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**Developing Bankable Transport
Infrastructure Projects: Case
Studies, Experiences and Learning
Materials for LLDCs and Transit
Countries**

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Case Studies

Kazungula Bridge Project: Botswana & Zambia

- The North-South Corridor (NSC) is a key trade route in Africa. It is approximately 2800km long stretching from the mining region of Lubumbashi in the Democratic Republic of the Congo (DRC) to the port city of Durban in South Africa. Along the way it passes through the Copperbelt (Zambia's industrial heartland) and Gaborone, the capital of Botswana. With spill over effects, the corridor further integrates Namibia, Zimbabwe, Lesotho and Eswatini.
- The NSC is primarily road-based and the Kazungula crossing point at the Zambezi River at a confluence between Zambia, Botswana, Zimbabwe and Namibia was a critical bottleneck that prevented the efficient flow of goods due to the lack of a bridge across the river(a ferry was being used instead).
- The development of a Bridge at the crossing was an opportunity to increase the capacity and speed of transit and also introduce an alternative mobility mode: railway transportation.
- The Kazungula Bridge Project (KBP) is a multi-national project on the NSC within the Southern African Development Community (SADC) region and part of a corridor-long infrastructure improvement programme. The project was identified as a key project under SADC's regional development plan and is spearheaded by the governments of Botswana and Zambia.

Kazungula Bridge Project: Botswana & Zambia



Kazungula Bridge

- The project scope includes a bridge linking Botswana and Zambia over the Zambezi River to replace the existing ferry and juxtaposed one-stop border facilities at Kazungula.
- The project's development objective is to improve the efficiency of transit traffic through the Kazungula border to facilitate and increase trade activities and global competitiveness of Zambia and Botswana; improve regional connectivity of the NSC; and contribute to economic regional integration within the SADC region.
- The project's stated outcomes include: (i) reduced border transit time; (ii) improved procedures on trade facilitation; (iii) improved border management operations, and consequently (iv) increased traffic throughput and (v) reduced time-based transport and trade cost (African Development Fund (ADF), 2011).

Kazungula Bridge

The Bridge:

- It is a 925m long, 18.5m wide viaduct across the Zambezi River
- Design type: extradosed cable stayed bridge
- Longest span: 129m
- Number of road lanes: 2
- Railway tracks: 1, narrow gauge 1.067m
- US\$260 million capital cost
- Main contractor Daewoo of South Korea
- One-stop border crossing facility located on the Zambian side

Kazungula Bridge



Kazungula Bridge

Financing the Project:

The implementation of KBP is divided into three contract packages namely:

- Package one: bridge and approach Ramps;
- Package two: one stop border post (OSBP) facilities Botswana side and approach road; and
- Package three: one stop border Post (OSBP) facilities Zambia side and approach road.

The estimated total project cost is USD 259.3 million funded through a co-financing arrangement between the African Development Fund (ADF) and JICA. The African Development Bank (through ADF) covers 31.5% of the total project cost. The balance is shared between JICA (57.5%), Governments of Botswana and Zambia (9.2%) and EU-ITF Grant (1.8%) (ADF Project Appraisal, 2011). The project implementation period is five (5) years.

The loans from AfDB and JICA are zero interest, with a tenure period of 50 years inclusive of a 10 -year grace period (ADF, 2011). The executing agency for the project is a combination of the Zambian and Botswana road authorities.

Kazungula Bridge

Organisation	Percentage of project funding provided
JICA	▪ 57.5%
ADF	▪ 31.5%
Zambian Government	▪ 5.2%
Botswanan Government	▪ 4.0%
ITF Grant	▪ 1.8%

Kazungula Bridge

Governance:

Once operational, the bridge will be managed by the Kazungula Bridge Authority, which will be set-up using the European Union Infrastructure Trust Fund (EU-ITF) grant. In effect, the project will be run similar to other trans-boundary projects such as the Zambezi River Authority, a body corporate enacted by parallel legislation in the Parliaments of Zambia and Zimbabwe.

Economic Sustainability:

Evaluation of economic sustainability was based on the economic internal rate of return (EIRR) and the net present value (NPV) of toll revenue. With an assumed opportunity cost in Zambia of 12%, the base case of the project yielded an EIRR of 23% and a benefit-cost ratio of 2.34. Even with an increase in costs of 20% and reduction in benefits of 20%, an EIRR of 17.5% and benefit-cost ratio of 1.56 provided a convincing case for financing the project (ADF, 2011). The cost of operating the bridge (OPEX) was intended to be covered by the toll revenue. A conservative assumption of 2.5% annual growth in traffic and 5% annual growth in OPEX were assumed and found to be covered by projected toll revenue (ADF, 2011).

Kazungula Bridge

Challenges:

Boundary Dispute

A boundary dispute ensued among the partner countries. Botswana and Zambia had originally intended to work with Zimbabwe on the project. However, Zimbabwe later pulled out of the project as a result of some dispute at the time about the country's boundary. Zambia and Botswana decided to go ahead with the project but Zimbabwe refused passage of the bridge through her territory. The Bridge, which was supposed to be 600 metres long, had to undergo design alterations and have its belly stretch away from Zimbabwe and curve into Zambia. The changes to the bridge design saw it stretching to 923 metres.

Tender Dispute:

The KBP also experienced a delay in its development due to a tender dispute. The disputed contract was for the Bridge construction only, but was sorted out after further discussions.

Kasomeno Mwenda Toll Road: DR Congo & Zambia

Kasomeno Mwenda Toll Road

Background:

- The Kasomeno-Mwenda Toll Road and associated One Stop Border Posts are located in the Democratic Republic of Congo (DRC) and Zambia.
- The project is currently undergoing its development cycle which has included the preparation of a pre-feasibility study (2017-2019), full feasibility bankable study (2019-2020) and fund raising (2020).
- Implementation of the project is expected to commence in April 2021 through a PPP regime with a 25-year concession given to the private sector after which the road and ancillary infrastructure will revert to the governments of DRC and Zambia.
- The project preparation studies were funded by the Development Bank of Southern Africa (DBSA) (Athari Advisory Group, 2020). The winning Concessioner and financier is Groupe Europeen de Development Africa (GED Africa) together with another equity investor from Hungary, Duna Aszfalt Investments (Athari Advisory Group, 2020).

Kasomeno Mwenda Toll Road



Kasomeno Mwenda Toll Road

Key Elements:

- 182 km of new single carriageway road – around 96km of the road is situated in the DRC and 86 km in Zambia;
- Construction of a 345 metres cable-stayed bridge across the River Luapula;
- Construction of one-stop border posts on each side of the River Bridge with associated parking and warehousing facilities;
- Construction of toll plazas on both sides of the bridge;
- Construction of four satellite toll plazas; and
- Provision of an access road to the proposed airport at Kasenga.

Scheme Costs:

- The preliminary Capital Cost (CAPEX) and Operating Cost (OPEX) cost estimates for the baseline solution were USD 770 million and USD 970 million, respectively.
- The preliminary CAPEX and OPEX cost estimates for the Potential Southern Route – Option 1 are USD 541 million and USD 1,001 million, respectively.
- The preferred option was (2) for the potential southern Route with a total CAPEX and OPEX of US\$1,541 million.

Kasomeno Mwenda Toll Road

Challenges:

- **Project Preparation-** being a bilateral project (DR Congo and Zambia) meant that concessions for the Toll Road had to be negotiated for each country and this delayed project commencement by almost two years. In addition the Feasibility Studies took a while to prepare due to the flooding in Democratic Republic of Congo in the Kasenga area making accessibility impossible for the study team for about 3.5 months. Traffic and Hydrological Surveys had to be put on hold.
- **Resettlement** Issues-the project scoping had greatly underestimated the impact of the road on village settlements. When the Environmental and Social Impact Assessment was carried out it revealed that at least 35 families would be to be resettled in the DR Congo area. A land resettlement plan for the affected persons was then drawn up in mitigation.

Kasomeno Mwenda Toll Road

Key Take Aways:

- Project preparation was funded by Development Bank Southern Africa which is a South African government owned bank with regional interests within SADC. Members of SADC – a number of which are also LLDCs - can take advantage of the bank.
- Road Pricing is proving to be a sustainable way of funding road infrastructure in Africa and a good way of attracting the private sector as development partners.