



# Large Infrastructure

## Introduction

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Last updated 25 April 2024 using IFs v7.64

## Introduction

Infrastructure is a crucial driver of economic growth and social progress and a critical enabler of productivity and sustainable economic growth. It contributes significantly to human development, poverty reduction and the attainment of the Sustainable Development Goals (SDGs).[1]

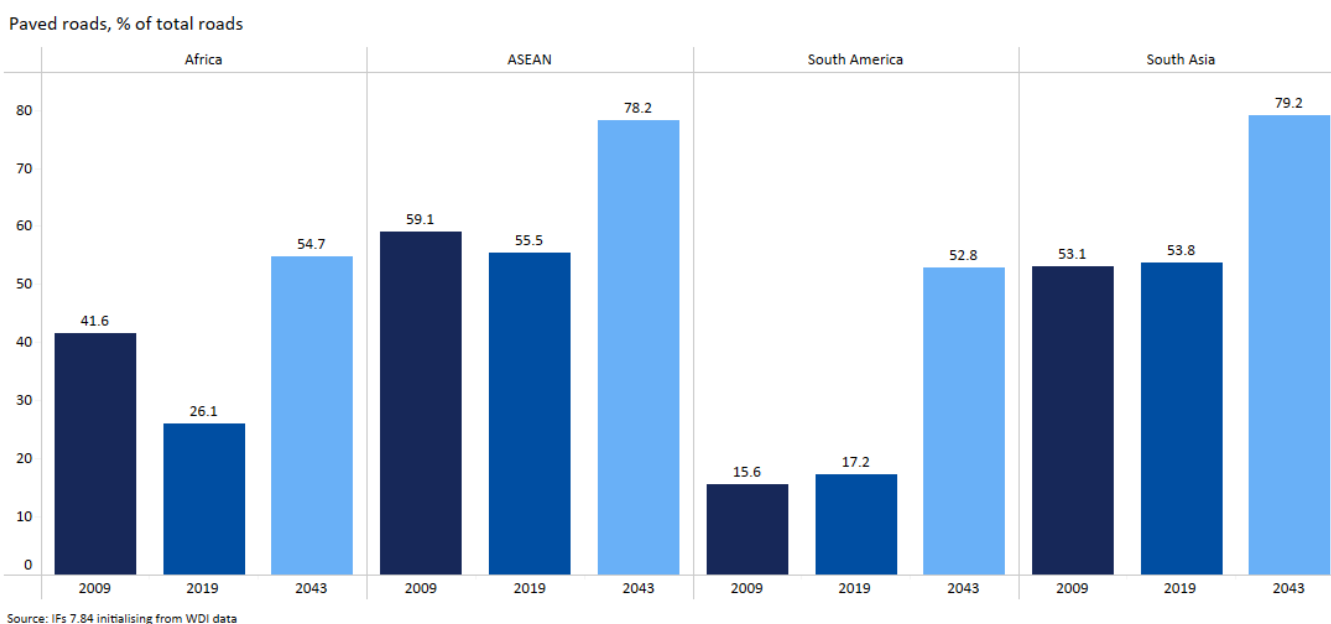
The role of infrastructure in economic growth and development goes back to Adam Smith's *Wealth of Nations*, which listed the duty of erecting and maintaining certain public infrastructure.[2] In the production process, public infrastructure is seen as an intermediate input, even though it is a product of its own industry. When infrastructure is available in sufficient quantity and quality, it helps lower input costs and increase profitability.

For Africa, infrastructure development is central to its future. According to the African Development Bank (AfDB) it accounts for over 50% of the recent improvement in economic growth and has the potential to achieve even more.[3] It can significantly contribute to achieving Africa's Agenda 2063 ambitions. However, despite the importance of infrastructure development in Africa, the stock of infrastructure in most African economies is far below what is needed to support their required levels of economic growth and development.

To put Africa's infrastructure deficit into perspective, Chart 1 shows a comparative evolution of infrastructure endowments and forecasts for Africa relative to other developing regions. Compared to its peers (i.e. South Asia, South America and the Association of Southeast Asian Nations), the chart shows that Africa trails in key metrics of electricity generation capacity, Internet access, mobile broadband access and paved roads.

For instance, Africa had an electricity generation capacity of only 0.2 kilowatts per person in 2019, whereas South Asia had 0.3 per person and South America had 0.8 electricity generation capacity per person. In addition, compared to its peers, Africa has a significantly lower proportion of paved roads. The length of paved roads in Africa was less than one-fourth of the paved road length in South Asia in 2019.

Chart 1: History and forecast of infrastructure by regions, 2009, 2019 and 2043



The AfDB regards Africa's infrastructure deficit as a sign of untapped productive potential, which is also a huge investment opportunity.[4] In early 2022, the AfDB estimated Africa's infrastructure investment gap to be more than US\$100 billion per

year,[5] affecting the living conditions of Africans and the continent's global competitiveness.

This infrastructure deficit has made it difficult for the continent to attract foreign direct investment (FDI), develop significant regional value chains (RVCs), expand trade and fully participate in the global economy. One of the continent's biggest projects, the African Continental Free Trade Area (AfCFTA), will not succeed without supporting infrastructure,[6] especially regarding transportation, electricity provision, information and communication technology (ICT) services, education and healthcare infrastructure projects.

In 2009, the World Bank conducted a study on Africa's infrastructure and found that the continent's inadequate infrastructure decreases annual economic growth by two percentage points and reduces business productivity by up to 40%.[7] Similarly, a report by the AfDB estimates that inadequate water and sanitation infrastructure is costing the continent about 5% of GDP and high transport costs add 75% to the price of Africa's goods.[8]

One of the main reasons for the infrastructure deficit in Africa particularly in the sub-Saharan African region is the historical underinvestment in infrastructure by both governments and the private sector. Many African countries have limited financial resources, which makes it difficult for them to finance the necessary infrastructure development. In 2020, only 42.2% of infrastructure investment in African countries was financed by national governments.[9]

In addition, poor governance, corruption and conflict have contributed to a lack of effective planning and implementation of infrastructure projects. However, there have been efforts to address the infrastructure deficit in Africa. International organisations such as the AfDB and the World Bank have provided financing and technical assistance for infrastructure development.

## Endnotes

1. African Development Bank, *The Africa Infrastructure Development Index 2018*, July 2018.
2. A Smith, *The wealth of nations* [1776] (Vol. 11937), 1937.
3. The African Development Bank Group, *Infrastructure development*, 17 March 2023.
4. African Development Bank, *Infrastructure Deficit and Opportunities in Africa*, September 2010.
5. African Development Bank Group, *African Development Bank sets course to close infrastructure gap with Board approval of its first public private partnerships strategic framework*, February 2022.
6. K Ighobor, *Ongoing regional infrastructure will boost free trade in Africa*, Africa Renewal, 10 October 2022.
7. World Bank, *Transforming Africa's infrastructure*, November 2009.
8. African Development Bank, *Tracking Africa's progress in figures*, May 2014.
9. African Development Bank, *Infrastructure financing trends in Africa 2019–2020*, December 2022.

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Jakkie Cilliers and Blessing Chipanda (2024) Large Infrastructure. Published online at [futures.issafrica.org](https://futures.issafrica.org). Retrieved from <https://futures.issafrica.org/thematic/11-large-infrastructure/> [Online Resource] Updated 25 April 2024.

## About the authors

Dr Jakkie Cilliers is the ISS's founder and former executive director. He currently serves as chair of the ISS Board of Trustees and head of the African Futures and Innovation (AFI) programme at the Pretoria office of the Institute. His 2017 best-seller *Fate of the Nation* addresses South Africa's futures from political, economic and social perspectives. His three most recent books, *Africa First! Igniting a Growth Revolution* (March 2020), *The Future of Africa: Challenges and Opportunities* (April 2021), and *Africa Tomorrow: Pathways to Prosperity* (June 2022) take a rigorous look at the continent as a whole.

Dr Blessing Chipanda joined the African Futures and Innovation (AFI) programme in January 2023. Before joining the ISS he worked as an assistant lecturer/research assistant at the University of Pretoria, Department of Economics. He is particularly interested in tasks within the wider realm of international trade, development economics, public policy, monetary policy, and econometric modelling. Equally interested in economic and socio-economic activities that impact social welfare. Blessing has a PhD in economics from the University of Pretoria, South Africa.

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