

# Africa's Infrastructure:

## A Time for Transformation





# About AICD

The Africa Infrastructure Country Diagnostic (AICD) is an innovative knowledge program to improve public understanding of what network infrastructure does to promote economic growth in Africa. By rigorously evaluating past infrastructure policy reforms, the AICD assists policymakers in setting priorities for current infrastructure investments and provides a baseline for monitoring progress.

The AICD has undertaken unprecedented data collection and analysis on the status of the main network infrastructures, including energy, information and communication technologies, irrigation, transport, and water and sanitation. The analysis encompasses public expenditure trends, future investment needs and sector performance reviews.

The AICD is being implemented by the World Bank on behalf of a steering committee comprising the African Union Commission, the New Partnership for Africa's Development, the African Development Bank, Africa's regional economic communities, and donors investing in African infrastructure.

The main contributors financing the AICD are the UK Department for International Development, the Public Private Infrastructure Advisory Facility, Agence Française de Développement, the European Commission, and the World Bank.



# The lifeblood of a modern economy

Air and seaports, roads and railways, electricity grids, power stations, telecommunications, water and sanitation are critical for economic growth and sustainable development. Sound infrastructure:

- Powers economic growth
- Enables trade
- Connects people and ideas
- Reduces poverty
- Protects the environment
- Fosters social cohesion
- Promotes regional integration.

But on just about any measure of infrastructure coverage—whether road density, telephone density, generation capacity, or service coverage—African countries are lagging behind their developing country peers. And the gaps are only widening over time.

Africa's pronounced "infrastructure deficit" is holding back per capita economic growth by 2 percentage points each year, reducing the productivity of firms by as much as 40 percent.

Lagging infrastructure coverage		
Low-income countries		
Normalized units	Sub-Saharan Africa	Other countries
Paved road density	31	134
Total road density	137	211
Mainline density	10	78
Mobile density	55	76
Internet density	2	3
Generation capacity	37	326
Electricity coverage	16	41
Improved water	60	72
Improved sanitation	34	51

Source: Yepes and others 2008.

Note: Road density is in kilometers per kilometer squared [?]; telephone density is in lines per thousand population; generation capacity is in megawatts per million population; electricity, water, and sanitation coverage are in percentage of population.



# Reducing Africa's infrastructure deficit

The largest deficit is in power. Only one in four Africans has access to electricity. Outside South Africa, power production is barely adequate to power one light bulb per person for two hours each day. And in about 30 African countries, even those with access to power experience regular blackouts.

On an agricultural continent, only one in three rural Africans has access to an all-season road. Those facing more than eight hours of travel to an urban center are effectively trapped in subsistence agriculture. Only 5 percent of agricultural land is irrigated, yet it accounts for 20 percent of the value of agricultural produce.

During the last 20 years, coverage of household services has barely improved. On current trends, Africa will not meet the Millennium Development Goal for water and sanitation, and universal access to household services is more than 50 years away.



# Containing exorbitant costs

Poor infrastructure leads to higher costs. The prices for Africa's network infrastructure services can be two to three times higher than in the rest of the developing world...and even higher for families and businesses without reliable access to networks.

Back-up generators, for example, cost a staggering US\$0.40 per kilowatt-hour to run, cutting into business profits and reducing the ability of African entrepreneurs to compete in international and regional markets.

Families without piped water connections often pay prices several times higher than utility rates to purchase water from kiosk operators or mobile vendors.

Regional integration often holds the key to reducing infrastructure costs. The continent's fragmentary infrastructure networks isolate smaller countries and prevent them from harnessing efficient larger scale technologies.

- By trading power across national borders, Africa can save \$2 billion a year in energy costs.
- By laying continental submarine cables, Africa can slash the costs of international communications in half, but only if access is competitive.

Africa's high-cost infrastructure		
	Sub-Saharan Africa	Other developing regions
Power tariffs (US\$/kWh)	0.02–0.46	0.05–0.1
Water tariffs (US\$/cubic meter)	0.86–6.56	0.03–0.6
Road freight tariffs (US\$/ton/km)	0.04–0.14	0.01–0.04
Mobile telephony (US\$/basket/mo)	2.6–21.0	9.9
International telephony (US\$/3 min. call to US)	0.44–12.5	2.0
Internet dial-up service (US\$/mo)	6.7–148.0	11

Source: Africa Infrastructure Country Diagnostic 2008.

Note: Ranges reflect prices in different countries and various consumption levels. Prices for telephony and Internet represent all developing regions, including Africa.



# Raising the money: US\$80 billion a year

Africa is making progress. More than 50 percent of the population now lives in range of a GSM wireless signal, up from only 5 percent in 1999. About half of Africa's improved growth performance is due to this "wireless revolution."

To replicate this kind of success, Africa needs some \$80 billion—split evenly between investment and maintenance—to address its infrastructure deficit every year. About half this need relates to power alone.

In 2002 Africa received \$4 billion in external finance for infrastructure.

By 2007 that number reached \$20 billion, thanks to more private capital flows, development assistance, and South-South cooperation.

Despite this welcome trend, Africa faces a funding gap of US\$40 billion per year in infrastructure spending. The bulk of the funding gap is associated with the power sector. About a third of the gap relates to fragile states.

Bridging this enormous gap is vital for economic prosperity in Africa.



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# Embracing sound policies

More money is needed, but money alone is not the answer. Prudent policies, wise management, and sound maintenance can narrow the gap and address Africa's infrastructure deficit.

African power and water utilities lose vast sums of money due to underpricing and operational inefficiency. So, measures to tackle current inefficiencies must accompany increased spending.

- About \$4 billion a year goes to subsidies, primarily benefiting richer consumers.
- Nearly \$2 billion a year is lost to unpaid power and water bills.
- A further \$2 billion a year of revenue is lost to theft and "leakage" from networks.

Rolling out infrastructure hardware is unlikely to deliver results without the appropriate institutional and regulatory "software."

- Competition matters: deregulating trucking services or liberalizing international calls can reduce monopoly profits and slash prices by about half.
- Institutions matter: improving administrative procedures at ports and border crossings can boost the speed of Africa's international road freight beyond today's glacial 10 kilometers per hour.

Building new infrastructure makes little sense if there is no provision for its maintenance. About 30 percent of Africa's infrastructure needs refurbishing, reflecting chronic underfunding of maintenance. Yet every dollar spent on preventive road maintenance saves \$4 in rehabilitation.



# Generating solutions

Going forward, increasing investments in Africa's infrastructure will be critical for securing economic growth, reducing poverty, and protecting the environment. By making sustainable development of infrastructure a priority, African nations will be able to forcefully address the continent's infrastructure deficit but also put in place growth-enhancing policies, projects, and programs necessary for achieving the Millennium Development Goals.

As conceived, the Africa Infrastructure Country Diagnostic provides policymakers and development practitioners with a wide range of resources and cutting-edge knowledge tools to inform and guide the scaling-up of infrastructure investments across Africa. The AICD service offerings include:

- Flagship report providing a brief, non-technical overview of the main findings
- Books and technical papers containing findings for each infrastructure sector
- Online databases and a wide range of performance indicators to inform and enrich decision-making
- Online geographic information system tools that allow users to independently conduct spatial analysis of infrastructure
- Online interactive models that enable users and investors to quantify investment needs

All AICD outputs are a public good, and will be made available for free at [www.infrastructureafrica.org](http://www.infrastructureafrica.org) later this year.

Africa's infrastructure is by far the most deficient and costly in the developing world. Inadequate infrastructure is holding back economic growth by two percentage points each year. Solving the problem will cost US\$80 billion per year, about twice what is currently being spent. More money is desperately needed, particularly for the power sector. But money alone is not the answer. Prudent policies, wise management, and sound maintenance can make current resources go much further, and contribute significantly to narrowing the infrastructure gap.



[www.infrastructureafrica.org](http://www.infrastructureafrica.org)

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