

# Infrastructure in Africa

## Policy brief no.2 - October 2010

Bridging Africa’s infrastructure gap is key to overcoming the continent’s development challenges. Road and rail systems make trade and investment possible; electricity facilitates mining, manufacturing and commercial activities; irrigation is critical for unlocking Africa’s agriculture potential; communication technologies can support product marketing and facilitate financial transactions; and access to clean water and sanitation helps to improve health and education services and prevent the spread of disease.

On the other hand, inadequate infrastructure retards economic growth and impedes human development efforts. Africa needs US\$ 93 billion a year for its infrastructure sectors, with about two-thirds required for new investment in physical infrastructure and a third for maintenance and operations.

Currently, only US\$ 45 billion is being invested, leaving a funding gap of US\$ 48 billion a year. The implications of this gap are serious: two-thirds of African countries face power crises; only 31 metres per 100 square kilometres of roads are paved; and only 60% of the population has access to improved water sources.<sup>1</sup> The situation is particularly severe in the power sector – disruptions in power supply, for example, cost the African economy between 1 and 2% of GDP annually. Significant investment and management reforms are required to address the situation. Figure 1 summarises the current spending for infrastructure in Sub-Saharan Africa.

**Figure 1. Infrastructure Spending on addressing Sub-Saharan Africa’s infrastructure needs, US\$ billion annual**

Infrastructure sector	Operation and maintenance		Capital expenditure				Total spending
	Public sector	Public sector	ODA	Non-OECD financiers	Private sector	Total	
ICT	2.0	1.3	0.0	0.0	5.7	7.0	9.0
Power	7.0	2.4	0.7	1.1	0.5	4.6	11.6
Transport	7.8	4.5	1.8	1.1	1.1	8.4	16.2
WSS	3.1	1.1	1.2	0.2	2.1	4.6	7.6
Irrigation	0.6	0.3	—	—	—	0.3	0.9
Total	20.4	9.4	3.6	2.5	9.4	24.9	45.3

Source: African Infrastructure Country Diagnostic Study, World Bank, 2009. Briceno-Garmendia, Smits and Foster 2008.

Note: Based on annualised averages for 2001-06. Averages weighted country GDP. Figures are extrapolations based on the 24-country sample covered in AICD Phase 1. Totals may not add exactly because of rounding errors. ICT = information and communication technology, ODA = official development assistance, WSS = water supply and sanitation. NA = not available.

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African governments are currently the primary funders of infrastructure – both for physical projects and operations and maintenance of assets. However, public spending is not enough to bridge the gap.

Private investors (domestic and foreign) can play an important role in providing funding, improving efficiency in utilities, and bringing their management expertise, technological know-how and broad range of experiences to bear on infrastructure services. But for these benefits to materialise, some major financial, institutional and regulatory obstacles to attracting and retaining successful private sector participation in infrastructure need to be addressed.

Figure 2 shows the trend of private participation in infrastructure.

Clearly, most private investment has been in the information and telecommunication sector, which received 87% of all investment commitments in 2008.<sup>2</sup>

## Recent developments

Public-Private Partnerships (PPPs) for infrastructure development in Africa have been growing in importance.

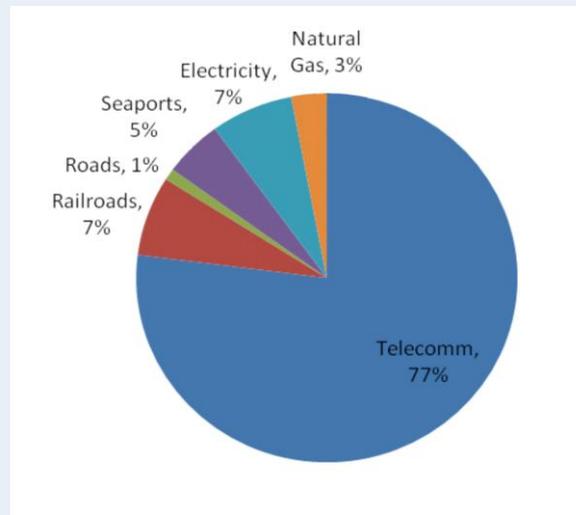
While there is no standard definition of PPPs, they can be described generally as an agreement between the government and one or more private partners whereby the latter delivers the service in such a manner that the service delivery objectives of the government are aligned with the profit objectives of the private partners.

For PPPs to be effective, there needs to be sufficient transfer of risk to the private partners.<sup>3</sup>

While not a new concept, PPPs have yet to be widespread across Africa. Public agencies need increased capacity to design, appraise and oversee PPP projects, and to develop the necessary legislation and policy framework to support private sector participation in infrastructure.

PPP Units have been cropping up around the continent, but more need to be established and more reforms

**Figure 2. Total investment commitments to infrastructure projects with private participation in Sub-Saharan Africa, by subsector, 1990-2008**



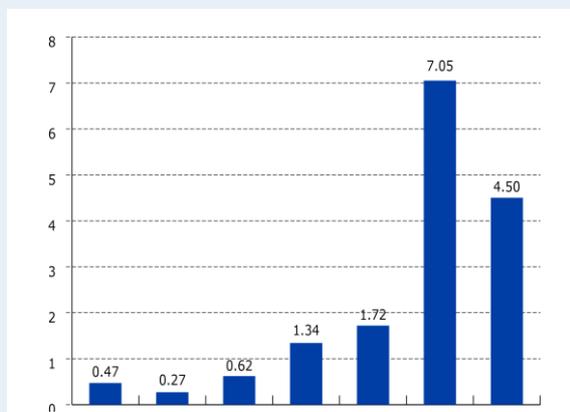
Source: adapted from Private Participation in Infrastructure Project Database, World Bank, 2008.

taken if they are to be truly effective in boosting infrastructure. Another interesting trend is the increasing role played by infrastructure investors from emerging markets. A number of companies from India, Malaysia, and South Africa are active investors and operators in infrastructure projects all over Africa, not to mention some African countries like Kenya and Namibia that offer advisory services for utilities.

China has made significant financial commitments to African infrastructure projects – a record US\$ 7 billion in 2006 (Figure 3).

However, China has also taken a challenging approach, the “Angola model”, whereby recipient countries receive loans from Chinese banks and in return contract Chinese companies to construct new infrastructure while also extending to them rights to extract natural resources.

**Figure 3. Chinese infrastructure finance commitments in Sub-Saharan Africa, 2001-2007**



Source: UNCTAD Africa Report 2009, adapted from Foster et al. 2008.

While an innovative system for countries who could otherwise not afford to raise capital for projects, the Angola model could also fall short if there is insufficient capacity and resources for maintaining and operating the infrastructure once it has been built. India has also been playing an increasingly big role in Africa.

## Policy challenges and opportunities

There are many challenges to developing Africa's infrastructure. First of all, many infrastructure projects are very capital intensive, but domestic financial markets are not developed enough to be able to fund these projects. This obliges project sponsors to tap into international capital markets but there are a number of risks that arise, chief among them the exchange rate risk, whereby project funders service their debts in foreign currency but receive revenues for projects in local currency. Moreover, many African countries do not have attractive credit ratings, which hampers their ability to source international funding for their projects. However, a few countries have had success with innovative funding mechanisms that make use of domestic resources: municipal bonds, pension funds and infrastructure bonds and funds have all been used in South Africa, Kenya and Cape Verde among others.

Moreover, syndicated loans – where a number of financial institutions pool loans for one project – have been increasing in recent years, from US\$ 138 million in 2000 to US\$ 1.18 billion in 2006 in 23 countries alone.<sup>4</sup> There is therefore a lot of scope for raising funds for infrastructure through domestic resources.

### Impact of the Crisis

Between 2002 and 2007, there was an increase in investment in infrastructure, largely because of the availability of project finance globally for infrastructure projects. African countries took advantage of it because international lenders had funds to spare to invest in projects that might otherwise have been deemed too risky. However, with the onset of the financial crisis, investment commitments to infrastructure projects decreased and capital dried up. In 2008, commitments for African infrastructure decreased from US\$ 37.3 billion in 2007 to US\$ 36.5 billion (ICA, 2009). As foreign banks' risk appetites diminished, so did inter-bank lending and access to international capital for African banks. Even when funding is available, the terms for loans have become more strict, with higher interest rates a common feature. However, Africa has not been as badly affected as Europe and Central Asia. Also, some multi-lateral donors have increased their aid and loan contributions for African infrastructure in response to the financial crisis. For example, the European Commission doubled its contribution to the EU-Africa Infrastructure Trust Fund as a direct response to the crisis, while the African Development Bank made efforts to release funds more quickly to eligible countries' infrastructure projects (DATA Report, 2010).

Source: Private Participation in Infrastructure Database, Note 36, May 2010;  
[http://www.ppiaf.org/ppiaf/sites/ppiaf.org/files/publication/PPI\\_Notes06-Impact\\_Crisis-May2010.pdf](http://www.ppiaf.org/ppiaf/sites/ppiaf.org/files/publication/PPI_Notes06-Impact_Crisis-May2010.pdf).

There are also institutional and regulatory challenges to infrastructure development. Many utilities in Africa are state-owned and tend to perform badly compared to other developing regions although there are big variations among countries.<sup>5</sup> For example, the inefficient management of infrastructure results in annual losses of US\$ 17 billion due to uncollected bills, overstaffing, poor budget execution, and so on. It is common for tariffs to be set below cost-recovery or profit-making levels. Independent regulators are few and far between. 9% of all projects between 1990 and 2008 were cancelled or in distress and often contracts have to be renegotiated during the life of the project.

These challenges highlight the need for better project management skills, independent and transparent regulatory bodies, and institutional reforms to make utilities more efficient. One way to measure the institutional reforms in infrastructure undertaken by African countries is the Institutional Scorecard,<sup>6</sup> comprised of three broad areas: reforms (sectoral legislation, restructuring enterprises, private sector participation); regulations (transparent and independent regulatory agencies and tools), and governance

(internal management within infrastructure enterprises such as shareholder relations).

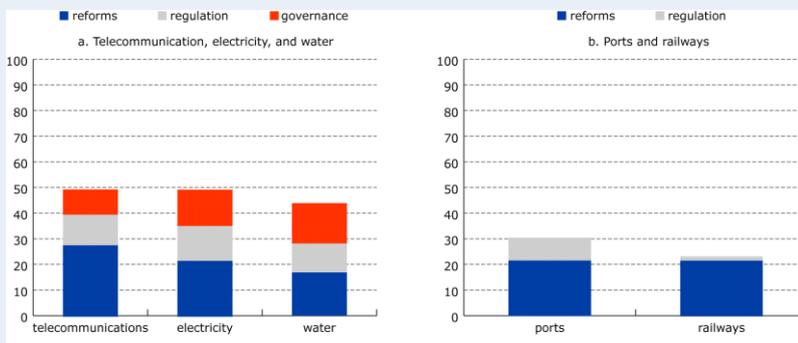
As Figure 4 illustrates, most African countries have made barely half the progress they need to in these three areas.

However, there are important sectoral variations to these reforms and there is often a correlation between institutional quality for infrastructure and general governance quality in a country, so these country variations must also be taken into account. As for opportunities, renewable energy has a lot of potential, especially given the abundance of solar, hydro, geothermal and wind resources all over the continent.

However, there has been little investment in renewable energy for a number of financial and regulatory reasons.

But in the context of climate change and energy poverty, especially in rural areas, and the increasingly undesirable effects of oil and coal, renewable energy can be an important way to address Africa's energy crisis in a sustainable way.

**Figure 4. Institutional progress across sectors, % score on institutional scorecard**



Source: AICD 2009, Vagliasindi and Neils.

Note: See Vagliasindi 2008c for the definition of the institutional indicators.

Moreover, regional infrastructure such as transport corridors and power pools hold a lot of promise for regional integration and increased access to utilities, due to economies of scale, but various states need to harmonise their regulatory standards and pull their resources together if such projects are to be realised.

The recent creation of the Programme for Infrastructure Development in Africa (PIDA), which merges all continental initiatives on infrastructure and is led by the AU Commission, the NEPAD Secretariat and the African Development Bank, is a good example of how harmonisation can happen.

## Notes

- 1 Africa Infrastructure Country Diagnostic; 2009
- 2 Private Participation in Infrastructure Database, World Bank; <http://ppi.worldbank.org/features/Dec2009/2008SSADDataLaunch.pdf>
- 3 For a full definition, and detailed analysis of PPPs, see "Public-Private Partnerships: In Pursuit of Risk Sharing and Value for Money"; OECD, 2008
- 4 Local Sourcing of Infrastructure for Financing; Jacqueline Irving, Astrid Manroth; World Bank, March 2009
- 5 An example is in the water sector. The OECD Checklist for Public Action on Water contains detailed information on private sector participation in water; the regulatory frameworks for infrastructure, and the operational performance of water providers in selected African countries. See OECD, 2009.
- 6 The infrastructure institutional scorecard was developed for the 2009 Africa Infrastructure Country Diagnostic Study.