Financing Sub-Saharan Africa’s Infrastructure through Public Private Partnerships (PPPs)

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Marcel Bruhwiler
Principal Investment Officer
Infrastructure, Sub-Saharan Africa
Overview

1. Background Sub-Saharan Africa
   - Some Macro-Economic Realities
   - Opportunities and Challenges

2. How to Finance the Infrastructure Deficit?
   - The Efficiency Gap and the Funding Gap
   - Traditional Public Sector Procurement
   - Can the Private Sector Fill the Gap?
   - Main Aspects of PPPs
   - The Importance of the EPC Contractor in PPPs
   - How to evaluate PPP opportunities?

3. How Can IFC Help?
   - Who we are and what we do
   - Some regional PPP infrastructure opportunities to watch
Comparably Low Economic Activity

**GDP 2011 (current USD)**

- South Africa and Nigeria contribute 51% to Sub-Saharan Africa’s (SSA) GDP.
- SSA’s total GDP is only about 1/2 of Brazil’s and 1/6 of China’s.
- GDP of most countries driven largely by resource extraction industries.
- Largest regional oil exporters: Nigeria, Angola and Sudan.
- South Africa as largest and most diversified regional economy.

<table>
<thead>
<tr>
<th>Country Name</th>
<th>2011 total (bUSD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>408</td>
</tr>
<tr>
<td>Nigeria</td>
<td>236</td>
</tr>
<tr>
<td>Angola</td>
<td>101</td>
</tr>
<tr>
<td>Sudan</td>
<td>55</td>
</tr>
<tr>
<td>Ghana</td>
<td>39</td>
</tr>
<tr>
<td>Kenya</td>
<td>34</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>32</td>
</tr>
<tr>
<td>Cameroon</td>
<td>25</td>
</tr>
<tr>
<td>Cote d'Ivoire</td>
<td>24</td>
</tr>
<tr>
<td>Tanzania</td>
<td>24</td>
</tr>
<tr>
<td>Zambia</td>
<td>19</td>
</tr>
<tr>
<td>Botswana</td>
<td>18</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td><strong>Sub-Saharan Africa</strong></td>
<td><strong>1,266</strong></td>
</tr>
</tbody>
</table>

**For Comparison:**

<table>
<thead>
<tr>
<th>Country</th>
<th>2011 total (bUSD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>15,094</td>
</tr>
<tr>
<td>China</td>
<td>7,318</td>
</tr>
<tr>
<td>Germany</td>
<td>3,571</td>
</tr>
<tr>
<td>Brazil</td>
<td>2,477</td>
</tr>
</tbody>
</table>

Source: Worldbank November 2012
High Population Growth
Actual 2011 to forecast 2020

- Most populated countries: Nigeria, Ethiopia and DRC.
- + 200m people until 2020.
- Regional population growth rate of 2.26% pa is more than double the world’s avg rate of 1% up to 2020.
- Avg life expectancy in SSA is approx. 54 years. Lowest: Lesotho 47, highest Mauritius 83; South Africa 52.

<table>
<thead>
<tr>
<th>Country Name</th>
<th>Tot. Pop. 2011 (mil)</th>
<th>Tot. Pop. 2020 (mil)</th>
<th>CAGR pa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nigeria</td>
<td>162</td>
<td>193</td>
<td>2.0%</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>87</td>
<td>108</td>
<td>2.4%</td>
</tr>
<tr>
<td>Congo, Dem. Rep.</td>
<td>70</td>
<td>88</td>
<td>2.6%</td>
</tr>
<tr>
<td>South Africa</td>
<td>51</td>
<td>53</td>
<td>0.4%</td>
</tr>
<tr>
<td>Tanzania</td>
<td>46</td>
<td>60</td>
<td>2.8%</td>
</tr>
<tr>
<td>Sudan</td>
<td>44</td>
<td>52</td>
<td>1.9%</td>
</tr>
<tr>
<td>Kenya</td>
<td>42</td>
<td>52</td>
<td>2.4%</td>
</tr>
<tr>
<td>Uganda</td>
<td>35</td>
<td>46</td>
<td>3.2%</td>
</tr>
<tr>
<td>Ghana</td>
<td>25</td>
<td>30</td>
<td>2.0%</td>
</tr>
<tr>
<td>Mozambique</td>
<td>24</td>
<td>29</td>
<td>2.0%</td>
</tr>
<tr>
<td>Cote d'Ivoire</td>
<td>22</td>
<td>27</td>
<td>2.2%</td>
</tr>
<tr>
<td>Madagascar</td>
<td>21</td>
<td>26</td>
<td>2.4%</td>
</tr>
<tr>
<td>Cameroon</td>
<td>20</td>
<td>24</td>
<td>2.0%</td>
</tr>
<tr>
<td>Angola</td>
<td>20</td>
<td>25</td>
<td>2.6%</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>17</td>
<td>22</td>
<td>3.0%</td>
</tr>
<tr>
<td>Niger</td>
<td>17</td>
<td>23</td>
<td>3.7%</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>883</td>
<td>1,080</td>
<td>2.26%</td>
</tr>
</tbody>
</table>

For Comparison:

<table>
<thead>
<tr>
<th>Country Name</th>
<th>Tot. Pop. 2011</th>
<th>Tot. Pop. 2012</th>
<th>CAGR pa</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>313</td>
<td>337</td>
<td>0.82%</td>
</tr>
<tr>
<td>China</td>
<td>1,379</td>
<td>1,420</td>
<td>0.33%</td>
</tr>
<tr>
<td>Germany</td>
<td>82</td>
<td>81</td>
<td>-0.16%</td>
</tr>
<tr>
<td>Brazil</td>
<td>197</td>
<td>210</td>
<td>0.76%</td>
</tr>
</tbody>
</table>

*Source: Worldbank & FAOSTAT November 2012*
Low GDP per capita
Sample countries (2011 USD@PPP)

- South Africa +/- equal to Brazil.
- Most countries < 2000 USD pa per capita.
- High inequality in income distribution (high GNI index).
- Economic growth > population growth required for poverty alleviation.

<table>
<thead>
<tr>
<th>Country</th>
<th>GDP per head (USD at PPP) 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equatorial Guinea</td>
<td>36,310</td>
</tr>
<tr>
<td>Mauritius</td>
<td>15,060</td>
</tr>
<tr>
<td>Botswana</td>
<td>14,890</td>
</tr>
<tr>
<td>South Africa</td>
<td>11,330</td>
</tr>
<tr>
<td>Angola</td>
<td>7,120</td>
</tr>
<tr>
<td>Ghana</td>
<td>3,020</td>
</tr>
<tr>
<td>Nigeria</td>
<td>1,820</td>
</tr>
<tr>
<td>Kenya</td>
<td>1,711</td>
</tr>
<tr>
<td>Tanzania</td>
<td>1,470</td>
</tr>
<tr>
<td>Uganda</td>
<td>1,470</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>1,240</td>
</tr>
<tr>
<td>Mozambique</td>
<td>1,000</td>
</tr>
<tr>
<td>Madagascar</td>
<td>963</td>
</tr>
<tr>
<td>Central African Republic</td>
<td>811</td>
</tr>
<tr>
<td>Burundi</td>
<td>421</td>
</tr>
<tr>
<td>Congo (Democratic Republic)</td>
<td>369</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>185</td>
</tr>
</tbody>
</table>

For Comparison:
- Brazil: 11,900
- China: 8,670
- Germany: 39,550
- United States: 48,350

Source: Worldbank November 2012
The Opportunities

*The true size of Africa ...*

- .. is frequently underestimated.
- Total land area = 30m sq km.
- USA = China = 9.6-9.8m sq km.
- SSA's land area > China + India.
- Very large arable land reserves suitable for rain-fed crops.
The Opportunities
Natural Resources: Curse and Blessing

Source: Worldbank November 2012
The Opportunities

*Sustained above average growth rates*

### World’s ten fastest-growing economies*

<table>
<thead>
<tr>
<th></th>
<th>2001-2010†</th>
<th>2011-2015‡</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>11.1</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>10.5</td>
<td>9.5</td>
</tr>
<tr>
<td>Myanmar</td>
<td>10.3</td>
<td></td>
</tr>
<tr>
<td>Nigeria</td>
<td>8.9</td>
<td></td>
</tr>
<tr>
<td>Ethiopia</td>
<td>8.4</td>
<td>8.1</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>8.2</td>
<td></td>
</tr>
<tr>
<td>Chad</td>
<td>7.9</td>
<td></td>
</tr>
<tr>
<td>Mozambique</td>
<td>7.9</td>
<td></td>
</tr>
<tr>
<td>Cambodia</td>
<td>7.7</td>
<td></td>
</tr>
<tr>
<td>Rwanda</td>
<td>7.6</td>
<td></td>
</tr>
</tbody>
</table>

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*Excluding countries with less than 10m population and Iraq and Afghanistan †2010 estimate ‡Forecast

*Sources: The Economist; IMF*
The Opportunities
*The rise of the urban middle-class consumer*

Growth of African cities
% increase, 2010-2025 forecast

City population, forecasts, 2010-2025

Source: UN-HABITAT
The Challenges

The *urbanization* trap
The Challenges

The infrastructure deficit

Productivity lost due to power outages by global region - 2009

Population with access to selected infrastructure services in Africa

Source: African Development Bank
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   - Who we are and what we do
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How to Finance the Infrastructure Deficit?

The Efficiency Gap (17b$) and the Funding Gap (31b$)

<table>
<thead>
<tr>
<th>Item</th>
<th>Electricity</th>
<th>ICT</th>
<th>Irrigation</th>
<th>Transport</th>
<th>WSS</th>
<th>Cross-sector gain</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure spending needs</td>
<td>(40.8)</td>
<td>(9.0)</td>
<td>(3.4)</td>
<td>(18.2)</td>
<td>(21.9)</td>
<td>n.a.</td>
<td>(93.3)</td>
</tr>
<tr>
<td>Existing spending</td>
<td>11.6</td>
<td>9.0</td>
<td>0.9</td>
<td>16.2</td>
<td>7.6</td>
<td>n.a.</td>
<td>45.3</td>
</tr>
<tr>
<td>Efficiency gap</td>
<td>6.0</td>
<td>1.3</td>
<td>0.1</td>
<td>3.8</td>
<td>2.9</td>
<td>3.3</td>
<td>17.4</td>
</tr>
<tr>
<td>Gain from raising capital execution</td>
<td>0.2</td>
<td>0.0</td>
<td>0.1</td>
<td>1.3</td>
<td>0.2</td>
<td>n.a.</td>
<td>1.9</td>
</tr>
<tr>
<td>Gain from eliminating operational inefficiencies</td>
<td>3.4</td>
<td>1.2</td>
<td>—</td>
<td>1.9</td>
<td>1.0</td>
<td>n.a.</td>
<td>7.5</td>
</tr>
<tr>
<td>Gain from tariff cost recovery</td>
<td>2.3</td>
<td>—</td>
<td>—</td>
<td>0.6</td>
<td>1.8</td>
<td>n.a.</td>
<td>4.7</td>
</tr>
<tr>
<td>Potential for reallocation</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>3.3</td>
<td>3.3</td>
</tr>
<tr>
<td>Funding gap</td>
<td>(23.2)</td>
<td>1.3</td>
<td>(2.4)</td>
<td>1.9</td>
<td>(11.4)</td>
<td>3.3</td>
<td>(30.6)</td>
</tr>
</tbody>
</table>

Source: Briceño-Garmendia, Smits, and Foster 2008.

Note: ICT = information and communication technology; n.a. = not applicable; — = not available; WSS = water supply and sanitation. Parentheses indicate negative values.
How to Finance the Infrastructure Deficits?

*Traditional Public Sector Procurement*

- Some aspects of traditional public sector infrastructure procurement:
  - Favoring investments over maintenance. More focus on up-front capex instead of lifecycle costs when investing (budget constraints).
  - Political agenda influences budget allocation. Misallocation / overspending in certain sectors.
  - Inefficiencies in state owned utilities. Overemployment, undermaintenance, underpricing, undercollection, distribution losses.

- Limited fiscal space. Hence, still significant amounts of concessional financing required:
  - World Bank and other OECD DFIs.
  - China Inc. and other non-OECD sources.
Public Private Partnerships

*Shared risks & responsibilities*

- **Government**
  - Ensure growth of the sector, formulate effective public policy

- **Private Sector**
  - Returns maximisation

- **Regulator**
  - Ensure transparency, balance the interests of different stakeholders

- **Consumer**
  - Value for Money

Conflicting interests of the different stakeholders
How to finance the infrastructure deficits? 
*Can the private sector fill the gap?*

**Key value drivers of PPPs:**

- Focus on lifecycle costs through bundling of construction with O&M; Payment only if KPI are met/services delivered.
- Incentives for efficiency improvements (technology, governance).
- Private risk capital, in many cases foreign direct investments.
- Contracts with optimal risk transfer that align incentives of private party with public interest (job creation, local content, IP transfer).
How to finance the infrastructure deficits?
*Can the private sector fill the gap?*

Main hurdles for PPPs

- Significant up front work to be done by Government in setting a clear policy and regulatory framework. Lack of capacity prevalent in many countries. Institutional development and political commitment are essential.

- High transaction costs, high contractual complexity.

- Governments give up some flexibility, control and political interests.

- Affordability of cost reflective tariffs. Existing Public services are often underpriced.

- Achieving full cost recovery with enduser tariffs can be difficult even long term.

- Public perception: “Privatization leads to price increases.”
The importance of the EPC Contractor in PPPs

*Pivotal to achieve project bankability*

- Contractor’s balance sheet, references, integrity and local footprint are major factors for bankability.

- EPC contractor = O&M provider is a valuable solution, but ...  

- EPC contractors can add significant value as project shareholders, but transactions need to be at arm’s length.

- Most PPP tenders include socio-economic evaluation criteria: Local content, job creation, know how transfer. EPC contractor has major role to play to achieve required parameters.
How to Evaluate PPP Opportunities
Betting on the right horses

Bujagali Hydro-Power Plant, Uganda

- Project development started by AES mid 90ties.
- In 2002, AES pulled out having spent more than 70m USD.
- Various setbacks due to E&S challenges, NGO opposition.
- The 250MW Bujagali hydro-power plant in Uganda was inaugurated mid 2012; Sithe Energy and IPS as sponsors; Multi DFI financing, commercial lenders with MIGA support.
How to Evaluate PPP Opportunities

Betting on the right horses

- Unsolicited proposals / negotiated deals (instead of public tenders) have increased risk of renegotiation or even termination by Government.

- Look out for fatal flaws: General investment climate, history of expropriation/defaults, enabling laws, sufficient off-taker credit, PEPs, forex risks/availability, environmental & social impact.

- Political commitment and champion in administration needed. Is “political window” long enough?

- Beware of white elephants! Does the project make economic sense? Is the tariff affordable? Public and NGO opinion?
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The World Bank Group

**IBRD**
**International Bank for Reconstruction and Development**
- Est. 1945
- Role: To promote institutional, legal and regulatory reform
- Clients: Governments of member countries with per capita income between $1,025 and $6,055
- Products: Technical Assistance, Loans, Policy Advice

**IDA**
**International Development Association**
- Est. 1960
- Role: To promote institutional, legal and regulatory reform
- Clients: Governments of poorest countries with per capita income of less than $1,025
- Products: Technical Assistance, Interest Free Loans, Policy Advice

**IFC**
**International Finance Corporation**
- Est. 1956
- Role: To promote private sector development
- Clients: Private companies in member countries
- Products: Equity/Loans, Risk Management, Advisory Services

**MIGA**
**Multilateral Investment and Guarantee Agency**
- Est. 1998
- Role: To reduce political investment risk
- Clients: Foreign investors in member countries
- Products: Political Risk Insurance
What IFC offers
3 Main Business Lines

- Access to finance
- Sustainable business
- Investment climate
- Public-Private Partnerships

IFC Advisory Services

- Loans / Equity
- Syndications
- Trade / Securitized finance
- Client risk management
- Treasury services
- Liquidity management

IFC Investment Services

- Wholly-owned subsidiary of IFC that invests third-party capital alongside IFC with about US$4bn under management

IFC Asset Management Company (AMC)
What IFC offers

*Development bank with the flexibility of a commercial bank*

1. **Long Term Financing**
   - Stamp of approval - by going through IFC’s rigorous due diligence, the company will be recognized as a credible company with international standards

2. **Political Risk Mitigation**
   - Market pricing - IFC offers best practice terms and market-based rates in connection with project risk and structure

3. **Global industry knowledge and network** - many clients appreciate input from IFC’s industry specialists and investment officers

4. **Best practice on sustainable business management** including environmental & social management, corporate governance, and insurance

5. **Counter-cyclical role** - we step up in difficult times
IFC Project Financing
Some Guidelines

**Equity**
- Corporate and Joint Venture
  - Typically 5-20% stake for IFC’s own account, possibly increased through AMC’s involvement
  - Long-term investor
  - Usually no seat on board
  - Early equity investments (InfraVentures)

**Mezzanine and Quasi Equity**
- Subordinated loans
- Income participating loans
- Convertibles
- Any other hybrid instrument one can come up with.

**Senior Debt and Guarantees**
- Senior Debt (corporate finance, project finance) and Guarantees
- Fixed or floating rates (US$, Euro and local currencies available)
- Commercial rates, structured loans
- Long maturities (8-20 years), appropriate grace periods
- Mobilization of funds from other lenders and investors (co-financing, syndication, underwriting and guarantees), including US OPIC, US EXIM etc.
- Swaps and other derivatives / risk management products
Some Regional PPP Infrastructure Opportunities

*Power and Gas*

- SA’s IPP procurement program. 28 1st round RE projects with 1416MW closed. 2200MW to come in round 2&3. Further 9000MW to be procured as per Mid Term Planning.
  - Grid connection! 47 projects to be connected over 2/3 years (round 1&2).
  - Wind turbine blade / tower logistics!
  - Wind turbine manufacturer’s risk!

- Large green-field hydro-power schemes with transmission backbones (Mozambique, Zambia, DRC).

- Gas monetization Mozambique, Tanzania, Kenya, Namibia.
Some Regional PPP Infrastructure Opportunities

Transport

- **Urban toll roads and mass transit systems.** Rapid urbanisation creates mega cities in the next 10-20 years (Lagos, Dakar, Abidjan, Accra, Kinshasa, Nairobi, Dar Es Salam, Addis Ababa, Karthoum, Antananarivo).

- **Railways.** Demand shift from existing general freight and passengers railways towards dedicated mining railways linked to landlocked mining exploitations (Copper belt in DRC/Zambia, Guinea, Congo, Cameroun and Mozambique).

- **Airport** concessioning will pick up primarily in the form of expansion of passengers capacity at existing airports (new terminals) rather than new airports.

- **Concessioning of all major seaports** is basically done (few exceptions). PPP activities in the port system therefore linked to capacity extension of existing ports (brownfields) allowing SSA catching up on containerization (e.g., Dakar, Conakry, Tema, Abidjan, Lomé, Lagos, Port Harcourt, Kribi, Matadi, Djibouti).
Thank you for your attention.

“Remember Watson: Things are usually more complex than they seem, yet for every problem there is a solution.”
Contacts

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