

**Economic Commission for Africa****Africa Regional Forum on Sustainable Development**

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**High-level panel on the challenges and opportunities arising
in achieving inclusive growth and prosperity for all****Background paper on building resilient infrastructure
and promoting inclusive and sustainable industrialization
and innovation****I. Introduction**

1. The transformation of Africa's economies, so that they promote sustainable development and prosperity for all citizens, is critically dependent on the continent's ability to promote industrialization, infrastructure development and innovation. Africa is well endowed with natural resources that could potentially support the continent's structural transformation through industrialization, in which resources are shifted from low- to high-value-added activities. Inclusive and sustainable industrial development can significantly boost incomes while allowing for rapid and sustained increases in living standards for all, including women and young people. The establishment, through industrialization of well-diversified economies, with strong backward and forward linkages to domestic economies, will help resource-rich African countries boost their economic performance while also reducing their vulnerability to fluctuating raw commodity prices.¹ Well-functioning infrastructure is, moreover, a key driver of economic development, increased productivity, higher revenues, more equitable income distribution and improvements in health and education.² Innovation can, moreover, enhance the technological capabilities of businesses, boost productivity and foster the development of new skills. Indeed, innovation fostered by advances in technology is a key driver of "green industrialization and infrastructure development", which in turn, remain an absolutely essential condition for environmentally-friendly development.³

2. The Sustainable Development Goals, in particular Goal 9 (Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation), and Agenda 2063: The Africa We Want, recognize the role of infrastructure, innovation and industrial development in meeting their objectives. In particular, promoting value addition and economic diversification in African

* E/ECA/ARFSD/3/1

¹ Nkurunziza, J. D. and others (2017). *Commodity Dependence and Human Development*. African Development Review, 29(S1), pp.27-41.

² See, for example: Calderon, C., and Serven, L. (2004). *The effects of infrastructure development on growth and income distribution* (No. 3400); World Bank, Washington D.C.; Gaye, A. (2007). *Access to energy and human development*. Human Development Report 2008: United Nations Development Programme, New York.

³ Economic Commission for Africa (2016). *Greening Africa's Industrialization*. Economic Report on Africa (2016).

countries through industrialization and improvements to infrastructure could generate sustained economic development, decent jobs and revenues for all, including women and young people. Efforts to achieve Goal 9 can contribute directly or indirectly to the achievement of several other Goals, including Goal 1 (End poverty in all its forms everywhere), Goal 2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture), Goal 5 (Achieve gender equality and empower all women and girls), and Goal 8 (Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all). Efforts to achieve Goal 9 can also contribute directly to the realization of aspirations enshrined in Agenda 2063, including aspiration 1 (A prosperous Africa based on inclusive growth and sustainable development), aspiration 6 (An Africa whose development is people-driven, relying on the potential of African people, especially its women and youth, and caring for children), and aspiration 7 (Africa as a strong, united and influential global player and partner).

II. Progress in implementation

3. Sustainable Development Goal 9 addresses three important aspects of sustainable development, namely infrastructure development, industrialization and innovation. Functional infrastructure fosters business as well as social and economic development; industrialization, particularly in the manufacturing sector, is a key driver of inclusive economic growth and job creation; innovation boosts economic productivity, encourages the development of new skills and promotes environmentally-friendly growth.

4. A mere two years have passed since the adoption of the Sustainable Development Goals in 2015 and it may therefore be too early to conduct a comprehensive assessment of progress achieved towards their implementation, given the lack of accurate data and the fact that such Goal-related programmes have not been up and running long enough to produce tangible results. Nonetheless, the efforts of African countries to promote industrial development, improve infrastructure and upgrade technologies is on track even if their performance generally lags behind that of countries in other regions. In 2015, manufacturing value added per capita in North Africa and in Africa, excluding North Africa, expressed in constant 2010 United States dollars, stood at \$406 and \$165, respectively – up from \$348 and \$139 a decade previously (see figure 1). Over the same period, the contribution of the manufacturing sector to gross domestic product (GDP) in the two regions remained relatively stable – around 11 per cent in North Africa and 10 per cent in Africa, excluding North Africa; this was well below global averages of more than 15 per cent (see figure 2). An enabling environment, in which significant investments are made in industry and technology, is needed if African countries are to increase the contribution made by manufacturing to their economies, and if least developed countries across the continent are to achieve the target of doubling the contribution made by industry to their GDP. The continent had yet to provide decent jobs for its labour force, which remains largely employed in low-value-added agricultural jobs.

Figure 1
Manufacturing value added per capita, 2005, 2010
and 2015 (constant 2010 US dollars)

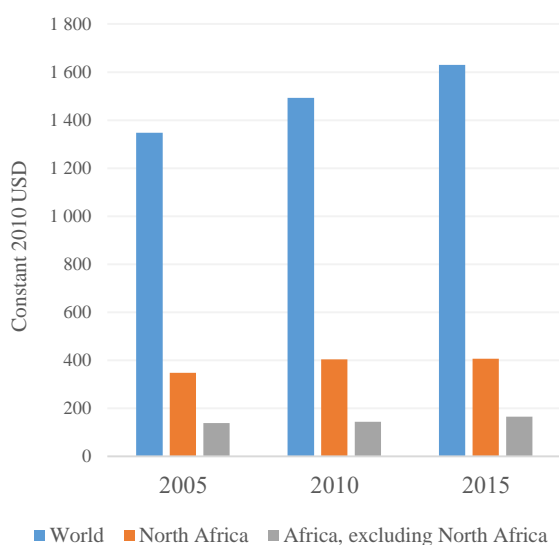
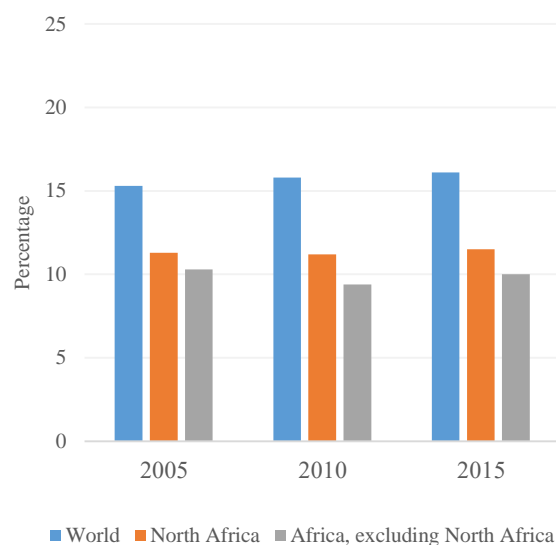


Figure 2
Manufacturing, value added (% of GDP)



Source: United Nations Statistics, UNData.

5. Although some progress has been made in recent years in terms of improving infrastructure in Africa, the continent, as a whole, continues to suffer from woefully inadequate transportation networks and access to energy and information and communication technologies (ICTs). Roads and railway networks in most African countries are significantly less developed than in other parts of the world. For example, in 2014, railway density in Africa, excluding South Africa, was estimated at 2.5 kilometers (km) per thousand square kilometers (1000 km²) of land area, compared with the global average of nearly 8 km per 1000 km², and higher figures in other developing regions, including Southern and Eastern Asia.⁴ Furthermore, many roads are unpaved and can become impassable during rainy seasons, thereby isolating remote rural areas from urban centres, impeding the movement of goods and people and undermining the competitiveness of Africa's industrial sector. As for the continent's energy infrastructure, electrical power generation – a key driver of social and economic development – remains grossly inadequate in many countries, with nearly half the population of Africa, excluding North Africa, living without access to electricity.⁵ With regard to ICTs, progress is being made through the promotion of technology clusters and innovation centres, while mobile telephone coverage in Africa, excluding North Africa, increased from 17.4 per cent in 2015 to 29.3 per cent in 2016.⁶ Over the same period, the internet penetration rate in the region increased from 20.7 to 25.1 per cent. Despite these encouraging figures, general progress in the area of ICT in Africa has continued to lag behind other regions. Indeed, according to the 2016 ICT Development Index, only seven of the 100 best performing countries in terms of ICT development were in Africa, with the best performer in Africa, Mauritius, ranked 73rd in the world.⁷ It is critical to reduce the ITC gap between Africa and other regions as soon as possible with a view to fostering a competitive

⁴: *World Development Indicators*, (selected data), World Bank, Washington D.C.

⁵ [Africa Energy Outlook - a Focus on Energy Prospects in Sub Saharan Africa](#). International Energy Agency (2014), Paris.

⁶ *International Telecommunication Union (ITU)*. Facts and Figures 2015 and 2016. Available online at <http://www.itu.int/en/ITU-D/Statistics/Pages/facts/default.aspx>.

⁷ International Telecommunication Union, see <http://www.itu.int/net4/ITU-D/idi/2016/#idi2016byregion-tab>.

technological environment that will benefit all relevant stakeholders across the continent. This is particularly important at a time when African countries are failing to mobilize funds for research and development (R&D), which is critical for attracting investment in technology and innovative knowledge generation systems, which, in turn, foster innovation. African countries are far from attaining the African Union's target of investing 1 per cent of GDP in R&D. Further efforts are needed to encourage research in African countries with a view to supporting economic diversification and achieving prosperity for all.

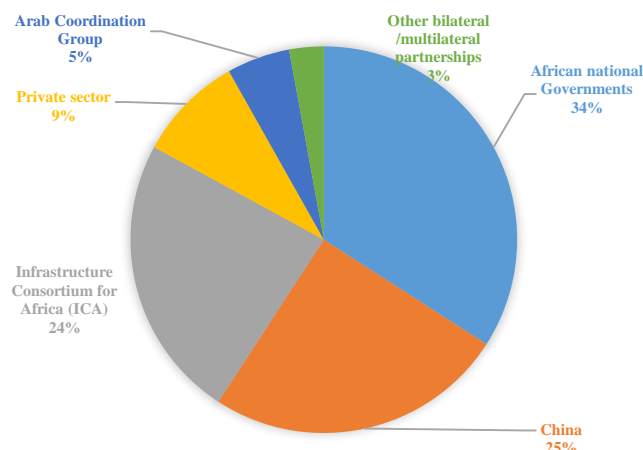
III. Emerging issues, challenges and opportunities

6. The efforts of African countries to achieve Goal 9 are being supported by infrastructure and industrial development strategies drawn up to support their medium and long-term development plans. Nonetheless, those countries face several challenges that are undermining their efforts to achieve Goal 9 targets. These challenges include financial constraints, a weak enabling environment for the private sector, in particular small and medium-sized enterprises, and limited capacity to collect and disseminate accurate data to track implementation of the 2030 Agenda for Sustainable Development. Inadequate funding remains one of the main factors impeding infrastructure development and sustainable industrialization in Africa. As a consequence, African governments, supported by their international partners, remain the main source of infrastructure funding across the continent. In 2015, more than a third of the \$83.5 billion spent on infrastructure projects across the continent was provided by African governments, with the private sector only providing some 9 per cent (see figure 4).

7. At a time when several resource-rich African countries are facing significant financial constraints as a result of low commodity prices, it is vital to strengthen the participation of the private sector in infrastructure development initiatives with a view to achieving Goal 9 targets. It is also critical to create a supporting environment for small and medium-sized enterprises, especially in the manufacturing sector, in order to promote inclusive economic growth.

8. In Africa, small and medium-sized enterprises are often associated with, and labelled part of the informal economy, and are considered distinct from the formal economy. As a result, these "informal" small and medium-sized enterprises are often locked out of the formal economy and play very little role in countries' industrial and technological development. Furthermore, the lack of timely and high quality data available to policymakers impedes efforts to track Goal 9 implementation; it is therefore critical to improve the capacity of institutions responsible for data gathering and analysis.

Figure 3
Infrastructure funding by source in Africa, 2015



Source: Infrastructure Consortium for Africa⁸.

9. Efforts to achieve Goal 9 can be accelerated if there is a strong commitment by African Governments to that end. Several regional and international initiatives also complement African countries' efforts in that regard. These include the Action Plan for Accelerated Industrial Development for Africa (AIDA), United Nations Industrial Development Organization (UNIDO) country partnership programmes, the Programme for Infrastructure Development in Africa (PIDA), the Trans-African Highways (TAH) Programme, the Africa Mining Vision, and the Africa Renewable Energy Initiative. Efforts to promote regional integration in Africa can also leverage regional approaches and concerted action to achieve Goal 9.

IV. Delivering on the means of implementation

10. African leaders have often stressed the need to transform the structure of their economies and to create decent jobs, boost productivity, raise incomes and achieve sustainable development. Sustainable industrialization is viewed as an integral part of efforts to achieve these objectives, with infrastructure development as a key driver. Both Agenda 2063 and the 2030 Agenda emphasize the role played by infrastructure and industrialization in achieving their objectives.

11. The contribution made by infrastructure development and industrialization to economic growth and poverty eradication is well established, particularly in terms of how these can promote regional integration and boost employment. The enduring paradox, however, is that limited progress in that area has been achieved and, consequently, the search for innovative ways to facilitate infrastructure development and promote sustainable industrialization continues.

12. In terms of infrastructure development, there is an increasing focus on regional projects that can link sectors and countries, as envisioned by PIDA, which promotes the establishment of regional corridors, as well as supporting efforts to create the necessary conditions for high-density economic activity and boost regional markets. Furthermore, the Presidential Infrastructure Champion Initiative was established to accelerate regional infrastructure development by providing political support to projects. Infrastructure champions of relevant issues are used to increase visibility, address bottlenecks, coordinate resource mobilization and ensure project implementation. The Presidential Infrastructure Champion Initiative enables African

⁸Infrastructure Consortium for Africa *Infrastructure financing trends in Africa*. ICA, Abidjan, 2015. Online available at https://www.icafrica.org/fileadmin/documents/Annual_Reports/ICA_2015_annual_report.pdf.

Heads of State and Government to become actively involved in the development and implementation of projects. Eight projects were initially identified by seven Heads of State and Government as champions worthy of support, while two additional projects were later included in the Presidential Infrastructure Champion Initiative family; there are now nine projects championed by eight Heads of State and Government. The projects cover four infrastructure sectors, namely transport, energy, ICT and transboundary water resources. Another important step that has been taken is the adoption of General Assembly resolution 70/293 on the Third Industrial Development Decade for Africa (2016-2025).

13. With regard to industrialization, a number of challenges continue to impede efforts by African countries to penetrate global value chains, including high tariffs imposed by European and other States on refined products; these challenges have seriously hindered the development of a manufacturing base in Africa. Enhancing regional trade and integration within Africa, inter alia, by developing the region's infrastructure, is viewed as a viable alternative strategy. Although the total trade among African States is less than those States' total trade with the rest of the world, manufactured goods constitute a greater proportion of intra-African trade than of the continent's trade with countries outside Africa. Strengthening regional and economic integration within Africa has therefore been identified as a means to support industrialization and diversification. However, much work remains to be done to ensure that the Continental Free Trade Area effectively promotes Africa's structural transformation.

14. A number of African countries have adopted or amended their industrial policies with a view to prioritizing and expanding their manufacturing capacity. Similarly, regional economic groups, including the Economic Community of West African States (ECOWAS), the Southern African Development Community (SADC), the Common Market for Eastern and Southern Africa (COMESA) and the East African Community (EAC) have lent their support to regional industrialization by providing guidance to member States and harmonizing relevant actions. In that regard, it should be noted that industrial development constitutes one of the pillars of a tripartite agreement concluded by COMESA, SADC and EAC.

15. Domestic resource mobilization is critical to the development of regional infrastructure. Steps are being taken to reduce fiscal pressures by facilitating remittances from abroad and by seeking to rely less on traditional investors and more on non-traditional African financial entities, including pension funds. Indeed, as only 2.9 per cent of pension fund investments are earmarked for infrastructure development projects, there is considerable scope to redirect an increased proportion of investments to that sector; increased investment in the sector should, moreover, take place in tandem with the development of robust policies to minimize risks and support project preparation.

V. Conclusion and strategic policy recommendations

16. To achieve the Sustainable Development Goals, particular emphasis should be placed on the promotion of sustainable industrial development through the building of competitive industrial capacities. Globalization, without the creation and enhancement of domestic productive capacity, will exacerbate marginalization. Increasing globalization, together with accelerating technological progress, means that industry has an increasingly important role to play in economic, social and environmental development.

17. Sustainable economic development will not be possible without industrialization. Industry, particularly the manufacturing sector, drives economic growth. Industry fosters entrepreneurship, boosts technological dynamism and productivity, creates skilled jobs and, through intersectoral linkages, facilitates the expansion of the agricultural and service sectors. Furthermore, prices of

manufactured exports can be less volatile and susceptible to long-term depreciation than the prices of primary goods; manufactured exports can thus support sustainable export growth and African countries' integration into the global industrial economy.

18. Industry plays an important role as a producer of goods for poor and socially disadvantaged groups. It facilitates rural development and can help reduce post-harvest losses. The expansion of private sector industrial activity provides a foundation for meeting the basic needs of the poor. Industry also produces a range of health-related goods, including those that increase life expectancy and reduce infant mortality. Industry strengthens the infrastructure needed for social and development and plays an important role in post-war and post-emergency reconstruction and recovery. It also helps prevent conflict and fosters peace by creating jobs, alleviating poverty and bolstering social stability.

19. Poverty cannot be eradicated merely by getting macroeconomic and social conditions right and by liberalizing trade and investment regimes: policies to ensure sustainable productivity growth and the equitable distribution of the benefits resulting from that growth are also vital. By paying due attention to the structural aspects of industrial development, African countries can greatly improve their industrial performance.

20. As a key part of an infrastructure-industrialization nexus, infrastructure development should be viewed as a way to promote industrial development and enhance value chains, rather than merely a way to implement projects. This underscores the need to seek holistic rather than partial solutions, both within and among countries, in order to maximize regional value chains.

21. With regard to finance, a shift in focus from financing gaps to identifying investment opportunities is needed. This will necessitate the formulation of clear strategies and an initial focus on areas that can provide high returns on investment. Furthermore, high-level business units, comprising finance experts responsible for the development of public-private partnerships, could provide support to governments by raising capital in financial markets and from remittances, or by developing innovative mechanisms to attract investment.

VI. Key messages

22. As a result of globalization, industrial development and trade are increasingly inter-related and interdependent. International trade is important for fostering industrial growth and the structural transformation of economies. African countries should diversify their economies by moving away from traditional trade patterns that are characterized by an excessive reliance on the export of raw materials and semi-processed goods and by a comparative advantage only in the provision of raw materials and unskilled labour. Manufacturing plays a crucial role in transforming the economies of poor countries, and can facilitate a shift from simple, low-value activities with poor growth prospects to economic activity characterized by high productivity, increasing returns and strong growth potential.

23. Global industrial value chains, linking the entire sequence of economic activity – from raw material extraction, research and development, design and production, to marketing, delivery, and disposal after use – opens up new avenues for industrial capacity-building and the structural transformation of developing countries' economies. Businesses can forge partnerships with international partners to acquire technologies and skills with a view to leveraging the resources needed for industrial development. While participation in global value chains can accelerate industrial capacity-building by businesses, effective and sustainable domestic industrial capacity-building is also needed that such capacity-building is successful.

24. By focusing on small and medium-sized enterprises industries and facilitating their integration into the global economy, by supporting agro-industries and rural industrialization, and by promoting industrial development at the regional level and integration of economic actors into regional and global value chains, significant progress towards the eradication of poverty can be achieved. Small and medium-sized enterprises account for the majority of registered businesses in Africa and have been responsible for a significant proportion of the jobs created in the last decade. Small and medium-sized enterprises that are considered part of the informal economy have created an even greater proportion of jobs. Such enterprises provide job opportunities for young people in Africa in sectors as diverse as agro-industry, ICT, automotive components, chemicals, pharmaceuticals and the service industry. Nonetheless, Small and medium-sized enterprises still find it difficult to access capital and technical skills and, as a result, face difficulties when they attempt to scale up their activities. To provide more effective support to small and medium-sized enterprises, financial institutions must develop the necessary expertise in sectors in which such enterprises play a significant role.

25. The economic importance of small and medium-sized enterprises is also due to their role as suppliers and subcontractors providing goods and services to larger exporting firms. They also have the potential to grow and increase in value. They can, moreover, contribute to industrialization and, due to the overall flexibility of their workforce and their capacity to adopt new technologies, can drive innovation. They are a source of new ideas and often design and implement new products and services. They can also produce goods and services that respond to unmet local needs, including, in particular, the needs of low-income consumers.

26. The role played by the private sector, and particularly the role it plays in establishing and supporting small and medium-sized enterprises, must be taken into consideration. Support for private-sector enterprises is needed, including the provision of analysis and support services by international organizations, such as the Asian Infrastructure Development Bank, the African Development Bank and the Continental Business Network. Clear, simple and stable regulatory frameworks are needed for private sector investment. Supporting the development of small and medium-sized enterprises can also promote capacity-development through the provision of relevant work experience, while facilitating the growth of such enterprises and their integration into the formal economy can help raise additional fiscal revenue.

27. High transaction costs related to inadequate transport infrastructure and unreliable and expensive power supplies and telecommunications services have undermined the development of productive capacities in many African countries, and have exacerbated the marginalization of the region in terms of global trade, finance and investment. Those costs have also undermined the impact of structural adjustment policies and hampered diversification. Because of its capital-intensive nature, the rehabilitation, modernization and expansion of Africa's transport, telecommunications, water and energy infrastructure can be achieved only by joining forces with the private sector.

28. To address capacity gaps, it is, moreover, crucial to enhance national education and training programmes. These gaps could also be addressed through infrastructure development and industrialization strategies that identify the capacities required to meet existing needs and priorities. Capacity development programmes that focus on the design and implementation of projects are needed. These capacities should include both technical and financial competencies, including in areas such as taxation and combating illicit financial flows.

29. Innovation can empower "late-developer" countries to "leap-frog" by learning from the experience of forerunner countries and exploiting opportunities in both emerging but mature industries. Forerunner countries may be committed to using existing technologies due to large investment costs, but late-developer countries can often enter mature industries without having to shoulder research and development

costs. Late developers can adopt the most up-to-date products, services, processes, organizational methodologies and marketing tools as part of catch-up and leap-frogging. As is the case with other regions, Africa has benefited, in particular, from innovations brought about by advances in information and communications technologies – better take-up and use of those technologies is imperative.

30. All relevant stakeholders, including governments, the private sector and education and training providers must coordinate their efforts, including in the provision of vocational and technical education. The establishment of research partnerships that bring together universities, private companies, civil society organizations and governments is another option that should be explored.
