Briefing Memorandum:

Second Nile Crossing at Jinja- Uganda

ICA Meeting:

Financing Transport for Growth in Africa

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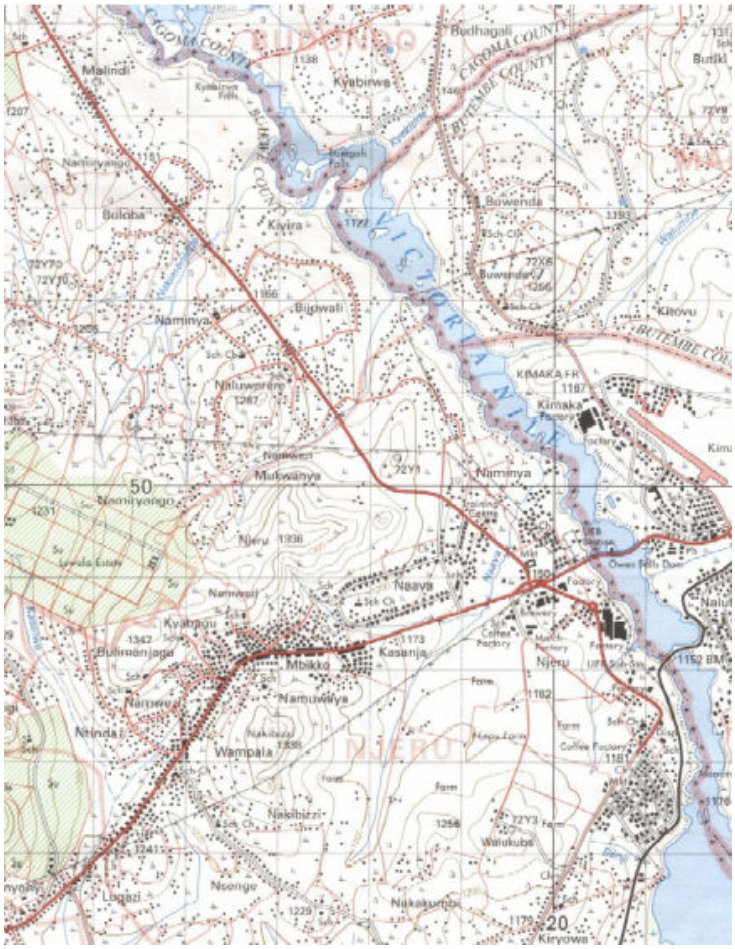
1. Summary

The Ugandan Ministry of Works, Housing and Communications (MOWHC) has expressed its interest in the construction of a bridge across the Nile River. The design of a new bridge has been prompted by concerns over the current state of the bridge at the Nalubaale Dam.

The existing bridge, which is supported by the dam, is the only Ugandan road connection across the Nile and, as such, is integral to the region's transportation network. The bridge also forms a key link along the Northern Corridor Route (NCR), Uganda's most important highway. Recent studies, however, have shown that the dam and bridge suffer from insufficient maintenance and will need extensive rehabilitation works.

Any closure of the bridge would block transportation across the Nile and effectively divide the country in two. In order to avoid this potential disruption, the government of Uganda has expressed its interest in building a new crossing point at Jinja.

The government has also expressed its desire to secure private sector funding for the project. The terms and conditions of such a deal would be negotiated between the Ugandan government and the private sector investors. Any negotiation would likely include the assignment of a portion of the tolling revenues to the private sector investors.



A pre-feasibility study for the project was completed in March of 2006. The government has approached the Japan International Co-operation Agency (JICA) for funding for the next stage feasibility study.

2. Economic Rationale

2.1 Uganda

Uganda is a developing landlocked country in Eastern Africa. Its per capita income is roughly USD 330 p.a. The country has been economically stable with real GDP growing at an average of 6.5% over the past 10 years.

Roads form the backbone of Uganda's transportation network. The country has only one international airport, at Entebbe, and only 205 km of functioning rail network, the Kampala-Malaba line.

2.2 The Northern Corridor Route

The Northern Corridor Route (NCR) is Uganda's most important national highway. It forms 6.8% of Uganda's road network and carries 31.5% of its traffic. Combined transit and transhipment traffic exceeds 2.2 million tonnes a day, and that rate has been growing at 20% annually. The road connects Uganda to the port of Mombasa, and is the preferred shipping route for much of Uganda's trade and commerce. The road is also critical to the transportation networks of Rwanda, Burundi and the Democratic Republic of the Congo.

The NCR currently has only one crossing point across the Nile River in Uganda, the Nalubaale Dam/Bridge, located near the source of the Nile River, at Jinja. Over 90% of the Ugandan traffic along the NCR crosses over the Nalubaale Dam/Bridge. Any closure of the bridge would result in immense economic disruptions and would effectively separate the south-eastern portion of the country from the western and northern portions.

The bridge at Nalubaale is supported by the existing dam structure that was created 50 years ago. Since construction, the dam and bridge have received only minimal repairs. The lack of proper maintenance has resulted in deteriorating conditions for both structures. The government has been making ad-hoc repairs designed to keep the conditions from deteriorating further but large scale repairs have yet to be undertaken. The MOWHC has decided that another bridge must be established to secure transportation along the Northern Corridor Route.

3. The Project

3.1 The Bridge

The new bridge would be a second crossing point close to the existing Nalubaale Dam/ Bridge. A pre-investment study conducted by Mott MacDonald, Kagga and Partners in March 2006 investigated several alternative bridge alignments and structures. The study concluded that the best option with the lowest capital cost was a cable stayed bridge with two spans of 90 meters and 210 meters respectively. The bridge would include the construction of an 80 meter tower on the Nalufenya bank of the river. In order to minimize the costs, the use of the Nile Island as a pier was recommended.

3.2 Environmental Impact

The 2006 pre-investment study included an environmental project brief. A project brief is a first, and necessary step in obtaining project approval from the Ugandan National Environmental Management Authority (NEMA). The project brief lays out the scope of the project, possible environmental impacts, and possible measures that could be undertaken to mitigate the environmental impacts. A full environmental study will need to be undertaken before the project can get final approval.

The project brief's initial assessment considered several different possible environmental factors including:

- Noise;
- Dust;
- Accidents;
- Potential loss of employment;
- Land taking for access roads;
- Disturbance to and displacement of people; and
- Ecological impact.

The project brief concluded that any negative externalities generated by the project could be reduced significantly with appropriate mitigation measures.

3.3 Legal Framework

Uganda has had limited experience with public-private partnerships (PPP), and as such, its legal structure has yet to develop laws to facilitate such arrangements. Its constitution, which was adopted relatively recently on October 8th, 1995, specifically forbids any tax that is not issued by parliament. Any attempt to levy a toll, even if alternative routes were available, without parliament's direct approval, could be challenged as a tax and therefore unconstitutional.

The 2006 pre-investment study recommends that the government of Uganda enacts legislation through its stakeholder ministries that envisions PPP concessions. It further recommends that subsidiary legislation be issued that supports the project specifically.

4. Feasibility Analysis

4.1 Options

The 2006 pre-investment study considered several different bridge designs. It also analyzed two possible bridge alignments, one utilizing an existing railroad bridge for support and the other using the Nile Island as a pier. The study then considered 5 possible bridge setups:

- Option A1 : Balanced Cantilever Bridge , Alignment A Island Route
- Option A2 : Cable Stay Bridge , Alignment A Island Route
- Option B1 : Balanced Cantilever Bridge , Alignment B Railway Route
- Option B2 : Cable Stay Bridge , Alignment B Railway Route
- Option B3 : Spandrel Bridge , Alignment B Railway Route

The study also considered 4 different financing options.

The first two were build, operate and transfer (BOT) arrangements whereby the private sector would finance the construction of the bridge in exchange for a 30 year concession. During the concession period, the private investor would be responsible for the bridge's maintenance and operations and would be able to collect toll revenues from the bridge. The first BOT option assumed the project would be financed through a subsidised "soft loan" with a 3% annual interest rate. The second BOT option assumed the project would be financed through a loan with an 11% annual interest rate.

In the third option it was assumed that the government finances the construction of the bridge and that the private sector would receive a contract for the operation and maintenance of the bridge. In exchange, the operators would be paid a set fee that would be taken from the tolling revenues. Any excess revenues would be given to the Ugandan Road Fund. This option was considered in order to show that the project revenues could cover maintenance and operations costs.

In the fourth option, a leasing arrangement was considered whereby the government would finance the construction of the bridge and the private sector would finance a portion of the bridge's construction costs in order to secure a 30 year contract under which it would maintain and operate the bridge in exchange for toll revenues. The study utilized a model whereby the government funded approximately 85% of the project's initial construction costs and the private sector funded the remaining 15%.

The timeline of the project was a three year construction period with construction costs of roughly USD 35 million, of which the private sector was expected to finance approximately USD 5.5 million. Maintenance and operation costs were estimated at USD 1.05 million in the first year of operations (the fourth year of the project) and were expected to grow at 5% per annum. Total maintenance and operations costs during the 27 operational years of the contract were projected at approximately USD 70 million. The study's analysis also included taxes and annual fees that would be paid by the operator to the government, although a detailed analysis of these fees is unavailable.

4.2 Traffic Growth

The report used statistical information gathered from the government of Uganda to estimate traffic growth along the proposed route. The estimates included are still preliminary and based on past traffic trends.

Period	Low Growth Scenario	Medium Growth Scenario	High Growth Scenario
2005 to 2008	3.5%	7.0%	10.0%
2009 to 2019	3.0%	5.0%	7.5%
2020 to 2039	3.0%	3.0%	3.0%

Source: Consultant estimates

Although these growth rates have not accounted for changes in traffic patterns due to the installation of a toll, the consultants expected that diversions would be relatively low due to the lack of other crossing points for road traffic.

One potential cause for concern is the planned rehabilitation of an existing rail-line across the Nile. The rehabilitation works could make the railway more appealing as a means of transportation across the river.

A more detailed traffic study will need to be undertaken to generate more accurate projections.

4.3 Conclusions

The pre-investment analysis of the project was conducted with the consultants' results summarized below:

Options	Option A1	Option A2	Option B1	Option B2	Option B3
Capital cost (in million US$	33.74	33.30	34.36	35.78	37.37
Loan Financed Construction, Operation and Maintenance – 3% Interest per annum	/	/	/	/	/
Loan Financed Construction, Operation and Maintenance – 11%Interest per annum	/	/	/	/	/
Contract : Operation and Maintenance	20.28	20.47	20.02	19.45	18.85
Contract : Leasing	18.42	18.72	17.99	17.06	16.07

Internal Rate of Return

Source: Consultants Estimates

The consultants were able to draw several conclusions from the data; although the study is still preliminary and a more extensive feasibility study will be required.

The study concluded that Option A2, a cable stay bridge using the Nile Island as a pier, generated the lowest capital cost and was the optimal bridge alignment and design.

The BOT options were not found to be viable. The financial IRR for the project was negative in both the case of a commercial loan with an 11% interest rate and a soft loan with a 3% interest rate. The contract option for operations and maintenance was shown to be profitable, with toll revenues exceeding the costs of maintenance and operations.

The leasing option was shown to be financially viable with an IRR of 18.72%.

The results indicate that the project is not a financially viable option if it were to be wholly financed by the private sector. They do indicate, however, that private sector involvement is possible, provided that a large portion of the initial construction costs were to be financed by the government of Uganda.

5. Development Status

In August of 2007 the MOWHC requested funding from the Japanese government to finance a feasibility study for the bridge project. A response is awaited.

The government of Uganda has expressed an interest in financing the project with the support of private investors. The government has yet to establish the exact nature of private sector involvement in the project and remains open to negotiations involving a variety of possible financing scenarios.

6. Project Contacts

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