

AFRICAN INFRASTRUCTURE DEVELOPMENT:

What should be done to win the next decade?

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INTRODUCTION

Africa is experiencing economic growth deceleration that reached 2.9% on average between 2010 and 2018, against 5.4% between 2000 and 2010. The sectoral performance of African economies depends critically on the stock and quality of infrastructure, directly as an essential input (for example, energy and transport) and indirectly by increasing total factor productivity. African economic integration, and the hoped-for emergence, can never be fully achieved with poor infrastructure, both in terms of quantity, quality, and access. Africa's changing demographics will eventually strain the existing infrastructure, particularly the health and education infrastructure, and thus have a detrimental effect on the human capital that forms the backbone of economic growth and development. The current COVID-19 health and economic crisis comes as a reminder of the necessity of protecting and investing in the individual first of all, as human labour and demand are cornerstones of economic growth.

One key message is that a two-fold approach, aiming to address Africa's infrastructure **funding** and **efficiency** gaps, is necessary to develop the continent's total infrastructure to spur productivity and output, and allow significant economic and social development for the continent.

CURRENT STATE, MAJOR FAILINGS AND CONSEQUENCES:

AFRICA'S INFRASTRUCTURE PERFORMANCE LAGS BEHIND THAT OF THE REST OF THE WORLD:

In Africa, underdeveloped infrastructure continues to be a binding constraint to economic growth. Unreliable and costly infrastructure is stalling growth by 2 percentage points each year (Foster and Briceno-Garmendia, 2010). Compared to other regions, Africa still suffers from limited access to infrastructure. The proportion of population with access to electricity (46%) and improved water (69%) is far lower than Latin America (97% and 94%, respectively) and Asia (88% and 90%, respectively). In addition, Africa's Infrastructure needs increase constantly, reaching \$130-\$170 billion a year, with a financing gap of \$68-\$108 billion (AfDB estimates, 2018). Plugging Africa's financing gap through investments in productive infrastructure would bring about national and global spillover effects.

Table 1: Regional benchmark of infrastructure access

Indicator	Africa	Asia	Europe	Latin America
Transport				
Paved road density (km of paved road per 100 km ² of land area)	2	25	122	3
Railway lines (km)	46.4	197.6	86.0	89.0
Information and communication technology				
Fixed broadband subscriptions per 100 population	1	6	15	9
Mobile cellular subscriptions per 100 population	73	85	119	115
Power				
Electricity production per capita (kWh)	572	1.9	3.4	2.1
Electricity access (% of total population)	46	88	100	97
Water supply and sanitation				
Improved water (% of total population)	69	90	99	94
Improved sanitation (% of total population)	39	61	93	82

Source: *African Economic Outlook (2018)*, African Development Bank

It is commonly believed, in the theoretical and empirical literature, that investments in infrastructure promote economic growth and contribute to the improvement of living conditions in developing countries (Agénor and Moreno-Dodson, 2006; Foster and Briceño-Garmendia, 2010; Gramlich, 1994; and others). In fact, the impact of infrastructure can be transmitted to economic growth through different channels: on the one hand, infrastructure, through its own contribution as an additional input of capital stock, participates directly to foster aggregate output. On the other hand, the impact is also indirect by enabling an efficient use of other inputs through the reduction of transaction costs (e.g. advanced transport networks), which leads to higher total factor productivity (Gramlich, 1994). For example, the quality of human capital can be boosted by efficient investment in health care services and education. In Africa, low quality infrastructure generates inefficiencies stemming from higher input costs that can increase by up to 200% in some countries (WEF, Brain and Co. and WB, 2013).

Moreover, the enhancement of economic growth by infrastructure can be achieved through external channels as well. Most African countries are small open economies that rely on international trade to boost their economic growth. Given the fact that infrastructure barriers became among the most important supply chain barriers, African countries have a compelling case for allocating more resources to advanced infrastructures that enable economies to support competitive sectors linked to the global value chain. By improving connections and thus reducing trade costs, investment in infrastructure is an important device to encourage regional integration. It is in this vein that China and the African Union Commission Agreement has been signed. Additionally, well-designed infrastructures are among the fundamental factors that enhance investment climate for FDI inflows through lower costs which increase the rate of return of foreign investors (Kumar, 2001). In this respect, and as East Asian economies did in the 1960s, African countries need also to focus on providing free-trade zones with high quality infrastructure in order to attract light manufacturing from the rest of the world (African Economic Outlook, 2018).

INSTITUTIONAL FACTORS HINDER THE OVERALL IMPACT OF INFRASTRUCTURE IN AFRICA:

Infrastructure investment is a necessary but not a sufficient condition to reap gains in terms of growth and development. Institutional considerations and low management capacities are likely to undermine the infrastructure investment endeavour. The political bias is a major impediment to the implementation and finalisation of infrastructure projects. Corruptive behaviours reduce potential benefits from infrastructure because of the misallocation of investment expenditures, in the sense that self-interest drives managers to invest in areas where material and political gains outweigh social benefits. Furthermore, corruption affects investment efficiency by delaying delivery times and increasing infrastructure costs (Locatelli et al., 2017).

These deficiencies are reflected in poor-quality infrastructure unable to meet steadily increasing demand. Power outages occur regularly, water supplies are unreliable, traffic congestion slows transport of merchandise and entails enormous costs, and healthcare systems are under-resourced. External shocks can potentially amplify these challenges such as natural disasters or as is being observed during the current COVID-19 shock. Consequently, the continent would not be able to maximise the benefits of infrastructure in terms of global and regional integration, FDI attractiveness, human capital and thus economic growth.

INFRASTRUCTURE IN TIMES OF COVID-19:

The COVID-19 outbreak has underscored the importance of infrastructure in protecting the economy and people's lives. While some infrastructure subsectors have exposed their limitations, others have played a vital role in rescuing some economic activities. On the one hand, the ongoing pandemic has highlighted the shortcomings of Africa's health infrastructure capacity in handling a large-scale shock. On the other hand, the ICT sector has played an active role in the context of lockdowns and social distancing. For instance, many sectors have shifted to digitalising their services in order to maintain access to essential goods and services; teleworking as well as education. However, planned investments in Africa's ICT sector for 2020 will be delayed because of the uncertainties resulting from the COVID-19 context. In addition, many telecommunication companies reported that the disruption of the supply chain of materials has had a negative impact on their activities, as China is the largest producer of fiber-optic cable in the world (UNECA, 2020). In this context, Africa should focus more than ever on decarbonisation, by developing green infrastructure projects for the near future, and also center on digital infrastructure, with the aim of approaching the technology frontier of developed countries in the long run.

LOOKING FORWARD TO THE UPCOMING DECADE: WHAT CAN BE DONE TO DEVELOP AFRICAN INFRASTRUCTURE?

Developing Africa's infrastructure cannot be achieved without addressing two fundamental gaps, the financing gap and efficiency gap.

- ▶ **Addressing Africa's infrastructure funding gap:** Africa's infrastructure projects considerably lack funding, and not much has been done recently to reduce the colossal financing gap. The already existing budget deficits and the low access to international capital markets imply the consideration of alternative funding sources:
 - ▶ At the international level: Addressing the mismatch between developed countries "global savings glut" and African countries "investment dearth", will be a win-win for all stakeholders. One of the biggest paradoxes of current times is that the excess savings in many developed countries are not channeled into financing profitable infrastructure projects in Africa. Developed countries' excess savings create several financial and economic problems, such as inordinately low interest rates and resultant liquidity traps, while investment deficits in Africa weaken growth prospects and deepen the population's economic and social misery as a consequence. This mutually profitable global transaction can simultaneously address developed countries' excess savings problem and the African countries' infrastructure funding gap.
 - ▶ At the national level: Public-private-partnerships (PPP) are a well-designed configuration to address the investment financing gap, allowing private companies contracted by the government to build and operate investment projects before transferring them back to the public sector after an agreed period. Appropriately designed user fees allow companies to recover their investments, while minimising their reliance on public money. However, in such contracts, the role, responsibilities, and potential financial liabilities of public and private partners need to be clearly defined.
- ▶ **Addressing Africa's infrastructure efficiency gap:** Addressing Africa's infrastructure efficiency gap is a pressing policy priority which is as crucial for the development of infrastructure in Africa as the need to address the funding gap. Reaping this efficiency dividend has to be a major policy priority for the continent, and efforts to scale up infrastructure finance need to be made in the context of continued commitments to address efficiency. Pouring additional funding into sectors characterised by high levels of inefficiency makes little sense. Potential efficiency gains include the following areas:
 - ▶ Increase infrastructure maintenance spending: One of the most flagrant inefficiencies is the failure to maintain infrastructure assets. Maintenance needs to be understood as an investment in asset preservation. Hence, overall infrastructure spending should be streamlined by making greater efforts in infrastructure maintenance.
 - ▶ Tackle inefficiency through institutional reforms: Institutional reforms remain essential for tackling utilities' operational inefficiencies, both through private participation (delegated service management) and through governance reforms for state-owned enterprises (avoiding inefficiencies such as over-staffing, under-collection of revenues, and distribution losses). Institutional reforms should also go beyond utilities to strengthen the planning functions of the line ministries and address serious deficiencies in the budgetary process.
 - ▶ Use administrative and regulatory reforms to get full value from existing infrastructure: The administrative and regulatory frameworks should be modernised to reduce bottlenecks that prevent services from being provided effectively across existing infrastructure networks, in order to get full value from these existing networks. Besides, substantial costs can be imposed on users in order to enhance the public service's revenue streams.
 - ▶ Pursue regional integration to reduce infrastructure costs: Regional integration can contribute significantly to reducing infrastructure costs by allowing countries to capture economies of scale and effectively manage regional public goods as part of a regional management strategy, aiming to secure the highest returns from new infrastructure investments by using them to secure economies of agglomeration and facilitate the development of productive activities along key economic corridors.
 - ▶ Rethink infrastructure social policy: Infrastructure's social policy needs to be rethought, placing more emphasis on recovering costs from those who can afford it and on recasting subsidies to accelerate access. Granting social infrastructure services, should be done on a fairness and not equality basis, to help in reducing the growing social inequalities within the continent.

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