







Transport Global Practice







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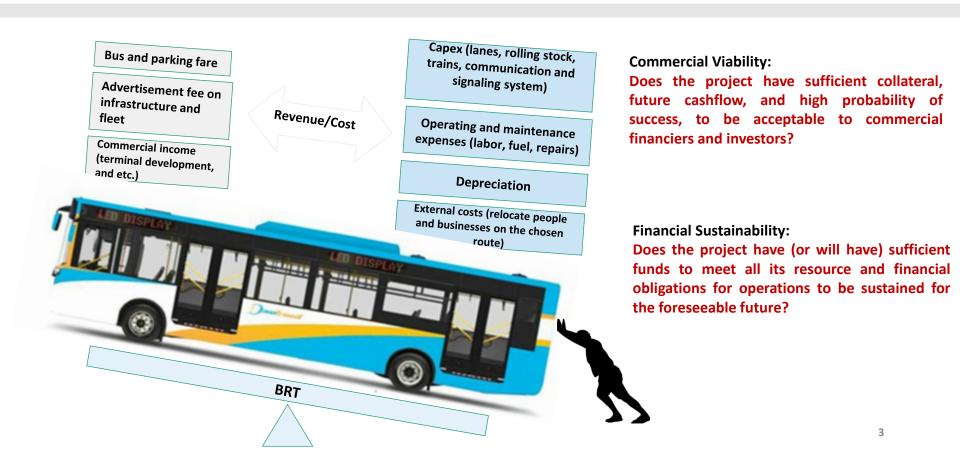
- Introduction of World Bank Technical Assistance and Case Studies
- Key Recommendations on Enhancing the Financial Sustainability and Commercial Viability of BRTs in SSA
- Conducting Factor Analysis via a Factor Assessment Tool
- Q&A



PROJECT OVERVIEW AND CASE STUDIES

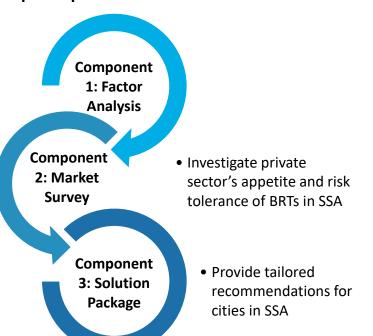
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INTRODUCTION: CONTEXT



INTRODUCTION: OBJECTIVES AND COMPONENTS

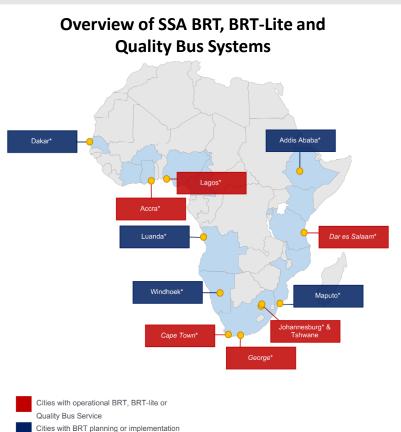
The project objective is to provide technical assistance and practical recommendations to SSA country and city governments on how to enhance financial sustainability and commercial viability of BRT projects to leverage private sector participation.



Two Pillars of Component

- 1. Identifying, framing and analysing the key factors affecting the financial sustainability and commercial viability of the BRTs in SSA context.
- 2. Developing a high level assessment tool for government officials and relevant stakeholders to assess the factors.

OVERVIEW OF SSA BRTS AND MAIN CHALLENGES



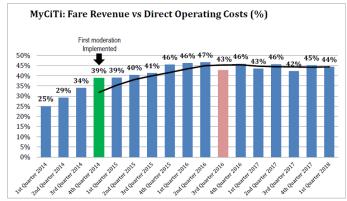
Key Challenges on Financial Sustainability and Commercial Viability of BRTs in SSA

Key challenges	Brief description
System Design	Mismatch of high-specification system design with passenger demand
Institutional Setting and Political Economy	Lack of dedicated and well-capacitated public transport authorities and effective institutional coordination
Legal and Regulatory considerations	Absence of an enabling legal and regulatory framework
Contractual Arrangements	Imbalanced contractual risks and benefits allocation
Paratransit Participation	Competition from paratransit operators and fiscal burden of their integration
Fare Collection and Financial Performance	High cash leakage, suboptimal fare setting and weak projections of operational and maintenance costs
Social and environmental aspects	Delayed resettlement and land acquisition escalate risks and costs

CASE STUDY-CAPE TOWN: BRT SYSTEM OVERVIEW

Cape Town system overview:

- Selected given its operational maturity
- Approximately 4 million people, GDP per capita R74,274 (2016)
- Phase 1, the first part of which became operational in 2011
- Phase 1 operational--New vehicle fleet of trunk (18m and 12m) and feeder buses (9m), Phase 2A in development
- Investment scale: Phase 1 R5.786billion (approx. US\$ 355.2 million)
- Daily Pax of phase 1: 64,000











CASE STUDY-CAPE TOWN: KEY FINDINGS

Factors enabling financial sustainability and commercial viability

- Legal and Regulatory Framework: comprehensive and enabling legal and regulatory framework
- Policy and Political Will: policy priority on the formalisation of the informal and incumbent minibus taxi industry
- Institutional Capacity: dedicated and capable MyCiTi Project Office
- Incumbent Operators: well integrated and formalized bus operating companies

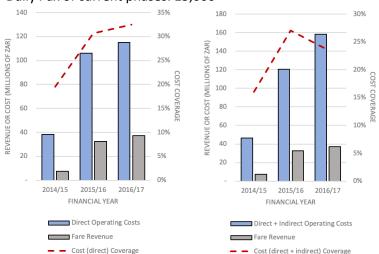
Factors challenging financial sustainability and commercial viability

- Fiscal Capacity: significant levels of capital and operational subsidy are required
- Market Dynamics: spatial legacy of Apartheid settlement patterns, low average population density
- System Design and Business Model: system was not designed to optimise profitability
- Participation Model: government takes most of the project risk via negotiated gross cost contract
- Adjacent Value: has not been a prioritised focus area

CASE STUDY-GEORGE: BRT-LITE SYSTEM OVERVIEW

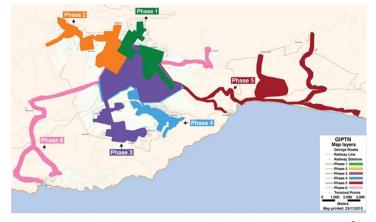
George system overview:

- Example of BRT-lite
- George is a secondary city in South African's Western Cape Province
- Population of approximately 200,000 people
- GDP per capita R56,184 (2016)
- GoGeorge BRT-Lite system has been operational since 2013
- The system design includes six coverage phases and three are operational
- Daily Pax of current phases: 13,000









CASE STUDY-GEORGE: KEY FINDINGS

Factors enabling financial sustainability and commercial viability

- Legal and Regulatory Framework: similar to Cape Town--enabling legal and regulatory framework
- Incumbent Operators: similar to Cape Town--well integrated and formalized bus operating companies
- System Design and Business Model: more costeffective and partially allows private sector participation

Factors challenging financial sustainability and commercial viability

- Fiscal Capacity: highly reliant on government subsidies
- Policy and Political Will: alignment of will among national, provincial and municipality is challenging
- Market Dynamics: similar to Cape Town--unidirectional
- Institutional Capacity: unlike Cape Town--limited development and management capacity
- Participation Model: government takes most of the project risk via negotiated gross cost contract
- Adjacent Value: has not been a prioritised focus area

CASE STUDY- DAR ES SALAAM: BRT SYSTEM OVERVIEW

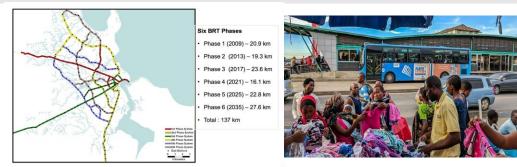
Dar es Salaam system overview:

- Selected given its operational maturity, size and complexity
- Population: 4.365 million
- GDP per capita 4,348,990 TZS (985.5 USD) (2019)

Interim operations commenced May 2016

and ongoing.

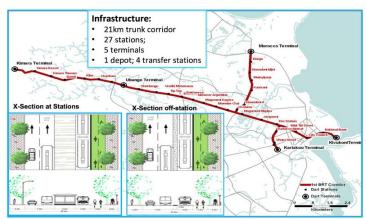
- The Dar es Salaam (DART) BRT system comprises of six phases
- Phase I infrastructure investment scope- US\$237.4 million
- Daily Pax: Interim Phase --160,000-185,000; Full Phase: 400,000



Full Operations (procurement ongoing) To consist of: ISP appointed 2015 (amended 2016) to utilise completed Phase 1 infrastructure. Bus Operator 1 (ISP, appointed). ISP comprised 30% shareholding by Bus Operator 2 (competitive incumbent informal (daladala) operators. procurement process, underway). Initial planned fleet of 5 trunk and 71 feeder Fare collector and ITS operator buses: amended to 39 trunk and 101 (competitive procurement process, feeder vehicles + AFCS/ITS system. underway).

Fund manager (competitive

procurement process, appointed).



DART BRT Phase 1: 2008-2016 (World Bank, 2018)

CASE STUDY-DAR ES SALAAM: KEY FINDINGS

Factors enabling financial sustainability and commercial viability

- Legal and Regulatory Framework: strong support but need to strengthen the legal procedures to clearly allocate roles and responsibilities
- Market Dynamics: strong demand and more potential once the unidirectional issues addressed
- Policy and Political Will: strong support but there is a need to further align some objectives and interests
- Adjacent Value: promising to achieve together with TOD

Factors challenging financial sustainability and commercial viability

- Fiscal Capacity: financial gap between operational revenue and cost requires subsidy from the government
- System Design and Business Model: highstandard network and full replacement of informal operators
- Institutional Capacity: slight fragmented responsibilities and insufficient institutional capacity
- Incumbent Operators: lack of integration into the BRT service
- Participation Model: in the early phase to explore feasible risk allocation model



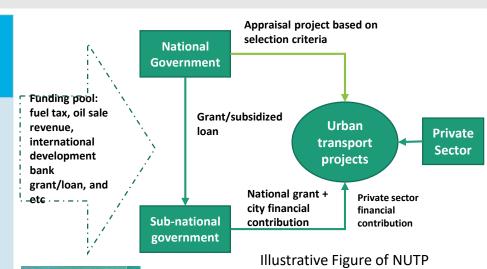
RECOMMENDATIONS TO SSA COUNTRIES

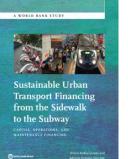
HONGYE FAN

RECOMMENDATIONS TO SSA GOVERNMENTS: FISCAL CAPACITY

The capacity of government to effectively meet their financial commitments and obligations over the lifecycle of the program

- Improve capacity to mobilize additional and alternative funding (e.g. fuel taxes, parking charges- Bogotá, Istanbul);
- Implement mechanisms to mitigate financial risk (e.g. guarantees, ring-fenced fare box revenues, and currency hedging);
- Possess good track records of implementing large infrastructure projects;
- Implement fiscal and fiduciary mechanisms to allow efficient fund flow and governance between entities (e.g. national urban transport fund/program-Mexico, Colombia, and India);
- Manage debt and contingent liability.





Sustainable Urban Transport Financing from the Sidewalk to the Subway: Capital, Operations, and Maintenance Financing

RECOMMENDATIONS TO SSA GOVERNMENTS: LEGAL AND REGULATORY FRAMEWORK

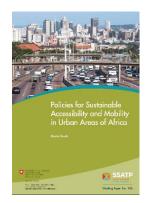
Legal provisions and regulatory frameworks enable BRT development and allow for and govern private sector participation in the project

- Set up enabling legal framework and process to foster private sector participation to allow diverse contractual arrangements and enforceable rights;
- Capture the participation of incumbent operators and/or related affected stakeholders with effective enforcement;
- Clearly stipulate the requirements and responsibilities for the government (e.g. decentralization of planning and regulatory rights from the central government, Indonesia);
- Ensure conducive business regulatory environment.



https://ppp.worldbank.org/public-private-partnership/





Policies for Sustainable Accessibility and Mobility and Urban Areas of Africa

RECOMMENDATIONS TO SSA GOVERNMENTS: MARKET DYNAMICS

Passenger market demand dynamics and commuters' capacity to afford the BRT service are core determinants of system revenue generation and profit margin

- Ensure sufficient demand in the served corridors and catchment areas (e.g. increasing demand by feeder service-Lima);
- Match the infrastructure and rolling stock capacity to demand with sound estimates;
- Fare levels should be adjustable and can optimize the balance of profitability and affordability, with adequate willingness to pay;
- Conduct thorough market sounding to factor in the risks consideration of private sector into revenue generating scheme.

Region/City	Standard BRT/BRT- lite fare (US\$)
Africa	0.98
Asia	0.51
Latin America	0.84
Europe	2.23
North America	2.26
Oceania	2.91
World	1.44
Developed	2.34
Developing	0.72

Source: BRT data.org 2017

RECOMMENDATIONS TO SSA GOVERNMENTS: SYSTEM DESIGN AND BUSINESS MODEL

BRT system's technical ability to attract and support private sector participation and cater to the public transport service need, in a sustainable manner through an effective operational model and design

- Achieve and maintain financial solvency with optimal system design by assessing available fiscal support, and factoring in competitors' impact;
- Align system design with urban planning, land use, mobility needs and integration with other public transit (e.g. split-rout configuration, Guayaquil, BRT station + sharing bike, Guangzhou);
- Conduct robust and stress-tested business model with reasonable and defensible assumptions;
- Reflect the requirements for private investment into system design and business model.



Metrovía BRT, Guayaquil, Ecuador



Guangzhou BRT, China

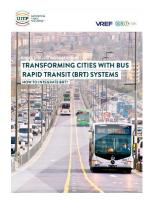
RECOMMENDATIONS TO SSA GOVERNMENTS: POLICY AND POLITICAL WILL

The overarching strategies and political desire to shape and drive development of a new BRT system, and appetite for private sector participation

- Build consensus among key government and related stakeholders to support BRT;
- Align mandates and objectives of key stakeholders in support of BRT implementation;
- Set up supporting city and country developmental policies and strategies for private sector participation;
- Mitigate the potential opposition to BRT project as early as possible;
- Encourage the use of public transport (e.g. limits the ownership of private cars via the Vehicle Quota System, charges registration fee and road tax, Singapore).



Electronic Road Pricing (ERP), Singapore

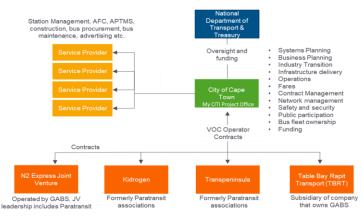


Transforming Cities with Bus
Rapid Transit (BRT) Systems

RECOMMENDATIONS TO SSA GOVERNMENTS: INSTITUTIONAL CAPACITY

The ability of a government to effectively fulfil its role around planning, designing, implementing, operating, and managing a BRT system

- Have appropriate institutional structures in place for effective implementation and regulation;
- Develop and retain sufficient competent staff on BRT development and management;
- Build up institutional track record of successful delivery of large infrastructure project;
- Set up a dedicated BRT management entity (e.g. Cape Town and Lima);
- Set up systematic and regular training and capacity building programs (e.g. Hubli-Dharwad BRT, India).



Institution Set-up of Cape Town BRT

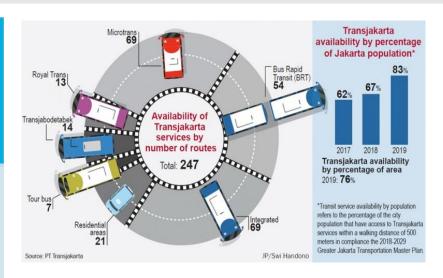


<u>Leaders in Urban Transport</u> (LUTP) <u>program</u>

RECOMMENDATIONS TO SSA GOVERNMENTS: INCUMBENT OPERATORS

Influence and role of incumbent operators (often largely made of an informal industry of private transport service providers) in the project

- Assess and address the impact and competition of the rollout of the BRT system on incumbent public transport providers, particularly the informal sector;
- Plan the incumbent operator participation model for partial or full integration (e.g. discounted transfer tickets to link the minibus with BRT and expand the feed service, TransJakarta BRT, Indonesia);
- Have the plans, processes, structures, and funding to formalize,
 professionalize and manage the incumbent operators.



Feeder Integration and service expansion, TransJakarta BRT, Indonesia

RECOMMENDATIONS TO SSA GOVERNMENTS: PARTICIPATION MODEL

Project participation model, structure, and arrangements between key stakeholders and role-players

- Remunerate the private participants through some form (government payments and/or revenue) of guaranteed minimum income, considering shared demand risks;
- Set up systematic performance indicators and link them to remuneration with reasonable level of return and profit margin;
- Lower the up-front proportion for the private participants;
- Encourage more effective market competition and improve the operation;
- Carefully assess the financial and technical strength of private investors (including incumbent operators);
- Explore the optimal model by bundling different elements of a BRT.

Role	Business as	MFD Structure				
Role	Usual	BRT #1 BRT #2		BRT #3		
Fund infrastructure	Government	Infrastructure company				
Fund rolling stock	Government	Bus operator	Fleet provider			
Cover costs of operations	Government and sometimes private	ticket and fare fare operator				
Land acquisition	Government					
Planning permits & approvals	Government body					
Set tariffs and service standards	Regulator					
Design and Build	Government					
Operate	Government and sometimes private					
Employ staff	Government and sometimes private	2 2 3 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6				
Monitoring	Regulator or other Government body					
Maintain	Government	Bus operator (rolling stock)	Fleet provider (rolling stock)	Bus operator and infrastructure		
	Government (infras	company				

	MDB Support
Government	Loan for infrastructure and/or subsidies/availability payment/VGF, sovereign guarantee, technical assistance.
Private sector	Loan/equity/ guarantee to private sector (infrastructure/operation/financing companies)

RECOMMENDATIONS TO SSA GOVERNMENTS: ADJACENT VALUE

The emergent value generators with potential to boost system commercial returns

- Explore tangential opportunities to generate additional value in the wider ecosystem (e.g., land value capture through property development--MTR system, Hong Kong, China, property taxation--Chicago, United States);
- Bundle viable adjacent value opportunities with implementation and operation of the new BRT system;
- Adjust the business model to facilitate the adjacent value capture.



Hongkong Kowloon MRT station, China



Chicago BRT, US



FACTOR ASSESSMENT TOOL

EDWARD BEUKES

DELIVERABLE 2: HIGH-LEVEL ASSESSMENT TOOL

Objective

- Assisting project teams and stakeholders to make a high-level assessment of the financial sustainability and commercial viability of BRT projects.
- Accompanying the factor analysis report for stakeholders to guide the users to diagnose, analyse, understand the core issues impacting the financial sustainability and commercial viability of BRTs.

Tool Mechanism

Factor	Questions	Answer Scoring	Answe Justificat	
Factor	Question 1 (sub-factor 1)	3		
Group	Question 2	3		
(e.g. fiscal	Question 3	2		
capacity)	Question 4	2		
	Question 5	1		
Average fact	tor score			
Factor 2,3	8,9 and more			
Overall viab	ility score			

corresponding
rationale and evidence
as reference for answer
validation and peer
review

resulting in an average factor score of financial sustainability and commercial viability

Utilising the questions and factor ratings, an overall system financial sustainability and commercial viability score is also provided, using the same red-yellow-green modality.

OVERVIEW – TOOL APPLICATIONS

- The tool can be used at any stage after the project is proposed to identify and highlight potential challenges facing the project.
- While many of these issues may already be appreciated by the team, it is a useful exercise to conduct a systematic assessment of the project to understand the variety of issues holistically and objectively.
- This helps the team to prioritize amongst the difficulties facing a project and develop considered strategies to address these.

Presentation Title

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OVERVIEW – USING THE TOOL

For each factor category, users answer a set of questions using the drop-down lists to select the answer which most closely describes their projects situation

The corresponding rationale and evidence is provided in the "Answer Justification" column.

The content in the 'Answer Justification' column facilitates a peer review of the assessment results, and can inform further tool customisation and expansion in line with the circumstances of each BRT.

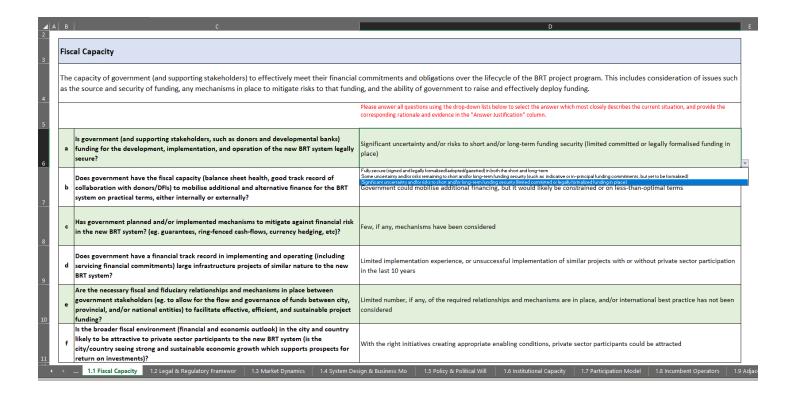
The results of the assessment are provided in a Score Card format using a traffic light indicator (red – yellow – green),

An overall system score is also provided, using the same red – yellow – green modality.

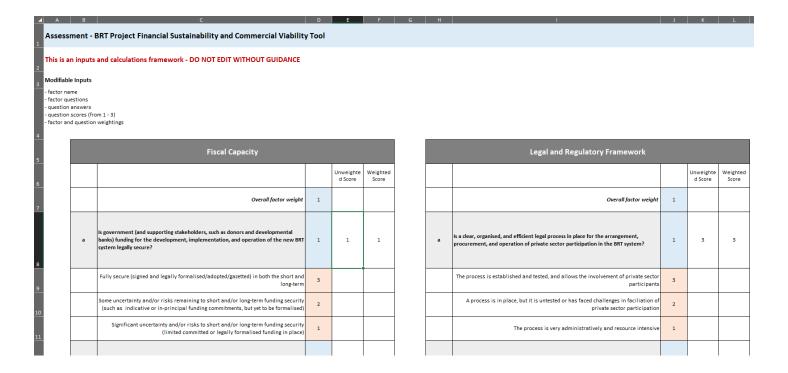
Within the bounds of the factors assessed in this model:

- a green rating suggests the project is likely to be commercially viable and financially sustainable as is (although it may still have 'blockers' in a specific factor with a red ranking),
- a red rating indicates a system that will require significant work in several areas for it to have a chance of becoming financially sustainable and commercially viable.
- a yellow rating indicates a system that, with further focus on areas of deficiency, has a certain level of likelihood of becoming commercially viable and financially sustainable.

OVERVIEW – RESPONSE ENTRY



OVERVIEW – CUSTOMIZATION AND SCORING



OVERVIEW: SCORING

Fiscal Capacity				
a	Is government (and supporting stakeholders, such as donors and developmental banks) funding for the development, implementation, and operation of the new BRT system legally secure?	•		
b	Does government have the fiscal capacity (balance sheet health, good track record of collaboration with donors/DFIs) to mobilise additional and alternative finance for the BRT system on practical terms, either internally or externally?	0		
С	Has government planned and/or implemented mechanisms to mitigate against financial risk in the new BRT system? (eg. guarantees, ring-fenced cash-flows, currency hedging, etc)?	•		
d	Does government have a financial track record in implementing and operating (including servicing financial commitments) large infrastructure projects of similar nature to the new BRT system?	•		
e	Are the necessary fiscal and fiduciary relationships and mechanisms in place between government stakeholders (eg. to allow for the flow and governance of funds between city, provincial, and/or national entities) to facilitate effective, efficient, and sustainable project funding?	•		
f	Is the broader fiscal environment (financial and economic outlook) in the city and country likely to be attractive to private sector participants to the new BRT system (is the city/country seeing strong and sustainable economic growth which supports prospects for return on investments)?	0		

BRT System Financial Sustainability and Commercial ViabilityScore Card

The tables below summarise the results of the assessment, providing the overall BRT system with a commercial viability rating:

- A green rating indicates a system which is likely to be commercially viable and financially sustainable.
- A yellow rating indicates a system that, with focus on areas of deficiency, has a good likelihood of becoming commercially viable and financially sustainable.
- A red rating indicates a system that will require significant work in several areas for it to have a chance of becoming commercially viable and financially sustainable.

Each factor is broken down and also given a similar red-yellow-green rating, which provides the user with some insight into which critical areas of the BRT work is required to improve the system's commercial viability.

OVERALL SYSTEM SCORE



	Fiscal Capacity			Legal and Regulatory Framework			
a	Is government (and supporting stakeholders, such as donors and developmental banks) funding for the development, implementation, and operation of the new BRT system legally secure?	•	a	Is a clear, organised, and efficient legal process in place for the arrangement, procurement, and operation of private sector participation in the BRT system?	•	a	Are the volun catchment ar
b	Does government have the fiscal capacity (balance sheet health, good track record of collaboration with donors/DFIs) to mobilise additional and alternative finance for the BRT system on practical terms, either internally or externally?	•	b	Are the legal and regulatory provisions agnostic with respect to the nature, such as nationality, of the private sector participant (eg. impartial and fair to an international participant)?	•	b	What is the no
c	Has government planned and/or implemented mechanisms to mitigate against financial risk in the new BRT system? (eg. guarantees, ring-fenced cash-flows, currency hedging, etc)?	•	с	Is the authorisation in place to implement the compensation for incumbent operators and/or related affected stakeholders?	•	c	What is the w services rend
d	Does government have a financial track record in implementing and operating (including servicing financial commitments) large infrastructure projects of similar nature to the new BRT system?	•	d	Does the city/country have a regulatory track record in procuring, implementing, and sustaining private sector participation in large infrastructure projects of similar nature the new BRT system?	,	d	Does modellin margins (und and be attract
e	Are the necessary fiscal and fiduciary relationships and mechanisms in place between government stakeholders (eg. to allow for the flow and governance of funds between city, provincial, and/or national entities) to facilitate effective, efficient, and sustainable project funding?	•	e	Does the legal and regulatory framework stipulate the requirements and responsibilitie for government in implementing and operating a new BRT system?	•	e	Will the new 8 ensure the sy
f	Is the broader fiscal environment (financial and economic outbook) in the city and country likely to be attractive to private sector participants to the new BRT system (is the city/country seeing strong and sustainable economic growth which supports prospects for return on investments)?	0	f	Based on the World Bank's 'Ease of Doing Business' analysis (www.doingbusiness.org), the broader business regulatory environment (eg. key employment laws, tax obligation investment protection regulations, foreign exchange controls, and similar?) in the dity/country conductive to efficient private sector participation?		f	Will fare level market force

FACTOR ASSESSMENT SCORE OF AN ILLUSTRATIVE BRT CASE

Factor Category	Score
Fiscal capacity	
Legal and regulatory framework	
Market dynamics	
System design and business model	
Policy and political will	
Institutional capacity	
Participation model	
Incumbent operators	
Adjacent value	
Overall score	

Green rating: a system which is likely to be commercially viable and sustainable (although it may still have 'blockers' in a specific factor with a red ranking)

Red rating: a system that will require significant work in several areas for it to have a chance of becoming financially sustainable and commercially viable.

Yellow rating: a system that, with further focus on areas of deficiency, has a certain level of likelihood of becoming commercially viable and financially sustainable.

REFLECTIONS

- The tool is simple to use, customizable and provides a comprehensive overview of the issues project teams face on a particular project.
- While often project teams are aware of many of the issues a project faces, applying the assessment to a project allows the team to quickly yet systematically assess where the major difficulties lie, and what the strengths are.
- This can help the team to prioritize actions, shift the emphasis of activities or communicate concerns in a digestible way.
- The tool can also, if completed collaboratively, be used to build consensus on an action plan and could help to highlight differences in the points of view among stakeholders.

THANK YOU!

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ANNEX 1: WORLD BANK INSTRUMENTS

Advisory Instruments	Instruments to Mobilize Capital	Instruments to Close Viability Gap
IBRD, IDA, and IFC Technical Assistance: Optimize risk allocation, ensuring bankability, preparing draft contracts, planning and managing	IFC Partial Credit Guarantee: Can cover lenders on debt instruments issued by the project company, such that IFC will pay shortfalls of principal and/or interest payments up to a predetermined amount	IDA Grant: Where grants are possible, they can be provided to partially offset upfront public funding required, such as for the construction of fixed infrastructure, VGF, or studies to advance projects
competitive procurement	IBRD and IDA Guarantee: Can be provided to cover project lenders against project company debt service defaults do to adverse government action or inaction	IBRD and IDA Loan: Finance the fixed infrastructure, provide fare subsidies, or pay the ticket and fare operator. It can also be used to pay availability payments to the
	MIGA's PRI and Credit Enhancement: Mitigate the risks of cross-border investors and lenders by providing cover for both equity and debt instruments against four specific political risks	infrastructure contractor
	IFC Equity: IFC participation can lend credibility to the project and induce a "crowding-in" effect, with other investors becoming more comfortable to participate. Use of equity product is less likely	
	IFC Loan: Loan to the project company to address currency risk that arises due to the mismatch between farebox revenues and financing and repayment in another currency	
43	IFC RSF: Can be extended to local commercial banks providing loans to bus companies. RSF has the potential of crowding in additional finance	WORLD BANK GROUP