Brazzaville – Kinshasa Toll Bridge

**Project Location**

**Brazzaville to Kinshasa**

**Owners & Project Sponsors**

- Government of the Republic of Congo
- Government of the Democratic Republic of Congo

**Implementing Partners**

- Délégation Générale des Grand Travaux
- Ministère du Plan et Suivi de la Révolution de la Modernité

**Regional Economic Community**

- Economic Community of Central African States (ECCAS)
Description & Impact
Brazzaville – Kinshasa Toll Bridge

• A tolled road-rail bridge across the Congo River linking Kinshasa and Brazzaville.
• The bridge is part of a larger project, the Kinshasa-Ilebo Railway project, that aims to improve the railway network in Africa.
• Whilst the bridge will improve and secure the connections between the two capitals of the DRC and RC, the larger project will connect into the Trans-African Highway and the Pointe Noire – South Eastern Africa Railway Network.
• The Project will stimulate trade between Brazzaville and Kinshasa, the DRC and RC, and the region.
• It will also encourage movement of people and goods along the Tripoli-Windhoek corridor.
Location
Brazzaville – Kinshasa Toll Bridge
The bridge will be 1,575m in length, and will include a single railway track, two road lanes (one in each direction) as well as two sidewalks.

To connect the bridge to existing road infrastructure, there will be a road extension of 6.8km in the DRC, and 3.2km in the RC.

The road could be extended to four lanes if future demand justifies such an extension.
Business Model & Project Costs
Brazzaville – Kinshasa Toll Bridge

- Project will be developed through a Build–Operate–Transfer (BOT) PPP financed with 70% debt and 30% equity.
- The special purpose vehicle (SPV) will require more than USD321 million of debt funding to fund project costs and other project finance requirements.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>AMOUNT EUR MILLION</th>
<th>AMOUNT USD MILLION</th>
<th>% OF TOTAL COSTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRIDGE</td>
<td>300.3</td>
<td>333.3</td>
<td>72.6%</td>
</tr>
<tr>
<td>CONNECTING ROADWAY</td>
<td>62.7</td>
<td>69.6</td>
<td>15.2%</td>
</tr>
<tr>
<td>CONTROL POSTS</td>
<td>37.7</td>
<td>41.8</td>
<td>9.1%</td>
</tr>
<tr>
<td>CONTROL AND SUPERVISION</td>
<td>12</td>
<td>13.3</td>
<td>2.91%</td>
</tr>
<tr>
<td>ENVIRONMENTAL MEASURES</td>
<td>0.8</td>
<td>0.9</td>
<td>0.19%</td>
</tr>
<tr>
<td>EXPROPRIATIONS</td>
<td>0.2</td>
<td>0.2</td>
<td>0.05%</td>
</tr>
<tr>
<td>TOTAL</td>
<td><strong>413.7</strong></td>
<td><strong>459.2</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
Financial Analysis & Revenue Model
Brazzaville – Kinshasa Toll Bridge

• Toll revenues paid by passengers and goods crossing the bridge will be collected by the concessionaire.

• The feasibility study forecasts a project IRR of 16.9% and an equity IRR of 24% in Euro terms.

• A discount rate of 12% was used to arrive at an economic internal rate of return (EIRR) of 22%, and a net present value of EUR 303.5 million (USD 336.9 million).

• A payment mechanism which will allow the two countries to share in higher than expected demand may need to be developed to ensure value for money for the public sector.

• Similarly, the private sector may require downside protection in the form of a patronage guarantee as part of the payment mechanism to protect it against lower than expected demand.
Development and Funding Opportunities
Brazzaville – Kinshasa Toll Bridge

• To unlock funding, a detailed demand study, underpinned by surveys, will need to be developed as part of the planned “Initial Business Case”.

• The surveys should also seek to identify affordability levels which will allow investors or funders to conclude on how affordable the proposed toll rates will be to potential users.

• The demand analysis will need to substantiate the significant growth in demand forecast in the Feasibility Study.

• Given how sensitive the Project appears to be to demand, the private sector will most likely require patronage guarantees to be issued by the two governments to undertake the project.

• These patronage guarantees could benefit from credit enhancement by a DFI, to attract private sector equity and concessionary debt.
Environmental & Social Assessments
Brazzaville – Kinshasa Toll Bridge

• The Feasibility Study includes a comprehensive environmental, socio-economic impact study, as well as a sustainability study.
  
  • The Project’s positive socio-economic impacts are expected to be significant. The bridge is expected to stimulate the local, provincial and regional economy, by creating jobs in the region.
  • The project is also likely to trigger further regional development of infrastructure.

• The Project’s negative impacts are expected to include the resettlement of populations living, possessing property or exercising business activities on the construction site.
  • Impact on the environment include construction related risks – e.g. pollution risks – and the impact of the carbon footprint to connect to the bridge.
**Brazzaville-Kinshasa Bridge Will Create an Estimated 420,000 Job Years Over 100 Years Useful Life**

<table>
<thead>
<tr>
<th></th>
<th>Over Twelve Year Project Development Time</th>
<th>Annual Operations</th>
<th>Total Over Project Useful Life of 100 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Project preparation</td>
<td>Construction</td>
<td>O&amp;M</td>
</tr>
<tr>
<td>Congo</td>
<td>326</td>
<td>15,407</td>
<td>220</td>
</tr>
<tr>
<td>DRC</td>
<td>441</td>
<td>13,276</td>
<td>12</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>767</td>
<td>28,683</td>
<td>232</td>
</tr>
</tbody>
</table>

*Based on assumptions*
**Brazzaville-Kinshasa Bridge Will Create An Estimated 11,200 Average Annual Jobs (based on preliminary assumptions)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Project Preparation</th>
<th>Construction</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>(8 years)</td>
<td>(4 years)</td>
<td>(100 years useful life)</td>
</tr>
</tbody>
</table>

### Number of Average Annual Jobs

- **Project Preparation (8 years):**
  - 110 direct, indirect, induced

- **Construction (4 years):**
  - 7,200 jobs:
    - 3,750 direct
    - 2,050 indirect
    - 1,400 induced

- **Operations (100 years useful life):**
  - 3,670 Secondary effects (direct, indirect, induced)
  - 232 O&M jobs (direct, indirect, induced)
### Required Job Skills & Potential Interventions to Maximize African Jobs

<table>
<thead>
<tr>
<th>PROJECT PHASE</th>
<th>EXAMPLES OF OCCUPATIONS</th>
<th>EXAMPLES OF POTENTIAL INTERVENTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Preparation</td>
<td>• Project developers • Financial advisors • Engineers • Procurement experts</td>
<td>• Require contractors to employ and train local engineers • Provide supplementary training programs with local business associations &amp; schools</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td>• Construction supervisors • Engineers (design) • Procurement experts • Site safety directors</td>
<td>• Require contractors to use local materials, labour, and partners that meet quality/price thresholds and conduct training • Provide support to local contractors (bidding, finance)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operations and</td>
<td>• Unskilled labor • Mechanical operators • Maintenance and control engineers • Site safety specialists</td>
<td>• Provide peer-peer training • Provide support to local contractors (bidding, finance) • Track training and employment performance by key targets (youth, gender, etc)</td>
</tr>
<tr>
<td>Maintenance</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Implementation Timeline & Way Forward

Brazzaville – Kinshasa Toll Bridge

- Preparation of an Initial Business Case (including demand study)
- Market sounding with DFI lenders, EPC contractors and potential equity investors
- Refinement of PPP structure
- Release of tender documents
Opportunities to unlock projects
Brazzaville – Kinshasa Toll Bridge

DFIs / ICPs
- Fund TA costs to advance project (including demand study)
- Extend concessionary loans
- Guarantee debt

Institutional Investors

Commercial Banks & Developers
- Provide equity for PPP

Governments
- Provide patronage guarantees
- Ensure legal frameworks in place

NEPAD/RECs
- Coordinate technical teams between countries
- Market projects to funders
- Provide political support
JOB CREATION ANNEX
METHODOLOGY FOR ESTIMATING JOB CREATION IN TRANSPORT INFRASTRUCTURE (Toll Roads, Bridges, etc)

**PRIMARY EFFECT** (jobs created as a result of infrastructure deployment)

- DIRECT JOBS (actual jobs required for project development, construction, operation phases over project’s useful life)
- INDIRECT JOBS (employment generated by businesses providing inputs for project preparation (studies, etc.), construction, operation (e.g., raw materials, equipment, etc.))
- INDUCED JOBS (Employment generated by household spending based on the income earned by direct and indirect workers engaged in project)

**SECONDARY EFFECT** (jobs created as a result of the economic spillover of infrastructure once it is deployed)

- DIRECT, INDIRECT AND INDUCED JOBS (employment resulting from new business creation and existing enterprises expanding as the result of enhanced trade facilitated by new infrastructure)

**BEST PRACTICE: INPUT-OUTPUT ANALYSIS** (used worldwide based on subsectorial economic national data)

- Estimate cost of inputs by country source
- Project preparation (studies, project staff & experts)
- Construction (labour, supervision, equipment, raw materials, etc.)
- Operations & Maintenance
- Enter inputs in Input-Output Tables (developed from GTAP data base for all African countries)
- Tables estimate jobs

**INPUT-OUTPUT ANALYSIS**

- Create an inter-country regional trade traffic matrix by country and sector based on GTAP national data
- Input trade improvement as result of new infrastructure (based on DBSA corridor approach)
- Enter incremental sector inputs in National Input-Output Tables
- Tables estimate jobs by country and sector
To Generate The Data Required For Estimating Jobs, Major Assumptions Were Made

<table>
<thead>
<tr>
<th>Phase</th>
<th>Assumptions</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project preparation</td>
<td>Absent any project preparation data, it was assumed following benchmarks that project preparation would amount to 4.5% of construction costs</td>
<td>Project preparation costs: US$ 22 million</td>
</tr>
<tr>
<td></td>
<td>Considering international location of firm conducting feasibility study, Cost of Feasibility study was assumed to be US$ 5 million (TOR from Communaute Economique Des Etats De L'Afrique Centrale mentions 5 million Universal Currency, value not determined)</td>
<td>Subtract US$5 million from overall project preparation costs</td>
</tr>
<tr>
<td>Construction</td>
<td>Time of construction was estimated in feasibility study at 4 years (vol. 10, p. 74) (similar to Transgambia Bridge, a smaller infrastructure project)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Construction costs as provided in Feasibility Study exclude all financial contingencies (reserve accounts, revolving fund requirements, etc.)</td>
<td></td>
</tr>
</tbody>
</table>