from other regions." Egypt was mentioned separately among African countries, in the context of the construction of a nuclear power plant there by *Rosatom*.

[6] Ibid.

[7] Order of the Government of the Russian Federation dated 13 November 2009 No. 1715-r "On Approval of the Energy Strategy of Russia for the Period up to 2030." *Electronic fund of legal and normative-technical documents*. 13.11.2009. (In Russ.). https://docs.cntd.ru/document/902187046?marker=64U0IK (accessed: 29.06.2025)

[8] Order of the Government of the Russian Federation № 1523-r dated 9 June 2020 "On Approval of the Energy Strategy of the Russian Federation for the Period until 2035" (As amended by Order of the Government of the Russian Federation № 3892-r dated 25.12.2023). *Government of the Russian Federation*. 09.06.2020. (In Russ.) http://pravo.gov.ru/proxy/ips/?docbody=&prevDoc=606272126&backlink=1&&nd=102751064 (accessed: 29.06.2025)

In the Energy Strategy of the Russian Federation for the Period until 2050, adopted in April 2025[9], Africa is mentioned 5 times, including 3 times in the context of coal. In the section "Assessment of the State and Trends in the Development of the Global Energy Sector and the Fuel and Energy Complex of the Russian Federation," it is noted that "coal exports to **African** countries are growing," and in the block "Coal Industry," the second task (after maintaining the existing coal production capacities) is indicated as "the growth of coal exports and reorientation to new markets, primarily to the markets of the Asia-Pacific region, the Middle East, and **Africa**." As part of the measures required to solve this task, "the expansion of railway transport capacity <…>, as well as port facilities to ensure the supply of coal products to <…> **African countries,**" is suggested.

Africa is mentioned twice in the sections analyzing the prospects for the development of the world's energy markets. For example, Africa, along with the Asia-Pacific region and South America, is referred to as the "growth regions" of the "global energy consumption level by 2050." The energy strategy also notes that "at least until 2035, oil demand is expected to grow against the backdrop of increasing motorization in Asia-Pacific, Latin America, and **Africa.**"[10]

The analysis of the main strategic document of the energy sector indicates that cooperation in the coal industry is currently identified as the key area of Russia's energy engagement with African countries. At the same time, such areas as the oil and gas sector (including LNG), nuclear energy, hydropower, and others are reflected to a lesser extent, which creates opportunities for their further elaboration and development in the future.

However, the decision to focus specifically on the coal sector should be more carefully considered, given the stagnation of consumption and the cancellation of many coal-fired TPPs projects (see *Table* 1). At the same time, there are no grounds for forecasts about the growth of consumption of coking coal in Africa, especially since up to 80% of Russian coal exports are energy coals.

Table 1. **Coal consumption and power generation in Africa in 2018–2024**

Year	2018	2019	2020	2021	2022	2023	2024
Coal consumption (EJ)	4.19	4.43	4.24	4.18	3.97	4.25	4.30
Electricity generation at coal-fired TPPs (TWh)	255.9	255.7	236	243.1	236.4	228.3	244.6
Electricity generation total (TWh)	847.2	863.4	843.9	896.9	892.7	924.3	963.9

Sources: Energy Outlook – webcast archive. *BP*. https://www.bp.com/en/global/corporate/energy-economics/webcast-and-on-demand.html (accessed: 29.07.2025); Statistical Review of World Energy. Energy Institute. https://www.energyinst.org/statistical-review (accessed: 29.07.2025)

It is also true that the Energy Strategy is focused on the internal tasks of developing the energy sector of the Russian Federation. However, it should be considered that the implementation of these tasks is impossible without taking into account the external context, especially for those spheres that have historically relied on export markets

[9] Order of the Government of the Russian Federation of 12 April 2025 No. 908-r "On Approval of the Energy Strategy of the Russian Federation for the period up to 2050". *Official Internet portal of legal information.* 12.04.2025. http://ips.pravo.gov.ru/?docbody=&nd=608534021&rdk=&backlink=1 (accessed: 29.06.2025)
[10] Ibid.

(natural gas, oil products, coal, power engineering). Thus, their development should be linked to external economic conditions and meet the dynamics of the global energy markets. Even if the task of increasing the exports is not on the list of priorities, the issue of diversifying sales markets, reducing dependence on individual buyers and intermediaries, establishing its own logistics, sales, and financial infrastructure, and, consequently, more profound target-setting, including for Africa, remains critical for Russian energy exports.

At the same time, energy has traditionally been one of the main items on the negotiating agenda at high-level and summit meetings. For example, in the declaration adopted at the first Russia-Africa Summit in 2019, the parties express their intention to "promote energy security cooperation, including the diversification of energy resources, the use of renewable energy sources and implementation of joint projects in civil nuclear energy. Continue mutually beneficial cooperation in the oil and gas industry."[11]

In general, the analysis of the 3 main Russia-Africa bilateral documents—the declarations of the first and second summits[12] and the Russia-Africa Partnership Forum Action Plan 2023–2026[13]—allows us to deduce 6 key areas of energy cooperation:

1. Ensuring energy security of African countries (through diversification and renewable energy sources) and overcoming energy poverty;
2. Cooperation in civil nuclear energy;
3. Cooperation in the oil and gas sector;
4. Development of domestic energy markets;
5. Strengthening supply chains, promoting open, transparent, and competitive markets, protecting critical energy infrastructure;
6. Cooperation in ensuring a just energy transition.

An important feature of the declarations is their bilateral nature, i.e., it is assumed that these priorities are agreed upon with the African partners. Although the declarations and the Action Plan concern ensuring Russia's foreign policy priorities, they are much more comprehensive and elaborate than the provisions on Africa in the Energy Strategy. It is indicative that in the texts of the declarations there is no mention of coal, which is the focus of the Strategy. There is a certain desynchronization of approaches, as well as a partial lag between the sectoral and the foreign policy vision.

The key role of energy in Russia-Africa cooperation is also emphasized in the Concept of the Foreign Policy of the Russian Federation[14] adopted in 2023 (in the previous versions of the Concept, the sections on Africa do not include energy, which is rather due to the laconic nature of the wording related to Africa). The first paragraph of the section on Africa states that "the Russian Federation intends to support further the establishment of Africa as a distinctive and influential centre of world development,

[11] Declaration of the First Russia-Africa Summit. *Russia – Africa*. 24.10.2019. https://summitafrica.ru/en/about-summit/declaration/ (accessed: 29.06.2025)

[12] Declaration of the Second Russia-Africa Summit. *President of Russia*. 28.07.2023. http://en.kremlin.ru/supplement/5972 (accessed: 29.06.2025)

[13] Russia-Africa Partnership Forum Action Plan 2023–2026. *President of Russia*. 2023. http://en.kremlin.ru/supplement/5971 (accessed: 29.06.2025)

[14] The Concept of the Foreign Policy of the Russian Federation. *Ministry of Foreign Affairs of the Russian Federation*. 31.03.2023. https://mid.ru/en/foreign_policy/fundamental_documents/1860586 (accessed: 13.08.2025)

giving priority to: 1) supporting the sovereignty and independence of interested African states, including through security assistance, inter alia food and **energy security**, as well as military and military-technical cooperation."[15]

In addition, Russian approaches to energy cooperation with Africa (formulated by various ministries and agencies) comprise a set of documents of different status. For example, the Strategy for the Development of Russia's Mineral Resource Base until 2035[16], adopted in 2018, introduces a classification of mineral raw materials according to the quantity and quality of their reserves in Russia, i.e., according to the need to explore new reserves or import certain minerals. The first group—minerals, the reserves whereof in Russia under any economic development scenario will meet the necessary needs until 2035 and beyond—includes **natural gas and coal**[17]. The second group includes minerals with production levels insufficiently covered by the existing reserves being developed for the period up to 2035; among others[18], it includes **crude oil**. Finally, the third group—deficit minerals, the domestic consumption of which is largely met by imports and/or stockpiled reserves—includes **uranium**[19][20], as well as several other minerals necessary for the energy transition (in particular, lithium).

Thus, based on the above classification, a hierarchy of priorities for the Russian economy is built, according to which only uranium production abroad remains necessary for Russia's development in terms of energy supply. In the case of crude oil, the possible deficit is planned to be covered by "the development of hard-to-recover oil reserves"[21] in Russia.

The Road Map for the Development of the Oil and Gas Chemical Complex in the Russian Federation for the period until 2025, adopted in 2019, does not mention Africa but instead specifies the prospects for expanding exports to "the key regions for the Russian Federation—Europe and Asia-Pacific countries."[22]

The most detailed plans for Africa can be found in the Russian Coal Industry Development Programme until 2035[23], adopted in 2020. It, like the Energy Strategy (the

[15] Ibid.

[16] Order of the Government of the Russian Federation of 22 December 2018, № 2914-r "On Approval of the Strategy for the Development of the Mineral Resource Base of the Russian Federation until 2035." *Official Internet portal of legal information*. 22.12.2018. (In Russ.). http://publication.pravo.gov.ru/Document/View/0001201812280093 (accessed: 29.06.2025)

[17] Also: copper, nickel, tin, tungsten, molybdenum, tantalum, niobium, cobalt, scandium, germanium, platinoids, apatite ores, iron ores, potassium salts, cement raw materials

[18] Also: lead, antimony, gold, silver, diamonds, zinc, high-purity quartz.

[19] Also: manganese, chromium, titanium, bauxite, zirconium, beryllium, lithium, rhenium, rare earths of the yttrium group, fluorspar, bentonites for foundries, feldspar raw materials, kaolin, coarse sheet muscovite, iodine, bromine, optical raw materials.

[20] Under this article, uranium is also classified as an energy resource because it is used as nuclear fuel to generate heat and electricity in nuclear power plants, along with traditional fossil sources, coal, oil, and natural gas.

[21] Order of the Government of the Russian Federation № 2914-r dated 22 December 2018 "On Approval of the Strategy for the Development of the Mineral Resource Base of the Russian Federation until 2035." *Official Internet portal of legal information*. 22.12.2018. http://publication.pravo.gov.ru/Document/View/0001201812280093 (accessed: 29.06.2025)

[22] Order of the Government of the Russian Federation No. 348-r of 28 February 2019 "On approval of the action plan (roadmap) for the development of the oil and gas chemical complex in the Russian Federation for the period until 2025". *Official Internet portal of legal information*. 28.02.2019. http://publication.pravo.gov.ru/Document/View/0001201903110043?index=1 (accessed: 29.06.2025)

[23] Order of the Government of the Russian Federation of 13 June 2020 No. 1582-r "On Approval of the Programme for the Development of the Coal Industry of Russia until 2035". *Official Internet portal of legal*

documents were probably developed at the same time, which explains the significant number of overlaps), notes the urgency of increasing Russian coal exports to Africa and postulates the need to develop port facilities "in accordance with the projected growth in demand for Russian coal in <...> African countries."[24] Finally, it contains forecasts of export growth to Africa (Egypt and Morocco are singled out separately).

Table 2. **Regions of Russian coal consumption by export destinations (million tons)**

Year	2018 (actual)	*2020*	*2025*	*2030*	*2035*
Russian exports to Africa (optimistic scenario)	3.3	5	9	13	15
Russian exports to Africa (conservative scenario)	3.3	4	6	8	9

Note: italicised years for which the forecast values are given

Source: Russian Coal Industry Development Programme until 2035. Order of the Government of the Russian Federation of 13 June 2020 № 1582-r "On Approval of the Programme for the Development of the Russian Coal Industry until 2035." *Official Internet portal of legal information*. 13.06.2020. http://publication.pravo.gov.ru/Document/View/0001202006180009 (accessed: 29.06.2025).

The Long-Term Program for the Development of Liquefied Natural Gas Production in the Russian Federation, adopted in 2021, does not consider Africa as a priority market for Russian gas at all, although there are about 20 liquefied natural gas (LNG) import projects at various stages of development in Africa[25], and Russian companies (Gazprom[26], Rosneft[27]) have experience in African LNG markets or are interested in entering them (Novatek[28]).

The analysis of the sectoral strategies shows that they still retain a certain fragmentation, and the data reflected in them is somewhat limited, which may hamper making comprehensive decisions. In the existing documents, the issues of Russian-African cooperation in the energy sector are still reflected in separate areas that develop independently and are not always interconnected. At the same time, the formation of a unified framework for cooperation could help to increase the coherence and effectiveness of Russian-African cooperation in the energy sector.[29]

information. 13.06.2020. http://publication.pravo.gov.ru/Document/View/0001202006180009 (accessed: 29.06.2025)

[24] Ibid.

[25] Ouki M. Africa's LNG import prospects in an era of high volatility and uncertainties. *Oxford Institute for Energy Studies*. 01.06.2022. https://www.oxfordenergy.org/wpcms/wp-content/uploads/2022/06/Insight-118-Africas-LNG-import- prospects-in-an-era-of-high-volatility-and-uncertainties.pdf (accessed: 29.06.2025)

[26] Gazprom received the first cargo from the floating plant in Cameroon. *Interfax*. 21.05.2018. (In Russ.). https://www.interfax.ru/business/613639 (accessed: 29.06.2025)

[27] Rosneft delivered its first ever LNG shipment to Egypt. *Forbes*. 06.05.2016. (In Russ.). https://forbes.ru/news/319529-rosneft-postavila-svoyu-pervuyu-partiyu-spg-v-egipet (accessed 29.06.2025)

[28] Novatek is ready to supply gas to Morocco. *Vedomosti*. 12.10.2017. (In Russ.). https://www.vedomosti.ru/business/articles/2017/10/12/737524-novatek-marokko (accessed 29.06.2025)

[29] Declarative documents are complemented by a network of tools for bilateral cooperation. For example, the Joint Intergovernmental Russian-Algerian Commission on Trade, Economic, Scientific and Technical Cooperation has a Working Group on cooperation in the field of energy. As of May 2025, 5 meetings of the working group were held, the last in 2018. The same group operates with Angola (1 meeting in 2016) and South Africa (no meetings).

RUSSIA AND AFRICAN COUNTRIES IN THE GLOBAL ENERGY MARKETS: COMPETITORS OR PARTNERS?

The starting point in almost all schools of thought in international relations on energy issues is the question of the confrontational potential of this sphere. While neorealists see energy markets as yet another field for the struggle of nations and determining the "balance of powers" [Moran, Russell 2009], the proponents of the neoliberal approach argue that the formation of interdependencies will allow international relations to develop on a less confrontational basis [Goldthau, Witte 2009].

In the context of Russia-Africa relations, one can hardly speak of the formation of interdependencies, for example, in terms of trade in energy goods. Even in those spheres where cooperation is developing dynamically on the Russia-Africa scale, it is minuscule when compared to competitors. For example, in the supply of oil products, Russia's market share fluctuates between 3 and 10% depending on the year, which, however, is leveled by the dependence of Russian exports on intermediaries and transshipment in third countries. On the other hand, individual success stories can play the role of a damping factor to a greater or lesser extent. For example, it is obvious that the rather high level of economic cooperation between Russia and Morocco (trade turnover at $1 billion annually), which is based on Russian coal supplies, contributed significantly to the neutral position that Rabat, having the status of the US Major Non-NATO Ally, took on the crisis in Ukraine[30]. Another such example in Africa is seen in the project of *Rosatom* to build the El Dabaa Nuclear Power Plant in Egypt, which forms a long-term basis for political and economic cooperation through maintenance contracts, fuel supply, personnel training, and loan repayments.

Russia-Africa relations, both in general and at the bilateral level, have a rather low confrontational potential due to geographical remoteness, similar views on global issues, and the generally neutral policy that most African states adhere to on non-African issues. However, there is a widespread perception in the academic literature that Russia and African countries are competitors in global and regional energy markets [Zoubir 2011][31]. Such assertions are often generalizations without focusing on specific cases.

The perception of Russia and African countries as doomed to compete in energy markets seems even less relevant when considering the few examples that had some confrontational potential. Not without reason, Russia and Algeria have long been seen as potential competitors in the European gas market. Back in the 1950s, Enrico Mattei, then head of the Italian company Eni, considered the diversification of energy sources through Algeria and the USSR as a pledge of Italy's energy sovereignty[32]. At the same time, with the growth of gas supplies from the USSR to Italy in 1978–1983 [Zonova 2011: 329–330], the construction of the Transmed gas pipeline from Algeria to Italy was underway. Later

[30] Bodetti A. Russia-Ukraine war: Morocco's economy would risk heavy price for taking sides. *Middle East Eye*. 24.02.2023. https://www.middleeasteye.net/news/russia-ukraine-war-morocco-economy-neutrality (accessed 29.06.2025)

[31] Katz M.N. Russia and Algeria: Partners or Competitors? *Middle East Policy Council*. 2007. https://mepc.org/journal/russia-and-algeria-partners-or-competitors (accessed: 29.06.2025)

[32] Onofri S. Enrico Mattei and Aldo Moro: Shaping the Mediterranean Détente in the Cold War. *School of Government, Luiss Guido Carli*. https://www.tesi.luiss.it/25420/1/635762_ONOFRI_SARA.pdf (accessed: 29.06.2025)

Italy became a distribution hub for Algerian gas supplies to other Central European countries (Austria, Slovakia, and others).

Nevertheless, competition in the target markets between the Algerian state monopoly SONATRACH and the Russian Gazprom has not led to an apparent increase in contradictions either politically or economically. On the contrary, in 2006, the companies signed a memorandum of understanding[33], which envisaged cooperation in geological exploration, production, transportation, development of gas transmission and distribution systems, exchange of assets, processing and sale of natural gas and oil in Algeria, Russia, and third countries. Subsequently, a representative office of Gazprom was opened in Algeria[34], and SONATRACH and Gazprom International established a joint venture for gas production at the El Assel gas field in Algeria, which is scheduled to be launched in 2028[35].

Energy cooperation between Russia and Algeria goes beyond the partnership between two state-owned corporations: interaction has been established within the Gas Exporting Countries Forum and the OPEC+ format[36]. Deepening and diversification of cooperation in the energy sector is listed as one of the objectives of bilateral relations in the Declaration on Strategic Partnership between the Russian Federation and the People's Democratic Republic of Algeria[37], adopted in 2001. In the new version[38] of the document fundamental to bilateral relations, adopted in 2023, energy is placed in a separate block, which opens with a paragraph where the parties declare their intention to deepen coordination and cooperation "in international energy organizations and blocks, including the GECF and OPEC+."

Over the years, Russia has shown interest in coordinating actions on energy markets with other African exporters, such as Angola, Libya, and Nigeria. However, due to political, economic, corporate, and other reasons, this did not bring significant results compared to Algeria. This is also due to the lower degree of control of these countries over their own energy sectors and the dominance of foreign investors in these markets.

The issue of actors is of key importance. After all, it is the control over resources and channels of their delivery to the end consumer that allows exporting countries to effectively use the "energy factor" for political purposes. Historically, Africa has been a region where various non-state actors have dominated, shaped the environment, and

[33] Gazprom and Sonatrach signed a Memorandum of Understanding. *Gazprom*. 04.08.2006. (In Russ.). https://www.gazprom.ru/press/news/2006/august/article55819/ (accessed: 29.06.2025)

[34] "Gazprom" opened a representative office in Algeria. *Oil and Capital*. 17.06.2008. (In Russ.). https://oil capital.ru/news/2008- 06-17/gazprom-otkryl-predstavitelstvo-v-alzhire-950020 (accessed: 29.06.2025)

[35] Algeria. *Gazprom International*. 2025. https://www.gazprom-international.com/operations/algeria/ (In Russ.). (accessed 29.06.2025)

[36] Hakim Darbouche. Russian-Algerian cooperation and the 'gas OPEC': What's in the pipeline? *CPES*. 2007. https://core.ac.uk/download/pdf/5084119.pdf (accessed: 29.06.2025)

[37] Declaration on Strategic Partnership between the Russian Federation and the People's Democratic Republic of Algeria. *Electronic fund of legal and normative-technical documents.* 2001. (In Russ.). https://docs.cntd.ru/ document/901794649 (accessed: 29.05.2025)

[38] Declaration on Deepening Strategic Partnership between the Russian Federation and the People's Democratic Republic of Algeria. *President of Russia.* 15.06.2023. http://special.kremlin.ru/supplement/5954 (accessed: 29.06.2025)

determined the development trajectories of industries, states, and regions[39]. The energy sector occupies a special position here—the growing role of non-state actors (transnational companies, media, "think tanks") has long been one of the dominant trends in the global energy sector [Borovsky 2014].

So far, most of the export infrastructure in African countries is still beyond the control of African governments. One of the few exceptions is Algeria, where there is a state monopoly on gas exports[40], and the state oil and gas company SONATRACH owns and operates most of the export infrastructure and independently determines the geography of sales. In most other African countries, however, the role of the central government in resource extraction, processing, and then export is minimal. This is due to a whole set of factors: financial and technological deficits, which do not allow states to independently engage in energy exploration, production, and export and infrastructure construction; the legacy of the colonial era, which had laid the long-term strategic foundations for the development of the energy sector of individual countries and regions and their export specializations; and the dominant position of a limited number of transnational companies in African energy markets. Thus, in most cases, African countries act only as a source of raw materials, generating revenues for the state, and an important source of foreign exchange.

On this basis, it can be argued that de facto Africa is indirectly represented on the world hydrocarbon markets by a very limited list of transnational corporations and traders: Dutch-British Shell, French TotalEnergies, British BP, Italian Eni, and American Chevron and Exxon Mobil; traders such as Glencore and Trafigura; as well as a number of other companies and smaller corporations that play a key role in certain countries (e.g., French Perenco in Cameroon and Gabon or American Marathon Oil in Equatorial Guinea). A similar situation is observed in other energy-related industries. In this case, it is reasonable to speak not of competition between Russia and African countries in the world energy markets but rather of competition between certain Western corporations relying on the resource base in African countries and Russia.

Applying the terminological apparatus borrowed from the literature on international economic systems (in particular, information and communication technologies) [Maurer 2018] and transferring it to energy markets, it is possible to attempt to construct a hierarchy of global governance in world energy markets. In terms of the *rule-makers* vs *rule-takers* hierarchy, African countries are predominantly among the *rule-takers* [Ramich, Piskunov 2022]. The only component of influence they have so far is mineral reserves, while the main infrastructure and institutions (tanker fleets, terminals, pipelines, exchange platforms, arbitration courts, etc.) are under the control of foreign governments and TNCs, and the rules on world markets are formed virtually without the participation of African countries.

Moreover, even intra-regional projects aimed at building regional energy markets and integration depend on the interests of extra-regional players who control the financing

[39] Examples of such a key role of non-state actors include the Dutch East India Company, the diamond mining company De Beers, and a number of others.

[40] Gas Natural pays Sonatrach $1.9 bln to end dispute. *Reuters.* 14.06.2011. https://www.reuters.com/article/idUSLDE75D26G/ (accessed 29.06.2025)

and technological support of such initiatives. Russia is rather a *rule-maker*, but at the same time it depends on technologies and initiatives developed without its participation, including deep-water drilling technologies, the concept of "energy transition" in its Western interpretation, the energy policy of the EU, carbon tax, or similar alternative concepts of China, aimed at putting additional pressure on exporters of energy or energy-intensive products.

In this regard, there is room for broader cooperation between Russia and African countries in the energy sector and establishing new forms of cooperation in the energy sector, infrastructure, and financial and technical mechanisms independent of Western decisions. Such cooperation seems even more relevant in the context of the growing share of non-Western countries (primarily Asian) in energy supplies from Africa and Russia. The positive experience of cooperation on the platforms of OPEC+ and GECF can be scaled up through existing or new formats of multi- and bilateral interaction.

Table 3. **African member countries of OPEC+, GECF, BRICS+**

	OPEC+	GECF	BRICS (including partner countries and/or NDB members)
Algeria	+	+	+
Angola	left in 2023	observer	-
Gabon	+	-	-
Egypt	–	+	+
Libya	+	+	–
Mauritania	–	observer	–
Mozambique	–	observer	–
Nigeria	+	+	+
Republic of the Congo	+	–	–
Eq. Guinea	+	+	–
Senegal	–	observer	–
Sudan	+	–	–
South Sudan	+	–	–

Note: the table includes countries that are members of OPEC/OPEC+/GECF. Additionally, the fact of membership in the BRICS formats is noted for them. +/– means that the country is (not) a full member of the organization.

Source: Organization of Petroleum Exporting Countries. OPEC. https://www.opec.org (accessed: 29.07.2025); Gas Exporting Countries Forum. GECF. https://www.gecf.org (accessed: 29.07.2025).

The key issue in considering the prospects for such interaction is the sovereignty of control over the fuel and energy sector, not only and not so much in terms of "physical" control over assets but rather in terms of regulatory, technological, and environmental control, which requires strengthening the role of national regulators, their human capital, and their technological base.

RUSSIA AS ONE OF THE KEY PARTICIPANTS IN THE PROCESS OF STRENGTHENING ENERGY SECURITY OF AFRICA'S COUNTRIES

In recent years, amidst the development of Russia-Africa relations, their diversification, and the trend towards securitization in increasing number of industries, political discourse has seen the idea of Russia "as a guarantor of Africa's security and sovereignty,"[41] with the concept of "security" in this case being interpreted broadly to include information, food, energy, biological, and other areas of security. This approach allows for a nuanced understanding of Russian policy in Africa and its role in the region, but there is still no in-depth elaboration of such a concept, which would be based on the theoretical apparatus, revealing the content of the terms used. Applied to Russia-Africa relations, researchers primarily focus on physical security issues [Isaev et al. 2023].

Energy security is a multivalent term, the perception of which depends not only on the school of thought but also on the position of the state in the world energy markets. The logic of the formation of the term at the turn of the 1970s and the 1980s against the background of energy crises and embargoes also determined the initial interpretation, which rather refers to importing countries and implies guaranteed stable supplies, not subject to political conjuncture and excessive price fluctuations. For exporting countries, the concept formed based on the logic of importers is more relevant—not the *security of supply* but the *security of demand*, i.e., long-term guarantees of demand for supplies of a particular type of energy [Borovsky 2022].

A related concept is *energy independence*—"striving for energy self-sufficiency of the state at the expense of any available opportunities"—and its logical development, *energy sovereignty*, when "states are able to provide themselves with energy by themselves—by refusing imported fossil fuels and switching to available alternative sources" [Schelly 2020].

It is also reasonable to cite the definition of energy security according to the Energy Security Doctrine of the Russian Federation of 2019: "Energy security is a state of protection of the country's economy and population from threats to national security in the energy sector, which ensures the fulfilment of the requirements for fuel and energy supply to consumers stipulated by the legislation of the Russian Federation, as well as the fulfilment of export contracts and international obligations of the Russian Federation."[42] Thus, the doctrine presents a complex interpretation of energy security, from the point of view of both the consumer and the exporter.

The African Union, in its key development document for the continent, Agenda 2063, defines the main task of the region's countries in the energy sector as harnessing the potential of all of Africa's energy resources to provide access to modern, reliable,

[41] See: Russia to help African countries strengthen sovereignty, Putin says. *RIA Novosti*. 26.07.2023. (In Russ.). https://ria.ru/20230726/afrika-1886305199.html (accessed: 29.06.2025); International Organisation of Pan-Africanists supported Russia's course in Africa. *TASS*. 10.02.2024. (In Russ.). https://tass.ru/mezhdunarodnaya-panorama/19954585 (accessed: 29.06.2025); The Sovfed declared Russia's readiness to act as a guarantor of security in Africa. *Gazeta.RU*. 27.08.2023. (In Russ.). https://www.gazeta.ru/politics/news/2023/08/27/21157826.shtml (accessed: 29.06.2025)

[42] Decree of the President of the Russian Federation № 216 of 13 May 2019 "On Approval of the Doctrine of Energy Security of the Russian Federation." *Official Internet portal of legal information.* 13.05.2019. (In Russ.). http://pravo.gov.ru/proxy/ips/?docbody=&firstDoc=1&lastDoc=1&nd=102549810 (accessed: 29.06.2025)

affordable, renewable, and environmentally friendly energy for African households, companies, industries, and organizations by creating national and regional energy pools and energy systems[43] with reliance on energy resources located in Africa.

The concept of energy sovereignty not on a country but on a regional or, in some aspects, continental level, i.e., the reliance on one's own resources, is consonant with traditional African ideological and philosophical developments: the Tanzanian concept of *ujamaa*, enshrined in the Arusha Declaration of 1967, which postulates the principle of *self-reliance*, and the ideas of Pan-Africanism and Negritude of the prominent African political thinkers and philosophers, Senegalese Sédar Senghor [Isanbor 2023] and Ghanaian Kwame Nkrumah [Haynes 1988]. In this interpretation, self-reliance implies reduced dependence on external economic aid. Although African countries have managed to achieve political sovereignty, the challenge of gaining economic independence remains [Mein 2003]. In fact, the desired model of regionalism, based on the above philosophical constructs, is at odds with the established model of globalization [Mensah 2008], in which African resources are not used for the development of the region but are used outside it. This is illustrated, for example, by the position of African countries in most global value chains[44].

The concept of self-reliance, which became popular in Africa during the wave of decolonization and the emergence of independent states in the 1960s and 1980s, has become relevant again in the late 2010s and early 2020s and has moved into the field of applied discussions on the prospects for self-sufficient systems of pharmaceutical production[45], financial distribution[46], food security[47], and so on.

A series of global crises contributed significantly to these discussions: the coronavirus pandemic, followed by the aftermath of the global economic crisis caused by the events in Ukraine and economic sanctions, which demonstrated the dependence of African economies and political systems on the global environment. In general, the growing relevance of the concept of self-reliance is linked to the crisis of the current model of globalization based on neoliberal approaches. As Russian political philosopher Eduard Batalov demonstrates, "In recent years—especially in connection with the current crisis, which is not only financial and economic in its nature but also ideological and values-related—obvious has become the failure of the philosophy of that model of globalization, within which it took place and which, as David Harvey showed, was formed on the basis of the principles of neoliberalism" [Batalov 2012].

When considering self-reliance in the African energy context, it is necessary to state that at this stage, the necessary infrastructure, as well as the competences, financial resources, and technologies to support it, are currently lacking. African countries are

[43] Agenda 2063. Framework document. *African Union*. 2013. https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf (accessed: 29.06.2025)

[44] Regional value chains in Africa for better global integration. *OECD*. 2020. https://www.oecd.org/coronavirus/en/ data-insights/regional-value-chains-in-africa-for-better-global-integration (accessed: 10.03.2024)

[45] Basak S. As Africa seeks greater pharma self-reliance, think generics. *World Bank Blogs*. 2022. https://blogs.worldbank.org/health/africa-seeks-greater-pharma-self-reliance-think-generics (accessed: 29.06.2025)

[46] Africa's financial self-reliance is not self-isolation, but a commitment to base development on own resources: Ministers of Finance. *African Union*. 22.06.2022. https://au.int/en/pressreleases/20220622/africas-financial-self-reliance-not-self-isolation-commitment-base (accessed: 29.06.2025)

[47] Africa's journey to self-sufficiency: The power of intra-Africa trade. *AGRA*. 2023. https://agra.org/news/daniel- njiwa-africas-journey-to-self-sufficiency-the-power-of-intra-africa-trade/ (accessed: 29.06.2025)

critically dependent on extraregional players [Gebreselassie et al. 2023] and their respective financing, technology, competences, and knowledge. In general, this is a consequence of the structural power of Western countries—over security (including control over energy supply routes), production (including the IEA), finance, and knowledge [Strange 1994]. In this context, the maximalist interpretation of self-reliance seems inappropriate.

At the same time, a softer alternative proposed by the Norwegian researcher Johann Galtung, *collective self-reliance* [Galtung 1977], is available, which implies closer cooperation between the countries of the Global South. This interpretation widens the window for Russia and other non-Western countries to participate in ensuring the energy sovereignty of African countries.

In the case of energy, such a collective approach should be expressed in the intensification of regional energy cooperation among African countries—*energy regionalization* or *sub-regionalization*. This will contribute not only to energy security but also to the creation of additional large markets within the region. Given the high spatial fragmentation of energy systems, uneven distribution of resources, and structural asymmetry between energy exporting and importing countries, deepening interstate energy cooperation in Africa is of strategic importance. Regional integration will make it possible to optimize transport and energy infrastructure, justify the economic feasibility of implementing high-capacity projects, reduce costs, improve the reliability of supply, and stimulate investment in the energy sector. One of the promising areas may be the development of intra-regional electricity markets within the framework of the so-called energy pools [Sharova 2024: 535].

In addition, regional integration creates institutional prerequisites for the development of a coordinated policy in the field of energy regulation and tariffs, aimed primarily at increasing the consumption of African resources within the region. This process will require the gradual localization of production of the means of production while maintaining the same volume of production of manufactured goods (for the period of building of production capacities within Africa), which will require the expansion of imports of both energy carriers themselves and knowledge-intensive products and services necessary for Africa's energy sector development (including those from Russia).

Russia's interest may lie not only in exporting goods, technologies, services, and knowledge but also in promoting the development of domestic energy markets in Africa [Maslov et al. 2021]—because such development creates a natural alternative to exporting raw materials to world markets, which during crises destabilizes these markets—since the lack of large domestic markets and reserve systems in most countries forces exporters to dump goods when there is an oversupply[48]. At the same time, the development of domestic consumption, inter-country energy trade, and reserve systems in African countries may well lead to the fact that African consumption itself will absorb most of the energy production and stabilize world markets in the long term.

[48] Analysis: Nigerian crude struggling to clear as market share battle kicks off. *S&P Global*. 12.03.2020. https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/oil/031220-analysis-nigerian-crude- struggling-to-clear-as-market-share-battle-kicks-off (accessed: 29.06.2025)

It is important to emphasize that Africa's energy resources already largely support the development of non-Western economies: for example, African countries provide about 10% of oil, gas, coal, and petroleum product exports to India and China each year, so the latter may be interested in maintaining exports from Africa at the same level while domestic consumption stagnates. In this regard, there is a need for a common framework for cooperation that considers the interests of both African economies and their partners, who depend to varying degrees on African energy. Exporting countries with their own competences and technologies, as well as experience in balancing the export and consumption of energy resources, such as Russia, Iran, Saudi Arabia, the UAE, Algeria, and Egypt, can play an important role in such cooperation.

As a leading player in the global commodity markets, Russia is interested in developing the processing industry where raw materials are extracted. This manifests a natural commonality of long-term interests between Russia and African countries, which can become the basis for solving the problem of energy poverty and limited access to energy resources. In the case of Africa, processing energy resources for the countries' own needs may mean not only solving energy-related issues but also achieving more sustainable models of economic growth through the production of fertilizers, cement, polypropylene, and other products.

CONCLUSION

Russia-Africa energy cooperation, despite its long history and strategic potential, remains largely underconceptualized to date. The results of the study show that most key Russian strategies, including the Russian Energy Strategy until 2030, 2035, and even 2050, either mention Africa in a fragmented manner or exclusively in the context of coal exports. This is somewhat at odds with the content of bilateral declarations and statements at Russia-Africa Summits, where energy is considered in a broader and more meaningful context [Andreeva et al. 2023]. A systematic analysis of Russia's strategic and foreign policy documents indicates a certain divergence between foreign policy objectives and sectoral approaches to energy cooperation with African countries. While the Energy Strategy is primarily oriented towards a trade-focused model, summit declarations and the Foreign Policy Concept outline a broader and more comprehensive vision of partnership. This opens opportunities for further updating and complementing strategic documents, as well as for discussing the prospects of cooperation with the active involvement of African experts and scholars.

One of the central points of the article is the analysis of competitive and cooperative elements in Russia's energy relations with African countries. On the one hand, Russia and some African states may indeed compete for markets, especially for gas, but such risks can be managed. An example is the history of Russia's energy relations with Algeria, where, despite potential competition, the parties managed to build coordination mechanisms within the framework of the GECF and OPEC+, as well as to establish practical cooperation at the level of state corporations. On the other hand, in most cases, competition between Russia and Africa in energy markets is either minimal or is driven by Western transnational corporations controlling export flows from Africa. This allows us to rethink the idea of a confrontational approach and consider opportunities for cooperation.

It is in overcoming institutional constraints—first, the dominance of transnational companies, a lack of state control over export infrastructure, and weakness of the regulatory and technological framework—that one of the main objectives of cooperation may lie. The article shows that energy cooperation should not be limited to the supply of raw materials or equipment and requires a deeper elaboration of objectives, formats, and conceptual bases. Special attention is paid to the concepts of energy security, energy sovereignty, and self-reliance as reflecting not only Russia's interests but also the approaches of African states.

Russia's participation in the creation of regional energy clusters, cross-border infrastructure, and the localization of production facilities and personnel training can contribute to a more sustainable energy architecture on the continent. Attention should be paid to the potential of the energy sector regionalization—the development of regional and sub-regional energy markets within Africa, which is especially important given the highly fragmented nature of African energy systems and uneven distribution of resources. Russia, in its turn, can act not only as an energy supplier but also as a technological and investment partner, contributing to the development of energy infrastructure and competences.

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КОНЦЕПТУАЛЬНЫЕ ОСНОВЫ РОССИЙСКО-АФРИКАНСКОГО СОТРУДНИЧЕСТВА В СФЕРЕ ЭНЕРГЕТИКИ

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Аннотация. Энергетика – одно из ключевых направлений российско-африканских отношений наряду с военно-техническим, продовольственным и промышленным сектором. За последние три десятилетия российские компании накопили значительный опыт в энергетическом секторе стран Африки, реализовав проекты по добыче полезных ископаемых, строительству инфраструктуры, поставкам топлива и продвижению российских атомных технологий. Однако стремительное усложнение международных энергетических связей, трансформация глобальных режимов и рост значения незападных

институтов требуют осмысления и корректировки концептуальных основ этого взаимодействия.

Цель статьи – концептуализация энергетического измерения российско-африканского партнерства, оценка тех доктринальных и нормативных условий, в которых это сотрудничество разворачивается. В статье анализируются теоретические и доктринальные рамки российско-африканского энергетического партнерства, его институциональное оформление и взаимосвязь с категориями энергетической безопасности и суверенитета. Особое внимание уделяется роли концепции опоры на собственные силы (*self-reliance*), традиционно значимой для политической мысли стран Африки, и ее сопряженности с российским подходом к энергетическому взаимодействию. Проанализированы не только потенциал взаимозависимости, но и конкурентные элементы в отношениях между Россией и африканскими экспортерами энергоресурсов. Системный анализ текстов стратегических и внешнеполитических документов Российской Федерации позволил выявить некоторую рассинхронизацию между внешнеполитическим и отраслевым подходами к энергетике на африканском направлении. Автор приходит к выводу, что в создании региональных энергетических кластеров, трансграничной инфраструктуры, локализации производств и подготовке кадров, а также в преодолении институциональных ограничений – в первую очередь, доминирования транснациональных компаний (ТНК), недостатка государственного контроля над экспортной инфраструктурой, слабости регуляторной и технологической базы – могут заключаться основные цели двустороннего сотрудничества.

Ключевые слова: российско-африканское сотрудничество; энергетическая безопасность; опора на собственные силы; энергетическая стратегия России; регионализация

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HUMAN CAPITAL

Research article

HEALTHCARE IN SOUTH AFRICA: WHAT DETERMINES ACCESS TO MEDICAL SERVICES

© 2025 E.S. Bakhmeteva, A.K. Morozkina

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Abstract. This study investigates disparities in access to healthcare in South Africa. The first part of the study provides a detailed review of the existing literature, which highlights various demographic and socio-economic factors of access to healthcare. However, previous works on South Africa are based on surveys prior to 2012 and do not account for recent changes, including the shock caused by the COVID-19 pandemic and the worsening energy crisis in South Africa in 2022–2024. This study includes data from General Household Surveys of South Africa from 2002 to 2024. Factors such as gender and race, education level, place of residence (province and city/village), and income level are considered. The study presents the main results for assessing the physical accessibility of healthcare. Overall, there is a positive trend, although the values of 2024 still reflect the shock of the pandemic and the energy crisis, showing worse results than in 2019. The study also presents the assessment for inequality in financial affordability of healthcare. Socio-economic factors (race, education, and income level) have a much greater impact on financial accessibility. Comparison with previous literature shows that in 2024, the healthcare access landscape in South Africa remained largely similar to the situation in 2012: the same population groups remained vulnerable (black Africans, poor people, rural residents, and people with low education level), and the level of inequality in financial access to medicine remained high.

Keywords: South Africa, inequality, healthcare, physical accessibility and financial affordability, income level, education level, racial discrimination

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INTRODUCTION

Modern economic theories increasingly recognize the importance of human capital development, with healthcare systems serving as a crucial mechanism for its formation and sustenance. The Millennium Development Goals, followed by the Sustainable Development Goals, have provided a framework for countries in the 21st century, underscoring, in particular, the necessity of developing this sector[1]. African states also identify their own set of priorities within the framework of "Agenda 2063," a strategy for the sustainable development of African countries, cooperation among the countries of the continent, and the strengthening of Africa's position on the global stage[2]. Addressing inequality in healthcare is a priority for many nations, including the Republic of South Africa. For South Africa, characterized by the highest level of inequality globally (with a Gini Index of 63% according to a 2025 survey[3]), the issue of access to various social services, such as education, social support, and, of course, healthcare, is particularly pressing.

An important factor contributing to contemporary inequality is the legacy of the apartheid regime, which existed until 1993 [Maphumulo, Bhengu 2019; Burger, Christian 2020]. After the abolition of apartheid, the state undertook measures that had a dual nature. On the one hand, the policy of preferential hiring of Black and Coloured individuals, initially aimed at overcoming racial inequality, led to a shortage of qualified personnel in hospitals due to the limited number of Black individuals with sufficient education in the country [Filatova 2016]. On the other hand, some progress was made in increasing the accessibility of healthcare for vulnerable social groups: racial segregation was abolished, and a new legislative framework was created—in modern South Africa, the healthcare sector is regulated by the Constitution of the Republic of South Africa (1994)[4] and the National Health Act (2003)[5], which proclaim the right of every citizen to receive medical care. In 1994–1996, free primary healthcare was introduced in state clinics for all citizens in several stages [Leatt, Shung-King, Monson 2006]. During the first quarter of the 21st century, a gradual three-stage preparation for the introduction of a national health insurance system took place, and in 2024, the law establishing it was finally signed[6].

Despite these legislative measures, the level of inequality in access to healthcare in South Africa as of 2024 remains significant for several reasons: a high level of economic inequality, differences in the quality of services between state and private clinics, persistent racial inequality. The main goal of this study is to identify the factors

[1] The Sustainable Development Goals (SDGs) are a global program of the United Nations (UN), adopted at the UN General Assembly in 2015 within the framework of the "2030 Agenda," declared as creating conditions for the prosperity of humanity and the preservation of the planet for future generations. The SDGs replaced the Millennium Development Goals (MDGs). The 17 Goals. *United Nations: Department of Economic and Social Affairs.* https://sdgs.un.org/goals (accessed: 10.05.2025)

[2] Agenda 2063: The Africa We Want. *African Union.* https://au.int/en/agenda2063/overview (accessed: 03.08.2025)

[3] Gini Coefficient by Country 2025. *World Population Review.* 2025. https://worldpopulationreview.com/country-rankings/gini-coefficient-by-country (accessed: 10.05.2025)

[4] The Constitution of the Republic of South Africa. *Parliament of the Republic of South Africa.* 1996. https://www.parliament.gov.za/storage/app/media/Acts/constitution/SAConstitution.pdf (accessed: 06.05.2025)

[5] The Presidency. № 61 of 2003: National Health Act, 2004. *Government Gazette Republic of South Africa. South African Government*. 23.07.2004. https://www.gov.za/sites/default/files/gcis_document/201409/a61-03.pdf. (accessed: 06.05.2025)

[6] The Presidency. Act № 20 of 2023: National Health Insurance Act, 2023. *Government Gazette Republic of South Africa. South African Government.* 16.05.2024. https://www.gov.za/sites/default/files/gcis_document/202405/50664nathealthinsuranceact202023.pdf (accessed: 06.05.2025)

influencing inequality in healthcare accessibility in South Africa during the first quarter of the 21st century.

Inequality in healthcare in South Africa is primarily examined in the works of South African researchers using data collected before 2012. The scientific novelty of the present study lies in the use of new data from 2024, which contains information on the impact of key events of recent years on inequality in access to healthcare in South Africa.

LITERATURE REVIEW

The problem of inequality in healthcare accessibility among different social groups, identified by demographic, socioeconomic, or geographic characteristics, exists to some extent in all countries worldwide, and South Africa, which is examined in this study, is not an exception. One of the most important factors in healthcare inequality for South Africa is racial disparity (this factor is mentioned in several studies, for example, [Ohonba, Kirsten, Mkhize 2023]). This factor is also significant for healthcare in middle-income countries, such as Brazil [Constante et al. 2021; Bruce et al. 2020] and Mexico [Serván-Mori et al. 2025].

The impact of income inequality on inequality in healthcare affordability is characteristic of many countries: for example, this problem is relevant for Brazil [dos Santos et al. 2019] and Indonesia [Mulyanto et al. 2019]. In South Africa, inequality in the financial affordability of healthcare is also a pressing issue [Ohonba, Kirsten, Mkhize 2023]. One of the possible reasons for this is the absence of a universal public health insurance system in South Africa until 2024 (the law establishing it was signed by the country's president only in 2024[7]). In some countries, the problem of the absence of a unified national health insurance system or insufficient insurance coverage is relevant: for example, the public health insurance system is highly fragmented in India, with separate programs that do not cover the entire population [Dubey et al. 2023].

In many countries, the problem of unequal access to healthcare for urban and rural residents is also relevant: access to healthcare tends to be higher in cities than in rural areas. This situation is characteristic of India [Banerjee 2021], some African countries [Samuel, Zewotir, North 2021], China [Ma et al. 2021], and Indonesia [Sambodo et al. 2021]. In South Africa, this problem also exists: in this country, the problem of a shortage of human resources and equipment in rural areas is more pressing than in urban areas [Mvikweni 2024].

A separate body of research is dedicated to econometric studies based on microdata (household surveys, individual surveys) to identify the links between access to medical services and individual characteristics (such an approach is used, for example, in the article by R. Burger and C. Christian [Burger, Christian 2020] for South Africa and A.D. Azad [Azad et al. 2020] for Malawi). Various statistical tests are also conducted to identify causal relationships; for example, in the article by R. Mutwali and E. Ross [Mutwali, Ross 2019], the chi-square test and Cramer's V test were used to determine the relationship between access to healthcare and its various factors.

If a study is based on individual survey data, variables such as the level of education [Bago d'Uva et al. 2011; Ohonba, Kirsten, Mkhize 2023], income [Larson, Halfon 2009; Ohonba Kirsten, Mkhize 2023], and place of residence (region of the country/urban or

[7] The Presidency. Act № 20 of 2023: National Health Insurance Act, 2023. *Government Gazette Republic of South Africa. South African Government.* 16.05.2024. https://www.gov.za/sites/default/files/gcis_document/202405/50664nathealthinsuranceact202023.pdf (accessed: 06.05.2025).

rural area) [Ohonba, Kirsten, Mkhize 2023] may be included in the models. In the case of using household survey data, various variables that reflect their well-being are of interest. These variables may include income and wealth levels, as well as housing characteristics and the presence or absence of specific assets—the methods for constructing a well-being variable are described in the work of O. O'Donnell [O'Donnell et al. 2008], examples of using this index in studies of inequality in healthcare accessibility in South Africa are found in the articles by F. Booysen and T. Gordon [Booysen, Gordon 2020] and B. Harris [Harris et al. 2011].

Various approaches are also used to determine an indicator of healthcare accessibility. The concept of assessing healthcare accessibility in three dimensions is widespread: physical accessibility, financial affordability and quality of services [Gelders et al. 2006; Wallace, MacEntee 2012; Balharith et al. 2023; Burger, Christian 2020; Harris et al. 2011; Ohonba, Kirsten, Mkhize 2023]. A study may include all three dimensions, or some individual ones. To measure physical accessibility, a numerical or binary variable is used, constructed on the basis of the distance to the nearest medical facility [McLaren et al. 2014] or the travel time to it [Burger, Christian 2020]. Variables of financial accessibility and service quality are often determined based on responses to direct questions included in a questionnaire for individuals or households, for example, questions about the fact and reasons for refusing to see a doctor in case of illness, as in [Ohonba, Kirsten, Mkhize 2023].

FEATURES OF THE SOUTH AFRICAN HEALTHCARE SYSTEM AND MAJOR DEVELOPMENT TRENDS IN THE FIRST QUARTER OF THE 21ST CENTURY

As in most countries worldwide, South Africa has both public and private healthcare systems. The majority of the South African population uses public clinics (80.4%, according to the South African General Household Survey of 2024), but despite this, public hospitals in South Africa are more likely than private ones to suffer from shortcomings such as a rather modest range of services offered, a shortage of personnel, excessive workload, inefficient management, and a lack of equipment and materials [Scheffler et al. 2015].

In addition to scientific medicine, traditional medicine exists in African countries. In many countries of the continent, traditional medical practices are officially permitted, legally regulated, and supported by the state, as traditional healers can successfully treat some diseases [Grishina 2024]. For example, according to proponents of traditional medicine, traditional practices can be effective in treating diseases common in Africa, such as cold, influenza, typhoid fever, malaria, etc. [Adu-Gyamfi et al. 2024]. In 1982, South Africa passed the Health Professions Act, which contained a provision on the legal status of physicians who use traditional practices [Grishina 2024]. In 2007, the Traditional Health Practitioners Act was adopted, which defined the modern institutional structure of traditional medicine in South Africa: the purpose of this law was to create an organization responsible for certifying and training physicians specializing in traditional medicine and for protecting the interests of their patients. Traditional medicine is studied in a number of educational programs at universities in South Africa [McFarlane 2015]; the University of Eswatini has an Institute for Research in Traditional Medicine, Medicinal and Indigenous Food Plants[8].

[8] University of Eswatini / Eswatini Institute for Research in Traditional Medicine, Medicinal and Indigenous Food Plants. *University of Eswatini*. https://www.uneswa.ac.sz/research/eirmip (accessed: 25.07.2025)

Previous studies indicate that traditional and scientific medicine interact in South Africa: traditional healers can provide assistance in cases where surgery is not required for treatment, explain the causes of illnesses to patients, and refer them to doctors in cases where the illness cannot be cured using traditional methods [Gracheva 2019]. Furthermore, the activities of traditional healers are particularly important in cases of physical or financial inaccessibility of scientific medicine. A negative consequence of the prevalence and official recognition of traditional medicine can be the spread of dangerous misconceptions. For example, some well-known traditional healers denied the need for antiretroviral therapy for the treatment of HIV infection [McFarlane 2015].

In the 21st century, the South African government implemented a number of programs aimed at improving access to healthcare. Government measures were quite diverse and included increasing the number of hospitals, supporting low-income population groups, transitioning to a national health insurance system, combating HIV infection and AIDS.

One of the first measures was the introduction of free primary care for all citizens and free inpatient treatment for a number of vulnerable population groups. These measures were implemented in 1996–2003 [Leatt, Shung-King, Monson 2006]. Programs aimed at increasing the availability of quality medical services were also launched: the Hospital Revitalisation Programme (since 2003)[9] and the Primary Healthcare Re-engineering Programme (since 2009) [Naledi, Barron, Schneider 2011]. Prior to the implementation of a national health insurance system in 2024, the government supplemented citizen access to medical services through financial assistance. A notable example of this intervention was the establishment of the Government Employees Medical Scheme (GEMS). This scheme operates on a principle analogous to that of private medical aid schemes in South Africa, whereby member contributions are pooled to finance the provision of medical services. However, contribution rates to the public scheme are set at a lower level compared to those of private schemes[10]. Furthermore, prior to 2024, the government also provided subsidies to citizens for the utilization of private hospital services[11].

One of the most significant recent interventions aimed at enhancing healthcare accessibility and reducing inequities in this sector has been the implementation of a national health insurance system. While the enabling legislation for this system was enacted in 2024, its development was preceded by numerous pilot projects. The implementation of national health insurance in South Africa was undertaken in three distinct phases. The initial phase, spanning 2012–2017, focused on improving primary healthcare systems, encompassing measures such as the establishment of working groups to coordinate healthcare services, the launch of health promotion programs for schoolchildren, the engagement of private practitioners in non-public hospitals to enhance service quality, and the implementation of electronic systems to optimize healthcare processes. The second phase of national health insurance implementation, conducted between 2017 and 2022, entailed the creation of necessary legislative

[9] The Presidency. Twenty-Year Review South Africa: 1994-2014 Background Paper: Health. *Department of Planning, Monitoring and Evaluation Republic of South Africa*. https://www.dpme.gov.za/publications/20%20Years%20Review/20%20Year%20Review%20Documents/20YR%20Health.pdf (accessed: 14.05.2025)

[10] Overview. *GEMS*. https://www.gems.gov.za/en/About-Gems/Overview (accessed: 10.07.2025)

[11] Department: Health Republic of South Africa. National Health Insurance: Healthcare for All South Africans. Understanding National Health Insurance. *Health Systems Trust*. https://www.hst.org.za/publications/NonHST%20Publications/Booklet%20-%20Understanding%20National%20Health%20Insurance.pdf (accessed: 10.07.2025)

frameworks and the provision of medical services to socially vulnerable populations. The third phase of the program involved the formal enactment of the National Health Insurance Act and the commencement of the new system's operations (*Table* 1)[12].

Table 1. **Key Phases of National Health Insurance System Implementation in South Africa**

Stages of the national health insurance system implementation project	Major goals
Phase 1 (2012–2017)	The execution of pilot projects and assessment of their outcomes; enhancement of the primary healthcare system
Phase 2 (2017–2022)	Development of the legislative framework; provision of support to socially vulnerable segments of the population in accessing healthcare services
Phase 3 (2022–2026)	Full implementation of the national health insurance system

Source: Authors' compilation based on data provided by the Government of South Africa. Evaluation of the Phase 1 Implementation of the Interventions in the National Health Insurance Pilot Districts in South Africa. *The Government of South Africa*. 2019. https://www.health.gov.za/wp-content/uploads/2020/11/nhi-evaluation_evaluation-report.pdf (accessed: 10.07.2025)

The South African government justifies the necessity of establishing a new healthcare system by citing significant imbalances that lead to inequitable access to medical care. According to data from the South African Department of Science, Technology and Innovation, only 16% of South African citizens utilize private healthcare facilities, while these facilities employ two-thirds of all physicians. The national health insurance system in South Africa stipulates that every citizen is entitled to state-funded coverage for specified medical services at public or licensed private hospitals. This does not preclude the option of acquiring private health insurance or membership in a private medical aid scheme. The system is financed through mandatory contributions from all citizens. State-funded insurance covers medical services such as primary healthcare, inpatient treatment, palliative care, rehabilitation, mental health treatment, emergency care, and patient transportation[13].

An important dimension in the development of South Africa's healthcare system has been the fight against HIV infection. The steady increase in the proportion of HIV-positive individuals during the late 20th and early 21st centuries posed a significant challenge to the South African healthcare system. According to World Bank data, the proportion of the population infected with HIV increased from 1.3% to 18.8% between 1990 and 2018; notably, this figure had already reached a substantial level of 13% by the year 2000, ranking South Africa third globally at that time[14]. Inequitable access to medical care exacerbates this problem: when antiretroviral therapy is available only to a limited segment of the population, individuals who do not receive treatment remain potential vectors of HIV transmission and are at elevated risk of developing AIDS.

[12] Evaluation of the Phase 1 Implementation of the Interventions in the National Health Insurance Pilot Districts in South Africa. *The Government of South Africa*. 2019. https://www.health.gov.za/wp-content/uploads/2020/11/nhi-evaluation_evaluation-report.pdf (accessed: 10.07.2025)

[13] National Health Insurance. Department of Science, Technology and Innovation of the Republic of South Africa. 2023. https://dsti.gov.za/index.php/media-room/latest-news/4099-national-health-insurance (accessed: 10.07.2025)

[14] Prevalence of HIV, total (% of population ages 15–49). *The World Bank*. https://data.worldbank.org/indicator/SH.DYN.AIDS.ZS?view=map (accessed: 25.07.2025)

To address the issue of unequal access to HIV therapy, the government has implemented a range of interventions. Since 2004, free HIV treatment has been available in South African public hospitals [Burger et al. 2022], and by March 2005, antiretroviral therapy had become accessible in all provinces of South Africa [Simelela et al. 2015]. Nevertheless, the period from 2000 to 2005 remained catastrophic, with over 330,000 deaths attributed to AIDS during this time, as the government was unable to implement a high-quality antiretroviral therapy program [Delobelle 2013]. In 2010–2011, large-scale campaigns were organized to conduct mass HIV testing and to train healthcare workers in the administration of antiretroviral therapy [Simelela et al. 2015]. Furthermore, the United States extended its President's Emergency Plan for AIDS Relief (PEPFAR) to South Africa[15].

Despite these interventions, progress in reducing the proportion of HIV-infected individuals within the general population has been observed only after 2018 (decreasing from 18.8% in 2018 to 17.8% in 2022). However, as of 2022, South Africa still exhibits the highest prevalence of HIV carriers globally[16]. Nevertheless, the South African government reports certain successes in addressing this challenge: 94% of South African citizens infected with HIV are aware of their status; 77% of individuals aware of their HIV-positive status are receiving antiretroviral therapy; and 92% of patients undergoing therapy have achieved viral suppression[17].

In 2025, South Africa faced a new challenge in its HIV/AIDS response: the United States discontinued funding for the President's Emergency Plan for AIDS Relief (PEPFAR) and the disbursement of research grants from the National Institutes of Health, which resulted in financial constraints for organizations providing HIV/AIDS therapy (e.g., MatCH, Anova) and the layoff of numerous personnel employed in this sector. Consequently, the accessibility of antiretroviral therapy within the country has significantly decreased. According to expert estimates, a lack of decisive action by the South African government in this situation will lead to extremely negative consequences, with the number of HIV-related deaths projected to increase by 56,000–65,000 compared to a scenario in which U.S. funding is maintained[18].

DATA DESCRIPTION AND RESEARCH METHODS

This study utilizes data from the South African annual General Household Survey (GHS) for 2002[19], 2005[20], 2012[21], 2019[22], 2020[23], 2023[24] and 2024[25]. The selection of the

[15] Where We Work – PEPFAR. U.S. Department of State. https://www.state.gov/where-we-work-pepfar (accessed: 25.07.2025)

[16] Prevalence of HIV, total (% of population ages 15-49). *The World Bank*. https://data.worldbank.org/indicator/SH.DYN.AIDS.ZS?view=map (accessed: 25.07.2025)

[17] Mokale S. Fighting HIV and AIDS in South Africa. *South African Government*. 29.02.2024. https://www.gov.za/blog/fighting-hiv-and-aids-south-africa#:~:text=In%20South%20Africa%2C%20we%20have,have%20come%20in%20tackling%20HIV. (accessed: 25.07.2025)

[18] Venter F. South Africa's HIV programme is collapsing. *University of the Witwatersrand*. 08.05.2025. https://www.wits.ac.za/news/latest-news/opinion/2025/2025-05/south-africas-hiv-programme-is-collapsing.html (accessed: 25.07.2025)

[19] Statistics South Africa. General Household Survey 2002. Version 1.3. Pretoria: Statistics South Africa. 2017. Cape Town. *DataFirst*. 2020. https://doi.org/10.25828/d2xh-m039

[20] Statistics South Africa. General Household Survey 2005. Version 1.4. Pretoria. Statistics South Africa. 2017. Cape Town. *DataFirst*. 2020. https://doi.org/10.25828/0agk-ne11

[21] Statistics South Africa. General Household Survey 2012. Version 2.1. Pretoria: Statistics South Africa. 2017. Cape Town. *DataFirst*. 2020. https://doi.org/10.25828/jpfy-2g79

study period is justified by data availability (the University of Cape Town provides survey data for 2002–2024) and by significant healthcare-related events that occurred in South Africa. Specifically, the National Health Act was enacted in 2003; data from 2002 reflect the situation immediately preceding its enactment, while data from 2005 capture its initial potential effects. Data from 2012 capture longer-term effects of the National Health Act, as well as the early results of several government programs (Government's Programme of Action 2009, Hospital Revitalisation Programme, Primary Healthcare Re-engineering). The 2019 and 2020 data reflect the situation before and during the coronavirus pandemic, respectively; and the 2024 data reflect the situation several years after the pandemic and the exacerbation of the energy crisis in 2022–2023.

The South African General Household Surveys present respondents with a range of questions designed to identify factors contributing to inequality, including, for example, demographic characteristics (gender, age, race, presence of chronic illnesses or disabilities, etc.), socioeconomic status (income, employment, ownership of specific assets, housing conditions, health insurance coverage, etc.), life satisfaction (including subjective assessments of health status and happiness) etc. Statistics South Africa compiles the microdata from the survey results, and the University of Cape Town provides access to these data upon request. The General Household Survey data are utilized in several studies concerning healthcare in South Africa, as the survey sample is considered representative of the entire South African population [Burger, Christian 2020; Mutwali, Ross 2019]. Responses from respondents under the age of 18, as well as from citizens who declined to provide information relevant to the research questions, were excluded from the sample. All calculations were performed using the Python programming language and the Jupyter Notebook environment (Anaconda).

In this study, respondents from all considered surveys were divided into groups based on several characteristics: gender, race, province of residence, urban or rural residence, educational attainment. For the surveys conducted in 2012, 2019, 2020 and 2024, population quartiles based on per capita household income were also delineated; the delineation of quartiles was not feasible for 2002 and 2005 due to the absence of household income data in the surveys for those years.

Healthcare accessibility was examined along two dimensions: physical and financial. Physical availability was deemed satisfactory for an individual if he or she spent no more than 14 minutes traveling to a healthcare facility. Private health insurance coverage was used as an indicator of financial affordability. The measurement of the level of and factors contributing to inequality in physical healthcare availability was not conducted on the 2020 survey data, as the survey questionnaire lacked questions regarding travel time to healthcare facilities.

Descriptive statistics (the proportion of the population with satisfactory healthcare accessibility within each group) were used to assess the level of inequality in healthcare accessibility across various dimensions and its primary determinants. For 2012, 2019, 2020, and 2024, the concentration index was also calculated, employing per capita

[22] Statistics South Africa. General Household Survey 2019. Version 1. Pretoria: Statistics SA. 2019. Cape Town: *DataFirst*. 2019. https://doi.org/10.25828/vtvj-pv21

[23] Statistics South Africa. General Household Survey 2020. Version 1. Pretoria: Statistics SA. 2020. Cape Town: *DataFirst*. 2021. https://doi.org/10.25828/pjzq-hn39

[24] Statistics South Africa. General Household Survey 2023 [dataset]. Version 1. Pretoria: Statistics SA [producer], 2023. Cape Town: DataFirst [distributor], 2024. DOI: https://doi.org/10.25828/9khq-h317

[25] Statistics South Africa. General Household Survey 2024. Version 1. Pretoria: Statistics SA. 2025. Cape Town: *DataFirst*. 2025. https://doi.org/10.25828/rx6h-3r34

household income as the welfare variable. The concentration index is a metric commonly applied in research on healthcare inequality. Its calculation methodology is analogous to that of the Gini index: to measure the concentration index, a coordinate system is constructed, with the horizontal axis representing the cumulative proportion of the population sorted by increasing welfare variable, and the vertical axis representing the cumulative proportion of a binary healthcare accessibility variable. The resulting curve is termed the concentration curve [Gordon et al. 2020].

FACTORS OF INEQUALITY IN PHYSICAL AVAILABILITY OF HEALTHCARE

According to World Bank data, South Africa maintains the lowest life expectancy at birth among the BRICS nations, registering at 66.14 years in 2023. This metric experienced a notable contraction during the period of exogenous shock of 2020, receding from over 66 years in 2019 to approximately 62 years in 2021[26]. While South Africa's governmental and overall healthcare expenditure is relatively elevated, exceeding the average for upper-middle-income economies (the category to which South Africa is classified[27]), there is evidence to suggest resource allocation inefficiencies and inequities.

By 2024, improvements had been achieved in the area of physical healthcare availability: while in 2002, 21.2% of the population spent up to 15 minutes traveling to a healthcare facility and 71.8% spent up to 30 minutes, these figures had increased to 36% and 83.8%, respectively, by 2024 (*Table* 2). These observed improvements may plausibly be attributed to governmental policies implemented to mitigate healthcare inequality. Since 1994, South Africa has undertaken the construction of numerous new hospitals, particularly in rural areas [Gaede, Versteeg 2011]. Complementing this expansion, the Hospital Revitalization Program, initiated in 2003–2004, facilitated the comprehensive renovation of 18 medical facilities by 2014[28]: this may have contributed to the increase in physical healthcare availability, as citizens residing near renovated hospitals may have reoriented their healthcare-seeking behavior towards these facilities, even if they had previously preferred to visit more distant hospitals due to their superior equipment and resources.

In 2009, a primary healthcare re-engineering program was initiated, aiming to achieve a more efficient allocation of human resources within this sector: the creation of new qualified teams to deliver primary care, with clearly defined job responsibilities and accountability, as well as systems to support these teams. Each team serves citizens residing within a specific geographic area [Naledi, Barron, Schneider 2011]. Collectively, these measures may have contributed to improvements in physical healthcare availability in South Africa. Unfortunately, due to the absence of relevant data in the 2020 and 2021 surveys, it is not possible to specifically assess the impact of the COVID-19 pandemic; however, it can be posited that, in conjunction with other factors (the exacerbation of the energy crisis), the excessive strain on the healthcare system led to a negative trend.

[26] Life Expectancy at Birth, Total (Years) - South Africa. *The World Bank.* 2023. https://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=ZA (accessed: 24.06.2025)

[27] The Global Health Expenditure Database. *World Health Organization.* 2025. https://apps.who.int/nha/database. (accessed: 24.06.2025)

[28] The Presidency. Twenty-Year Review South Africa: 1994-2014 Background Paper: Health. *Department of Planning, Monitoring and Evaluation Republic of South Africa*. https://www.dpme.gov.za/publications/20%20Years%20Review/20%20Year%20Review%20Documents/20YR%20Health.pdf (accessed: 14.05.2025)

Table 2. **Physical Availability of Healthcare in South Africa, %**

Criterion / Year	2002	2005	2012	2019	2023	2024
Proportion of the population living within 0–14 minutes' travel time to a hospital	21.2	20.7	39.0	39.8	35.2	36.0
Proportion of the population living within 0–29 minutes' travel time to a hospital	71.8	66.9	79.8	83.8	82.2	83.8

Source: authors' calculations based on data from South African General Household Surveys for 2002, 2005, 2012, 2019, 2023 and 2024.

Table 3 presents statistics disaggregated by selected social groups. The data reveal that positive trends are evident across all groups, although governmental support measures were primarily targeted at improving accessibility for the most vulnerable populations (i.e., Black Africans and low-income individuals). However, a persistent consequence is the maintenance of inequality between groups; populations that held an advantage in 2002 continue to retain it with a substantial margin.

An examination of the dynamics of inequality in physical availability of healthcare in South Africa reveals the explicit aim of the implemented governmental policies: significant progress has been achieved only in reducing racial inequality. The gap between the most privileged and the most vulnerable groups based on these criteria (White Africans and Black Africans, respectively) has decreased by approximately 1.5 times. Regarding geographic factors of inequality, no significant positive trend is observed; the gap between urban and rural areas widened in 2024 compared to 2002. The disparity between provinces in 2024 was lower than in 2002 but higher than in 2012. The situation concerning inequality between individuals with differing incomes in 2024 is nearly the same as the situation in 2012 (see *Table* 3). The 2024 survey data does not demonstrate significant changes compared to 2023—it is likely that the adoption of the new law has not yet had a significant impact on the system as a whole.

Table 3. **Proportion of the Adult Population of South Africa Living Within 0–14 Minutes of a Hospital, %**

Criterion / Year	2002	2005	2012	2019	2023	2024
Sample size, persons	60,577	63,956	56,437	43,057	44,897	44,703
Urban/Rural						
Rural	13.1	10.1	20.4	20.0	19.0	18.7
Urban	26.9	28.8	50.0	50.9	44.6	45.7
Province						
Eastern Cape	19.2	19.5	29.6	33.6	27.5	27.1
Free State	25.4	25.0	45.6	38.3	37.0	34.9
Gauteng	22.4	21.0	48.3	55.1	48.9	49.1

Criterion / Year	2002	2005	2012	2019	2023	2024
KwaZulu-Natal	11.1	13.3	26.6	29.2	20.0	24.7
Limpopo	18.9	12.9	30.7	22.2	21.6	23.4
Mpumalanga	21.7	15.0	33.9	30.7	32.4	27.0
North West	17.6	22.2	37.0	37.9	31.4	29.7
Northern Cape	23.9	30.3	36.2	32.9	38.6	35.9
Western Cape	38.4	37.2	60.9	62.5	58.6	59.4
Population Group						
Black African	16.2	15.0	33.6	35.6	31.6	31.9
Coloured	34.5	35.8	54.1	56.0	54.1	57.2
Indian/Asian	19.4	38.7	57.6	57.4	41.9	52.8
White	43.0	43.6	62.2	61.9	55.9	57.7
Education						
No education/only primary education	15.4	14.6	27.7	27.6	25.0	24.8
Secondary education is not completed	19.6	19.9	35.4	35.8	30.7	31.6
Secondary education	23.4	23.8	41.1	41.1	36.1	36.5
Tertiary education	34.3	40.2	53.0	52.3	44.3	47.0
Income Quartile						
1	–	–	28.9	38.9	27.6	25.6
2	–	–	31.7	32.3	30.2	31.4
3	–	–	41.6	38.7	37.7	38.6
4	–	–	53.9	49.2	45.3	48.3

Source: authors' calculations based on data from South African General Household Surveys for 2002, 2005, 2012, 2019, 2023 and 2024.

To evaluate income-related inequality in physical healthcare availability, the concentration index was calculated for 2012, 2019, and 2024. The resulting index values were 0.14, 0.06, and 0.14, respectively. These figures suggest that, in 2019, physical healthcare accessibility was redistributed in favor of lower-income individuals; however, by 2024, the disparity between high- and low-income groups had reverted to the level observed in 2012. The relatively low, positive values of the concentration index indicate a limited degree of income-related inequality, while also suggesting that individuals in lower income brackets are, on average, more vulnerable than their higher-income counterparts.

An interesting effect is observed in 2019: the concentration curve in the lower deciles lies above the line of equality. This implies certain advantages for the poorest segments of the population. Undoubtedly, this is related to the second phase of the national healthcare insurance system implementation, which provided services for the most vulnerable populations. The graphs for 2012 and 2024 have a standard form, where the curve lies

below the line of absolute equality, meaning that better physical access to healthcare is available to the more affluent population (*Fig.* 1, 2, 3).

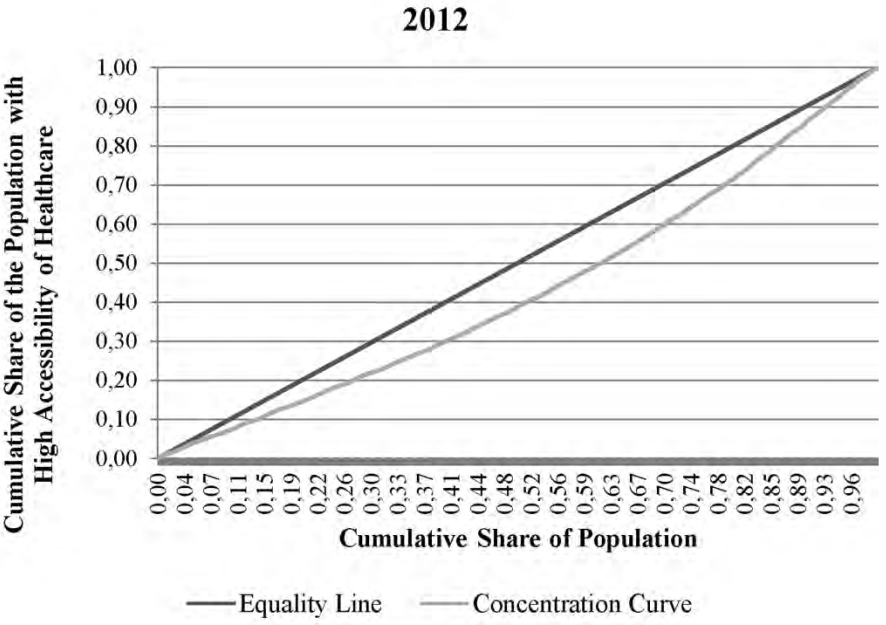

Fig. 1. **Concentration curve for physical availability of healthcare in South Africa in 2012 (accessibility criterion – 0–14 minutes travel time to a hospital).**
Source: Authors' calculations based on data from South African General Household Survey for 2012.

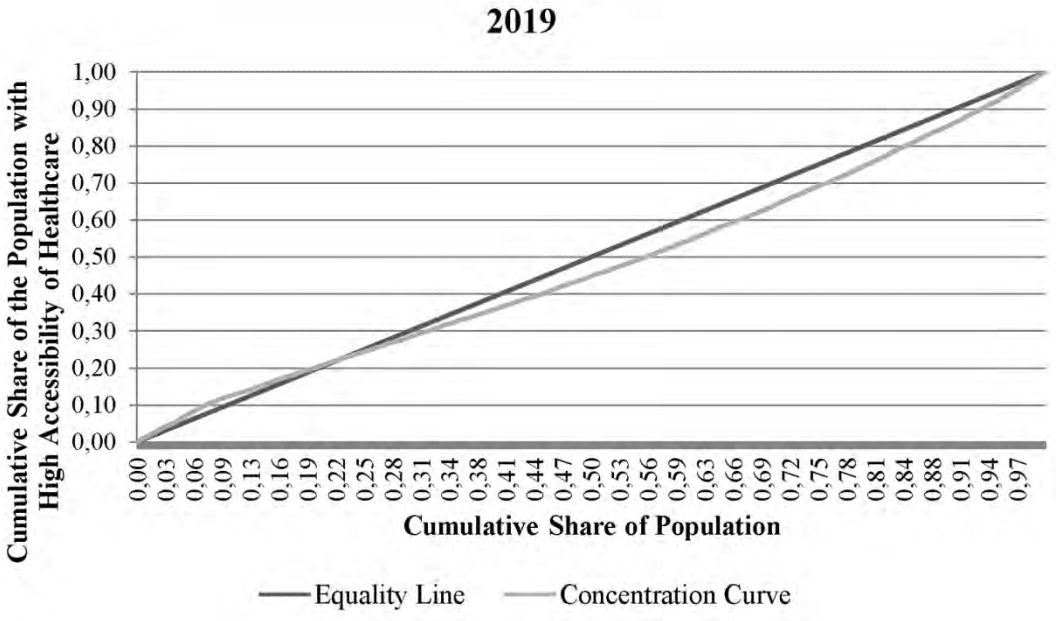

Fig. 2. **Concentration curve for physical availability of healthcare in South Africa in 2019 (accessibility criterion – 0–14 minutes travel time to a hospital).**
Source: authors' calculations based on data from South African General Household Survey for 2019.

Logistic regressions for physical accessibility using survey data from 2012, 2019, and 2024 demonstrate high marginal effects for the variable of urban residence: for an urban resident in 2012, 2019, and 2024, the probability of living within 0–14 minutes of a

hospital is higher by 24%, 22%, and 17%, respectively, than for a rural resident (*Table* 4), with a decrease in marginal effects observed over time. Furthermore, significant marginal effects are observed for the urbanized provinces of Western Cape (for all the years) and Gauteng (for 2019 and 2024). Racial variables are also significant in this model: being Asian, White African, or Coloured significantly increases the probability of physical availability of medicine compared to being part of the Black population. The marginal effects of income and education variables are mostly low; the models do not identify a statistically significant difference in physical accessibility to medicine for women and men.

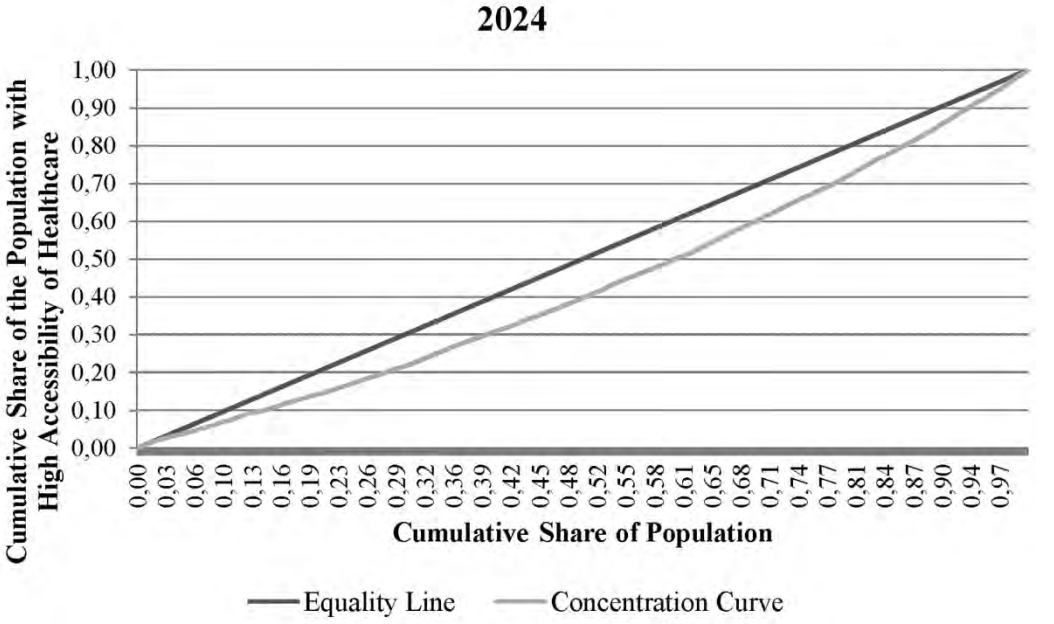

Fig. 3. **Concentration curve for physical availability of healthcare in South Africa in 2024 (accessibility criterion – 0–14 minutes travel time to a hospital).**
Source: authors' calculations based on data from South African General Household Survey for 2024.

Table 4. **Marginal effects of logistic regression for physical availability of healthcare (accessibility criterion – 0–14 minutes travel time to a hospital)**

Variable	2012	2019	2024
Urban	0.2411***	0.2161***	0.1688***
Male	0.0007	0.0025	0.0041
Free State	0.0682***	-0.0348***	0.0176
Gauteng	0.0387***	0.0788***	0.1085***
KwaZulu-Natal	-0.0698***	-0.0514***	-0.0237***
Limpopo	0.1323***	-0.0437***	0.0240**
Mpumalanga	0.0635***	-0.0094	0.0182*
North West	0.0884***	0.0529***	0.0461***
Northern Cape	-0.0269***	-0.0901***	-0.0054
Western Cape	0.1228***	0.1079***	0.1272***
Coloured	0.0516***	0.0654***	0.1129***
Indian/Asian	0.153***	0.1214***	0.1111***

Variable	2012	2019	2024
White	0.0971***	0.1036***	0.0887***
Secondary education is not completed	0.0263***	0.0307***	0.0247**
Secondary education	0.0381***	0.0465***	0.0369***
Tertiary education	0.0563***	0.0915***	0.0678***
2 quartile	0.0123**	-0.0028	0.0404***
3 quartile	0.0512***	0.0106*	0.0595***
4 quartile	0.0855***	0.0197***	0.0854***

Note: *** – marginal effect is significant at the 1% significance level;
** – marginal effect is significant at the 5% significance level;
* – marginal effect is significant at the 10% significance level.
Source: authors' calculations based on data from South African General Household Surveys for 2012, 2019, 2024.

Thus, the main factors of inequality in physical access to medical services are geographical and social factors: White Africans or Asian citizens from urban areas of more developed provinces generally have more convenient access to medical infrastructure. Overall progress is observed, especially in absolute terms; however, the difference between residents of different provinces and residents of urban and rural areas remains high.

Success in reducing racial disparities in the healthcare system is particularly evident. Inequality between the poor and the wealthy was also reduced by 2019, but in 2024, the situation deteriorated again, likely due to the escalation of the energy crisis.

FACTORS OF INEQUALITY IN FINANCIAL AFFORDABILITY OF HEALTHCARE

Analysis of financial healthcare affordability from 2002 to 2024 reveals a lack of clear positive progression; the proportion of the South African population possessing health insurance remained consistently below 20%. Furthermore, the indicator exhibited a decline in 2024 compared to 2002 (Table 5), with positive trends only evident during the 2005–2012 period. Existing literature attributes this to the activities of the Government Employees Medical Scheme (GEMS) [Willie, Maqbool 2023]. Notably, the observed trend indicates further deterioration despite the implementation of relevant measures, with the insured population decreasing from 14% in 2023 to 13.7% in 2024.

Table 5. **Dynamics of financial affordability of healthcare in South Africa, %**

Criterion/Year	2002	2005	2012	2019	2020	2023	2024
Proportion of the population with private health insurance / contributions to a medical scheme	16.0	12.3	17.6	16.0	12.3	14	13.7

Source: authors' calculations based on data from South African General Household Surveys for 2002, 2005, 2012, 2019, 2020, 2023, and 2024.

The structure of financial affordability of healthcare has hardly changed over the years examined (*Table* 6). An exception is the dynamics of healthcare affordability for different social groups, categorized by income level. In 2012, the proportion of people

with private health insurance increased as they moved from a less affluent group to a more affluent one; in the wealthiest group, more than half of the respondents had private insurance, while in other quartiles, the proportion of respondents with insurance was small. In 2019, the situation changed quite dramatically for the top and bottom quartiles: the proportion of people with insurance in the poorest group increased significantly, and in the wealthiest group, it decreased substantially. This, as with physical availability to healthcare, is related to measures taken in the second phase of reforms to support the most vulnerable populations (low-income citizens).

In 2020, the COVID-19 pandemic disproportionately impacted the most economically vulnerable segments of the population, a trend reflected in a substantial decline in the proportion of individuals contributing to medical schemes, falling from 15.5% to 2.5% between 2019 and 2020. In contrast, the health insurance status of the wealthiest population remained relatively stable. By 2024, the structure of access to fee-based medical services across various income groups had reverted to a configuration similar to that observed in 2012; however, the overall proportion of individuals possessing private insurance remained lower across all income quartiles. Notably, an analysis of the changes between 2023 and 2024 reveals multidirectional trends, exhibiting a reduction in racial inequality alongside a slight increase in inequality related to income level and type of settlement. Overall, these results suggest that the most recent phase of healthcare reforms has not yet translated into substantial improvements in the population's lived experience.

Across all years examined, and under any population disaggregation criterion employed, the proportion of individuals with health insurance or a medical aid scheme in the most privileged group (urban residents, White Africans, those with higher education or the highest income quartile) was consistently more than double that observed in the most vulnerable group (rural residents, Black Africans, those with elementary education or no formal education, and the lowest income quartile) (see *Table* 6).

Table 6. **Dynamics of financial affordability of healthcare in South Africa by specific population groups, %**

Criterion/Year	2002	2005	2012	2019	2020	2023	2024
Sample size. persons	60577	63956	56437	43057	21422	44897	44703
Urban/Rural							
Rural	6.4	5.0	5.8	6.7	5.4	5.4	5.6
Urban	22.6	17.8	24.5	21.1	17.6	18.9	18.3
Province							
Eastern Cape	12.7	11.4	13.3	11.1	9.7	10.3	10.5
Free State	15.7	12.9	16.9	15.0	12.4	13.3	11.8
Gauteng	24.7	19.7	24.1	19.9	14.7	17.8	16.9
KwaZulu-Natal	12.1	8.1	15.9	13.8	7.5	10.9	9.3
Limpopo	10.2	8.4	7.8	10.2	7.2	9.5	10.1
Mpumalanga	13.0	9.4	14.1	11.4	7.6	9.4	10.0
North West	14.4	11.0	15.1	16.2	18.4	12.2	11.9
Northern Cape	17.7	15.1	19.5	17.5	18.6	15.4	16.6
Western Cape	22.9	18.3	27.3	26.9	29.6	25.4	25.4

Criterion/Year	2002	2005	2012	2019	2020	2023	2024
Population Group							
Black African	8.5	6.6	10.2	9.9	8.1	8.9	9.1
Coloured	16.6	12.7	20.2	21.3	19.5	19.3	19.1
Indian/Asian	27.8	27.4	41.0	46.5	35.4	44.4	39.6
White	66.7	61.4	74.3	71.3	73.9	69.5	68.1
Education							
No education/only primary education	3.0	2.0	3.5	2.2	1.6	1.5	1.4
Secondary education is not completed	7.1	4.9	6.1	5.2	3.0	2.9	2.8
Secondary education	20.2	18.3	16.7	13.5	10.1	10.7	10.4
Tertiary education	61.0	69.8	63.5	57.7	47.6	51.4	49.9
Income Quartile							
1	–	–	2.9	15.5	2.5	1.4	2.0
2	–	–	3.1	3.9	1.9	2.9	2.4
3	–	–	12.2	6.7	5.7	7.5	8.1
4	–	–	52.0	38.0	39.0	43.8	42.2

Source: authors' calculations based on data from South African General Household Surveys for 2002, 2005, 2012, 2019, 2020, 2023, and 2024.

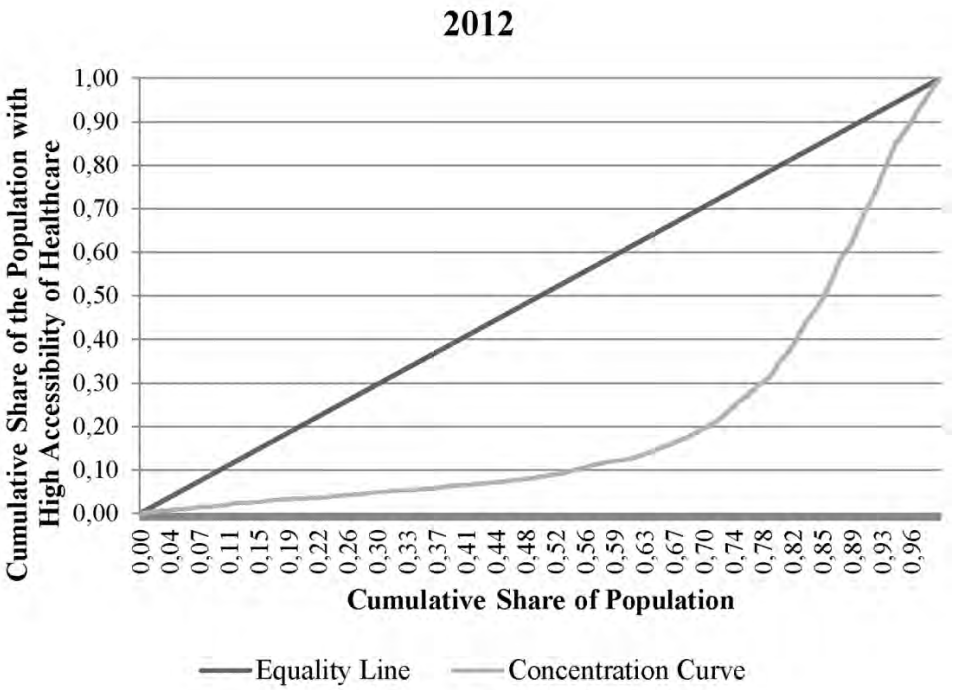

Fig. 4. **Concentration curve for financial affordability of healthcare in South Africa in 2012.**
Source: authors' calculations based on data from South African General Household Survey for 2012.

The concentration index for the financial affordability of healthcare is 0.59 (2012), 0.29 (2019), 0.63 (2020), and 0.64 (2024), indicating a rise in inequality in financial accessibility to healthcare. Interestingly, the concentration curves for financial

affordability of healthcare are much more convex than those for physical availability, signifying greater inequality. As with physical availability, there is a clear effect of government measures—the curve for 2019 and, in addition, the curve for 2020. That means that healthcare services were more accessible to citizens from the poorest segments of the population in these years than to members of the middle class (*Figs*. 4, 5, 6, 7). Indeed, the pilot project of national health insurance implied the payment of medical services for vulnerable groups of the population by the state. In 2024, South Africa returned to the situation that existed in 2012.

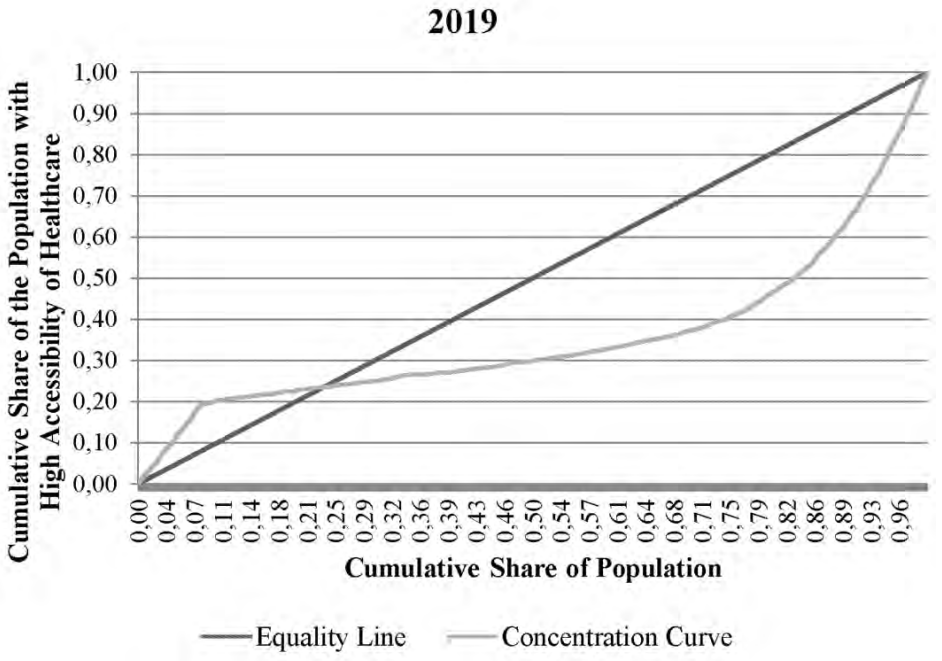

Fig. 5. **Concentration curve for financial affordability of healthcare in South Africa in 2019.**
Source: authors' calculations based on data from South African General Household Survey for 2019.

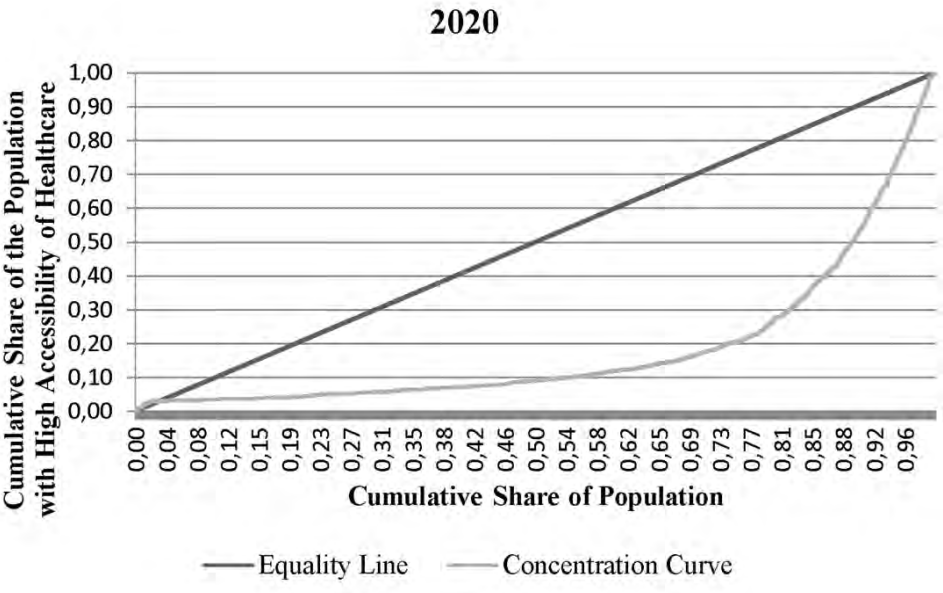

Fig. 6. **Concentration curve for financial affordability of healthcare in South Africa in 2020.**
Source: authors' calculations based on data from South African General Household Survey for 2020.

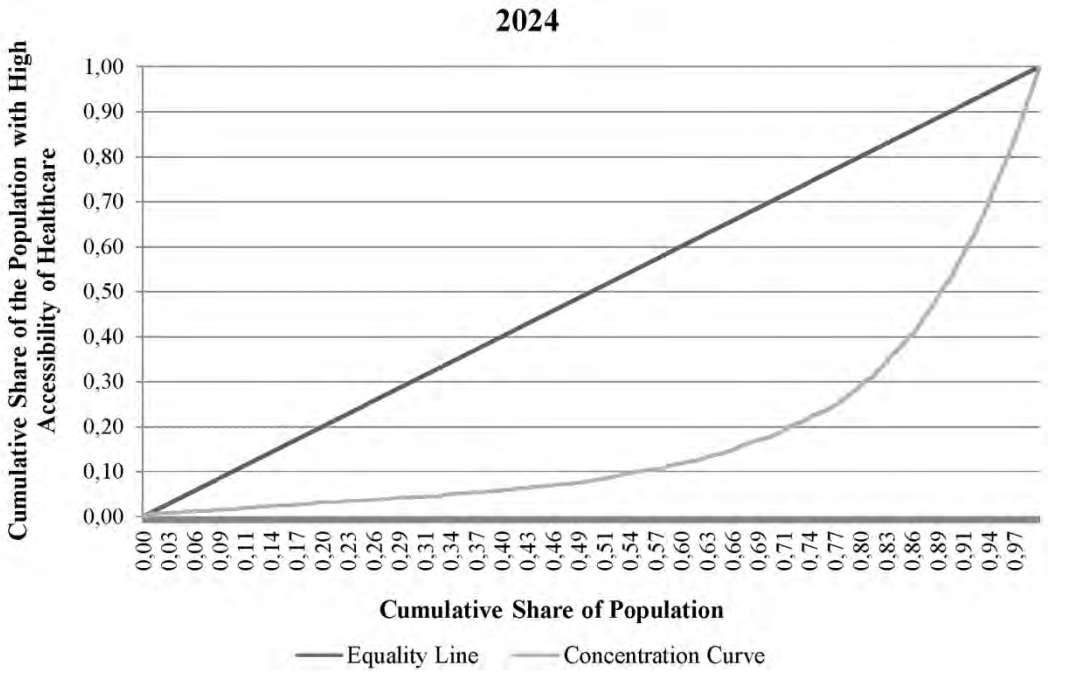

Fig. 7. **Concentration curve for financial affordability of healthcare in South Africa in 2024.**
Source: authors' calculations based on data from South African General Household Survey for 2024.

The logistic regression for financial affordability of medicine, unlike the model for physical availability, shows low or statistically insignificant marginal effects for geographical factors (Table 7). The most significant marginal effects in the models based on 2012, 2019, 2020, and 2024 data are observed for income, education, and race variables. While the situation for racial variables and education level indicators is similar in all the years considered (the most vulnerable groups are Black Africans and people with low levels of education, while Whites and people with higher education are in the most advantageous position), an atypical situation is observed for the income variable in 2019. While in the other years considered, representatives of the first quartile in terms of per capita household income were the most vulnerable group or at least did not have a statistically significant advantage over other quartiles, in 2019, the probability of living near a hospital for representatives of the 2nd and 3rd quartiles is significantly lower than for the poorest population (by 9% and 5%, respectively). This result is consistent with the conclusions that were made based on the concentration index.

Table 7. **Marginal effects of logistic regression for financial affordability of healthcare**

Variable	2012	2019	2020	2024
Urban	0.0518***	0.0468***	0.0262***	0.0286***
Male	-0.0141***	-0.0126***	-0.0114***	-0.0139***
Free State	0.01*	0.0091	0.0189**	0.0224
Gauteng	-0.0176***	0.0013	-0.0095	-0.0128***
KwaZulu-Natal	-0.0031	0.0076	-0.022***	-0.0188***
Limpopo	-0.004	0.0198***	0.0002	0.0109*
Mpumalanga	0.0073	0.0049	-0.0023	-0.0025
North West	0.0235***	0.0574***	0.0658***	0.0265***
Northern Cape	0.0186***	0.0181**	0.0375***	0.0193***

Variable	2012	2019	2020	2024
Western Cape	-0.0204***	-0.0037	0.011	-0.0118**
Coloured	0.0466***	0.0717***	0.0157**	0.0427***
Indian/Asian	0.0652***	0.1183***	0.0761***	0.1006***
White	0.1619***	0.2007***	0.1484***	0.1390***
Secondary education is not completed	0.0241***	0.0513***	0.02	0.0290**
Secondary education	0.0693***	0.1102***	0.0754***	0.0973***
Tertiary education	0.1936***	0.2669***	0.1774***	0.2076***
2 quartile	0.002	-0.0867***	-0.0102	0.0111
3 quartile	0.0999***	-0.0527***	0.0545***	0.0877***
4 quartile	0.2134***	0.0707***	0.1683***	0.1969***

Note: *** – marginal effect is significant at the 1% significance level;
** – marginal effect is significant at the 5% significance level;
* – marginal effect is significant at the 10% significance level.
Source: authors' calculations based on data from South African General Household Surveys for 2012, 2019, 2020, 2024.

Thus, as with physical accessibility, financial accessibility is influenced by various factors, including geographic, demographic, and social, but economic factors stand out particularly strongly. In the wealthiest quartile, more than 40% of the population has private health insurance or contributes to medical aid schemes, while in the other groups, the proportion of people with private insurance does not exceed 10%. However, there is limited evidence of significant advancement in either enhancing overall financial affordability of healthcare or mitigating disparities between various social groups. The influence of geographical factors on inequality remained largely unchanged from 2002 to 2024, and the degree of inequality in access to medical services between individuals with differing levels of education and income has increased.

By 2019, progress had been made in reducing inequality between representatives of different races by providing insurance to the most vulnerable population, but the crisis caused by the COVID-19 pandemic led to the positive results of previous years being effectively nullified, which may be due to the negative impact of government measures (lockdown, restriction of freedom of movement, cancellation of mass events) on economic activity and on the situation of socially vulnerable groups [Abrahams et al. 2022; Staunton et al. 2020]. Furthermore, divergent trends emerged when considering racial inequality versus income inequality: while the disparity between racial groups in financial healthcare access decreased in 2024 compared to 2020, the inequality in healthcare access between individuals with varying income levels experienced a significant increase.

The introduction of a national health insurance system has not improved the situation with inequality in financial accessibility to medicine in South Africa: in 2024, the situation was nearly the same as in 2012. This may be because, at the time of the household surveys, people were not sufficiently aware of the national health insurance program or had not yet terminated contracts with private insurers or funds (if they wished to), as little time had passed since the introduction of the new system. Significant changes will likely be observed in data from later surveys.

Studies on inequality in access to healthcare in South Africa cover its various aspects: inequality in physical availability and financial affordability, differences in the perception

of the quality of services provided between different social groups. The results of this study mostly correspond to previous estimates, highlighting racial, economic, and geographic characteristics as influencing access to healthcare. The identified vulnerable population groups also align with economic logic and previous results [Burger, Christian 2020; Ohonba, Kirsten, Mkhize 2023; Harris et al. 2011]. Certain differences include a different assessment of the impact of the rural factor on access to healthcare (in the study [Ohonba, Kirsten, Mkhize 2023], this factor proved insignificant).

Thus, it is premature to say that the situation has significantly changed with the implementation of government policies, and it can also be argued that by 2024, the situation had not returned to normal after the COVID-19 shock.

CONCLUSION

The study of factors influencing inequality in physical and financial accessibility to healthcare in South Africa revealed that the factors for physical and financial inequality are similar—they include geographical, demographic, and social differences. Citizens living in cities and the most urbanized provinces, with high incomes, and people of certain races (most often, White Africans) are in the most advantageous position. It is particularly noteworthy that the level of inequality in financial availability of healthcare, as indicated by the proportion of individuals with health insurance, is significantly greater than the level of inequality in its physical affordability, which is measured by the proportion of individuals residing within a 15-minute commuting distance to a hospital.

Since 2002, the South African government has managed to significantly increase the proportion of the population that does not spend a lot of time traveling to a hospital; in addition, it has managed to reduce the level of inequality in physical accessibility to healthcare between people of different races and citizens with different levels of education. On the one hand, this allows us to conclude that the Constitution of South Africa and the National Health Act of 2003 laid the foundation for improving the situation in the healthcare sector, but given the continuing high level of inequality in both directions, further efforts are required. In the field of physical accessibility to healthcare, the energy crisis of 2022–2023 had an additional negative impact: rolling blackouts led to disruptions in public transport, which is mainly used by low-income citizens. This led to an increase in travel time to hospitals.

Financial accessibility to healthcare does not show positive dynamics, and in 2024, this indicator is lower than in the previous year, 2023, and even than in the base year, 2002. The high level of income inequality still translates into unequal access to healthcare for the population. In 2024, despite the completion of the phased reform of the healthcare system and the signing of the law on the creation of a national health insurance system, the situation has not significantly changed compared to 2023, and in some aspects, there is even a negative trend. However, minor fluctuations may be more related to the specifics of the survey and sample than to a real deterioration of the situation during the year. What is important is that rapid positive changes have not occurred, unlike the measures of the second phase of the reform, when the physical and financial accessibility of medical services for the vulnerable population significantly increased.

Simultaneously with the development of the system after legislative changes, a decrease in inequality in financial accessibility can be expected, as during the pilot project of the second phase of the reform. However, this will depend on the effectiveness of the implementation of legislative initiatives, which will be evident from the results of further household surveys.

Additional materials[29]: Appendix 1. Coefficients of logistic regressions, standard errors and p-values.

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Научная статья

ЗДРАВООХРАНЕНИЕ В ЮАР: ЧТО ВЛИЯЕТ НА ДОСТУП К МЕДИЦИНСКИМ УСЛУГАМ

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Аннотация. Данное исследование посвящено вопросу неравенства в доступности медицинских услуг в Южно-Африканской Республике (ЮАР). В первой части исследования дан подробный обзор существующей литературы, в которой выделяются различные демографические и социально-экономические факторы доступа к услугам здравоохранения. Однако предшествующие работы по Южной Африке основаны на опросах до 2012 г. и не учитывают изменения последних лет, включая пандемию *COVID-19* (краткосрочные эффекты переполненности больниц и экономический эффект снижения доходов), а также обострение энергетического кризиса в ЮАР в 2022–2023 гг. Настоящее исследование включает данные из опросов домохозяйств ЮАР с 2002 по 2024 гг. Рассматриваются такие факторы, как пол и расовая принадлежность респондента, его уровень образования, место жительства (провинция и город/село), уровень дохода.

В исследовании представлены основные результаты для оценки физической доступности здравоохранения. В целом видна положительная динамика, хотя уровень 2024 г. все еще отражает эффект энергетического кризиса, показывая более низкие значения, чем в 2019 г. В исследовании представлены результаты оценки неравенства финансовой доступности здравоохранения. На финансовую доступность в гораздо большей

степени оказывают влияние социально-экономические факторы (расовая принадлежность, образование и уровень дохода). Сравнение результатов исследования с выводами из более ранней научной литературы показывает, что в 2024 г. ситуация с доступностью здравоохранения в Южной Африке во многом осталась похожей на ситуацию 2012 г. – те же самые группы населения остались социально незащищенными (черные африканцы, малоимущие слои населения, сельские жители, люди с низким уровнем образования) и уровень неравенства финансовой доступности медицины остался высоким.

Ключевые слова: ЮАР, неравенство, здравоохранение, физическая и финансовая доступность, уровень дохода, уровень образования, расовая дискриминация

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Research article

INVISIBLE TOILERS: CRITICAL TRENDS IN WOMEN'S SOCIO-ECONOMIC STATUS IN SUB-SAHARAN AFRICA

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Abstract. This article presents a comprehensive analysis of the socio-economic status of women in sub-Saharan Africa (SSA). The purpose of the study is to assess the potential of women's human capital in the context of the region's sustainable growth, as well as to identify the main socio-economic trends related to the changing role of women in the region. The analysis is based on the theoretical and methodological developments of the Gender Research Group of the Institute for African Studies of the Russian Academy of Sciences, which ensures the comprehensiveness of the approach. In the context of global efforts to achieve sustainable development, gender inequality is of particular relevance and requires closer attention. The article highlights that systematic underestimation of women's contribution to the economic development of SSA countries leads to missed opportunities for economic growth and deepening social injustice. Special attention is paid to analyzing the complex relationship between the levels of education, acquired competencies, employment opportunities for women, and their impact on the economic development of the region as a whole. The novelty of the study lies in the identification of the relationship between the various socio-economic factors determining the status of women in SSA, as well as in the comparative analysis of the respective socio-gender indicators with those of South Asia, Middle East, and North Africa. This conveys that despite the existing difficulties and challenges, women's capital in SSA countries not only shows steady growth but also surpasses some gender indicators in South Asia and Middle East and North Africa. This indicates a significant potential for further development and the need to focus on supporting and empowering women in the region and promoting their active participation in building a sustainable future.

Keywords: Sub-Saharan Africa (SSA), woman, economic growth, human capital, labor market, skills, gender inequality

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"By educating a man, you educate an individual.
If you educate a woman, you educate a nation."

African proverb

"If we are to see any real development in the world,
then our best investment is women."

Desmond Tutu, Nobel Peace Prize Laureate

INTRODUCTION

The aspirations of African women to define independently their role in society are attracting the attention of the international community[1], especially in the context of discussing new opportunities for their participation in the economy [Krylova, Ksenofontova 2022]. As noted during the discussion "New Trends in International Cooperation" at the Fourth Eurasian Women's Forum in 2024, there is currently a rapid evolution in the socio-economic role of African women: policymakers' focus is shifting to the underutilization of women's potential and human capital in the economies in Sub-Saharan African countries[2].

In 2021, the Human Capital Index in Sub-Saharan Africa was 0.4 points[3], while the global average was 0.57[4]. Currently, on average across Sub-Saharan African countries, human capital potential[5] is utilized at only 55%, with the global average of 65%[6]. Moreover, the Human Capital Index, adjusted for actual utilization, reflects that women in the region lose on average up to 20% of their potential contribution due to limited access to the labor market and resources [Pennings 2020: 2–4]. In 2023, the share of economically active women in Sub-Saharan Africa was 56% compared to 70% for men[7]. Moreover, in 2023, women in Sub-Saharan Africa earned on average 30% less than men, even with comparable levels of education and qualifications[8].

[1] Institute for African Studies, Russian Academy of Sciences conducts a special research direction on the formation of the identity of African women, both in traditional and modern society, which faces new challenges. Twenty-six monographs prepared by the Institute are dedicated to this topic.

[2] New trends in international cooperation. The Fourth Eurasian Women's Forum. *Roscongress* 18.09.2024. https://roscongress.org/sessions/eawf-2024-delovaya-programma-novye-tendentsii-mezhdunarodnogo-sotrudnichestva/translation/# (accessed: 22.07.2025)

[3] The proposed index, taking values from 0 to 1, reflects the developmental potential of a newborn. The maximum index value (1) is achieved only if the child grows up healthy (without growth delays), reaches the age of 60, and realizes their educational potential (graduates from school by the age of 18).

[4] Africa Dialogue Series Geopolitical Sessions Theme: Human capital and building forward better after the COVID-19. *United Nations.* 26.05.2021. https://www.un.org/osaa/sites/www.un.org.osaa/files/docs/pr_statement_and_input_osaa.pdf (accessed: 05.07.2025)

[5] Potential includes implicit and difficult-to-measure characteristics such as creativity, leadership qualities, adaptability, which play a crucial role in innovations.

[6] Africa Day: Is Africa the new global talent pool? *CHRO South Africa.* 25.05.2023. https://chro.co.za/articles/africa-day-is-africa-the-new-global-talent-pool/(accessed: 05.07.2025)

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Table 1. **Gender Inequality Index (GII)[9] of Sub-Saharan Africa by components, 2023**

Sub-Saharan Africa	Reproductive Health Index (RHI)		Index of Political Representation (PR)	Women's Labor Force Participation Rate (LFPR)
	Maternal mortality ratio (per 100,000 live births) (MMR)	Adolescent birth rate (births per 1,000 women aged 15–19) (ABR)	Share of seats held by women in national parliaments, %	Labor force participation rate (% of the population aged 15 years and over)
Women	448	93	27	65
Men	–	–	73	75

Source: compiled by the author based on World Development Indicators data. *World Bank Group Data*. https://data.worldbank.org/ (accessed: 06.07.2025)

The formula for calculating the Gender Inequality Index (GII) is as follows:

$$GII = 1 - \sqrt[3]{RHI \times PR \times LFPR}$$

where RHI is the Reproductive Health Index, PR is the Index of Political Representation, and LFPR is the women's Labor Force Participation Rate.

We calculated this index for Sub-Saharan Africa based on 2022 data:

$$RHI = \left(1 - \frac{MMR}{MMRmax}\right) \times \left(1 - \frac{ABR}{ABRmax}\right) = \left(1 - \frac{448}{1000}\right) \times \left(1 - \frac{93}{200)}\right) = 0.295$$

$$PR = \frac{\mathbf{W}parl}{\mathbf{W}parl + \mathbf{M}parl} = 0.27 / (0.27 + 0.73) = 0.27$$

$$LFPR = \frac{\text{LFPR}\, women}{\text{LFPR}\, men} = 0.65 / 0.75 \approx 0.867$$

For Sub-Saharan African countries in 2022, the index value was:

$$GII = 1 - \sqrt[3]{0.295 \times 0.27 \times 0.867} \approx 0.59$$

The index indicates significant gender inequality: its value approaches the upper end of the scale (1.0) and significantly exceeds the global average (~0.45)[10], which demonstrates the existence of deeply rooted barriers faced by women in the region. They are particularly acute in the areas of reproductive health, as the level of political and labor force participation is better than expected: the proportions of women in parliament (27%) and in the economy (65%) are relatively high. Therefore, with improved access to healthcare and a reduction in maternal and adolescent mortality, GII could decrease sharply.

In Sub-Saharan Africa, women make up 48% of the workforce in agriculture, which is the foundation of the economies of many countries in the region[11]. It should be noted

[9] The Gender Inequality Index (GII) is a comprehensive indicator that demonstrates how much a national economy loses in its development potential because women do not have equal opportunities with men in key areas (reproductive health, political representation, participation in the workforce).

[10] Gender inequality index (*GII*). *Human Development Reports Data Center*. https://hdr.undp.org/data-center/thematic-composite-indices/gender-inequality-index#/indicies/GII (accessed: 08.07.2025)

[11] Employment in agriculture, female (% of female employment) (modeled ILO estimate). *World Bank Group Data*. https://data.worldbank.org/indicator/SL.AGR.EMPL.FE.ZS (accessed: 04.07.2025)

that women head about 30–40% of households in Sub-Saharan African countries[12]. By earning higher income, African women can improve the well-being of families and communities and, most importantly, invest in the future of children, that is, in the next generations.

It is important to consider that by 2050, the population of Sub-Saharan Africa, where around 1.2 billion people currently live, is expected to almost double[13]. And as the Director of the Institute for African Studies of the Russian Academy of Sciences, I.O. Abramova, notes, "The rapid increase in the African population compared to other regions of the world will lead to the fact that the quantitative component of human capital reproduction will shift towards Africa" [Abramova 2013: 445]. According to the World Bank's estimates, the total fertility rate (TFR) in Sub-Saharan African countries in 2022 was five children per woman, which is approximately twice the global rate[14]. Therefore, Professor L.L. Fituni rightly states, "When talking about the future, one should not forget that the demographic potential of Africa has largely become the foundation of the modern development of the global economy" [Fituni 2017: 10–11].

Since women, according to estimates by the World Bank, made up 50.2% of the total population of Sub-Saharan Africa in 2024[15], a significant portion of human capital remains underutilized, leading to structural misbalance in the economies of the region [Grishina 2015: 54‑56; Bongaarts 2020: 1–3].

According to Professor V.A. Meliantsev, a comprehensive, multifactorial approach to studying the economies of Asian and African countries should largely rely on comparative factor analysis, which is a valuable tool for examining complex interrelationships that determine economic growth and competitiveness of the Asian and African countries [Meliantsev 2022: 14–16]. In this context, the question arises: is the underestimated potential of women an important driver of economic growth in the region, and what factors contribute to or hinder the realization of this potential?

EDUCATION AND SKILLS

Undoubtedly, improving the quality of education for women in Sub-Saharan Africa is one of the key factors in solving the region's economic and social problems. Compared to women who have not received education, educated women manage their finances more effectively, which reduces the risk of poverty for themselves and their families [Rybalkina 2010]. Moreover, women, being custodians of cultural traditions and moral values, play a crucial role in raising children [Ksenofontova, Ilyina, Tatarovskaya 2021].

Women in Sub-Saharan Africa face obstacles to advancing their educational and professional levels from an early age [Gribanova 2012]. As Professor E.S. Lvova notes, these obstacles are both economic and cultural in nature, significantly affecting opportunities for education [Lvova 2014]. Despite gender parity in primary schools in

[12] Statement by the Office of the Special Adviser on Africa during the African Dialogue Series on Human capital and Building forward better after the COVID–19. *United Nations*. 26.05.2021. https://www.un.org/osaa/sites/www.un.org.osaa/files/docs/pr_statement_and_input_osaa.pdf (accessed: 26.01.2025)

[13] Shifting Demographics. *United Nations.* https://www.un.org/en/un75/shifting-demographics (accessed: 04.07.2025)

[14] Fertility rate, total (births per woman). *World Bank Group Data*. https://data.worldbank.org/indicator/SP.DYN.TFRT.IN?view=chart (accessed: 04.07.2025)

[15] Population, female (% of total population). *World Bank Group Data*. https://data.worldbank.org/indicator/SP.POP.TOTL.FE.ZS?end=2024&locations=ZG&start=2000&view=chart (accessed: 04.07.2025)

many Sub-Saharan African countries, in 2022, for every 100 men entering university, there were, for example, 59 women in Benin, 58 in Burkina Faso, 76 in Rwanda, and 81 in Cameroon[16].

In the last four decades, a steady increase in literacy rates among women aged 15–24 in sub-Saharan African countries has been observed[17].

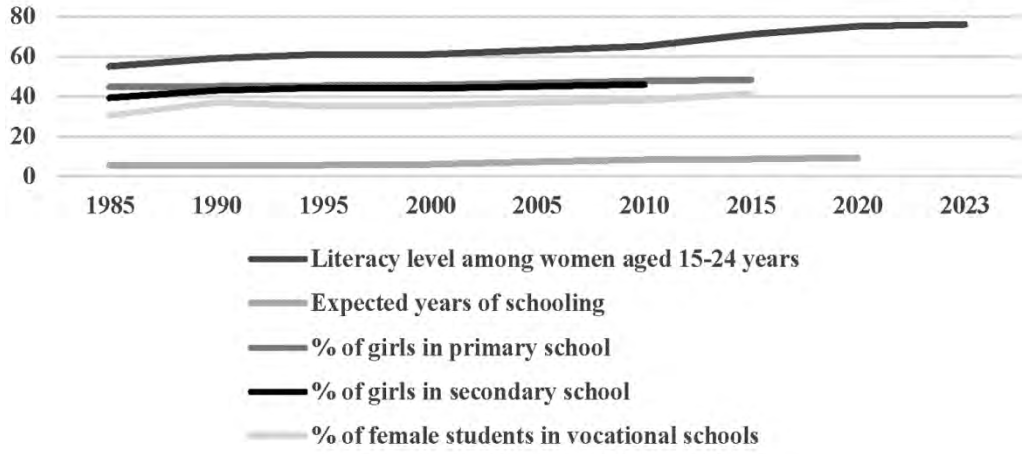

Fig. 1. **Changes in key indicators of female education in Sub-Saharan African countries, 1985–2023, %.**
Source: compiled by the author based on World Development Indicators data.
World Bank Group Data. https://data.worldbank.org/ (accessed: 06.07.2025)

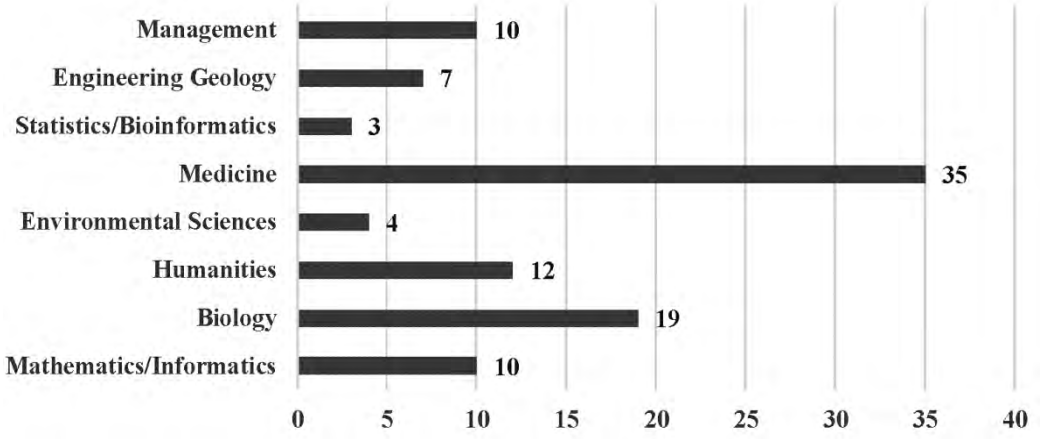

Fig. 2. **Share of female postgraduate students in Sub-Saharan Africa by field of study, 2022, %.**
Source: compiled by the author based on data from the webinar "Achieving gender equality in education in Sub-Saharan Africa on the 2020 Gender Report"[18].

According to the report of the UNESCO International Institute for Higher Education in Latin America and the Caribbean, in 2022, approximately 47% of students and postgraduate students at African universities in STEM fields (Science, Technology,

[16] Ratio of female to male students in tertiary level education. *The Global Economy Data.* https://theglobaleconomy.com/rankings/Female_to_male_ratio_students_tertiary_level_educa/ (accessed: 04.07.2025)
[17] According to the World Bank, in 1985, the literacy rate among women aged 15–24 was 55%, and in 2023, it increased to 76%.
[18] Webinar on the "Achieving gender equality in education in Sub-Saharan Africa". UNESCO GEM Report and the Forum for African Women Educationalists (FAWE).*UNESCO.* 26.10.2020. http://en.unesco.org/gem-report/events/2020/achieving-gender-equality-education-sub-saharan-africa-regional-webinar-2020-gender (accessed: 06.02.2025)

Engineering, and Mathematics) were women[19]. In 2023, in Mauritius and South Africa, this indicator exceeded 46%; in Kenya, 38%; and in Uganda, 30%[20]. In 2020, women also made up about 30% of doctoral graduates [Fisher et al. 2020: 1] and 32% of the total number of researchers in Sub-Saharan Africa[21].

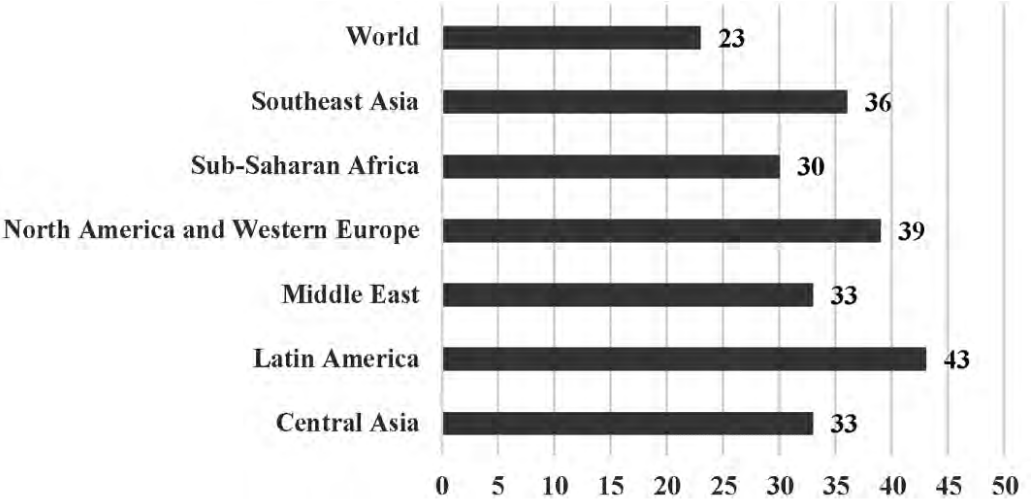

Fig. 3. **The share of women in the field of scientific research and development in 2022, %.** Source: compiled by the author based on data from the webinar "Achieving gender equality in education in Sub-Saharan Africa on the 2020 Gender Report"[22].

However, according to UNESCO data, women occupy only about 30% of STEM positions in Africa, indicating a significant gap between educational potential and its realization in the labor market[23]. For example, only 25% of university lecturers are women, and their share among researchers is about a third[24].

In the field of primary education, female staff in 2022 made up a significant proportion of teachers, reaching almost 50%, which indicates a notable presence of women in this area[25]. According to the World Bank, in 2023, the proportion of women among all secondary school teachers in Sub-Saharan African countries increased to 35%[26] from 30% in 2018 [Boniol et al. 2019: 3]. Moreover, in 2022, women made up 72% of the main medical professions in the region, while men accounted for 28%. The

[19] Rose-Innes A. Africa has highest proportion of female STEM graduates. *Women in science*. 03.08.2022. https://womeninscience.africa/africa-has-highest-proportion-of-female-stem-graduates/ (accessed: 05.07.2025)

[20] Researchers (female), %. UIS Data Browser. *UNESCO*. https://databrowser.uis.unesco.org/browser/SCIENCE_TECHNOLOGY_INNOVATION/UIS-ScienceOPRI/fem-res/per-fem-res?highlightId=FRESPTHC&highlightGroupId=IG-FRESP.THC (accessed: 05.07.2025)

[21] Celebrating African most talented young female scientists. *UNESCO*. 27.12.2024. https://www.unesco.org/en/articles/celebrating-african-most-talented-young-female-scientists (accessed: 05.07.2025)

[22] Webinar on the "Achieving gender equality in education in Sub-Saharan Africa". UNESCO GEM Report and the Forum for African Women Educationalists (FAWE). *UNESCO*. 26.10.2020. https://en.unesco.org/gem-report/events/2020/achieving-gender-equality-education-sub-saharan-africa-regional-webinar-2020-gender (accessed: 06.02.2025)

[23] What You Need to Know about the Challenges of STEM in Africa. *UNESCO***.** 26.11.2024. https://unesco.org/en/articles/what-you-need-know-about-challenges-stem-africa (accessed: 07.07.2025)

[24] Closing the Gender Gap in science: call to action**!** *Blog of Evelyne Para, Representative at UNESCO.* 05.08.2024.https://soroptimistinternational.org/closingthegendergapinsciencecalltoaction/ (accessed: 24.02.2025)

[25] Primary education, teachers (% female). *World Bank Group Gender Data Portal.* https://genderdata.worldbank.org/en/indicator/se-prm-tchr-fe-zs?view=trend&geos=WLD_SSF (accessed: 05.07.2025)

[26] Secondary education, teachers (% female)**.** *World Bank Group Gender Data Portal*. https://genderdata.worldbank.org/en/indicator/se-sec-tchr-fe-zs?view=trend&geos=WLD_SSF (accessed: 06.07.2025)

following specialties are predominantly feminized: midwives (94%), primary healthcare workers (79%), and nurses (73%), whereas men predominate in pharmacy, dentistry, and medical practice[27].

Table 2. **Gender Parity Index Indicators for Science, Technology, Engineering, and Mathematics (STEM) in Sub-Saharan Africa, 2022** [28]

Level of education in science	Women (%)	Men (%)	GPI
Higher education (*STEM*)	47	53	**0,89**
Postgraduate studies (*STEM*)	30	70	**0,43**
Researchers (scientific field)	32	68	**0,47**

Source: compiled by the author from the African education research database. *ESSA*. https://essaafrica.org/node/501?keywords=Higher%20education&action=searchadvanced&page=1 (accessed: 25.07.2025)

At the level of higher education in STEM, gender parity is almost achieved (GPI = 0.89); however, at the postgraduate level, the proportion of women significantly decreases (GPI = 0.43) and among researchers remains extremely low (32%), practically not differing from the postgraduate level (GPI = 0.47). We observe how the participation of women in Sub-Saharan Africa in science decreases with each subsequent stage of their academic career.

LABOR MARKET

According to data from the International Monetary Fund, an increase in the share of women in the workforce by 10% can lead to a 1% increase in GDP. Moreover, expanding women's economic participation in Sub-Saharan Africa could increase GDP by 10–30%[29].

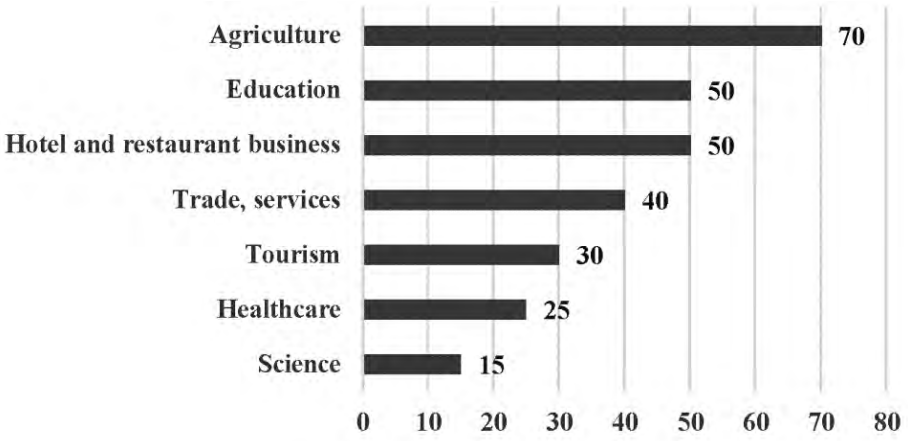

Fig. 4. **Share of employed women in Sub-Saharan Africa in total employment in 2020, %.**
Source: compiled by the author from the webinar "Achieving gender equality in education in Sub-Saharan Africa on the 2020 Gender Report"30.

[27] **S**tate of the health workforce in the WHO African Region: decade review of progress and opportunities for policy reforms and investments. *BMJ Glob Health.* 25.11.2024. https://pubmed.ncbi.nlm.nih.gov/39592187/com (accessed: 05.07.2025)

[28] The index is calculated using the formula: GPI=$\frac{share\ of\ women}{share\ of\ men}$

[29] Dabla-Norris E., Kochhar K. Closing the gender gap: the economic benefits of bringing more women into the labor force are greater than previously thought. *Financial and development magazine.* 01.03.2019. https://www.imf.org/en/Publications/fandd/issues/2019/03/closing-the-gender-gap-dabla (accessed: 23.01.2024)

[30] Webinar on the "Achieving gender equality in education in Sub-Saharan Africa."

Notably, despite the steady growth of women's share in the service sector from 29% in 2000 to 42% in 2023[31], for a significant number of women, the source of livelihood remains low-paid or subsistence labor in natural resource sectors such as agriculture and forestry [Christiaensen, Demery 2018: 11–13].

At the session "Women of Russia and Africa: International Cooperation for Sustainable Development and Social Progress" within the framework of the second Russia-Africa Summit in 2023, the issue of women's participation in the energy sector and mining was raised[32]. Women make up approximately 8–17% of the workforce in the mining industry in Sub-Saharan Africa[33]. It is important to note, however, that of those 47% receiving higher education in STEM, only 13% work in the energy sector[34]. Nevertheless, in Sub-Saharan Africa, the share of women managers in renewable energy companies reaches 27%, which is higher than the average for the G20 countries (around 20%)[35]. Although, according to recent estimates, the proportion of women employed in agriculture in Sub-Saharan African countries has decreased from 63% in 2000 to 48% in 2023, they still constitute the main workforce in this key economic sector of the region[36].

In Sub-Saharan Africa, there is also an alarming "feminization of poverty" phenomenon: in 2023, for every 100 poor men aged 25–34, there were 127 poor women [37]. According to the UN forecast, by 2030, more than 60% of the 235 million women and girls living in extreme poverty worldwide (on less than $2 per day) will reside in Sub-Saharan Africa[38]. Low living standards seriously limit the opportunities of African women not only in access to education and healthcare but also in choosing decent work [Krylova et al. 2019: 36–38]. As a result, low-paid and unstable types of labor characterize women's employment in the region: in 2023, 88% of non-agricultural female employment fell on the informal sector, while for men this indicator was 81%[39].

In Sub-Saharan Africa, the informal sector of the economy acts as the dominant source of female employment [Grishina 2019: 98]. Moreover, 85% of working women in

UNESCO GEM Report and the Forum for African Women Educationalists (FAWE). *UNESCO*. 26.10.2020. https://en.unesco.org/gem-report/events/2020/achieving-gender-equality-education-sub-saharan-africa-regional-webinar-2020-gender (accessed: 06.02.2025)

[31] Employment in services, female (% of female employment) (modeled ILO estimate). *World Bank Group Data*. https://data.worldbank.org/indicator/SL.SRV.EMPL.FE.ZS (accessed: 14.07.2025)

[32] Women of Russia and Africa: international cooperation for sustainable development and social progress. The Second Summit, the Russia–Africa Economic and Humanitarian Forum. *Roscongress*. 27.07.2023 .https://roscongress.org/sessions/africa-2023-zhenshchiny-rossii-i-afriki-za-ustoychivoe-razvitie-i-sotsialnyy-progress/about/?ysclid=mdmwt0umze641980246 (accessed: 22.07.2025)

[33] Shaping the future minerals: unlocking mineral supply for global development and the energy transition. Report by Future minerals forum. *Future minerals forum*. 16.12.2024. https://www.africanmining.co.za/wp-content/uploads/FMF25-Content-Report.pdf (accessed: 23.01.2025)

[34] Fowzia Hassan, Meskerem Mulatu Legesse, Marie-Paule Ngaleu, Osman Bin Masood. A journey to empowering women in Africa's energy sector. *World Bank Blogs*. 26.08.2024. https://blogs.worldbank.org/en/nasikiliza/journeyto-empowering-women-in-africa-energy-sector-afe-0824 (accessed: 31.01.2025)

[35] Results and impact: Annual report 2021. *Sustainable stock exchanges initiative*. 03.11.2021. https://sseinitiative.org/sites/sseinitiative/files/documents/2021-results-and-impact.pdf (accessed: 31.01.2024)

[36] Employment in agriculture, female (% of female employment) (modeled ILO estimate). *World Bank Group Data*.https://data.worldbank.org/indicator/SL.AGR.EMPL.FE.ZS (accessed: 15.07.2025)

[37] Gender Equality improves in Sub-Saharan Africa. *The Borgen Project*. 18.12.2023. https://borgenproject.org/gender-equality-in-sub-saharan-africa/ (accessed: 15.07.2025)

[38] Progress on the sustainable development goals. The gender snapshot 2023. *UN Women*. 12.09.2023. https://bit.ly/gender-snapshot-2023 (accessed: 14.07.2025)

[39] Women and men in the informal economy: A statistical update. *ILO*. 07.03.2023. https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40ed_protect/%40protrav/%40travail/documents/publication/wcms_868918.pdf (accessed: 04.07.2025)

Sub-Saharan African countries have unsafe working conditions, which significantly exceeds the global average level (49%)[40]. Meanwhile, women continue to devote more time to household chores and family care, which forces them to choose lower-paying jobs that allow them to combine professional and family responsibilities.

Currently, in Sub-Saharan African countries, women rarely occupy leadership positions and often perform tasks at lower levels, which does not allow them to realize fully their professional potential. Despite the fact that 43% of university graduates in the region are women, only 5% of them become leaders, which indicates a significant gap between educational achievements and career growth[41].

The presence of women in leadership positions is limited in most economic sectors, especially in the education sector [Sadovskaya 2008]. Women lead notably only a third of leadership positions in telecommunications, media, and technology, and only 9% of African technology startups[42].

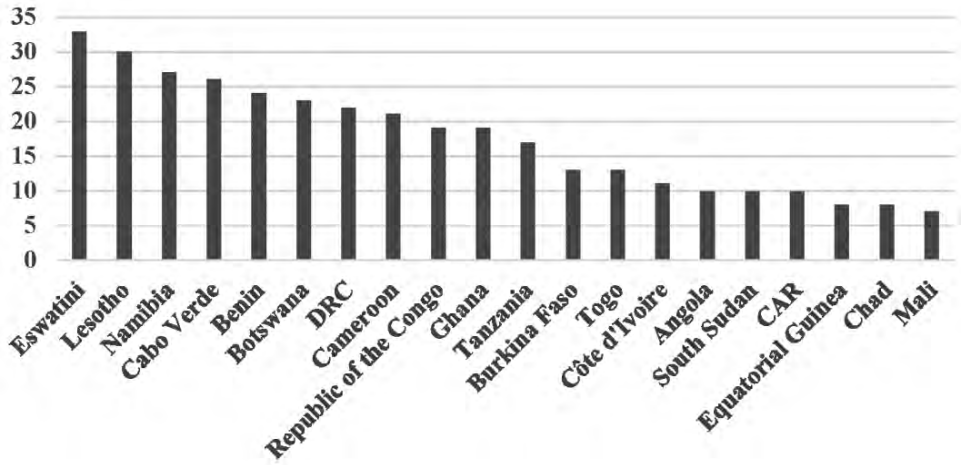

Fig. 5. **Companies with women in top executive positions in 2023, % of firms**
Source: compiled by the author from World Development Indicators.
World Bank Group Data. https://data.worldbank.org/indicator/IC.FRM.FEMM.ZS (accessed: 06.07.2025)

Despite these difficulties, according to the results of a sociological survey by the Education Sub-Saharan Africa (ESSA) organization, 81% of female respondents working in the public civil service strive to develop their professional skills to advance to leadership positions. Similar results were demonstrated by the women working in higher education and the private sector (82%)[43]. At the same time, women in Sub-Saharan Africa comprise only 33% of candidates for leadership positions. Many female applicants noted that they would like to hold a leadership position one day; however, 59% of them believe that men have more opportunities for career advancement[44].

[40] Five facts about informal economy in Africa. *ILO News*. 18.06.2015. https://www.ilo.org/resource/news/five-facts-about-informal-economy-africa (accessed: 31.01.2024)
[41] Unlocking the potential of female education leaders. *ESSA Blog.* 01.07.2021. https://essa-africa.org/node/976 (accessed 03.02.2024)
[42] Toesland F. Women led tech startups on the rise in Africa. *Africa Renewal*. 08.08.2018. https://www.un.org/africarenewal/magazine/august-november-2018/women-led-tech-startups-rise-africa (accessed 03.02.2024)
[43] The state of women leading report: Unlocking the potential of female leadership in tertiary education. *Education Sub Saharan Africa (ESSA).* 01.07.2021. https://essa-africa.org/sites/default/files/inline-files/ESSA%20Women%20Leading%20Report_July%202021_0.pdf (accessed 03.02.2024)
[44] The state of women leading report: Unlocking the potential of female leadership in tertiary education. *Education Sub Saharan Africa (ESSA).* 01.07.2021. https://essa-africa.org/sites/default/files/inline-files/ESSA%20Women%20Leading%20Report_July%202021_0.pdf (accessed: 03.02.2024)

INTERNATIONAL INDICATORS IN THE ASSESSMENT OF GENDER INEQUALITY

Currently, Sub-Saharan Africa, South Asia, and the Middle East and North Africa often serve as regions for comparative analysis in the context of women's human capital development, their role in the economy, and gender equality, which regularly becomes a topic of discussion at international forums[45].

According to the report "Global Gender Gap 2024" by the World Economic Forum[46], Sub-Saharan Africa, with a gender parity index of 68%, is ahead of South Asia (63%)[47] and the Middle East and North Africa (61%)[48]. However, the progress in this sphere in the region is uneven: Namibia (0.80), Rwanda (0.79), and South Africa (0.78) have reduced the gender gap by more than 70%, while DRC (0.61), Mali (0.60), and Chad (0.57) lag significantly behind. If current dynamics continue, Sub-Saharan Africa will achieve full gender parity in 102 years. Moreover, despite the global Gender Empowerment Measure (GEM)[49] reaching 0.721, in Sub-Saharan Africa (0.498), South Asia (0.507), and the Middle East and North Africa (0.565), it is significantly lower. It is approximately the same in these regions, which indicates comparable problems in the areas of gender equality and human development in Sub-Saharan Africa, South Asia, and the Middle East and North Africa, which lag far behind global trends[50].

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[45] All three regions are characterized by relatively low levels of gender equality compared to other parts of the world.

[46] Global Gender Gap 2024: Insight Report. *World Economic Forum*. 01.07.2024. https://www3.weforum.org/docs/WEF_GGGR_2024.pdf (accessed: 24.02.2025)

[47] The leaders of South Asia are Bangladesh (0.72), Bhutan (0.68), and Sri Lanka (0.66), while Pakistan (0.57), Iran (0.57), and Afghanistan (0.40) lag significantly behind. If the current dynamics continue, full gender parity in South Asia is projected to be achieved in 149 years. Global Gender Gap 2024: Insight Report. *World Economic Forum*. 01.07.2024. https://www3.weforum.org/docs/WEF_GGGR_2024.pdf (accessed: 24.02.2025)

[48] The leaders in the Middle East and North Africa are the United Arab Emirates (0.71), Israel (0.70), Bahrain (0.66), and Oman (0.60) closes the list. Egypt (0.62) and Algeria (0.61). At the current rate of progress, it will take 152 years to achieve full gender parity in the Middle East and North Africa.Global Gender Gap 2024: Insight Report. *World Economic Forum*. 01.07.2024. https://www3.weforum.org/docs/WEF_GGGR_2024.pdf (accessed: 24.02.2025)

[49] The Gender Empowerment Measure index (GEM) measures the level of women's participation in economic and political decision-making and control over resources.

$$GEM = \frac{Politics + Economy + Income}{3}$$ где,

$$Politics = \frac{Share\ of\ Women\ in\ Parliament}{50\%}$$

$$Economy = \frac{Economic\ average}{50\%}$$

$$Economic\ average = \frac{Share\ of\ women\ among\ legislators\ and\ managers + Share\ of\ women\ among\ technical\ specialists}{2}$$

$$Income = \frac{GNI\_f}{GNI\_m}$$

The value of the index ranges from 0 (complete absence of women's empowerment) to 1 (full equality with men in political and economic influence and income control).

[50] The paths to equal: Twin indices on women's empowerment and gender equality. Report of the United Nations Development Programme (UNDP) and the United Nations Entity for Gender Equality and the Empowerment of Women 2023. *United Nations*. 18.07.2023. https://unwomen.org/sites/default/files/2023-07/the-paths-to-equal-twin-indices-on-womens-empowerment-and-gender-equality-en.pdf (accessed: 27.01.2025)

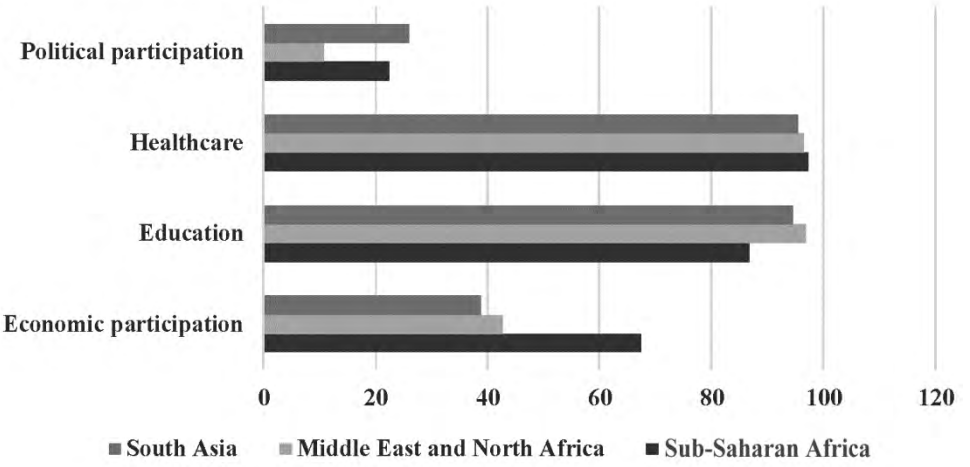

Fig. 6. **Regional indicators broken down by components, 2024, %**
Source: compiled by the author based on Global Gender Gap 2024: Insight Report. *World Economic Forum.* 01.07.2023. https://www3.weforum.org/docs/WEF_GGGR_2024.pdf (accessed: 24.02.2025)

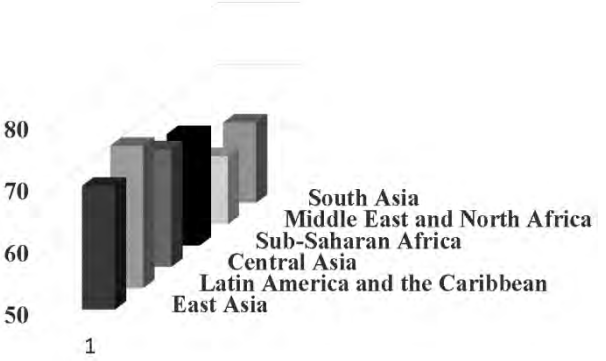

Fig. 7. **Closing the gender gap by regions, 2024, %**
Source: compiled by the author from the data of the report "Global Gender Gap 2024: Insight Report"[51]

Sub-Saharan Africa demonstrates a slightly higher Gender Development Index (GDI) [52] of 0.894 compared to South Asia at 0.858 and the Middle East and North Africa at 0.864. While sub-Saharan Africa has low scores on the Women, Peace, and Security (WPS) Index[53] (0.498), reflecting poor social institutions and political instability that

[51] Global Gender Gap 2024: Insight Report. *World Economic Forum.* 01.07.2023. https://www3.weforum.org/docs/WEF_GGGR_2024.pdf (accessed: 24.02.2025)

[52] The Gender Development Index (GDI) is a measure that demonstrates the extent to which women have achieved the same level of human development (health, education, income) as men. A value of 1 indicates equality; a value less than 1 indicates women's lag. The GDI is measured as the ratio of the Human Development Index (HDI) of women to that of men.

$$GDI = \frac{HDI\ f}{HDI\ m}$$

[53] The "Women, Peace, and Security" (WPS Index) measures the status of women in terms of inclusiveness, fairness, and safety in society. The index is calculated using the formula:

$$WPS\ Index = \frac{Sub{-}index\_Inclusiveness + Sub{-}index\_Justice + Sub{-}index\_Safety}{3}$$

For the calculation of the sub-index, key indicators are selected, with values averaged using the arithmetic mean.

$$Sub\text{-}index = \frac{Index1 + Index2 + \ldots + IndexN}{N}$$

where N is the number of indicators in the sub-index.

make African women particularly vulnerable, South Asia (0.581) and the Middle East and North Africa (0.458) also face significant challenges in this area. Women, Business and Law Index (WBL Index)[54] reflects significant differences in the legal status and social protection of women in Sub-Saharan Africa (57 points), South Asia (46 points), and the Middle East and North Africa (39 points), highlighting unequal conditions for women in these regions[55].

Table 3. **Regional indicators of the Gender Development Index by components, 2022**

	Gender Development Index (GDI)	Human Development Index (HDI)		Life expectancy		Expected years of study		Average years of schooling		Gross National Income (GNI) per capita (in 2017 PPP, thousands of $)	
		F	M	F	M	F	M	F	M	F	M
Sub-Saharan Africa	0.894	0.51	0.57	62	58	10.1	10.6	5.1	6.9	2,970	4,429
South Asia	0.848	0.56	0.66	69	66	11.5	11.6	6.3	7.3	2,352	10,426
Middle East and North Africa	0.864	0.64	0.74	73	68	12.2	12.5	7.6	8.6	4,745	21,667
World	0.959	0.71	0.74	74	69	12.9	12.7	8.4	8.9	12,241	21,210

Source: compiled by the author from data Our World in Data. *Global Change Data Lab*. https://ourworldindata.org/grapher/genderdevelopmentindex?tab=table (accessed: 20.02.2025)

Despite the fact that Sub-Saharan Africa demonstrates better indicators on a number of gender equality indices compared to similar regions of the Global South, the internal disparities within countries, low values in health and safety components, and limited access to opportunities hinder the full realization of women's potential.

CONCLUSION

Contrary to the findings of the book "Gender Equality and Economic Development in Sub-Saharan Africa," which emphasizes significant gender inequality in women's participation in labor and politics in Sub-Saharan African countries compared to other regions of the world, the conducted analysis indicates the presence of multidirectional trends [Kolovich, Newiak 2024].

[54] The "Women, Business and the Law" (WBL Index) measures how laws and regulations in different countries affects women's economic opportunities by comparing them to men's opportunities. The calculation is based on an analysis of laws and regulations covering 8 key areas (mobility, employment, wages, marriage, motherhood, entrepreneurship, assets, pensions) in women's lives, from the start of their careers to retirement. Each of the 8 areas is scored from 0 to 100 points.

The overall 'Women, Business and the Law' index is calculated as the simple arithmetic mean of the scores across all 8 areas: $\text{WBL} = \frac{(\text{Score\_Mobility} + \text{Score\_Employment} + \ldots + \text{Score\_Pension})}{8}$

[55] Women, Business and the Law 2024. *The World Bank*. https://openknowledge.worldbank.org/server/api/core/bitstreams/b39e2a7-ea65-4ed0-a471-d285ded8c4c7/ content (accessed: 26.01.2025)

On the one hand, the female capital of Sub-Saharan Africa demonstrates steady growth, especially in education, economic participation, and political representation, and surpasses a number of gender indicators in South Asia, the Middle East, and North Africa. Women in Sub-Saharan Africa are increasingly participating in the economy, developing small and medium-sized businesses in various industries. They make up 50.2% of the population in the region[56] and at the same time provide almost 48% of the workforce [57] in agriculture, which places them in the central place in the economy of countries in Sub-Saharan Africa.

In the field of education over the past 40 years, the proportion of literate women aged 15–24 has been growing by an average of 0.86% per year, which indicates a slow but steady progress[58]. At the same time, although up to 40% of STEM graduates are women, only about 30% of them work in related sectors in Sub-Saharan Africa, which points to a significant gap between educational potential and its implementation in the labor market[59].

Moreover, limited access to resources, gender stereotypes, and the “glass ceiling” in politics and economics form a persistent structure of barriers that hinder the full realization of women's potential.

Thus, we should consider women’s human capital in Sub-Saharan Africa not only as a factor of inclusive growth but also as an indicator of the region's development quality. After all, women's involvement in the economy and politics is not just a matter of fairness but also of a rational economic strategy. Overcoming the gender gap can become a catalyst for GDP growth and improvement of institutions.

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Научная статья

«НЕВИДИМЫЕ ТРУЖЕНИЦЫ»: ВАЖНЕЙШИЕ ТРЕНДЫ СОЦИАЛЬНО-ЭКОНОМИЧЕСКОГО ПОЛОЖЕНИЯ ЖЕНЩИН В СТРАНАХ АФРИКИ ЮЖНЕЕ САХАРЫ

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Аннотация. В данной статье представлен всесторонний анализ социально-экономического положения женщин в странах Африки к югу от Сахары (АЮС). Цель исследования – оценить потенциал женского человеческого капитала в контексте устойчивого роста региона, а также обозначить основные социально-экономические тенденции, связанные с изменением роли женщин в регионе. Анализ опирается на теоретические и методологические разработки Группы гендерных исследований Института Африки РАН, что обеспечивает комплексность подхода. В контексте глобальных усилий по достижению устойчивого развития, гендерное неравенство приобретает особую актуальность и требует пристального внимания. Отмечается, что систематическая недооценка вклада женщин в экономическое развитие стран АЮС

приводит к упущенным возможностям для экономического роста, углублению социальной несправедливости.

Особое внимание уделяется анализу сложной взаимосвязи между уровнем образования, приобретенными компетенциями, возможностями трудоустройства для женщин и их влиянию на экономическое развитие в целом. Новизна исследования заключается в выявлении взаимосвязи между различными социально-экономическими факторами, определяющими положение женщин в АЮС, а также в сравнительном анализе социально-гендерных индикаторов с показателями Южной Азии (ЮАЗ), Ближнего Востока и Северной Африки (БВСА). Подчеркивается, что, несмотря на существующие трудности и вызовы, женский капитал в странах АЮС не только демонстрирует устойчивый рост, но и превосходит ряд гендерных показателей в ЮАЗ и БВСА, что свидетельствует о значительном потенциале для дальнейшего развития и необходимости акцентирования внимания на поддержке и расширении прав и возможностей женщин в данном регионе, их активному участию в построении устойчивого будущего.

Ключевые слова: Африка южнее Сахары (АЮС), женщина, экономический рост, человеческий капитал, рынок труда, компетенции, гендерное неравенство

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HISTORY

Research article

THE DJIBOUTI–ADDIS ABABA RAILWAY AND ITS ROLE IN INTERNATIONAL RELATIONS OF THE LATE 19th AND EARLY 20th CENTURIES

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Abstract. Drawing on a wide range of literature and sources, as well as Russian and British archival materials, the author of the article traces the influence of the rivalry between European countries for Ethiopia on the creation of transport communications in this country. An important role in granting the concession for the construction of the railway to the French company was played by the closest adviser to Emperor Menelik II, the Swiss engineer Alfred Ilg. Ethiopia was to be connected by railway to the coast of French Somalia, which would facilitate France's political and economic expansion in this country. The railroad was to be extended to the White Nile, i.e., to Sudan, the territory of which France had laid claim to. After a diplomatic defeat by Great Britain, as well as numerous raids by nomadic tribes on the railway under construction, the railroad construction company faced a crisis. London's policy concerning this transport project also became more active. Great Britain did not want to tolerate the damage from a possible French trade monopoly in the region, so it tried to financially subordinate the company building the Ethiopian railway. France's retaliatory measures to effectively nationalize the road led to an open confrontation with the Emperor of Ethiopia. Under these conditions, and also under the influence of the 1904 Treaty of Cordial Entente, France and Great Britain were forced to coordinate their interests with each other, as well as with Italy. This led to the achievement of the Tripartite Agreement of 1906 on the division of spheres of influence in Ethiopia. The railway was completed only in 1917 on the basis of a new concession. The author of the article draws a connection between the political and economic processes in the changing balance of power of the European countries in Ethiopia and their influence on international relations in the late 19th and early 20th centuries.

Keywords: Ethiopia, railway, transport, Djibouti, Addis Ababa, Alfred Ilg, Menelik II, history

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INTRODUCTION

The history of the first Ethiopian railway, the Djibouti–Addis Ababa line, is closely tied to the struggle of major world powers on the international stage at the end of the 19th and the beginning of the 20th centuries, as well as to their rivalry for influence over Ethiopia. However, this topic has not been thoroughly studied in Soviet and Russian Ethiopian studies. Only one short article has been published, providing a general overview of the main stages of the railway's construction [Kuzmin 1991].

In European historiography, the most attention to this subject has been paid in Switzerland, the homeland of Alfred Ilg, the engineer and initiator of the railway's construction. In 1918, his biography was published, written by K. Keller, which briefly described his life and achievements [Keller 1918]. More than half a century later, in 1974, a monograph by W. Loepfe appeared, examining Ilg's role in the design and construction of the Djibouti–Addis Ababa railway. The book highlights his struggle for Ethiopia's sovereignty and his insistence on the strict observance of its rights in the implementation of this transport project [Loepfe 1974].

Beyond Switzerland, the topic has received little attention. British researcher R. Pankhurst published an article devoted to foreign specialists at the court of Menelik II, which also touches on their participation in the railway's construction [Pankhurst 1967]. An article in English also explored the role of British financial capital in the project [Shiferaw 1991]. The French perspective on the history of the Djibouti–Addis Ababa railway throughout the 20th century, as well as its technical characteristics, is presented in the monograph by Rosanna Van Gelder de Pineda [Gelder de Pineda 1995].

* * *

At the end of the 19th century, Ethiopia had no railways or highways whatsoever. All of the country's foreign trade was carried out via caravan routes, facilitated by Somali tribes [Gelder de Pineda 1995: 13–16]. The construction of Ethiopia's first railway is closely associated with Alfred Ilg, the chief advisor to Emperor Menelik II. Ilg was born on March 30, 1854, in Frauenfeld, a small town and capital of the Swiss canton of Thurgau. He received his engineering education at the Swiss Federal Institute of Technology in Zurich [Keller 1918: 10–14]. In 1878, he moved to Ethiopia and became an advisor to one of the local rulers—Menelik, the Negus[1] of the Shewa region, who aspired to the imperial throne. In 1883, Menelik signed a treaty of friendship and trade with Italy, which allowed him to use the Italian port of Assab for external communications.

When choosing experts, Menelik preferred citizens of neutral countries over nationals of colonial powers, whom he rightly distrusted [Voellmy 2003: 182]. Shortly after the arrival of the Swiss, Menelik moved his capital from Ankober to Entoto. Ilg

[1] Negus was a royal title in Ethiopia. The title is often used in relation to the Emperor of Ethiopia, which is not entirely accurate, since the title of the Emperor was Negusa Nagast: "negus of neguses," "king of kings."

built the Negus's palace, houses, churches, aqueducts, and bridges. His most notable achievement was the design and construction of a bridge over the Awash River in 1886 [Pankhurst 1967: 34].

Gradually, Ilg moved beyond strictly technical matters and became involved in all areas of the Negus's affairs. After learning Amharic, he served as an interpreter, chief of protocol, politician, and diplomat. Ilg's efforts contributed significantly to the modernization of Shewa and later of Ethiopia as a whole [Bairu 1998].

The Negus continued to expand his realm. In 1886, Menelik annexed Arussi and Wollega. In 1887, his troops captured the important trading center of Harar. In the 1880s, Shewa's exports via caravan routes were limited to goods of high value and small volume—such as ivory, gold, and civet musk (used in perfumery). However, the country's real potential for foreign trade was much broader, but it was constrained by the lack of infrastructure. The conquest of Harar changed the situation: the city could serve as a hub for transit trade with the coast.

As early as 1879, Alfred Ilg, hoping to demonstrate the importance of modern transportation for Ethiopia's future, showed Menelik a model of a railway. But at that time, the country was not yet ready for such construction.

The French poet and merchant Arthur Rimbaud, who lived in Ethiopia for a long time, wrote in 1887 that "the favorable location of Harar so inspired Menelik that, upon returning home and recalling how fervently the Europeans had preached to him the benefits of railways, he began seeking someone to commission or grant a concession for building a rail line from Harar to the sea. Then, however, he remembered that the coast was in British hands! Naturally, if the project ever materializes (and sooner or later it will), the government of Shewa will not contribute to the expenses." [2]

In 1889, Menelik became Emperor of Ethiopia. Ilg was the only European to accompany the Emperor on his campaign against the Tigray region. During the expedition, he wrote that he was "negotiating with the Emperor about a railway concession from the coast to Harar." By the end of February 1890, he already had "a firm commitment" from the Emperor on this matter [Loepfe 1974: 19]. However, in the summer of that year, discussions over Article 17 of the Treaty of Wuchale (1889)[3] pushed the railway issue off the agenda. Additionally, concerns—fueled by Empress Taytu—arose that the railway could pose a threat to Ethiopia in the event of war.

In August 1891, Ilg traveled to Paris for negotiations with the French government. He found that the Ethiopian issue was met with skepticism there. The Swiss engineer attempted to shift this perception, arguing that if France wished to maintain an economically viable colony on the Somali coast, it would inevitably have to reach an understanding with Ethiopia. By the autumn, Ilg had succeeded in forming a pro-Ethiopian lobbying group led by deputy François Deloncle, who had extensive contacts in colonial circles [Loepfe 1974: 26].

[2] Rimbaud A. (1928). Voyage in Abyssinie et au Harrar. Paris: La Centaine. Pp. 37–38.

[3] The Treaty of Wuchale (Uccialli) was a treaty of friendship and trade between the Kingdom of Italy and the Ethiopian Empire (Trattato di Uccialli), a political and economic treaty between Italy and Ethiopia signed on May 2, 1889, in Uccialli (Ethiopia). The treaty was Italy's first attempt to establish a protectorate over Ethiopia and effectively cemented Italian rule in Eritrea.

On February 11, 1893, Menelik authorized Alfred Ilg to study the project of establishing a railway in Ethiopia. However, the Emperor objected to Article 9 of the proposed concession agreement, which allowed the railway company to collect a 10% tax on trade revenues between Harar and French Djibouti. Menelik saw this as a threat to Ethiopia's economic sovereignty. Ilg argued that the expansion of Ethiopia's foreign trade via the railway would generate such profit that the 10% would seem insignificant. On April 7, 1894, Menelik signed a concession agreement granting Alfred Ilg and his French associate, merchant Léon Chefneux, the right to build a railway from Djibouti to the banks of the White Nile—though the document was backdated to March 9 [Rossetti 1910: 135–138].

THE BIRTH OF THE IMPERIAL ETHIOPIAN RAILWAY COMPANY

The Imperial Ethiopian Railway Company (Compagnie Impériale des Chemins de fer d'Éthiopie) was tasked with constructing the railway in three sections: Djibouti–Harar, Harar–Addis Ababa, and Addis Ababa–the White Nile (Article 1 of the concession agreement dated March 9, 1894). The detailed provisions of the concession concerned only the first section (Article 2). The initial duration of the concession was set at 99 years. Article 3 stipulated that "according to the agreement, no other railway company shall be authorized to construct competing lines" [Rossetti 1910: 135]. In this way, Ilg secured a railway monopoly, which lasted for the next eight years. According to Article 4, Menelik decreed that construction must begin within two years. The railway Company was also required to build a telegraph line alongside the railway track, and Ethiopian government telegrams were to be exempt from charges (Article 6). Article 7 established the obligation to transport troops in times of war. It was also stated that railway tariffs must not exceed current transport costs (Article 8).

Article 9 dealt with the trade tax in Harar that the Emperor contested: "Customs duties currently collected in Harar on behalf of His Majesty amount to only 5% and do not exceed 1 million francs. In order to support the construction of the railway and ensure returns on invested capital, His Majesty, the King of Kings of Ethiopia, grants the Company the privilege of levying a 10% duty on all goods transported in both directions. However, this levy, as outlined in Article 9, will be reduced to 5% once the Company's net profit reaches 2.5 million francs. Once the profit reaches 3 million francs, the tax will be entirely abolished. If the Company's net profit exceeds 3 million francs per year, the excess shall be divided equally between the Company and the Government of Ethiopia" [Rossetti 1910: 137].

Article 10 was also a point of contention: Menelik committed to ensuring that in the future all goods between Harar and Djibouti would be transported exclusively by rail [Rossetti 1910: 137]. Thus, the concession included a clearly impractical provision. Menelik also made a key modification to this article, replacing the word "coast" in the original draft with the more specific "Djibouti." The Emperor wanted to avoid provoking conflict with Britain, which would have been inevitable had he tried to forcibly shut down trade routes between Ethiopia and British Somaliland. The Amharic version of the text was also worded in such a way that, with goodwill, no misunderstanding of the meaning could reasonably arise.

The Ethiopian government granted the Imperial Ethiopian Railway Company all land within a 1-kilometer-wide corridor along the projected railway route, including all forests, water sources, and mineral deposits found there. The Company was given the right to set tariffs freely, provided they did not exceed the cost of existing pack-animal transport. The concession was granted for 99 years, after which the railway was to become the property of Ethiopia [Kuzmin 1991: 210].

In March 1896, the Ethiopian army decisively defeated the Italian invaders at the Battle of Adwa, securing the country's independence. Nevertheless, Ilg believed that a cautious and skillful policy of balancing between France and Britain would allow him to neutralize the expansionist ambitions of European powers.

In January 1896, the concessionaires signed a contract with entrepreneur Jean Duparchy, under which his company would build the railway at a cost of 100,000 Swiss francs per kilometer, with three-quarters of that amount to be paid in cash and one-quarter in bonds. Duparchy, however, was highly interested in Ethiopia's resources—gold and coal mines, salt extraction, postal and telegraph services, minting of coins, and banking—all of which he hoped to bring under his control. On August 7, 1896, the founding assembly of the Imperial Ethiopian Railway Company was held. Its charter capital was set at 2 million francs (4,000 shares at 500 francs each); Duparchy controlled 85% of the shares, while Alfred Ilg and Léon Chefneux each held 2% [Loepfe 1974: 44–45].

Ras Makonnen, the imperial governor of Harar, was sharply opposed to the railway's construction, as it threatened his trade monopoly. His stance significantly complicated the transport project. As French traveler Jean-Gaston Vanderheym noted, "Ras Makonnen pays a substantial tribute to Negus Menelik, earning considerable income from customs duties. Harar, in general, conducts a large volume of trade, particularly in coffee" [Vanderheym 1896: 26–27].

In May 1896, the Company's charter capital was increased to 8 million francs. By the summer of 1897, the railway was expected to reach El Bahé. However, a serious miscalculation was made: El Bahé was not 225 km from Djibouti, as had been assumed, but nearly 309 km away [Loepfe 1974: 50].

REVITALIZATION OF THE EUROPEAN POWERS'S INTEREST TOWARDS ETHIOPIA

In 1897, France and Great Britain stood on the brink of a decisive clash over Sudanese territory, which would culminate in the Fashoda Crisis[4] the following year. Ethiopia, too, sought to expand its borders toward Sudan, particularly in the region of the White Nile. In Paris, a diplomatic mission to Ethiopia was organized, led by the

[4] The Fashoda Crisis of 1898 was a conflict between Great Britain and France caused by the struggle to establish colonial rule in Africa. It got its name from the settlement of Fashoda (modern-day South Sudanese Kodok) on the Upper Nile, captured by an armed detachment under the command of French army major Marchand. Great Britain, which was laying claim to control over the territories from Cape Town to Cairo, demanded that Marchand leave Fashoda. On November 3, 1898, the French government decided to withdraw Marchand's detachment from Fashoda, abandoning its claims to access to the Nile. The agreement between Great Britain and France of March 21, 1899, which settled mutual claims, in fact recognized the watershed of the Nile and Congo as the boundary of the spheres of Anglo-French influence in Africa.

Governor of French Somaliland, Léonce Lagarde. He was instructed to coordinate Ethiopian actions with French initiatives and to "neglect nothing in securing lasting friendship in the country and strive to establish our peaceful influence in Abyssinia"[5]. French Colonial Minister Théophile Delcassé wrote to Lagarde that "the independence of Menelik and the establishment of an alliance with him is the main objective of French policy in the Nile Valley" [Michel 1972: 138]. A treaty signed on March 20 regulated the borders between Ethiopia and French Somaliland. A secret annex defined the French and Ethiopian spheres of influence in southern Sudan, specifically in the White Nile region[6].

To demonstrate his special trust in France, Menelik appointed Alfred Ilg as State Secretary and awarded him the Order of the Star of Ethiopia [Biasio 2004: 14], while Léon Chefneux was appointed head of the Ethiopian railways and Consul General in Europe [Langer 1935: 541].

London's response was swift. Britain dispatched a diplomatic mission to Ethiopia to counteract French influence over Menelik. The mission was led by James Rennell Rodd, who held the rank of Envoy Extraordinary. He had previously served as Consul General in Zanzibar and was First Secretary at the British diplomatic agency in Cairo at the time [Vasin 1974: 29]. Rodd was tasked with delivering a letter from Queen Victoria to Menelik, inviting him to her Diamond Jubilee celebration. Additionally, seeking to sow discord between France and Russia, certain British newspapers reported that St. Petersburg was allegedly displeased with France's growing success in Ethiopia [Skalkovsky 1901: 429–430].

On May 14, 1897, an Anglo-Ethiopian treaty was signed, addressing border issues between Ethiopia and British Somaliland[7]. Nevertheless, Menelik informed Rodd that he regarded the eastern bank of the White Nile as exclusively within Ethiopia's geopolitical sphere of interest [Bartnitsky, Mantel-Nechko 1976]. Still, as a compromise, the Negus agreed to a British proposal that Ethiopian goods exported through the British port of Zeila would not be subject to customs duties [Marcus 1966: 121].

During this period, Russian-Ethiopian diplomatic relations were also established. The head of the Russian mission was appointed as Privy Councillor P.M. Vlasov, an experienced diplomat who had previously served in Persia. According to instructions from the Russian Ministry of Foreign Affairs, P.M. Vlasov was to support French interests against British ones and assist Menelik in strengthening his position along the eastern bank of the White Nile and its tributary, the Sobat River [Khanov 1981: 63]. In September 1897, the new Russian Foreign Minister, M.N. Muravyov, sent additional instructions to Vlasov, directing him to thoroughly inquire of the Ethiopian rulers "how far and in which direction, according to their understanding, Abyssinian territories extend and what grounds they base their territorial claims upon"[8].

[5] G. Hanotaux to A. Lebon. 30.11.1896. № 35. In: *Documents diplomatiques français, 1871–1914* (DDF). (1953). Série 1, 1871–1900. T. XIII, 16 octobre 1896 – 31 décembre 1897. Paris: Ministère des affaires etrangères. P. 64.

[6] Convention pour les frontiers. 20.03.1897. № 158. In: *DDF*. (1953). Série 1, 1871–1900. T. XIII, 16 octobre 1896 – 31 décembre 1897. Paris: Ministère des affaires etrangères. P. 277–278.

[7] Hertslet E. (1909). *The Map of Africa by Treaty.* Vol. II. London: Harrison and Sons. P. 423–427.

[8] Dispatch of M.N. Muravyov to P.M. Vlasov. 12(24).09.1897. In: *Archive of Foreign Policy of the Russian Empire (AFPRI).* F. Politarchive. Inv. 482. F. 2067. S. 22–27. (In Russ.)

RAILWAY CONSTRUCTION: CHALLENGES AND OBSTACLES

Approximately 12,000 people participated in the construction of the railway, including around 1,000 Europeans from various countries. When construction began in the autumn of 1897, it became clear that the workers lacked adequate housing and were forced to sleep in the open air [Keller 1918: 139]. Caravan traffic to and from Harar was almost completely halted for several weeks due to attacks by the Issa Somali tribe. The tribe's well-being had been threatened by the disruption of its transport monopoly. In March 1898, Léon Chefneux attempted to reach an agreement with the Issa. The Company paid the tribe a significant sum in compensation [Loepfe 1974: 66].

Progress on the railway was slow. In the spring of 1898, only 500 workers were employed on the site, including a relatively large number of locals, who were mainly used for transporting materials. For example, during the construction of the Chabelley Bridge, water for the mortar had to be hauled from over 14 kilometers away. By the end of July 1898, only 20 kilometers of railway had been completed. Starting in February 1899, Issa attacks on the work camp resumed. By June 1900, about 30 workers had been killed. As Soviet historian I.S. Katsnelson wrote, "The indignation of the natives was caused by the construction of the railway on their land, which deprived the Somalis of their means of subsistence. The Somalis attacked the railway workers and halted construction. At the same time, they disrupted the caravan postal service between Djibouti and Jaldessa. The city of Djibouti was gripped by panic for a time. Residents armed themselves and prepared for defense" [Katsnelson, Terekhova 1975: 149].

The French parliamentarian Count d'Ollans delivered a speech in the Chamber of Deputies criticizing the government's policies on the Somali coast. He strongly condemned the "egregious waste" and "abuses" of the administration and called for the appointment of a governor of French Somaliland who would be independent of the French envoy to Ethiopia (i.e., Léonce Lagarde). In Djibouti itself, it was widely believed that Lagarde had been dismissed as governor due to the Issa unrest, although the decision had actually been made earlier. His position had also been weakened by the unexpected death of his patron, President Félix Faure of France. The new governor of French Somaliland became Alfred Martineau [Loepfe 1974: 68].

There was no doubt that the unrest among the Issa was primarily caused by fears over access to water sources. Governor Martineau convened representatives of the tribe and the railway administration for negotiations, which resulted in an agreement for reconciliation and compensation. To prevent further conflict, the administration was forced to issue strict instructions to the workers. Builders were only permitted to approach wells if accompanied by Issa representatives. Corporal punishment against members of the Issa tribe was strictly forbidden. Attempts were made to reduce Somali resistance to the railway, mainly by hiring them as porters and camel drivers, and later also for earthworks. Engineers also agreed to consider grazing areas, water sources, and Somali cemeteries when determining the railway's route. During the hot season of 1899, progress remained slow. Only 50 kilometers of railway and one major engineering structure were completed—the Chabelley viaduct, 156 meters long and 20 meters high [Loepfe 1974: 70].

Soon, a rebellion broke out in British Somaliland under the leadership of Sayyid Mohammed Abdullah Hassan, also known as the "Mad Mullah." Panic spread in Harar,

and Europeans began fleeing en masse to Addis Ababa. Nevertheless, the Issa tribes, who roamed along the line of the railway under construction, reportedly remained "completely indifferent to the unrest that had swept through the Ogaden," according to the Russian chargé d'affaires in Ethiopia, A.A. Orlov[9].

BRITISH INITIATIVES TO GAIN CONTROL OVER THE RAILWAY

The Company's board of directors found itself in an uncomfortable position, as it had to admit that its own resources were insufficient to complete the construction of the first section of the railway. It became evident that El Bahé was at least 70 kilometers farther from the coast than originally assumed. The collapse of the French railway bond market led to losses amounting to 210,000 francs. The resulting shortfall had to be covered by attracting new shareholders.

In July 1900, an agreement was reached with the British investment firm New Africa Company, headed by A. Ochs. The Company undertook the construction of the railway in the desert section from kilometer 225 to 295 at a cost of 107,000 francs per kilometer. The necessary funds were to be raised through the issuance of 30,000 bonds. In addition, the *New Africa Company* provided a short-term loan of 2 million francs at an annual interest rate of 6%, using as collateral the unpaid subscribed capital of the railway company. Rather than securing this capital, the railway company effectively burdened its budget with additional interest payments [Rossetti 1910: 141–142]. A. Ochs also established the International Ethiopian Railway Trust and Construction Company, which was designed to safeguard British interests in the Ethiopian railway. One of the goals of this company was to push for the construction of a branch line connecting the main railway to the port of Zeila in British Somaliland [Shiferaw 1991: 352]. The British expressed hope that "measures may be taken to connect the British port of Zeila to the main railway line… Such a policy would give both the French and the British equal opportunities for commercial influence in Abyssinia" [Loepfe 1974: 92].

In response, French Foreign Minister Théophile Delcassé called for direct government intervention to protect French interests in the Ethiopian railway project. The Suez Canal was cited as a precedent—constructed by France, it had eventually fallen under British control [Keller 1918: 149].

Members of the British Parliament were increasingly concerned about the consequences "for the trade of the British protectorate in Somaliland" resulting from the completion of the French railway from Djibouti. One MP noted that "the trade of Zeila and Aden has been steadily declining, while Djibouti's export trade increased from 693,013 francs in 1900 to 2,679,300 francs in 1901"[10]. As the British ambassador to Ethiopia, John Harrington, wrote to London, "Once the railway reaches Harar, it will have an impact—both political and commercial—on Aden, Somaliland, and Sudan. It

[9] From the report of the temporary Russian chargé d'affaires in l'Ethiopia A.A. Orlov to the Russian Ministry of Foreign Affairs on Ethiopia's relations with the liberation movement led by Said Mohammed bin Abdullah. 26.05.1900. (2005). In: Davidson A.B. (Ed.). *History of Africa in documents. 1870–2000*. Vol. 1. Moscow: Nauka. P. 107. (In Russ.)

[10] United Kingdom Parliament, Hansard, House of Commons. 19.06.1902. *Hansard.* https://hansard. parliament. uk/Commons/1902-06-19/debates/7d801eb0-34c9-47f1-a0bc-ced2f89a5f06/BritishSomaliProtectorate?highlight=djibouti%20railway#contribution-08699984-9014-4341-a45d-eb5d533af8d1 (accessed: 26.03.2025)

will affect Aden, because it is no secret that the French hope to weaken Aden's position as a trade hub on the Red Sea and as a coal station for the merchant fleets of all nations trading with the East... The Somali coast will be affected as well, since it is obvious that the Djibouti–Harar railway will divert trade from Zeila to Djibouti, taking with it commerce from Harar and southern Abyssinia"[11].

Anglo-Ethiopian relations rapidly deteriorated due to competing territorial claims in southeastern Sudan following France's defeat in the Fashoda Crisis. In May 1900, aiming to gauge Italy's stance in the event of a possible war between Ethiopia and Great Britain, Alfred Ilg traveled to Rome. There, he held talks with the Secretary General of the Italian Foreign Ministry[12], Emilio Visconti-Venosta, who informed the Swiss advisor that in such a scenario, Italy would remain benevolently neutral but would not provide assistance to Ethiopia[13].

On February 6, 1902, a draft agreement between the French government and the Imperial Ethiopian Railway Company was submitted to the French Parliament. It proposed an annual subsidy of 500,000 francs to the Company for a period of 50 years [Rossetti 1910: 143–150]. The deputies approved the agreement in March. However, the subsidy was granted under strict conditions. Article 5 stipulated that any capital increases, bond issues, loans, and the election of the board of directors were subject to government approval. Numerous articles also regulated technical requirements. Article 11 reduced the share of Emperor Menelik in the Company's potential net profit. Thus, the French government effectively established certain rights over Ethiopian territory. The Company's headquarters were moved to Paris [Rossetti 1910: 143–146]. This agreement was concluded without the knowledge or consent of Menelik, who had not anticipated that the French government itself would become the concessionaire. In April 1902, the Emperor asked the Russian chargé d'affaires in Addis Ababa, A.A. Orlov, to inform Léon Chefneux that he did not recognize the signed agreement. Menelik banned the continuation of construction, and a conflict erupted between him and the French government [Kuzmin 1991: 213–215].

Until then, all matters related to the railway in Ethiopia had been handled jointly by Ilg and Chefneux. Gradually, Ilg began to suspect that Chefneux was attempting to sideline him from decision-making. Ilg only learned of the subsidy convention from Léonce Lagarde[14]. On March 10, 1902, Ilg expressed to Menelik his hope that there would be no governmental control from France in the railway matter.

While preparations were underway in Paris for the official opening of the first section of the railway, British ambassador John Harrington was actively lobbying his government in London to support the construction of the Berbera–Harar railway line. His reputation had been significantly boosted by the successful negotiation of the Anglo-Ethiopian border treaty, signed on May 15, 1902. This agreement recognized Ethiopia's western borders in terms that even the French considered as stretching too far into the Nile

[11] J. Harrington to Lord Salisbury. 31.08.1899. In: *The National Archives of the United Kingdom (TNA).* Foreign Office (FO). 881/7382/72.
[12] Equivalent to the post of Minister of Foreign Affairs.
[13] J. Harrington to Lord Salisbury. 14.05.1900. In: *TNA.* FO. 881/7547/3.
[14] F. Ciccodicola to G. Prinetti. 28.07.1902. In: *Documenti Diplomatici Italiani (DDI).* (2000). 3 serie (1897–1907). Vol. VII. Roma: Ministero degli Affari Esteri. № 49. P. 40.

Valley. Menelik's approval for the construction of a Sudan–Uganda railway line through Ethiopian territory was seen as a concession to Britain (Article 5). While the French viewed this provision as a threat to Ethiopia's independence by Britain, the British themselves were far more interested in Article 3 of the treaty. Under this clause, Menelik committed not to construct any hydraulic works that could obstruct the flow of the Nile[15].

In June 1902, the Emperor of Ethiopia dispatched a prominent religious figure, Abuna Matewos, to Russia on a special mission, instructing him to expedite the appointment of a new Russian representative to Ethiopia. During his audience in St. Petersburg, the Russian Emperor "inquired about the state of the railway from Djibouti to Harar; upon learning that the line would soon reach Harar, His Majesty remarked that this railway would benefit Abyssinia. To this, Abuna Matewos, while acknowledging the advantages for the country, replied, 'This same railway will open the path for foreign military invasion into the heart of the country.' His Imperial Majesty graciously remarked that, since the railway is in the hands of our allies, the French, no threat to Abyssinia can come from that direction"[16].

On December 24, 1902, the first train arrived at Dire Dawa station. Emperor Menelik's refusal to attend the inauguration of the railway's first section was viewed in Paris as a failure of French diplomacy [Keller 1918: 141].

In early 1903, much to his disappointment, Alfred Ilg realized that Menelik had come to believe rumors—spread by the Italian envoy Federico Ciccodicola—claiming that Ilg was secretly being paid by the French government. Ilg took the bold step of submitting his resignation as State Secretary. Menelik refused to accept it and was eventually persuaded to acknowledge the necessity of an agreement with France regarding the new legal status of the Imperial Ethiopian Railway Company. The Emperor authorized the Company to resume its operations and declared that he "neither accepts nor rejects the convention of last February but expresses his willingness to conclude an agreement with the French government to define the Company's final status" [Loepfe 1974: 111]. As a result, final decisions were postponed.

Meanwhile, financier A. Ochs tried to mediate an agreement on the railway issue between France and Great Britain. He proposed a joint Anglo-French financing plan for the railway section between the Awash River and Addis Ababa. In December 1903, Ochs succeeded in organizing a meeting between John Harrington and Léonce Lagarde. The British ambassador attempted to convince his French counterpart of the need for joint control over those territories. The western part of Ethiopia, adjacent to Sudan, was to be considered a British sphere of interest. These initial negotiations later led to the Tripartite Agreement of 1906 [Shiferaw 1991: 373–374].

The signing of the Entente Cordiale in April 1904 marked a new starting point for Anglo-French negotiations on Ethiopia. Meanwhile, on August 8, Menelik issued a decree stating, "So that the railway Company does not waste time, I inform you that I wish it to immediately begin construction on the line from Dire Dawa to Addis Ababa. As for the specific terms, I will reach an agreement with the Company later" [Caioli 1989: 10].

[15] Hertslet E. (1909). *The Map of Africa by Treaty.* Vol. II. London: Harrison and Sons. Pp. 430–432.

[16] Report by S.A. Sason on the conversation between Nicholas II and the Ethiopian Metropolitan Abuna Matewos. 17.07.1902. In: *AFPRI.* F. Politarchiv. Inv. 482. F. 2036. S. 173. (In Russ.)

On April 11, 1905, the Emperor summoned representatives of the European powers and expressed his dissatisfaction with the delays in railway construction. He threatened to carry out the work independently if no proposals were forthcoming from governments "capable of aligning the project with their international interests" [Boev 1964: 99]. The situation was further complicated by Germany's open offer of patronage to Ethiopia. In March, Menelik warmly received a trade mission from Berlin in Addis Ababa. Fears of a German rival pushed France toward coordinated action with Britain.

TRIPARTITE AGREEMENT ON THE DIVISION OF SPHERES OF INFLUENCE IN ETHIOPIA AND COMPLETION OF THE RAILWAY

Until 1906, the issue of dividing spheres of influence in Ethiopia dominated the relations between Great Britain, France, and Italy. Against this backdrop, the construction of the railway was considered a secondary matter. The dispute between France and Ethiopia was resolved in favor of France through negotiations among England, France, and Italy, which culminated in the signing of a tripartite agreement on the division of spheres of influence in Ethiopia on December 13, 1906, in London[17]. The agreement recognized the interests of "France and Ethiopia regarding the French Protectorate of the Somali Coast, from the interior districts of this protectorate to the area necessary for the construction and operation of the railway from Djibouti to Addis Ababa"[18]. Regarding the railway, "the governments of the three powers agreed that the Ethiopian Railway Company or any other French company would continue the construction of the Djibouti–Dire Dawa railway to Addis Ababa, with a possible branch to Harar, provided that nationals of these powers enjoyed equal rights concerning trade and transit on the railway and in the port of Djibouti. No transit duties would be levied on goods transported for the benefit of the Company or the authorities of French Somaliland"[19].

The illness of Menelik and the increased pressure from European powers on Ethiopia, culminating in the 1906 agreement that defined the boundaries of the economic spheres of interest of Great Britain, France, and Italy in Ethiopia, combined with court intrigues, weakened Alfred Ilg's position at the imperial court. During this period, he grew closer to S.A. Likhachev, the temporary Russian chargé d'affaires in Ethiopia. The Swiss confidentially informed Likhachev about the behind-the-scenes aspects of Ethiopia's foreign policy and also provided copies of treaties concluded with Germany and Austria-Hungary[20].

Following the death of Ilg's father-in-law, A. Gattiker, the issue of the large family estate needed to be resolved. Leaving for Switzerland, Ilg told the German chargé d'affaires that he would return to Ethiopia only if a decision favorable to his interests as concessionaire regarding the continuation of the Abyssinian railway construction was made [Loepfe 1974: 139]. Ilg did not respond to Menelik's requests to return to Ethiopia.

[17] Hertslet E. (1909). *The Map of Africa by Treaty.* Vol. II. London: Harrison and Sons. P. 440–444.
[18] Ibid. P. 442.
[19] Ibid.
[20] S.A. Likhachev to V.N. Lamzdorf. 17.04.1906. In: *AFPRI*. F. Politarchiv. Inv. 482. F. 167. S. 52. (In Russ.)

All his property was transferred to state ownership. Settling in Zurich with his wife, daughter, and three sons, Ilg died at the age of 61 on January 7, 1916.

At the same time, despite the difficulties in building the railway, even Russia was interested in the project. The Russian mission in Addis Ababa received many letters from people wishing to settle in Ethiopia and make a career there. Some specialists, especially engineers and railway workers, wanted to get jobs building the Djibouti-Addis Ababa railway [Khrenkov 2001: 93].

As a result of the construction of the railway, the city of Dire Dawa actively began to develop. It was located 65 km from Harar, 310 km from the Red Sea coast, and 470 km from Addis Ababa. The location and layout of the city were determined by the railway Company. In the summer of 1903, L. Chefneux completed the settlement plan, in which European and native quarters were clearly separated. The central place was occupied by the railway station and workshops. By the beginning of the First World War, the population had grown to approximately 6,000 people [Loepfe 1974: 168–169].

In 1907, the Imperial Ethiopian Railway Company was forced to declare bankruptcy. Under pressure from France, on January 30, 1908, Menelik issued a new concession for the construction and management of the railway for 99 years in the name of his French doctor, a black native of the island of Guadeloupe, J. Vitalien[21]. A new Franco-Ethiopian Railway Company *(La Compagnie du Chemin de Fer Franco-Éthiopien)* was created, in which the main economic role was played by the Bank of Indochina. The railway passed under the full control of the French government along the entire route. In January 1910, work resumed but still progressed slowly.

In 1913, the famous Russian poet N.S. Gumilev went to Ethiopia. In his "African Diary," he wrote, "We learned that the train we were supposed to take deeper into the country departs on Tuesdays and Saturdays. We were to stay in Djibouti for three days." "The fare in second class, where all Europeans usually travel—the third class was intended exclusively for natives, and the first class, which was twice as expensive and no better than the second, was usually occupied only by members of diplomatic missions and a few German snobs—cost 62 francs per person, somewhat expensive for ten hours of travel, but such are all colonial railways. The locomotives bore loud but hardly justified names: Elephant, Buffalo, Strong, etc. Already a few kilometers from Djibouti, when the climb began, we moved at a speed of one meter per minute, and two Negroes walked ahead, sprinkling sand on the rails wet from rain… After breakfast, we were informed that the train would not go further because the rains had washed away the track, and the rails were hanging in the air." [22] After that, N.S. Gumilev and other passengers reached the destination by handcar.

On June 7, 1917, the railway was finally extended to Addis Ababa. Its length was 784 km. Ethiopia's foreign trade turnover sharply increased. It became the main route for Ethiopian goods. According to the Russian historian V.S. Yagya, with the construction of the railway, "the Empire's dependence on caravan trade routes, which connected the Ethiopian market with neighboring Anglo-French-Italian possessions and through them to the world market, sharply decreased" [Yagya 1978: 31].

[21] Concession du chemin de fer franco-éthiopien (Menelik – Vitalien), 30.01.1908. *Tracer des frontières à Djibouti.* https://djibouti.frontafrique.org/?toDo=docs&ID=107&posID=133 (accessed: 17.04.2025)

[22] Gumilev N.S. African diary. April – May 1913. (In Russ.). https://gumilev.ru/prose/10 (accessed: 10.04.2025)

As noted by researcher M.Yu. Sitnikov, “the rolling stock was delivered by sea. At the first stage, after the railway opened in 1917, 54 locomotives, 36 passenger cars of three classes, and 445 freight cars and platforms were delivered, mostly of Swiss, French, and German manufacture.”[23]

A distinctive feature of the Ethiopian railway was the exclusive use of metal ties because it was impossible to use wooden ties due to termites. Periodically, heavy rains washed away bridges and embankments. The speed of locomotives was limited to 30 km/h. To purify water for boilers, special filtration systems had to be installed. However, the limited number of water stations allowed only one train per day in each direction. By 1934, trains ran twice a week in each direction, and the journey took three days, with no trains running at night [Luknitsky 1936: 243].

The railway functioned reliably until the 1970s, surviving the Italo-Ethiopian War of 1935–1936 and the battles of World War II on Ethiopian territory. The 1974 revolution, the Ogaden War of 1977–1978, and general regional destabilization led to the cessation of railway operations. Later, train services resumed but were completely stopped in 2008. In 2018, a new, more modern railway was opened, built by Chinese companies[24]. Thus, a hundred years later, history in some way repeated itself. In the new political and economic conditions of globalization, China began to play an increasingly important role in the world, pursuing an active policy, including in the development of communications in Africa.

CONCLUSION

The Djibouti–Addis Ababa railway became not just an engineering project but also an arena of intense international rivalry during the era of the colonial scramble for Africa. From the very beginning, the concession reflected the struggle of the great powers—primarily France and Great Britain—for influence in the strategically important Horn of Africa region. France used the railway as a tool to consolidate its presence in Ethiopia and to counterbalance British positions in neighboring Sudan and British Somaliland. Great Britain, in turn, sought to limit French penetration by promoting alternative routes and exerting pressure on the Ethiopian leadership. This confrontation turned the construction of the railway into a protracted political and financial process. Disputes over the route, complex negotiations with Menelik II, and pressure from foreign missions—all these demonstrated how an infrastructure project became a field of geopolitical contest. As a result, Ethiopia, despite its formal independence, found itself involved in the rivalry of empires, on which the success of its modernization efforts depended.

Nevertheless, the completion of the railway by 1917 marked an important milestone: Ethiopia gained access to the sea and a transport corridor that contributed to its economic development. For the European powers, the railway was less a means of economic benefit and more an element of political influence. Thus, the history of the Djibouti–

[23] Sitnikov M.Yu. Railways of Ethiopia: history of construction and prospects. (In Russ.). http://scbist.com/xx2/25339-02-2013-zheleznye-dorogi-efiopii-istoriya-stroitelstva-i-perspektivy.html (accessed: 24.03.2025)
[24] Chinese-built Ethiopia-Djibouti railway begins commercial operations. *Xinhua.* 01.01.2018 http://xinhuanet.com/english/2018-01/01/c_136865306.htm (accessed: 15.04.2025)

Addis Ababa railway vividly illustrates how infrastructure projects during the colonial period became instruments of geopolitical struggle, the consequences of which determined the fate of entire regions.

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Научная статья

ЖЕЛЕЗНАЯ ДОРОГА ДЖИБУТИ – АДДИС-АБЕБА И ЕЕ РОЛЬ В МЕЖДУНАРОДНЫХ ОТНОШЕНИЯХ КОНЦА XIX – НАЧАЛА XX вв.

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Аннотация. Опираясь на широкий круг литературы и источников, а также российские и британские архивные материалы, автор статьи прослеживает влияние соперничества европейских стран за Эфиопию для создания транспортных коммуникаций этой страны. Важную роль в даровании концессии на строительство железной дороги французской компании сыграл ближайший советник императора Менелика II швейцарский инженер Альфред Ильг. Железная дорога должна была связать Эфиопию с побережьем Французского Сомали, что облегчало Франции проведение активной политической и экономической экспансии в этой стране. Дорога должна была быть доведена до Белого Нила, то есть, до Судана, на территории которого претендовала Франция.

После дипломатического поражения перед Великобританией, а также многочисленных набегов кочевых племен на строящуюся железную дорогу, компания по ее строительству столкнулась с кризисом. Политика Лондона в этом транспортном проекте активизировалась. В Великобритании не хотели терпеть ущерб от возможной французской торговой монополии в регионе, поэтому попытались финансово подчинить себе компанию по строительству эфиопской железной дороги. Ответные меры Франции по фактической национализации дороги привели к открытому противостоянию с императором Эфиопии. В этих условиях, а также под влиянием договора 1904 г. Франция и Великобритания были вынуждены скоординировать свои интересы друг с другом, а также с Италией. Это привело к достижению тройственного соглашения 1906 г. о разделе сфер влияния в Эфиопии. Железная дорога была завершена лишь в 1917 г. на основании новой концессии. Автор статьи проводит связь между политическими и экономическими процессами в меняющемся балансе сил европейских держав в Эфиопии и их влиянием на международные отношения конца XIX – начала XX вв.

Ключевые слова: Эфиопия, железная дорога, транспорт, Джибути, Аддис-Абеба, Альфред Ильг, Менелик II, история

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Research article

DIPLOMATIC RELATIONS WITH THE TRANSVAAL IN THE CONTEXT OF RUSSIAN FOREIGN POLICY OF THE LATE 19th CENTURY

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Abstract. This article examines the establishment of diplomatic relations between Russia and the Transvaal in 1898, placing it within the broader context of Russian foreign policy in the late 19th century. While previous studies have explored the negotiations surrounding this event, this article delves deeper into the motivations behind Russia's interest in the Transvaal. Challenging the view that Russian interest stemmed largely from growing migration and economic ties, this article argues that the decision to establish diplomatic relations was driven by strategic considerations within the complex European political landscape. The Transvaal's emergence as a significant gold producer and its resistance to British expansionism placed it at the center of geopolitical rivalries, particularly between Great Britain and Germany. Russia, seeking to maximize its influence in the world, recognized the potential of leveraging the Transvaal situation to its advantage. By establishing diplomatic ties, Russia aimed to gain access to information and potentially influence the dynamics between the major European powers vying for control in Southern Africa. This move aligns with Russia's broader foreign policy strategy of the time, which involved engaging with various regions, including Africa, to advance its interests in the face of European colonial competition.

Based on documents from the Foreign Policy Archive of the Russian Empire and the National Archives of South Africa, this article demonstrates that Russia's engagement with the Transvaal was not an isolated incident but a calculated move within its overall foreign policy framework. By supporting the independence of states like the Transvaal, Russia sought to counterbalance the growing dominance of other European powers and protect its own strategic interests.

Keywords: history of Russian-African relations, Russian Empire, Transvaal, South African Republic, diplomatic relations between Russia and the Transvaal, foreign policy of the Russian Empire, Russian interests in Africa, Anglo-Boer War of 1899–1902

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INTRODUCTION

In 1898, the South African Republic (the Transvaal Republic) became the first country in southern Africa with which the Russian Empire established diplomatic relations. The circumstances of the establishment of a Russian diplomatic mission in this republic have already been studied. Since the 1990s, documents on negotiations to establish direct relations between the two states have been published. [Davidson et al. 1999; Khritinin 1999]. The research articles and books by the staff of the Centre for African Studies of the Institute of General History of the Russian Academy of Sciences (RAS) and the Archive of Foreign Policy of the Russian Empire reveal the course of these negotiations, the arguments of supporters and opponents of the Russian-Transvaal rapprochement, and the vicissitudes of the establishment of their respective missions in St. Petersburg and Johannesburg [Davidson, Filatova 2010; Marchenko 1992].

And yet, to my knowledge, only one work—a monograph by prominent Africanists A.B. Davidson and I.I. Filatova [Davidson, Filatova 1998]—attempts to identify the reasons for the Russian government's interest in establishing diplomatic relations with the Transvaal. According to these researchers, the Russian government in the late 19th century focused its attention on South Africa because of the growing migration from the Russian Empire to the Cape Colony and the Transvaal, as well as requests from businesspeople for assistance in establishing trade and economic relations. The rapid development of gold mining in the Transvaal also played a role. The owners of Russian gold mining enterprises wanted to gain access to the technologies of their South African competitors [Davidson, Filatova 1998: 195, 202].

Davidson and Filatova see the main reason for Russia's interest in establishing intergovernmental ties with the Transvaal in the fact that the Boer republics and Great Britain were in a political confrontation that could escalate into a military one. Thus, the conditions were created for Russia to "bring them to its side as allies" [Davidson, Filatova 1998: 196].

Historical studies published in recent decades have made it possible to study Russian-Transvaal relations not only in connection with the Russian-British antagonism but also in the broader context of Russian foreign policy. It seems promising to turn to the publications of I.S. Rybachenok of the Institute of Russian History of the Russian Academy of Sciences.

Having studied the views of Russian statesmen and diplomats on the fundamental interests of the empire in the late 19th and early 20th centuries, I.S. Rybachenok interprets the growing interest in events in Africa at that time as a sign that the ruling circles of the Russian Empire had realized the interconnectedness of political actions in different regions. Russian politicians and diplomats saw that the intertwining of European and colonial contradictions provided an opportunity for new combinations and arrangements. While the European powers fought for control over the most important, in an economic and military/strategic sense, regions of Africa, Russia, whose interests were only indirectly involved, could use this confrontation in its own interests [Rybachenok 2007: 268, 296–297].

For example, the Russian government was concerned about the regime of navigation through the Suez Canal, which provided a sea route from the western part of Russia to the Far East. It was interested either in the neutral status of the canal or in the growing influence of allied France in the region. Assistance to Ethiopia was seen in St Petersburg, among other things, as a means of inducing the Ethiopian emperor to take heed of the Russian recommendations in the field of foreign policy. This was supposed to be an

instrument of Russian influence on the European states that were competing for dominance in the region. Russia also closely followed the “scramble” for Morocco, in which were involved Great Britain, Germany, Spain, and France. Meanwhile, in the south of the continent, the contradictions between the aspirations of Great Britain, which wanted to establish undivided domination there, and Germany, which favored the Transvaal, became clear.

In all these cases, it was advantageous for Russia to ensure that African states remained independent. And the establishment of official ties with them indicates that the Russian government appropriately assessed their importance in international politics [Golikov, Rybachenok 2011: 97; Rybachenok 2012: 321]. As early as 1868, diplomatic relations with Egypt were established. And in 1897–1899, Russian diplomatic missions appeared in Morocco, Ethiopia, and the South African Republic [Rybachenok 2020: 103].

This article examines the establishment of Russian-Transvaal intergovernmental relations from the angle of the Russian Empire’s foreign policy priorities in the period immediately preceding the Anglo-Boer War of 1899–1902. Documents from the Archive of Foreign Policy of the Russian Empire and the National Archives of South Africa are used.

EARLY INTERGOVERNMENTAL CONTACTS

In the 19th century, the Russian Empire was the only major European power that did not have colonies in Africa and had no intention of acquiring them. Russian presence and influence in Southern Africa were minimal.

Meanwhile, political and colonial contradictions on other continents repeatedly brought Russia into armed confrontation with the British Empire. Therefore, people in Southern Africa who were anti-British felt that Russia could prevent British expansion and socio-political hegemony. As early as 1841, a Russian sailor who visited the Cape Colony recorded the statement of a Boer winemaker, dissatisfied with the compensation from the British colonial authorities for his freed slaves: “You, Russians, are strong: why do you not deliver us from these porter-bloated eaters of roast beef?” [Butakov 1844: 22]. In the late 1830s and early 1840s, the rivalry between Russia and Great Britain in Central Asia (“The Great Game”) intensified. News of a possible war with Russia reached the Cape Colony, inspiring local opponents of British colonial rule.

The political leaders of the countries created by the Boers in the 1850s—the South African Republic (Transvaal) and the Orange Free State—were also thinking about bringing Russia to their side.

In the early decades of these sparsely populated agrarian republics, their economic situation was very difficult. Unwise agricultural land distribution policies left half of the white inhabitants without land. State power in the republics was weak. It was impossible to ensure effective tax collection and military service of citizens [Giliomee, Mbenga 2007: 195]. At the same time, Britain became increasingly interested in expansion throughout the region. Prior to the discovery of rich diamond deposits in West Griqualand, Britain had prioritized taking control of the entire coastline so that military vessels of other powers would not be able to use South African bays without its knowledge [Giliomee, Mbenga 2007: 164]. But after the British annexation in 1871 of the diamond fields claimed by the Orange Free State and the discovery of gold in what soon became Southern Rhodesia and Bechuanaland, the empire continued to push deeper into the subcontinent, having realized its economic potential.

In the mid-1870s, the Minister of Colonies Lord Carnarvon believed that there were favorable circumstances for forcing the republics to join the confederation under the

control of the British Empire [Giliomee, Mbenga 2007: 195]. Foreign loans for large-scale modernization projects taken by the Transvaal on the initiative of President T.F. Burgers burdened the country's economy. In addition, the republic, whose armed forces were formed on the militia principle, could not find enough volunteers to defend itself in the event of an invasion by Zulu and Pedi groups, let alone resist British colonial troops. There was a threat of annexation of the republic [Appelgryn 1979: 233]. In the 1870s in the Transvaal, attempts began to involve Russia in the defense of the political independence of this state. To gain access to the Indian Ocean and strengthen the republic's international ties, President Burgers decided to build a railway from Pretoria to Delagoa Bay in Portuguese Mozambique (present Maputo Bay) [Giliomee, Mbenga 2007: 194]. In 1875, the British Foreign Office was informed that Burgers had asked Russia, along with Germany and the United States, to act as a guarantor that Delagoa would not come under the control of the British Empire. But Baron A.G. Jomini, who ran the Russian Foreign Office, showed no interest in the South African question. In response to an inquiry from a British colleague, he stated that he did not know about Burgers and had little knowledge of the Transvaal [Uys 1933: 153].

Meanwhile, the financial crisis in the republic was worsening. By early 1877, the foreign debt had grown so high that civil servants were no longer paid their salaries [Giliomee, Mbenga 2007: 195]. The white population, dissatisfied with the country's leadership, was divided and offered no resistance when in January of the same year the British Commissioner, Sir Theophilus Shepstone, arrived in Pretoria, the capital of the Boer state, with a small military detachment.

Expecting Britain to end the independence of the republic, Vice-President Paul Kruger tried to organize resistance with international support. On 10 March 1877, he proposed to the president and the government to draw the attention of Russia, Germany, and the USA to Britain's aggressive intentions towards the Transvaal [Appelgryn 1979: 233; Engelbrecht 1925: 218]. This idea did not come to fruition. A month later, Shepstone, as a special representative of his government, announced the annexation of the Transvaal.

Boer nationalists saw this annexation as a violation by Britain of the conventions of the 1850s under which it recognized the independence of the republics. Kruger led the resistance. In December 1880, the Boers turned to armed struggle. Fighting with British troops lasted three months. The British Empire suffered a major military defeat for the first time since the US War of Independence of 1775–1783. The British government, forced to use troops to maintain order in Ireland, where a radical movement for political independence and the complete elimination of English land ownership was growing, did not send reinforcements to Southern Africa.

The Russian embassy in London reported to St. Petersburg on the Anglo-Transvaal peace negotiations. Already in these reports, the Russian diplomats' pro-Boer sympathies can be traced. The embassy staff believed that the annexation of Transvaal was illegal and the demands of the supporters of the independence of the republic were just [Davidson, Filatova 1998: 197].

PROPOSALS TO ESTABLISH DIRECT LINKS

During the period of direct British rule in the Transvaal (1877–1881), the British authorities managed to reform the financial system and public administration, significantly increasing their efficiency [Giliomee, Mbenga 2007: 196]. In 1883, P. Kruger was elected president and directed his efforts towards achieving full political

independence from Great Britain. After the British troops left the Transvaal, the London Convention of 1884 was concluded. [Röhl 2015: 783]. The Transvaal became officially known again as the South African Republic. Its government could conclude agreements not only with the Orange Free State but also with other countries. For such a treaty to enter into force, the British government's authorization was required, which was considered to have been obtained if no objections were received from London within six months [Davidson, Filatova, 2010: 103].

The political and economic importance of the South African Republic increased after the discovery of extensive gold deposits in 1886 in the Witwatersrand mountain range (Giliomee, Mbenga 2007: 199–201). The development of these deposits attracted large foreign capital as well as tens of thousands of migrants from different continents. At the time, the Transvaal mines became the largest source of gold in the world [Giliomee, Mbenga 2007: 195]. In addition, diamond deposits were discovered in the Transvaal and the Orange Free State. The Cape Colony was no longer the only source of these minerals in southern Africa.

The economic autonomy of the Boer republics hindered British expansion in the region. In particular, it complicated the plans of Cecil Rhodes, a financier and the founder of the largest diamond mining company, De Beers. Rhodes, who became Prime Minister of the Cape Colony in 1890, sought to unite the subcontinent under the British flag [Giliomee, Mbenga 2007: 206–207]. The supporters of the Transvaal's incorporation into the British Empire wanted to exploit the discontent of a significant part of the population of the Boer republic: white migrant laborers (uitlanders), mostly British subjects. They demanded voting rights. Many owners of large businesses were also dissatisfied. They criticised the government for giving private individuals or Transvaal companies a monopoly on the production of certain goods, including dynamite needed for mining. Importing these goods was unprofitable because of high import duties.

The British government was also concerned about the Transvaal's strengthened political-economic ties with Germany. Not only did German investors own significant stakes in mining ventures in the Witwatersrand, but German capital also helped establish the State Bank of the South African Republic in 1894 [Giliomee, Mbenga 2007: 2010]. Joseph Chamberlain, appointed British Secretary of State for the Colonies in 1895, favored cooperation with Germany [Giliomee, Mbenga 2007: 2010]. But he and his colleagues in the government could not ignore the growing trade and economic competition from this power and its political ambitions in Southern Africa.

Russian diplomats also noticed that British interests in the region were in many ways at odds with German interests. This was reported to the Acting Minister of Foreign Affairs in early 1895 by N.V. Charykov, Counsellor at the Embassy in Berlin. In a letter, which was read by Nicholas II, the diplomat noted that the South African Republic was comparable in size to Italy. The independence of this country, which the citizens defended in a war, was recognized by Great Britain. The official representative of the Transvaal, Baron Gerard Beelaerts van Blokland, was received at the Dutch royal court as an envoy, on a par with other diplomats of that rank. Charykov learned from him that there were hundreds of Russian migrants living in the South African Republic[1].

Beelaerts van Blokland expressed the opinion that Russia should open a consulate there, as Portugal, Germany, the United States, France, Belgium, and Turkey had already done. N.V. Charykov thought that, instead, the Russian consul in the Cape Colony could

[1] N.V. Charykov to N.P. Shishkin, 27 January (8 February) 1895. Archive of Foreign Policy of the Russian Empire (AVPRI). Fonds 133. Series 470. Year 1895. File 17. Pp. 39-rev.-40.

be accredited in the Transvaal: "Without incurring unnecessary expenses, such an appointment would enable the Imperial Ministry to follow locally one of the manifestations of the now escalating colonial struggle between Germany and England"[2].

By then, the Transvaal had become the most prosperous and fastest growing territory on the subcontinent. Industrialization was underway, towns were growing, and more and more people were working in the mining industry. The Department of Trade and Industries of the Russian Ministry of Foreign Affairs began to receive requests from Transvaal businesspeople to establish trade relations with the South African Republic. In the spring of 1895, the secretary of the Russian embassy in the Netherlands, A.E. Berends, was instructed to find out from Beelaerts van Blokland whether the Transvaal government was interested in establishing formal relations and concluding a trade treaty[3]. At the same time, the Russian consul in Cape Town, C.H. Knight, was instructed to provide information on the development of trade and industry in the South African Republic, as well as on the number of Russian subjects living there[4].

Consul Knight sent a detailed report to the Ministry of Foreign Affairs, indicating that there were not hundreds, as Beelaerts van Blokland believed, but up to 6,000 people of Russian birth living in this country[5]. Nevertheless, the Ministry decided that the time had not come to open a diplomatic mission. F.R. Osten-Sacken, Director of the Department of Internal Relations of the Ministry of Foreign Affairs, stated on 20 November (2 December) 1895 that there was no need to establish a consulate in the Transvaal[6].

JAMESON RAID AND RUSSIA'S POSITION

A few weeks later, following the wave of protests against discrimination against the uitlanders in the Transvaal, which began in the British press, the Prime Minister of the Cape Colony, Cecil Rhodes, decided that it was time to overthrow Paul Kruger and initiate rapprochement with Great Britain. He equipped an armed detachment under the leadership of his confederate Leander Starr Jameson, who was to penetrate the territory of the Republic and, with the assistance of uitlanders, to carry out a coup d'état. The preparation of this expedition, which came to be known as the "Jameson Raid," involved mine owners who wanted the government in Pretoria to be receptive to British demands [Giliomee, Mbenga 2007: 207–208].

But the Jameson Raid failed. The uitlanders did not come to the aid of the detachment, and it was defeated on 2 January 1896. L.S. Jameson was captured and sentenced to imprisonment by the Transvaal court. This Boer victory boosted Kruger's popularity, enabling him to form a defense alliance with the Orange Free State. The British government condemned the raid and sought to distance itself from its organizers. Rhodes, having been compromised, resigned as Prime Minister of the Cape Colony [Giliomee, Mbenga 2007: 209].

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[2] Ibid. Pp. 40 rev.–41.
[3] Russian Ministry of Foreign Affairs to A.E. Berends, 23 March (4 April) 1895 Draft. AVPRI. Fonds 155. Series 929. File 2. P. 1 rev.
[4] F.R. Osten-Sacken to C.H. Knight, 27 Match (8 April) 1895. Draft. AVPRI Fonds 155. Series 929. File 2. Pp. 2–2 rev.
[5] Statement of the Economic Situation of the Transvaal. 1895. AVPRI. Fonds 155. Series 929. File 2. P. 9 rev.
[6] F.R. Osten-Sacken to M.N. Nikonov, 20 November (2 December) 1895. Draft. AVPRI. Fonds 155. Series 929. File 2. P. 7.

The armed intervention of Great Britain in the Transvaal outraged the public in Europe and the USA because it was a conspiracy against a Christian state established and governed by Europeans. After the invasion of L.S. Jameson's unit into the Transvaal territory, Kruger asked Germany and France for support on 30 December 1895. Germany sent a cruiser from Zanzibar to Delagoa Bay and also prepared a detachment of its marines to be sent from Mozambique to the Transvaal. In response, Britain sent a special forces squadron to Delagoa [Newton, Benians 1936: 564].

From Berlin, the Ambassador Count N.D. Osten-Sacken reported to the Foreign Minister, Prince A.B. Lobanov-Rostovsky, that the German government was thus endeavoring to prevent the formation of an unbroken chain of British colonies in Africa, from the Cape of Good Hope to the Nile Valley. Recognizing that the Transvaal issue was "little known" to the Russian government, the ambassador nevertheless believed that what was happening in Southern Africa deserved attention. For Russia, wrote N.D. Osten-Sacken, this issue was of interest because it would "inevitably contribute to the multiplication of points of disagreement between Germany and England," and might potentially "become relevant in the field of European politics and international complications"[7].

In addition, Ambassador N.D. Osten-Sacken cited in his report the sensational telegram that Wilhelm II sent to Kruger on 3 January 1896 after the capture of L.S. Jameson. The Kaiser congratulated the president on the fact that the citizens of the republic had succeeded in defending the country's sovereignty by their own efforts [Röhl 2015: 785–786]. He hinted that friendly powers such as Germany would come to the aid of the Transvaal if necessary.

Foreign Minister A.B. Lobanov-Rostovsky familiarized the Russian Emperor with the report of N.D. Osten-Saken. This material helped Nicholas II to prepare for a long conversation with the German ambassador Prince Hugo von Radolin, which took place on 6 January 1896. When discussing the South African events, the Tsar supported the position of the German government on the Transvaal question and sharply condemned the actions of Great Britain [Lepsius, Mendelssohn-Bartholdy 1924: 42–43].

Nicholas II responded similarly to Wilhelm II's private letter of 2 January 1896, handed over by Hugo von Radolin. The Kaiser expressed indignation at the plot against the South African government and declared, "<...> I will never allow the British to defeat the Transvaal!" [Goetz 1920: 301]. He also informed the Russian emperor that he would offer France to jointly defend the interests of their nations in the Transvaal and to insist on honoring international treaties. Wilhelm was probably referring to the Anglo-Transvaal conventions of the 1850s and 1880s, under which Britain recognized the independence of the Boer republic. The German emperor asked the Tsar to join this démarche [Goetz 1920: 301].

The Kaiser thus wished to involve France and Russia in an anti-British alliance of European powers. This was in line with the general direction of German foreign policy as outlined by its ideologist, Baron Friedrich August von Holstein. German diplomacy expected that the "continental league," i.e., the concerted actions of the Triple and Franco-Russian alliances, would make Great Britain realize the danger of its diplomatic isolation and the advantageousness of rapprochement with Germany [Yerusalimsky 1974: 87; Röhl 2015: 785–786].

[7] N.D. Osten-Sacken to A.B. Lobanov-Rostovsky, 22 December 1895 (3 January 1896). AVPRI. Fonds 133. Series 470. Year 1895. File 17. Pp. 400–400 rev.

Nicholas II replied that he agreed with everything Wilhelm had written [Lepsius, Mendelssohn-Bartholdy 1924: 43]. But his foreign minister soon clarified Russia's position on intervention in the Anglo-Transvaal conflict. In a conversation with the German ambassador on 8 January 1896, A.B. Lobanov-Rostovsky confirmed that further British expansion in Africa was undesirable but that the Boers were unlikely to retain their independence. Moreover, the Transvaal was not independent even now because, according to the London Convention of 1884, the Transvaal government was obliged to coordinate with Great Britain its treaties with foreign countries. From this, according to the minister, it followed that the Boers recognized the British protectorate [Lepsius, Mendelssohn-Bartholdy 1924: 44].

Thus, Russia did not agree with the German interpretation of the Anglo-Transvaal Treaty of 1884. A.B. Lobanov-Rostovsky's reasoning echoed the assertions of Lord Salisbury's government, which insisted that Great Britain retained suzerainty over the South African Republic.

GROWING INTEREST IN TRANSVAAL

Meanwhile, the Transvaal envoy Beelaerts van Blokland met with the Russian ambassador in Berlin, N.D. Osten-Sacken, in early January 1896. At this time, the Transvaal State Secretary W.J. Leyds, responsible for foreign affairs, was in Germany. It was probably Leyds who instructed the envoy to probe the Russian embassy. Beelaerts van Blokland shared with N.D. Osten-Sacken the idea of proclaiming the neutrality of the South African Republic on the condition of receiving from the European powers guarantees of protection of this country from British aggression[8].

Ambassador N.D. Osten-Sacken assumed that the probe was carried out on the initiative of Germany and therefore asked the German State Secretary for Foreign Affairs, Adolf Marschall von Bieberstein, whether this idea was feasible. Marschall von Bieberstein replied that the Transvaal, as an independent state, had the right to negotiate with foreign governments on the matter[9]. The Russian ambassador did not know that a few days earlier, at the request of Adolf Marschall von Bieberstein, the German representative in the Transvaal had submitted to Kruger the idea of a conference of European powers on the Transvaal question and informed him that Germany would support the request of the South African Republic to hold it [Lepsius, Mendelssohn-Bartholdy 1924: 31].

However, neither Russia nor its ally France was willing to guarantee the security of the Boer republic together with Germany. The Russian point of view was known from the above-mentioned conversation between von Radolin and A.B. Lobanov-Rostovsky: the attempted coup d'état inspired by the British government and colonial authorities was outrageous but it was an internal affair of the British Empire, since the Transvaal could not be considered an independent state. As for France, its government was indifferent to the German initiative. It was satisfied with the course of negotiations with Great Britain to settle colonial issues [Yerusalimsky 1974: 86]. The prospect of rapprochement between these powers seemed real at that time.

[8] N.D. Osten-Sacken to A.B. Lobanov-Rostovsky, 29 December 1895 (10 January 1896). AVPRI. Fonds 133. Series 470. Year 1895. File 17. Pp. 431–433 rev.

[9] N.D. Osten-Sacken to A.B. Lobanov-Rostovsky, 29 December 1895 (10 January 1896). AVPRI. Fonds 133. Series 470. Year 1895. File 17. Pp. 431–433 rev.

The Jameson Raid and the resulting aggravation of British-German relations demonstrated to Russian diplomacy the importance of what was happening in southern Africa. From 1896, the Russian embassy in Britain sent more frequent reports and briefings to the Foreign Office on the situation in the region, as well as on the investigation into the involvement of Rhodes's British South Africa Company in the armed invasion of the Transvaal. Public interest in the Boer republics in Russia has also grown since the attempted coup in the Transvaal, and the subsequent German demarches were discussed in the Russian press [Davidson 1997: 33; Davidson, Filatova 1998: 199].

Armed confrontation with Britain was very likely, but the Transvaal president and government became convinced that they had no reliable allies among the great powers. The British government began to adopt a harsher policy towards the Boer republics, hoping thereby to extract concessions and defend its interests in the region. The manifestation of this trend was the appointment of Sir Alfred Milner, a supporter of forceful methods of solving the Transvaal issue, as High Commissioner of South Africa [Giliomee, Mbenga 2007: 209]. In response, the government of the republic began to strengthen foreign relations.

In 1897, the South African Republic and the Orange Free State concluded a treaty on mutual assistance in case of external aggression [Giliomee, Mbenga 2007: 208]. The Transvaal embarked on a massive and costly rearmament, purchasing guns, artillery, and ammunition from Europe. In the area of domestic politics, the government limited agitation for voting rights for the uitlanders and abandoned reforms that might have weakened the dominance of the Boers in the political life of the country. In doing so, it accommodated many of the demands of the mines' owners.

State Secretary W.J. Leyds began to establish direct relations between the republic and European countries and reorganized the consular service. He wanted the republic to have diplomatic representations in the capitals of all the most important countries. This would mobilize the support of the governments and publics of these countries in favor of recognizing the sovereignty of the South African Republic. French Foreign Minister Gabriel Hanotaux welcomed W.J. Leyds's intention to open a consulate in Paris.

FIRST ATTEMPT AT DIPLOMATIC RELATIONS

As the Transvaal already had official relations with France, Russia's ally, an inquiry was submitted to the Russian Ministry of Foreign Affairs through Hanotaux in March 1897 about the possibility of establishing relations and concluding a trade treaty. Count V.N. Lamsdorf, Assistant Minister of Foreign Affairs, made inquiries with the Russian ambassadors in Berlin and London and found out that the establishment of relations with the Boer republic would not require the sanction of the British government. The restrictions imposed by the London Convention of 1884 applied only to the Transvaal's entering into international agreements. Although Britain insisted on maintaining suzerainty, it did not regard the appointment of consuls as recognizing the independence of that state[10].

The Russian government went to great lengths to ensure that the establishment of diplomatic relations with South Africa by other powers did not provoke protests from Britain [Davidson, Filatova 2010: 103]. The British government anticipated that objections to the recognition of Transvaal representatives as diplomats could lead to undesirable consequences. A foreign government that accredited a Transvaal envoy

[10] E.E. Staal to V.N. Lamsdorf, 30 April (12 May) 1897. AVPRI. Fonds 155. Series 929. File 2. P. 31.

would refer the question of the legality of accreditation and the status of the Boer republic to international arbitration. And its decision could question the British suzerainty over the Transvaal [Van Niekerk 1985: 199].

Thus, Russia could establish a representative office in the South African Republic without arousing British protest. The Transvaal mission in Europe justified the expediency of opening a Russian consulate by the fact that it would be more convenient for Russia to inform the government of the republic about its position on those South African affairs that affected the relations between the great powers[11].

This argument proved convincing. The Russian Ministry of Foreign Affairs sought to establish representative offices not only in those regions that were within the scope of the direct interests of the Empire but also where its expansion was not envisaged. Just a few weeks after receiving the Transvaal request, the Minister of Foreign Affairs, Count M.N. Muravyov, on the tsar's order, began to prepare for the establishment of a consulate in the South African Republic [Khritinin 1999: 73].

In the same year, 1897, Nicholas II ordered the establishment of diplomatic relations with Ethiopia (Abyssinia), Morocco, and Siam [Rybachenok 2020: 103]. Like the Transvaal, these states retained their independence but were the objects of colonial claims of European powers, with which Russia competed in other regions. Instructions to the head of the permanent Russian mission in Addis Ababa informed him that Russia had no immediate interests in Africa, but that the government wished to maintain Abyssinian independence. This would allow Russian diplomacy to "turn this country into an instrument of exerting pressure on England as our chief political rival" in order to induce it to make concessions on those political issues that directly affected Russia [Davidson et al. 1999: 129, 132].

Russia wanted to establish ties with the Transvaal because of its successful resistance to British expansion. In 1899, A.K. Bentkovsky, Director of the Second Department of the Ministry of Foreign Affairs, noted that "Abyssinia in the north and the Transvaal in the south seem destined to serve as obstacles to the all-consuming imperialism of England"[12]. In his opinion, Russia benefited from the independence of the South African Republic. Not being able to provide practical assistance, Russian diplomacy could support the Boers morally. At the same time, A.K. Bentkovsky believed that Russia should cooperate with its ally, France, which did not accept the further spread of British influence in Southern Africa either[13].

Russia at that time spent 2.5 to 3 times less on the maintenance of its foreign missions than France and Great Britain [Rybachenok 2020: 102]. It did not manage to create such an extensive network of consular offices on different continents, as these powers had. But the Minister of Foreign Affairs M.N. Muravyov, in a letter of 28 March (9 April) 1897, tried to convince the Minister of Finance S.Y. Witte that it was necessary to allocate funds for representation in the Transvaal. The head of the Ministry of Foreign Affairs pointed out that relations with the Boer republic would help Russia "to counteract

[11] Memorandum "Communication française", 6 (18) March 1897. AVPRI. Fonds 155. Series 929. File 2. Pp. 24–24 rev.

[12] Memorandum by A.K. Bentkovsky, "Conflit anglo-transvaalien", 23 September (5 October) 1899. Copy. AVPRI. Fonds 155. Series 929. File 2. Pp. 139 rev.–140. The text is based on a memorandum by I.Y. Korostovets, secretary of the Russian mission in Lisbon, "English influence in Portuguese Africa (Mozambique) and in the Transvaal", sent to Prince V.S. Obolensky, senior advisor to the Ministry of Foreign Affairs, on 25 March (6 April) 1899. AVPRI. Fonds 155. Series 929. File 2. Pp. 97–126 rev.

[13] Memorandum by A.K. Bentkovsky, "Conflit anglo-transvaalien", 23 September (5 October) 1899. AVPRI. Fonds 155. Series 929. File 2. P. 140.

the English aspiration to acquire a dominant influence in southern Africa". [Cited in: Khritinin 1999: 73]. Witte, without disputing the arguments of his colleague, replied on 29 April (11 May) that from an economic point of view, the establishment of a consulate in a country with which Russia had almost no trade ties was unjustified and proposed to reduce the budget [Cited in: Khritinin 1999: 75].

The expediency of opening a consulate-general in the Transvaal was discussed by the ministers at the same time as the question of establishing relations with Morocco. Russia had no economic interests in this North African country either. But the government had concerns about the prospect of increasing British influence in Morocco. If Britain established itself not only on the northern but also on the southern shores of the Strait of Gibraltar (primarily in the Moroccan port of Tangier), it would be able to restrict access to the Mediterranean at its discretion [Morozov 2010: 45]. Therefore, the Russian military and naval ministers wanted an official observer in Tangier to collect and forward information on this issue to St. Petersburg.

As for the Ministry of Foreign Affairs, it expected that the information to be provided by the consul would help to maintain the balance of power of the European powers in the Mediterranean basin and, in the interests of Russian policy in various regions, to take advantage of the struggle of these powers for influence in Morocco [Zherlitsyna 2017: 168]. Funds for the establishment of Russian diplomatic missions were allocated more readily in case of interest of the army or the navy [Rybachenok 2020: 103]. Therefore, the consulate-general in Morocco was soon opened. But, as Muravyov reported on 5 (17) May in a letter to Witte, the establishment of a mission in the Transvaal was postponed "until a more favorable time" [Cited in: Khritinin 1999: 75].

RUSSIAN CONSUL IN JOHANNESBURG

More than six months later, in February 1898, the issue of establishing relations was revisited. Now there was no question of a consulate-general, although France and Germany maintained missions of this level in the Transvaal capital. It was only expected that Russia would enter into official relations with the Boer republic. The conclusion of a commercial treaty and a consular convention was considered a matter for the future. In the meantime, the Ministry of Foreign Affairs wanted to appoint a Russian subject residing in the republic as its representative. This person would be accredited to the Transvaal government as an honorary vice-consul and enjoy the same rights and privileges as consuls of other countries[14].

At Russia's request, the French consul-general in the South African Republic held preliminary talks about this. He spoke not with W.J. Leyds, who had resigned as state secretary due to illness, but with his successor, F.W. Reitz. The Transvaal government agreed to the appointment of a Russian consul[15]. And upon the arrival in Europe of W.J. Leyds in his new position as envoy of the South African Republic to France, Germany, the Netherlands, Belgium, and Portugal, negotiations on the establishment of a Russian mission continued between him and the Russian ambassador in Paris, Prince L.P. Urusov. In August 1898, an agreement was reached[16].

While the Russian Ministry of Foreign Affairs was looking for a candidate for the post of a non-staff vice-consul in Johannesburg, F.W. Reitz notified M.N. Muravyov of

[14] V.N. Lamsdorf to L.P. Urusov, 12 (24) February 1898. AVPRI. Fonds 155. Series 929. File 2. Pp. 32–34.
[15] F.W. Reitz to M.N. Muravyov, 11 July 1898. Copy. AVPRI. Fonds 155. Series 929. File 2. Pp. 75–75 об.
[16] L.P. Urusov to V.N. Lamsdorf, 6 (18) August 1898. AVPRI. Fonds 155. Series 929. File 2. Pp. 73–74.

the intention of the president of the South African Republic to accredit W.J. Leyds as envoy to Russia. A telegram was sent from St. Petersburg on 16 (28) September 1898 to the Transvaal State Secretary F.W. Reitz with the consent to this appointment [Marchenko 1992: 66].

W.J. Leyds was unable to come to Russia because of worsening symptoms of laryngeal disease. Credentials on his behalf were presented by the secretary of the Transvaal mission F.A. van der Hoeven, who arrived in the Russian capital in December 1898. [Marchenko 1992: 66]. The Transvaal mission in Europe was located in Brussels. From there W.J. Leyds coordinated the work of the consuls general in London, Paris, Amsterdam, Lisbon, and Lourenço Marques. But a South African consulate never opened in St. Petersburg.

At the end of 1898, the Russian Ministry of Foreign Affairs found a Russian subject in the Transvaal who could be trusted to represent the interests of the empire as an honorary vice-consul. Only "people of impeccable reputation" were to be appointed to such a position, because, according to the Russian consular regulations, the functions of honorary and regular vice-consuls were the same [Safronova 2002: 216–217].

Baron R.A. von Gernet, an engineer, was considered for the post of Russian diplomat in the South African Republic. A native of the Estland province and husband of Princess L.E. Meshtcherskaya, he had been the private secretary of E.W. von Siemens, the founder of Siemens, which owned businesses in various countries, including Russia. In Johannesburg, R.A. von Gernet established a branch in Johannesburg, which was involved in the extraction of gold from waste by cyanidation [Rausch-Gernet 1998: 49; Von Stackelberg 1931: 104].

The Government of the South African Republic accepted the appointment of R.A. von Gernet as Russian vice-consul in Johannesburg. In May 1899, he was issued a consular exequatur, but in the same month he fell ill with typhoid fever[17]. R.A. von Gernet had to leave for Europe to recover his health. Since August, the management of the Johannesburg Russian vice-consulate was taken over by the French vice-consul in that city, J.-M. Colomiès[18]. R.A. von Gernet was unable to return to his diplomatic post, as the Second Anglo-Boer War (1899–1902) soon broke out, at the end of which the Transvaal lost its independence.

CONCLUSION

Russian diplomats paid close attention to the Transvaal after the republic managed to defend its independence in the Anglo-Boer War of 1880–1881. With a major defeat of British forces and an honourable peace treaty, the Transvaal asserted itself as a state to be reckoned with by European powers. Its international importance increased when Transvaal mines became the world's largest supplier of gold and a major source of diamonds. By strengthening its economic position and foreign relations, the South African Republic was becoming an imposing barrier to British expansion in the subcontinent. At the same time, the Transvaal was expanding its political and economic ties with Germany, which was vying with Britain for influence in southern Africa.

[17] M. Torrente to F.W. Reitz, 9 June 1899 National Archives of South Africa. Repository TAB. Source SSA. Ref. RA3293/99.

[18] L.P. Urusov to V.A. Artsimovich, 28 August (9 September) 1899. AVPRI. Fonds 155. Series 929. File 2. P. 144.

It was after the contradictions between British and German colonial aspirations became apparent in the Transvaal issue that Russian diplomats established contacts with official representatives of the South African Republic in Europe. The Ministry of Foreign Affairs of the Russian Empire began to receive information about the thousands of Russian migrants living in the country and the interest of businessmen in establishing interstate relations with it. In 1895, the parties began preliminary discussions on establishing direct ties and concluding a trade treaty.

The decisive moment was the failed coup attempt in the Transvaal by pro-British interventionists (the Jameson Raid). It so aggravated Anglo-German relations that there were even discussions of Germany opening military action in defense of the Boer republic. It became obvious to Russian diplomats that the Transvaal question had acquired international significance and was affecting European politics.

Russia did not support the German initiative of joint demarches in defense of Transvaal independence. This would have been a step towards realizing the long-standing intention of German diplomacy to create and lead an anti-British alliance of European powers. The Russian Emperor and the Ministry of Foreign Affairs preferred to act independently.

The most persuasive reason for the Russian government to open a diplomatic mission in the Transvaal was the prospect of prompt and confidential communication with the President of the Republic and his ministers on Russia's position on those South African affairs that affected the relations of the European powers. By coordinating with France, Russia could morally support the Transvaal's resistance to colonial expansion to thwart British undivided dominance in southern Africa. At the same time, to avoid British objections, before establishing diplomatic relations, the Russian government endeavored to ensure that such a move would not be seen as a challenge to British suzerainty over the South African Republic.

Thus, the main reason for Russia's interest in establishing direct relations with the Boer republic was that the Transvaal issue involved Great Britain, Germany, and France, and relations with these powers played a decisive role in Russian foreign policy at that time.

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Научная статья

УСТАНОВЛЕНИЕ ДИПЛОМАТИЧЕСКИХ ОТНОШЕНИЙ С ТРАНСВААЛЕМ В КОНТЕКСТЕ РОССИЙСКОЙ ВНЕШНЕЙ ПОЛИТИКИ КОНЦА XIX в.

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Аннотация. Установление дипломатических отношений между Россией и Трансваалем (Южно-Африканской Республикой) в 1898 г. вписывается в широкий контекст российской внешней политики конца XIX в. В этой статье изучены причины заинтересованности

России в налаживании прямых межгосударственных контактов с Трансваалем. Автор оспаривает мнение о том, что заинтересованность России была во многом обусловлена ростом миграционных и экономических связей. Решение об установлении дипломатических отношений было продиктовано стратегическими соображениями в сложном европейском политическом контексте. Превращение Трансвааля в крупнейшего поставщика золота и его упорное сопротивление британскому экспансионизму поместили его в центр геополитического соперничества, прежде всего, Великобритании и Германии. Россия, стремившаяся усилить свое влияние в мире, осознала возможность использования ситуации в Трансваале в своих внешнеполитических целях. Установив дипломатические связи, Российская империя намеревалась получить доступ к информации с места событий и в перспективе влиять на отношения между ведущими европейскими государствами, претендующими на доминирование на юге Африки. Этот шаг соответствовал российской внешнеполитической стратегии, которая предполагала дипломатическое присутствие в различных регионах, включая африканские, для продвижения своих интересов в условиях колониального соперничества европейских держав. На основе документов из Архива внешней политики Российской империи и Национального архива Южной Африки показано, что взаимодействие России с Трансваалем было не частным случаем, а продуманным шагом в рамках внешнеполитического курса. Поддерживая суверенитет таких государств, как Трансвааль, Россия пыталась уравновесить усиливающееся влияние других европейских держав и защитить свои стратегические интересы.

Ключевые слова: история российско-африканских связей, Российская империя, Трансвааль, Южно-Африканская Республика, дипломатические отношения России и Трансвааля, внешняя политика Российской империи, интересы России в Африке, англо-бурская война 1899–1902 гг.

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