Document of
The World Bank

Report No: ICR00004196

IMPLEMENTATION COMPLETION AND RESULTS REPORT
(IDA-44550 IDA-51850)

ON A

CREDIT IDA-44550

IN THE AMOUNT OF SDR 115.4 MILLION
(US$190 MILLION EQUIVALENT)

AND

CREDIT IDA-51850

IN THE AMOUNT OF SDR 64.9 MILLION
(US$100 MILLION EQUIVALENT)

TO THE

UNITED REPUBLIC OF TANZANIA

FOR THE

SECOND CENTRAL TRANSPORT CORRIDOR PROJECT

November 7, 2017

Transport and ICT Global Practice
Africa Region

—

CURRENCY EQUIVALENTS

(Exchange Rate Effective September 30, 2012)

Currency Unit	=	Tanzania Shilling (TZS)
TZS 1,574	=	US$1.00
US$1.54219	=	SDR 1

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AF	Additional Financing
AfDB	African Development Bank
AFCS	Automatic Fare Collection System
BRT	Bus Rapid Transit
CAS	Country Assistance Strategy
CTCP2	Second Central Transport Corridor Project
DART	Dar Rapid Transit Agency
DUTP	Dar es Salaam Urban Transport Improvement Project
EIRR	Economic Internal Rate of Return
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
FIRR	Financial Rate of Return
GoT	Government of Tanzania
ICAO	International Civil Aviation Organization
ICR	Implementation Completion and Results Report
ISP	Interim Service Provider
ITS	Intelligent Transport System
JICA	Japan International Cooperation Agency
M&E	Monitoring and Evaluation
MKUKUTA	Tanzania's Poverty Reduction Strategy (*Mkakati wa Kukuza Uchumi na Kuondoa Umasikini Tanzania*)
MoICT	Ministry of Infrastructure, Communications, and Transport
MoWCT	Ministry of Works, Communications and Transport, Tanzania
NPV	Net Present Value
NTP	National Transport Policy
O&M	Operation and Maintenance
PAP	Project Affected Person
PCR	Project Completion Report
PDO	Project Development Objective
PPP	Public-Private Partnership
RAP	Resettlement Action Plan

RGOZ	Revolutionary Government of Zanzibar
RSSP	Roads Sector Support Project
SUMATRA	Surface and Marine Transport Regulatory Authority
TA	Technical Assistance
TANESCO	Tanzania Electric Supply Company
TANROADS	Tanzania National Roads Agency
TAZARA	Tanzania-Zambia Railway Authority
TCAA	Tanzania Civil Aviation Authority
TSIP	Transport Sector Investment Program
TSSP	Transport Sector Support Project
ZTMP	Zanzibar Transport Master Plan

Senior Global Practice Director:	Jose Luis Irigoyen
Practice Manager:	Aurelio Menendez
Project Team Leader:	Yonas Eliesikia Mchomvu
ICR Author:	Peter Freeman

UNITED REPUBLIC OF TANZANIA
Second Central Transport Project
CONTENTS

A. BASIC INFORMATION			
Country:	Tanzania	Project Name:	Second Central Transport Corridor Project
Project ID:	P103633	L/C/TF Number(s):	IDA-44550,IDA-51850
ICR Date:	11/07/2017	ICR Type:	Core ICR
Financing Instrument:	SIL	Borrower:	United Republic of Tanzania
Original Total Commitment:	XDR 115.40 million	Disbursed Amount:	XDR 180.16 million
Revised Amount:	XDR 180.29 million		
Environmental Category: A			

Implementing Agencies:
Dar Rapid Transit Agency (DART)
Tanzania National Roads Agency (TANROADS)

Cofinanciers and Other External Partners:

B. KEY DATES				
Process	**Date**	**Process**	**Original Date**	**Revised / Actual Date(s)**
Concept Review:	10/17/2006	Effectiveness:	07/07/2008	11/28/2008
Appraisal:	11/26/2007	Restructuring(s):		08/02/2011 01/15/2013
Approval:	05/27/2008	Mid-term Review:	05/27/2010	07/30/2010
		Closing:	12/31/2011	12/31/2016

C. RATINGS SUMMARY	
C.1 Performance Rating by ICR	
Outcomes:	Moderately Satisfactory
Risk to Development Outcome:	Substantial
Bank Performance:	Moderately Satisfactory
Borrower Performance:	Moderately Unsatisfactory

C.2 Detailed Ratings of Bank and Borrower Performance (by ICR)			
Bank	**Ratings**	**Borrower**	**Ratings**
Quality at Entry:	Moderately Unatisfactory	Government:	Moderately Satisfactory
Quality of Supervision:	Moderately Satisfactory	Implementing Agency/Agencies:	Moderately Unsatisfactory

Overall Bank Performance:	Moderately Satisfatory	**Overall Borrower Performance:**	Moderately Unsatisfactory

C.3 Quality at Entry and Implementation Performance Indicators			
Implementation Performance	**Indicators**	**QAG Assessments (if any)**	**Rating**
Potential Problem Project at any time (Yes/No):	No	Quality at Entry (QEA):	None
Problem Project at any time (Yes/No):	Yes	Quality of Supervision (QSA):	None
DO rating before Closing/Inactive status:	Moderately Satisfactory		

D. SECTOR AND THEME CODES		
	Original	**Actual**
Major Sector/Sector		
Transportation		
Aviation	15	13
Rural and Inter-Urban Roads	38	
Urban and General Transport	47	87

Major Theme/Theme/Sub Theme		
Trade		
Trade Facilitation and Market Access	20	10
Private Sector Development		
Public Private Partnerships	10	13
Urban and Rural Development		
Rural Infrastructure and service delivery	17	
Urban Development		
Urban Infrastructure and Service Delivery	53	77

E. BANK STAFF		
Positions	**At ICR**	**At Approval**
Regional Vice President:	Makhtar Diop	Obiageli Katryn Ezekwesili
Country Director:	Bella Deborah Mary Bird	John McIntire
Practice Manager:	Aurelio Menendez	C. Sanjivi Rajasingham
Task Team Leader(s):	Yonas Eliesikia Mchomvu	Dieter E. Schelling

—

ICR Team Leader:	Yonas Eliesikia Mchomvu	
ICR Primary Author:	Peter Nigel Freeman	

F. RESULTS FRAMEWORK ANALYSIS

Project Development Objectives (from Project Appraisal Document)

The Project Development Objective (PDO) in the Project Appraisal Document was to support Tanzania's economic growth by providing enhanced transport facilities that are reliable and cost effective, in line with the Poverty Reduction Strategy and the National Transport Policy and Strategy. The Financing Agreement was briefer: it said "to support Tanzania's economic growth by providing enhanced transport facilities that are reliable and cost effective." In August 2011, the project was restructured and the trunk road component was dropped. The trunk roads were to be implemented under the Transport Sector Support Project.

Revised Project Development Objectives (as approved by original approving authority)

In January 2013, when Additional Credit was approved, the PDO was revised to be more specific as follows: to support the recipient's efforts to achieve economic growth by providing a reliable and cost effective mass transit system on the selected corridor in Dar es Salaam City and airport facilities on Zanzibar Island. Thus, the PDO referred to the remaining components reflecting the restructuring. The Financing Agreement was similarly amended.

(a) PDO Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1:	Average rush hour travel time by public transport users between Ubungo and Dar es Salaam central business district (Posta) (in minutes)			
Value (Quantitative or Qualitative)	62	25	25	28
Date achieved	04/15/2008	12/31/2011	12/31/2016	12/31/2016
Comments (including% achievement)	Substantially achieved - time saving of 34 minutes; almost reached target.			
Indicator 2:	Average vehicle operating costs on the Korogwe - Same trunk road (US cents/km)			
Value (Quantitative or Qualitative)	34	23	Dropped	Dropped
Date achieved	04/15/2008	12/31/2011	08/03/2011	08/03/2011
Comments (including % achievement)	This indicator was dropped in the August 2011 restructuring, when the decision was taken to fund the road component under a separate project.			
Indicator 3:	Satisfactory rating of Zanzibar airport by airlines and passengers			
Value (Quantitative or Qualitative)	Unsatisfactory	Satisfactory	—	Satisfactory
Date achieved	04/15/2008	12/31/2011	—	12/31/2016
Comments	Achieved. Based on a satisfaction survey, both the passengers and the airlines			

(including% achievement)	gave a satisfactory rating to the airport runway and facilities.			
Indicator 4:	Satisfactory rating by public transport users between Kimaera, Kariakoo and Kivukoni along the BRT corridor.			
Value (Quantitative or Qualitative)	No survey	—	Satisfactory	Moderately Satisfactory
Date achieved	04/15/2008	—	12/31/2016	12/31/2016
Comments (including% achievement)	Partially achieved. Respondents were very satisfied with the infrastructure and the bus rapid transit (BRT) experience but were less satisfied with some operational aspects (primarily waiting times).			

(b) Intermediate Outcome Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1:	Percentage of completion of BRT works by value on July 1 each year			
Value (Quantitative or Qualitative)	0	100	100	100
Date achieved	04/15/2008	12/31/2011	12/31/2016	12/31/2016
Comments (including % achievement)	Fully achieved; work commenced in January 2012 and was completed in 2015: 2012 25%; 2013 58%; 2014 80%; 2015 (Dec 100%)			
Indicator 2:	Number of DART buses operational			
Value (Quantitative or Qualitative)	0	305	248	140
Date achieved	04/15/2008	12/31/2011	12/31/2016	12/31/2016
Comments (including % achievement)	Target not achieved. There were delays in setting up full operations and the interim service provider ordered 140 buses delivered in 2016. The competitive selection of an operator of the 165 pending buses is expected to be concluded by December 2017.			
Indicator 3:	Average number of public transport passengers per day through the Morogoro corridor at Jangwani (in thousands)			
Value (Quantitative or Qualitative)	250	360	360	162
Date achieved	04/15/2008	12/31/2011	12/31/2016	12/31/2016
Comments (including % achievement)	Target not achieved because of fewer than expected operational BRT buses. An estimated 200,000 additional passengers per day were carried by Daladalas through Jangwani running parallel to the BRT system.			
Indicator 4:	Zanzibar Airport runway repaired and strengthened[1]			
Value (Quantitative or Qualitative)	No	Yes	—	Yes
Date achieved	04/15/2008	12/31/2011	—	12/31/2016
Comments (including %	Fully achieved. The airport runway rehabilitation works were completed 100% in August 2010, ahead of schedule.			

[1] Revised wording at AF to read 'extended and rehabilitated'.

—

achievement)				
Indicator 5:	Compliance of Zanzibar Airport with TCAA/ICAO safety and security standards			
Value (Quantitative or Qualitative)	No	Yes	—	Yes
Date achieved	04/15/2008	12/31/2011	—	12/31/2016
Comments (including % achievement)	Fully achieved			

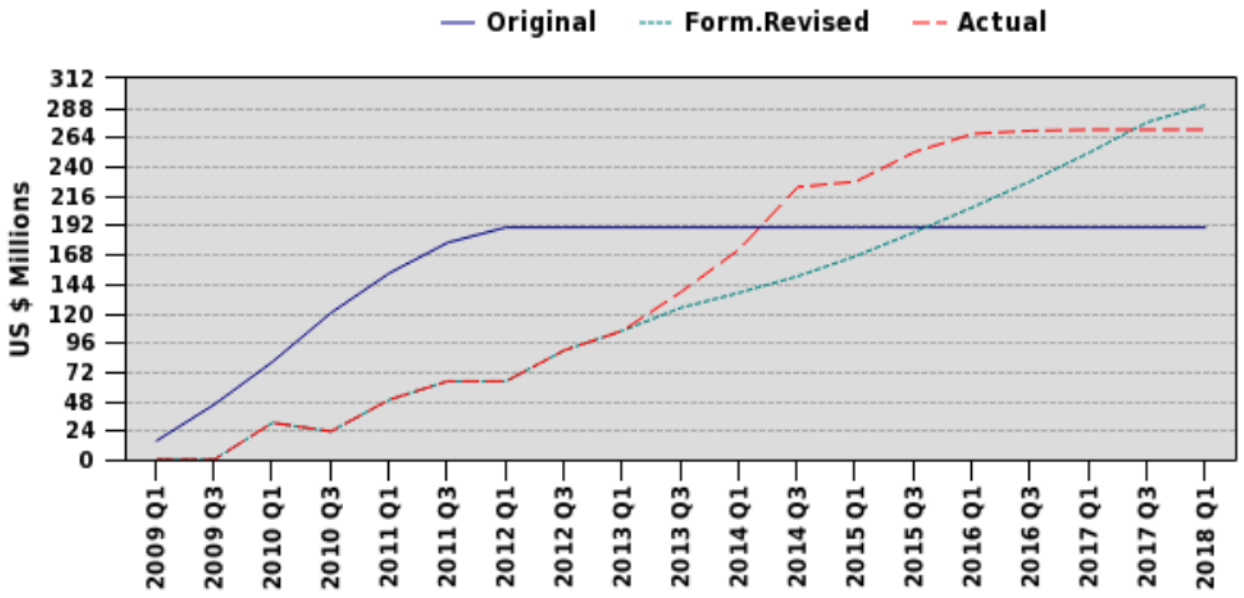
G. RATINGS OF PROJECT PERFORMANCE IN ISRs

No.	Date ISR Archived	DO	IP	Actual Disbursements (US$, millions)
1	09/06/2008	Satisfactory	Satisfactory	0.00
2	03/19/2009	Satisfactory	Satisfactory	0.00
3	11/12/2009	Satisfactory	Satisfactory	30.09
4	06/07/2010	Moderately Satisfactory	Moderately Satisfactory	48.90
5	04/12/2011	Moderately Unsatisfactory	Moderately Unsatisfactory	64.06
6	10/21/2011	Moderately Unsatisfactory	Moderately Unsatisfactory	64.06
7	02/11/2012	Moderately Satisfactory	Moderately Satisfactory	64.06
8	08/14/2012	Moderately Satisfactory	Moderately Satisfactory	96.74
9	03/27/2013	Moderately Satisfactory	Moderately Satisfactory	137.07
10	10/07/2013	Moderately Satisfactory	Moderately Satisfactory	172.02
11	02/04/2014	Moderately Satisfactory	Moderately Satisfactory	190.32
12	05/07/2014	Moderately Satisfactory	Moderately Satisfactory	222.95
13	11/17/2014	Moderately Satisfactory	Moderately Satisfactory	227.47
14	07/07/2015	Moderately Satisfactory	Moderately Unsatisfactory	266.54
15	11/24/2015	Moderately Satisfactory	Moderately Unsatisfactory	266.54
16	06/15/2016	Moderately Satisfactory	Moderately Satisfactory	269.14
17	01/03/2017	Moderately Satisfactory	Moderately Satisfactory	269.91

—

H. RESTRUCTURING (IF ANY)					
Restructuring Date(s)	Board Approved PDO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in US$, millions	Reason for Restructuring and Key Changes Made
		DO	IP		
08/02/2011	—	MU	MU	64.06	Strengthening of urban transport institutional arrangements, dropping trunk roads component (now financed under the Transport Sector Support Project), design changes to Zanzibar airport component, and extension of closing date by three years to December 31, 2014.
01/15/2013	Y	MS	MS	121.23	Additional credit to cover cost overruns of the BRT construction and technical support for TANROADS to ensure implementation of the BRT. Revised PDO and a further indicator added. Extension of closing date by a further two years to December 31, 2016.

I. DISBURSEMENT PROFILE



—

1. Project Context, Development Objectives and Design

1.1 Context at Appraisal

1. The United Republic of Tanzania, with a population of 50.4 million (2015), is situated in eastern Africa. It has the Indian Ocean to the east and borders eight countries: Kenya and Uganda to the north; Burundi, Democratic Republic of Congo, and Rwanda to the west; and Malawi, Mozambique, and Zambia to the south. Tanzania is classified as a low-income country with a gross national income per capita of US$920 (2015).[2] Dar es Salaam, with a population of 4.3 million, is the main commercial city and port, while the rapidly developing inland capital, Dodoma, is the fourth largest city. The Zanzibar archipelago off the east coast is governed semiautonomously. For its income, the Tanzanian economy relies primarily on agriculture, tourism, and minerals, and it is vulnerable to shocks from drought and fluctuations in commodity prices. The main mineral export by value is gold, but the country has deposits of coal, nickel, iron ore, and natural gas. In the medium term, it is expected that natural gas will replace liquid fuel as the main source of thermal power generation, which will have a positive effect on the economy.

2. The transport system in Tanzania includes roads, railways, aviation, water transport, and pipelines. The road network length on the mainland of Tanzania is 92,221 km. (while Zanzibar has about 1,600 km.). This network includes trunk and regional roads (34,184 km) managed by the Tanzania National Roads Agency (TANROADS) and urban, district, and feeder roads with a total length of 58,037 km managed by the 133 local government authorities. Tanzania's railway system has a total length of 3,681 km of which 2,706 km are operated by Tanzania Railways Limited and 975 km by the Tanzania-Zambia Railway Authority (TAZARA). The Tanzania Port Authority is responsible for all ocean and lake ports. The more important ports are Dar es Salaam, Tanga, and Mtwara on the Indian Ocean mainland shore and Mwanza, Kigoma, and Itungi on the inland lakes. There are 368 aerodromes, 59 of which are owned, managed, and operated by the Tanzania Airports Authority and the others by various entities, including national park authorities and the private sector. There are four international airports, the Julius Nyerere (Dar es Salaam), Kilimanjaro, Mwanza, and Zanzibar. The Revolutionary Government of Zanzibar (RGOZ) manages the island's international airport, as well as the roads and ports on Zanzibar and Pemba islands. In addition, the Tanzania-Zambia pipeline provides oil for the refinery in Lusaka, Zambia, through the port of Dar es Salaam.

3. The Government of Tanzania (GoT) approved a National Transport Policy (NTP) in 2003 and an update has been drafted. The formal Government approval of the revised policy is anticipated in late 2017. The policy delegates regulatory and executive functions to autonomous authorities, creates an independent user-financed funding mechanism for road maintenance, grants the operation of transport entities to private operators, and limits the role of ministries to policy setting and sector oversight.

4. The average annual economic growth rate of 6 percent between 2000 and 2007 resulted in significant growth in transport demand. The growth in container traffic at the port of Dar es Salaam grew from 176,000 Twenty-Foot Equivalent Units (TEU) in 2002 to 326,000 TEUs in

[2] World Bank data

2007; and the passenger volumes at the Zanzibar international airport also grew from 178,000 in 2001 to 597,000 in 2007; representing an average annual growth of 21 percent and 23 percent, respectively. the increase in port throughput resulted in a faster rate of deterioration of the main trunk road network, thereby increasing the backlog requiring rehabilitation. The Zanzibar airport runway was in poor condition and further deterioration would have had a significant negative impact on tourism which was key for economic growth at the archipelago. The rapid motorization in Dar es Salaam city was causing major traffic congestion in all major corridors in the city, thereby resulting in millions of dollars of economic losses due to delays in traffic - details in box 1. The Government's Ten-Year Transport Sector Investment Program (TSIP) was developed as a sectorwide approach for addressing the transportation bottlenecks to economic growth.

Box 1 Context at Appraisal

The NTP's urban transport strategy addressed the gradually worsening traffic congestion affecting Dar es Salaam's effectiveness as Tanzania's main commercial center. At the time of appraisal, the public transport system largely consisted of mini- and mid-size buses called *daladala*. In 2008, there were approximately 7,000 registered and privately owned *daladala* in service, with an estimated aggregate capacity of approximately 273,000 seats. In addition, about 30 publicly owned conventional buses were also in operation, mostly on out-of-town routes, with an aggregate capacity of about 3,000 seats. The Surface and Marine Transport Regulatory Authority (SUMATRA) was responsible for fare setting and regulation. The rationale for the Second Central Transport Corridor Project (CTCP2) as given in the Project Appraisal Document (PAD) was that important subprojects prepared under the CTCP in the subsectors of roads, airports and public transport were ready for implementation and the World Bank had committed its support to the Transport Sector Development Program in tandem with other development partners.

1.2 Original Project Development Objectives (PDO) and Key Indicators

5. The PDO in the original Financing Agreement was to support the recipient's efforts to achieve economic growth by providing reliable, and cost effective enhanced transport facilities.

6. The PAD added that the objective would be in line with Tanzania's Poverty Reduction Strategy (*Mkakati wa Kukuza Uchumi na Kuondoa Umasikini Tanzania*, MKUKUTA) and the National Transport Policy and Strategy.

7. The original PDO indicators covered the following:

- A reduction of rush hour travel time of public transport users in Dar es Salaam; target 25 minutes;
- Reduced vehicle operating cost on the Korogwe-Same trunk road; target 23 US cents per km;
- Satisfactory rating of Zanzibar Airport facilities by both airlines and passengers.

1.3 Revised PDO and Key Indicators, and Reasons/Justification

8. The road component, affected by much higher than expected bid prices (nearly double the cost based on the original scope), had been dropped from the project in a restructuring in August 2011 when a decision was made to rather finance a scaled-back version under the parallel

Tanzania-Transport Sector Support Project (TSSP).[3] This was because the bus rapid transit (BRT) component was also expected to be 43 percent higher than anticipated and it made sense to separate the urban public transport (requiring different skills) from the rural trunk roads. A revised (more specific) PDO was approved in the November 2012 Project Paper for additional credit. This revised PDO was to support the recipient's efforts to achieve economic growth by providing a reliable and cost-effective mass transit system on the selected corridor in Dar es Salaam City and airport facilities on Zanzibar Island. An additional indicator was introduced to measure the satisfaction of public transport users along the BRT corridor, but the indicator associated with the trunk road component was dropped, (that is, reduced vehicle operating cost on the Korogwe-Same trunk road).

1.4 Main Beneficiaries

9. Many inhabitants of Dar es Salaam were expected to benefit directly or indirectly from the project, which aimed to reduce the level of traffic congestion experienced in this port city, improve public transport options, and support Tanzania's economic growth by making the city more efficient and less polluted. Indirectly this would also support the country's poverty reduction strategy. The system, as planned, is expected to handle 406,000 passenger trips per day. Improvements to Zanzibar Airport would enhance communications between the Tanzanian mainland and Zanzibar Island and improve facilities for tourists. According to the PAD, passenger traffic would increase from 178,000 to 597,000 in six years and aircraft movements from 16,800 to 33,500.[4] Up-to 19 scheduled airlines and many chartered flights would benefit from the improvements. Some agencies and government departments were to benefit from institutional strengthening, especially TANROADS; Dar Rapid Transit Agency (DART); and the Ministry of Infrastructure, Communications, and Transport (MoICT) Zanzibar, while local commuter minibus owners would receive compensation through preferential access to BRT shares.

1.5 Original Components

10. There were three components under the original IDA Credit (4455-TA) of US$190 million.

11. **Component A: The Dar es Salaam Urban Transport Component** (Total US$158.2 million: Financing: Government US$10.0 [for resettlement costs]; IDA US$98.2 million; private sector US$38.2 million [for bus procurement and the fare collection system] leaving a financing gap of US$11.8 million). This component was to support the implementation of Phase 1 of a BRT system in Dar es Salaam, including strengthening of DART through key appointments as well as technical assistance. The component included the construction of 21 km of roads with exclusive bus lanes, mixed traffic lanes, bicycle, and pedestrian lanes and construction of five bus terminals, two bus depots, and six feeder transfer stations.

12. **Component B: Trunk Road Improvements** (Total US$64.3 million: Financing: Government US$0; IDA US$57.4 million, leaving a financing gap of US$6.9 million). This was to rehabilitate/upgrade the Korogwe-Mkumbara-Same trunk road (172 km) connecting Dar es

[3] P055120.
[4] Project Appraisal Document 43399, April 30, 2008.

Salaam with major tourist destinations in northern Tanzania. It is also part of the main link between Dar es Salaam and Nairobi in Kenya. The road was in fair to poor condition and its width was not commensurate with modern trunk road standards. The estimated cost included support to TANROADS to implement the project. In addition, because TANROADS was responsible for the BRT implementation, provision was made for incremental operating costs, studies, and training related to this task.

13. **Component C: Zanzibar Airport Improvements** (Total US$17.6 million; Financing: Government US$0; IDA US$15.7 million, leaving a financing gap of US$1.9 million). The component comprised the repair and strengthening of the existing runway, the design of a new airport runway, and technical assistance (TA) to the MoICT, Zanzibar. An earlier attempt to rehabilitate the airport runway financed under the Second Integrated Roads Project had failed after the contractor was terminated due to lack of performance.[5]

1.6 Revised Components

14. In a restructuring in August 2011, Component A for the BRT system was split into seven packages as no bidders prequalified when the civil works were offered as a single package. It was also decided to include additional design studies—these were the design of a crowd control system at Kivukoni/Magogoni ferry terminal, design of the BRT Phases 2 and 3 for Dar es Salaam City, and detailed engineering design for the planned BRT control center. The cost for Component A increased from US$158.2 million to US$225.6 million.

15. Component B, for the trunk road section, resulted in a bid that was US$62 million above the engineer's estimate of US$65 million. Consequently, it was decided to cancel the bid, to reduce the scope of works, and have the roads financed under the parallel TSSP. Incremental operating costs for overseeing project implementation of Component A remained, as well as studies and extensive training connected with the newly established BRT unit. The component was renamed 'support to TANROADS' after dropping the civil works. This freed up some US$60 million to be made available towards Components A and C. TANROADS was given the responsibility for the BRT infrastructure because of their experience managing infrastructure contracts.

16. Component C, 'Zanzibar Airport Improvements' was renamed as 'Zanzibar Airport and Transport Studies' and the proposal for the improvement of the airport runway was scaled up from 'repairs and extension' to 'rehabilitation and extension'. Additional studies were included, encompassing a feasibility study and detailed engineering design of the Zanzibar town urban entry roads, detailed engineering design for the rehabilitation of taxiways and apron, and Phase 2 consultancy services on the reform of the MoICT as part of the implementation of the Zanzibar Transport Master Plan (ZTMP) study that was approved by the RGOZ in 2009. This added US$21.7 million to the original cost of the airport component.

1.7 Other Significant Changes

17. The original project was approved on May 27, 2008, and became effective on November 28, 2008. The financing instrument was a Specific Investment Loan. Restructuring took place in

[5] TZ Roads 2; P002770.

—

August 2011 and the Additional Financing (AF) was approved on January 15, 2013, and became effective on July 12, 2013. An additional IDA Credit (51850-TA) was approved in January 2013 to help finance the cost overrun associated with the construction of the BRT system and to provide technical support for TANROADS to ensure full implementation of the BRT activities.

18. The project was formally restructured twice:

(a) In August 2011, in a Level 2 restructuring, the abovementioned revisions under 1,6 were made to the project components, and

(b) In January 2013, the Board approved AF for an additional IDA Credit of US$100 million (51850-TA). This was to finance cost overruns and scope changes on the construction and establishment of the BRT system, Zanzibar Airport, and additional studies, and to provide sufficient technical support to TANROADS for them to carry out their role in ensuring the full implementation of the BRT activities (see table 1). The additional amount also covered the identified financing gap because the GoT was unable to mobilize further funding for this project. In addition, the project's closing date was extended to December 31, 2016.

Table 1. Revised IDA Cost Table Including Additional Finance Costs

Project Costs (US$, millions)						
Project Cost by Component and Activity	**Original IDA Cost[a]**	**Restructured Cost**	**Commitment up to September 30, 2012**	**Expenditure up to September 30, 2012**	**AF Cost**	**Revised Costs with AF**
A. The Dar es Salaam Urban Transport Component	**98.20**	**138.40**	**220.61**	**55.61**	**87.22**	**225.62**
Financing Gap	11.80	11.80	—	—	—	—
A.1 Civil works	91.70	128.70	213.91	50.87	85.21	213.91
A.2 Supervision	3.50	4.20	3.52	2.30	1.76	5.96
A.3 Technical assistance and studies	1.00	3.50	2.22	1.32	0.00	3.50
A.4 Training for DART	0.50	0.50	0.17	0.17	0.00	0.50
A.5 Furniture and equipment for DART	0.50	0.50	0.32	0.32	0.00	0.50
A.6 Operating cost of DART	1.00	1.00	0.47	0.63	0.00	1.00
A.7 Implementation of BRT communication strategy	0.00	0.00	0.00	0.00	0.25	0.25
B. Support to TANROADS	**57.40**	**3.80**	**1.99**	**2.02**	**0.53**	**4.33**
Financing Gap	6.90	6.90	—	—	—	—
B.1 Civil works Korogwe-Mkumbara	25.60	—	—	—	—	—
B.2 Civil works Mkumbara-Same	26.80	—	—	—	—	—
B.3 Supervision	2.50	—	—	—	—	—
B.4 —assistance and studies for TANROADS	0.50	2.00	0.71	0.68	0.33	2.33
B.5 Training for TANROADS	0.50	0.50	0.48	0.50	0.20	0.70
B.6 Equipment for	1.00	0.50	0.31	0.31	0.00	0.50

—

Project Costs (US$, millions)						
Project Cost by Component and Activity	**Original IDA Cost[a]**	**Restructured Cost**	**Commitment up to September 30, 2012**	**Expenditure up to September 30, 2012**	**AF Cost**	**Revised Costs with AF**
TANROADS						
B.7Operating costs of TANROADS	0.50	0.80	0.49	0.53	0.00	0.80
C. The Zanzibar Airport and Transport Studies Component	**15.70**	**39.30**	**39.21**	**39.51**	**0.00**	**39.30**
Financing Gap	1.90	1.90	—	—	—	—
C.1 Runway rehabilitation and extension (revised) plus design	16.70	35.70	35.70	36.18	0.00	35.70
C.2 Supervision	0.30	0.70	0.85	0.61	0.00	0.70
C.3 TA and studies for MoICT, Zanzibar	0.20	2.30	2.34	2.38	0.00	2.30
C.4 Training for MoICT Zanzibar	0.20	0.20	0.18	0.19	0.00	0.20
C.5 Operating cost of MoICT, Zanzibar	0.20	0.20	0.06	0.10	0.00	0.20
C.6 Equipment for MoICT, Zanzibar	0.00	0.20	0.08	0.05	0.00	0.20
Physical and time related contingencies	**6.60**	**0.00**	**0.00**	**0.00**	**7.70**	**7.70**
Price/Currency Contingencies	**8.50**	**8.50**	**0.00**	**0.00**	**4.55**	**13.05**
Total IDA Funding[a]	**190.00**	**190.00**	**261.81**	**97.14**	**100.00**	**290.00**
Financing Gap (including contingencies)	**22.80**	**22.80**	**—**	**—**	**—**	**—**

Note: a. Excludes resettlement (Government contribution US$10.0 million), bus procurement US$35.8 million and fare collection system US$2.4 million (private sector).

2. Key Factors Affecting Implementation and Outcomes

Project Preparations, Design, and Quality at Entry

19. A concept study for the entire DART system had already been financed under the first CTCP and included the detailed design of Phase 1 of the BRT system, including the preparation of single-tender bidding documents that comprised 20.9 km of separate busways, five terminals, 29 trunk stations, six integrated feeder stations, two bus depots, and the improvement of the up-country bus station at Ubungo to be integrated with the DART system. The entire busway system was to be provided with tree-shaded bicycle and pedestrian ways on both sides of the road. The average distance between bus stops was to be 500 m and system users would be encouraged to either walk or bicycle to the bus stops (privately operated bicycle parking facilities were planned at each bus stop). Other aspects considered were the lack of interest by international contractors due to the 2008 worldwide economic crisis and the low capacity of local contractors to tender and undertake an extensive project of this nature. The system provided for integration with other public transport services such as *daladala*, the Kivukoni ferry, and the Ubungo bus terminal. A total of 148 articulated trunk buses, with a capacity of 140 passengers each, were planned to

provide both normal (stopping at all stations) and express services (stopping only at connector stations). Additionally, a system of 100 feeder buses, each with a capacity of 60 passengers, was to transport passengers to the trunk system through feeder stations. Trunk buses were to be accessed at the stations by the passengers at the platform level, to enhance system capacity and comfort.

20. In preparing the PAD for the CTCP2, the team was aware that this would be a risky project and the overall risk was considered high. Of the 25 risks identified in the PAD, 23 were associated with the introduction of the BRT (Component A) of which 7 were rated high risk and only 1 each for Components B and C related to the implementing capacity (rated substantial for TANROADS and high for MoICT, Zanzibar). For the BRT, in particular, there was concern about the transparency of procurement for bus operations and fare collection contracts, DART's staff capacity, interference in the setting of fares, and protest action by *daladala* owners. The mitigation strategies were reasonable, but procurement costs, and cost overruns due to time delays were not considered in the risk analysis and given that the trunk road component had to be dropped, it appears that due diligence in this area was inadequate. Despite Environmental and Social Impact Assessments (ESIAs) and Resettlement Action Plans (RAPs) affecting large numbers of people, no risk was included to take account of process delays. This proved to be a significant omission as the contractors failed to gain access at some sites because the implementation commenced before some issues could be resolved. A further risk related to the identified shortfall of finance at appraisal of US$22.80 million. This led to a project condition that the Tanzania Ministry of Finance would undertake to close this gap not later than 24 months after effectiveness of the Credit. In the event, this did not happen and the outstanding amount was included in the AF Credit.

21. On the other hand, the preparation team drew on the substantial technical experience in the World Bank on the introduction of the BRT over the previous 10 years. The PAD contained a useful table of best practices in BRT design and the potential application of this knowledge in Dar es Salaam. This covered a spectrum of topics from planning, through decision making, implementation, and operation. The learning from Colombia, Nigeria, and South Africa was particularly noteworthy. However, in many cases, the examples were from middle-income or lower-middle-income countries. Tanzania, as a low-income country, where a shortage of skills and lack of capacity was clearly more constraining, provided a significant challenge.

2.2 Implementation

Trunk Road Improvements

22. The estimated cost for the trunk road improvements was nearly US$65 million, but the lowest bid received in a time of rapid price escalation was US$127 million. Reducing the scope by eliminating four road/rail overpasses and using cheaper materials for the shoulders could potentially bring the cost down to US$110 million, but there was still the uncovered financing gap for the whole project, while the BRT component showed similar price escalation and the Zanzibar Airport runway now needed full rehabilitation (see also paragraph 29 and table 2). It was accordingly decided that the road component should be dropped and moved to the parallel TSSP. However, capacity building for TANROADS for the implementation of the BRT infrastructure was strengthened.

—

Dar es Salaam Urban Transport

23. The original concept strongly supported by the World Bank was to launch the BRT with two bus operators, an automated fare collection operator and a fund manager. Construction of the BRT infrastructure, however, experienced significant delays due to procurement issues and social safeguard challenges. The prequalification process failed in September 2008 due to a lack of local qualified applicants. To overcome this, the works were repackaged into seven separate lots, splitting major building-related works from roadworks. After re-tendering, the six smaller packages of buildings and utility-related infrastructure were awarded in mid-2010, while the main roadworks contract was awarded in February 2011. However, the successful bidder for the main contract (concerned that the bid was under priced) declined to proceed after initial precontract negotiations. This led to a further delay, during which time works were negotiated with the fourth-ranked bidder,[6] and the contract was finally signed in December 2011[7] (the delays due to social safeguard challenges are discussed under the section on safeguard compliance). The roadworks contract for the BRT trunk system also faced difficulties because of the low quality of design. The issues included inadequate working drawings for key areas, changes in design, and a significant number of unmapped utilities, especially water and sewerage that required relocation. The quality of the supervision team (separately contracted) was also reportedly below expectations. There were substantial delays in clarifying issues, giving instructions, completing claims assessment reports, and preparing accounts for completed projects. After discussions, the supervision consultant agreed to provide additional staff.

24. The Government decided to only advertise for the BRT bus operators after having some BRT trunk infrastructure in place to showcase to potential bidders. A market consultation conference with over 200 participants from 120 organizations was held on June 3 and 4, 2014. However, the decision on the way forward between multiple service providers versus a single service provider was only made in October 2014 when the Government decided to adopt the single service provider approach. Because the main trunk route (Kimara-Kivukoni) was nearing completion, it was also decided to introduce ‘interim services by local/existing operators’. The main rationale for the setting up of an interim service provider (ISP) operation was to make use of completed infrastructure to avoid vandalism and illegal use of the new bus ways, gain experience for the move to full operations, introduce the public to BRT services, and provide an opportunity for the affected *daladala* operators to build capacity for tendering for the full service provider. The negatives associated with this decision were that a phased approach would now mean that the targets for buses in operation and hence passengers carried could not be met before the project closed and that the competitive selection of the second operator was delayed. It is noted that Tanzania only introduced public private partnership (PPP) in 2009 and PPP law in 2010. The non-conducive environment and lack of clear regulatory arrangements for PPPs affected and delayed the competitive procurement of operators.

25. Transaction advisers assisted with the drawing up of a suitable interim service contract based on existing operators, which was signed in April 2015. The interim fleet was set to comprise 76 BRT buses (5 trunk and 71 feeder) in such a way as to not jeopardize the further

[6] Note that the second bidder was not qualified and the third bidder failed to extend the bid validity period.
[7] Pre-signing negotiations focused on reducing the cost, especially for contractor’s obligations such as traffic management during construction, some 36 percent of the original bid.

competitive process for the rest of the fleet. The GoT, however, excluded the suggested clauses that would prohibit the ISP from scope increases and participation in the bidding for service providers. After signing the contract, which only required the ISP to use simple paper tickets, the ISP went ahead and ordered 140 BRT buses (39 trunk and 101 feeder), as well as an automatic fare collection system (AFCS) with intelligent transport system (ITS) capability.

26. The new Government elected in 2015 was in favor of competition and restructured the management of DART, clearing the way for the competitive process to proceed. The deviation between contract and supply led to a further round of high-level discussions between GoT and the World Bank. In February 2016, an addendum was signed that contractually legalized the entire bus fleet supplied and limited the ISP scope. Ownership of the AFCS and ITS was to be shifted to the Government subject to independent technical and financial due diligence. Bus operations formally commenced on May 10, 2016, starting with a five-day free period to introduce the service to the public from May 16 through December 31 when the project closed. The request for quotations was relaunched in June 2016, but after review by the World Bank the process had to be re-tendered. In September 2017, the process commenced again and shortlisting began. Similarly, the AFCS and fund management were relaunched and advertisements were closed in September 2016. However, the contract awards of these entities have been slow.

27. The BRT Phase 1 system was expected to displace 1,800 *daladala* (existing minibuses). The default mechanism that was put in place was to reroute the *daladala* when the operations of the BRT were ready to commence. The Government conducted consultations with the *daladala* sector and agreed on the following approaches: (a) *daladala* to be paid disturbance allowances and be rerouted, (b) *daladala* to buy shares in the Usafiri Dar es Salaam (UDA) company (a privatized former Government-owned operator) where the GoT owned some shares, and (c) *daladala* to get compensation for their vehicles when scrapped. Therefore, apart from being rerouted, the ISP contract had a requirement for the operator to sell 30 percent of its shares to *daladala* as an incentive for being provided with a long-term operating contract as one of the participating operators. The current BRT fares are also comparable to daladala fares and recover the operational costs of the ISP.

Zanzibar Airport

28. The Zanzibar Airport was upgraded under two IDA-financed projects, CPCT2 and the TSSP. Under CTCP2, the runway of the Zanzibar Airport was extended and rehabilitated and works were completed in August 2010 without major problems.[8] Under the AF for the TSSP, the World Bank agreed to meet the financing of some other immediate physical airport investment needs, such as improvements to the apron and taxiways in compliance with International Civil Aviation Organization (ICAO) standards, stimulated by the growth in tourism, the air traffic at the Zanzibar Airport was expected to grow rapidly. An earlier (costly) proposal to build another runway based on over-optimistic projections was not pursued. Detailed engineering design for the rehabilitation of taxiways and apron were included under CPCT2 and various studies. In the meantime, the Government secured a loan from the China Exim Bank to finance a new terminal building (still unfinished due to a design error regarding its interface with the aircraft parking

[8] The runway improvements comprised rehabilitation of 2,462 m of existing runway and construction of 560 m of new runway. This enabled larger aircraft such as the Boeing 787, Boeing 767 and Airbus A320 to use the airport conveying more passengers.

apron). *However, this was not part of the World Bank project.*

Cost Overruns

29. During preparation and appraisal, the project team seriously underestimated the impact on construction prices due to a surge of new investment in Africa, especially during the 2008 worldwide economic turmoil. Increased funding, especially from the private sector and China, led to this growth. Between 1998 and 2007, spending on infrastructure in Africa rose by 17 percent a year and caused substantial price inflation.[9] A study by the African Development Bank (AfDB), commissioned in 2011 to investigate the high construction costs experienced in the region, found that other factors were also at play, and in a third of the cases examined, cost overruns were as high as 50 percent to 100 percent.[10] In the case of CPTC2 inadequate attention was given to the engineer's estimates. Then in 2008, the global financial crisis brought uncertainty to the market and some high-profile bidders pulled out of the market, which may have affected later bids.

Table 2. Summary of Cost Overruns (US$, millions)

Component	Appraisal		Restructured Estimate (IDA allocation)	Revised Costs (IDA) allocation)	Cost Overruns
	Cost Estimate	IDA Allocation			
A. BRT	110.0	98.2	138.4 [a]	225.6 [b]	87.2
B. Trunk roads	64.3	57.4	3.8	4.3	0.5
C. Airport	17.6	15.7	39.3	39.3	0.0
Contingencies	20.9	18.7	8.5	20.8	12.3
Total	212.8	190.0	190.0	290.0	100.0

Note:
a. The 2009 cost estimate for all the BRT works under Component A was US$146 million, including the roadworks estimate of US$91.65 million.
b. The 2011 cost estimate for all the BRT works under Component A was US$190.5 million, including the roadworks estimate of US$154 million. The revised allocation includes the total committed works of US$213.9 million, including the roadworks contract of US$177.4 million.

2.3 Monitoring and Evaluation (M&E) Design, Implementation, and Utilization

30. The M&E methodology in the World Bank was less advanced at the time of the preparation of this project. However, in comparison to some other urban transport projects prepared around that time, the results framework was less robust. The average reduction in travel time during the rush hour was used as the main PDO indicator for the BRT as well as the throughput of passengers, which was primarily determined by the number of available buses. For the roads, the saving in vehicle operating costs was based on the highway design model. However, this component was dropped. For the airport, a satisfactory rating by the airlines and passengers was used—requiring a formal survey to be undertaken. This indicator gave information about satisfaction, but did not measure reliability or cost effectiveness. An intermediate indicator was whether the upgraded airport met the compliance requirements of the ICAO. Surprisingly, the numbers of passengers projected to use the airport and the expected

[9] Cloete R et al - (2010)
[10] AfDB(2014). The report indicated that the increases were due to a variety of factors, including lack of competition in the bidding process, increases in fuel and bituminous product prices locally and internationally, technology used in roadworks, contract management practices, and the availability and quality of road construction materials.

revenue to be generated were not identified as intermediate indicators, even though they were a crucial aspect of the economic and financial analyses. The results framework was adequate, but for the BRT, it did not cover safety aspects, air pollution reduction, accessibility, or the satisfaction of female public transport users as is normal today in many BRT projects elsewhere.

31. The overall responsibility for M&E of this project was given to TANROADS and was implemented through quarterly progress reports that included information provided by DART and the MoICT. With the planned expansion of the support for the BRT, however, a detailed impact assessment was launched. A baseline travel time survey and a baseline household survey were completed in January 2016, before the opening of Phase 1 in May 2016.[11] The implementing agency was DART and the duration of the study was expected to be four years. Information sought included, among others, changes in travel times due to the introduction of the BRT and effects on traffic congestion, air quality, road safety, modal shift, property values, predictability, and accessibility, as well as a range of socioeconomic welfare factors.

2.4 Safeguards and Fiduciary Compliance

Safeguards Compliance

32. The project was designated as an Environment Category 'A'. Two safeguard policies were triggered: Environmental Assessment (OP/BP 4.01) and Involuntary Resettlement (OP/BP 4.12). The safeguard instruments used included an ESIA and a RAP that consisted of a census as well as a properties survey and a socioeconomic survey of residents and businesses. Environmental and Social Management Plans (ESMPs) for all components were drawn up with appropriate mitigation measures during construction. There was compliance with environmental safeguards and no significant environmental issues emerged during initial construction activities. Later, however, flash flooding occurred at Jangwani along the Msimbazi river basin. Analysis revealed that the flooding was due to rapid siltation of the basin due to uncontrolled encroachment, solid waste management and human activities upstream. During implementation, flood prevention measures were taken to prevent flooding of the BRT infrastructure, but a more permanent solution is being pursued under BRT Phases 2 and 3 involving relocation of petty traders and better environmental controls. TANROADS had sufficient experience of World Bank projects and the management of environmental risks. The reduction in the number of *daladala* in favor of buses was expected to lead to a 60 percent drop in emissions for moving the same number of passengers. An ESIA for the Zanzibar Airport indicated that noise pollution would not be significant because the aircraft took off over the sea. In general, there were no serious issues of non-compliance of the environmental aspects of the project.

33. The total number of project-affected persons (PAPs) at the start was 877, which later increased to 1,236. The actual total RAP budget was TZS 23.5 billion (about US$11 million). However, serious problems emerged with the compensation of PAPs. In January 2011 during an implementation support mission, the World Bank team learned that insufficient funds had been allocated to meet the commitments under the RAP. The inadequate funding and legal disputes (including court injunction) by PAPs led to contractual disputes and the termination of two

[11] P158912: Analytic and Advisory Activities project: Experimental Evidence on Urban Transport and Mobility: Impact Evaluation of the Dar es Salaam BRT System. The research team includes the London School of Economics, Stanford University, and the International Growth Centre.

works contracts, as the sites were not available for the contractors. The RAP had to be updated in March 2012 and the Ministry of Finance augmented the amount of funds available. The Government also introduced a communications outreach strategy and established a grievance redress mechanism. The PAP at the Kariakoo terminal site had filed a court case in 2008 and secured an injunction that blocked Government from accessing the site. This involved 106 families in semidetached buildings, but their case for an injunction was dismissed by the High Court. Meanwhile, the main case is still pending judgment although eight years have now elapsed. However, the PAP's compensation funds were deposited in an escrow account and most of the affected people have already claimed their compensation. These events substantially added to the delays in implementation.

Fiduciary Compliance

Financial Management

34. TANROADS was responsible for the fiduciary oversight of the project. The organization had a track record of adequate financial management capacity and its professionally qualified accountants were familiar with the World Bank's financial systems. The borrower complied fully with the loan covenants and fiduciary compliance was satisfactory. Budgeting, funds flow, accounting, internal control, financial reporting, and audit arrangements were assessed as effective. The auditors identified some minor issues about a small ineligible expenditure and the need to recover an advanced payment after a contract was terminated. These matters were appropriately attended to.

Procurement

35. Procurement activities under the project were carried out in compliance with World Bank guidelines.[12] TANROADS was considered to have adequate procurement capacity because of its experience on other World Bank projects.

36. However, when the Government signed the contract for the ISP in April 2015, it did not include clauses prohibiting scope increase or participation in the competitive service provider bidding. After additional buses were ordered, there was a further delay until February 2016 when the World Bank agreed to an addendum to contractually legalize the whole available fleet on the understanding that the operators for the remaining 165 BRT buses, fare collection, and fund management were to be competitively selected.

2.5 Post-completion Operation/Next Phase

37. The World Bank has significantly increased its support to urban development in Dar es Salaam. The BRT system will ultimately have six phases. Phase 1 (the larger component of CTCP2) cost US$226 million. Phase 2 is financed by the AfDB, which approved loans to the value of US$141.71 million in September 2016. The World Bank, as part of the DUTP, is funding Phases 3 and 4 through a credit for US$425 million that was approved in March 2017. The expanded BRT is supported by a fund manager and a fare collection system. A rigorous

[12] Procurement Guidelines, October 2006, (replaced for new contracts by Procurement of Goods, Works, and Non-Consulting Services Under IBRD Loans and IDA Credits and Grants by World Bank Borrowers 2011)

impact evaluation of the BRT system has also commenced, with final delivery expected in June 2020. In parallel, the Dar es Salaam Metropolitan Development Project is being implemented to improve urban services and institutional capacity.[13] In Zanzibar, the emphasis is likely to switch from the airport to the upgrading of Zanzibar town's entry roads.

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design, and Implementation

Relevance of Original and Revised Objective
Rating: High

38. The original PDO under the PAD, and the more specific objective under the AF, were consistent with the development objectives of the project and with the country's poverty reduction strategy (MKUKUTA II), the Zanzibar Strategy for Growth and Reduction of Poverty (MKUZA II), and the World Bank's Country Assistance Strategies (CASs) of 2007–2010[14] and 2012–2015,[15] which all emphasized the need for improved transport infrastructure, including the removal of bottlenecks and measures to alleviate traffic congestion. The activities included under the AF were also aligned with and expected to contribute to the economic and social objectives of the World Bank's New Africa Strategy of March 2011 through the provision of increased connectivity and transport facilitation in the project areas.

39. The development objective supported the GoT's NTP and the RGOZ's ZTMP. The NTP aimed to help facilitate the achievement of the National Development Vision for 2025. The BRT proposals were in line with the urban transport strategy detailed in the NTP, to address the growing traffic congestion in Dar es Salaam, which threatened to undermine the city's status as an emerging regional trade hub and as Tanzania's main commercial center. A decision to plan for the introduction of the BRT was taken by the Dar es Salaam City Council in 2003.

Relevance of Original and Revised Design
Rating: Substantial

40. The design at appraisal included urban transport, trunk road, and airport components, but at restructuring Component B (the trunk road) was dropped not because of relevance, but because the increased cost after bidding could not be accommodated in the project. The wording of the objective could have been improved; while there is no doubt that the infrastructure improvements would support economic growth, the extent of such support was not measurable in a macro sense because of attribution factors. Nevertheless, proxy factors such as time savings (urban transport), vehicle operating costs (trunk roads), and user satisfaction (airport infrastructure) were sensible alternatives. The results framework was adequate to meet the PDO, but the revised objective at the AF included the words "reliability and cost effectiveness," and it is unclear why a new indicator was not introduced that would have been better aligned to this goal.

[13] P123134: Approved March 2, 2015.
[14] Report 38625-TZ
[15] Report 80313-TZ

—

3.2 Achievement of Project Development Objectives

Performance against Original Objectives
Rating: Modest

41. The PDO approved at appraisal was: to enhance prospects for economic growth through provision of an efficient and integrated transport system that is safe and affordable to improve access to services and market opportunities.

42. The total project cost (after AF) was US$290 million and when the development objective was changed, 39.7 percent of this total had been disbursed.

A. Evidence of Achievement of Original PDO

Phase 1 BRT System (Modest)

- It was too early to achieve any reduction in rush hour travel. The tendering process for the BRT infrastructure failed in September 2008 after no bids pre-qualified when the civil works were offered as a single package. Subsequently, seven smaller packages were offered. All works contracts were awarded, but there were serious time delays due to land acquisition challenges as well as a failure to comply with legal covenants for the bus operations. There were also substantial cost overruns. After the restructuring in August 2011, there was an overall improvement in implementation progress and the rating was upgraded to Moderately Satisfactory.

Trunk Roads (Negligible)

- There was no progress towards reducing vehicle-operating costs on the designated road sections. Component B was dropped due to excessive cost and a scaled-down version was undertaken as part of the TSSP. Only some capacity-building activities for TANROADS took place for the organization to be able to move forward with its new BRT responsibilities.

Zanzibar Airport (Substantial)

- The proposal under Component C for the improvement of the airport runway was scaled up at restructuring from ‘repairs and extension’ to ‘rehabilitation and extension’. Additional studies were also added. The runway works were completed on August 3, 2010, when the runway was extended by 560 m from 2,462 m to 3,022 m. This enabled larger aircraft carrying more passengers to use the airport, including charter flights from Europe. The indicator was a satisfactory rating of Zanzibar Airport facilities by both airlines and passengers. While formal evidence of positive satisfaction was only obtained in a 2013 survey, there were no major issues with this component and performance is regarded as Satisfactory.

B. Evidence of Achievement of Intermediate Indicators

- Percentage completion of the BRT works and trunk roads was zero, but the airport

works were completed.

- ICAO and the Tanzania Civil Aviation Authority (TCAA) certified the airport on April 23, 2012.[16]

Performance against Revised Objectives
Rating: Modest

43. The revised PDO approved at Additional Financing was: to support the recipient's efforts to achieve economic growth by providing a reliable and cost effective mass transit system on the selected corridor in Dar es Salaam City, and airport facilities on Zanzibar Island.

A. Evidence of Achievement of Revised PDO

Phase 1 BRT System (Substantial)

- **The average rush hour travel time by public transport users between Ubungo and the Dar es Salaam central business district** (Posta) reduced from 62 minutes to 28 minutes—a saving of 34 minutes, but not quite reaching the target of 25 minutes. Express (limited stop) services achieved 23–25 minutes, but 'all stop' services averaged 28 minutes.

- **Positive satisfaction rating of public bus transport users between Kimara, Kariakoo, and Kivukoni along the BRT corridor.** A survey conducted by DART in November/December 2016 showed positive satisfaction, but with an understandable caveat—respondents were very satisfied with the infrastructure and the BRT experience, but less so with waiting times. This was due to the lower number of buses in operation than had originally been projected, but this is a temporarly phenomena until the additional buses arrive.

B. Evidence of Achievement of Intermediate Indicators

- **Percentage achievement of BRT works.** Full completion was achieved in 2016.

- **Number of DART buses operational.** The target of 305 was not achieved. Two operators were originally envisaged. However, because there were delays in setting up full operations, an ISP was appointed that acquired 140 buses. The balance of 165 buses necessary to successfully operate Phase 1 is still to be competitively supplied and is expected to be in place later in 2017.

- **Average number of public transport passengers per day through the Morogoro corridor at Jangwani.** Clearly, with fewer buses, fewer passengers could be conveyed by currently available BRT buses. The target was 360,000 and 162,000 was achieved. An estimated 200,000 passengers per day were passing Jangwani by Daladala (mini-bus) that are still operating in parallel with the BRT system.

[16] Certificate 278-12/13.

44. The main rationale for the setting up of an ISP, supported by the GoT, was to make use of completed infrastructure to avoid vandalism and illegal use of the new busways, gain experience for the move to full operations, introduce the public to BRT services, and provide an opportunity for the affected *daladala* operators to build capacity for tendering for the full service provider. This was in the context that delays had severely limited the time allocated for the project.

A. Evidence of Achievement of Revised PDO

Zanzibar Airport (Substantial)

- **Satisfactory rating of the Zanzibar Airport by airlines and passengers.** The results of a survey by the Economic and Social Research Foundation for the MoICT, dated February 15, 2013, showed a significant improvement in satisfaction over the baseline survey conducted in 2008. Airlines considered the runway condition to be good or very good (84 percent), but lower (though positive) satisfaction ratings were given for aprons (60 percent), taxiways (58 percent), and security (58 percent). The terminal building was rated inadequate by 92 percent of respondents, as it did not meet international standards, *(but this was not part of the World Bank project*).

- **Actual airport traffic has been lower than the unrealistic forecast at appraisal** but still sufficiently substantial to yield a good return (16.7 percent based on airport revenue, excluding the large benefits from increased tourism). Some 1.6 million passengers were estimated for 2016. At the closure of the project on December 31, 2016 the number of passengers had reached 0.95 million.[17] Nevertheless, many of these passengers were tourists from Europe, boosting the growth of tourism on the island. The average growth rate over the last 10 years was 7.5 percent.

- **Recognizing that the existing terminal was inadequate** the Government secured a loan from a development partner to finance a new terminal building, but this is unfinished due to a design error regarding its interface with the aircraft-parking apron and funds were unavailable to fix the problem. However, until this issue is resolved, passengers using the airport may be inconvenienced. The Ministry of Finance is actively trying to resolve the funding issue to ensure that the terminal is fully functional.

B. Evidence of achievement of intermediate indicators

- The TCAA and ICAO safety and security standards were met.

- The rehabilitation and extension works were satisfactorily completed ahead of schedule.

- In addition, a detailed engineering design for the rehabilitation of taxiways and apron, as well as various studies and an airport user satisfaction survey were completed. The assistance included detailed design and preparation of tender documents for the upgrading of Zanzibar Town entry roads (78 km) and a review

[17] Data from the Zanzibar Airports Authority

and conceptual planning for institutional changes set out in the ZTMP. Staff training and equipment were provided for the MoICT and the Kisuani Office was renovated for the Master Plan implementation team.

3.3 Efficiency
Rating: Modest

Phase 1 BRT System

45. At appraisal, financial and economic assessments were carried out in which economic benefits were calculated by taking into account two direct benefits, passenger time savings and reduction of vehicle operating costs, as well as two indirect benefits, namely; reduction of air pollution and reduction of accidents. When these economic benefits were compared with the total cost of the BRT investment, then estimated at US$183 million, the economic internal rate of return (EIRR) was estimated at 14.5 percent, with a net present value (NPV) of US$22.51 million. The financial model showed that the BRT system would be profitable enough to attract two private bus operators and a fare collection company.

46. When the project was restructured in 2012, the economic and financial model was updated with some actual data incorporated, such as the BRT roadworks, for which the cost estimate had increased by 70 percent from US$110 million to US$177 million. The expected ridership was also updated to 524,000 passenger trips per day. The updated EIRR was estimated at 12.4 percent.

47. The Implementation Completion and Results Report (ICR) ex post evaluation is based on the assessment model with *actual* figures reflected. While it is normal to rely on the model that was used at appraisal, this was not possible in this case because the working details were no longer available. However, the assessment model used is considered more accurate, and DART is currently using this model to evaluate the follow-on phases of the Dar es Salaam BRT. After long delays in the construction of bus lanes, appointment of bus operators, and acquisition of required equipment, including buses, the interim operations of BRT Phase 1 commenced on May 10, 2016. The latest evaluation is carried out with the information that was available as of end-2016.

48. **Reduction of travel time.** The passengers' travel time saving depends on ridership and average reduction of travel time. The daily ridership was expected to be 406,000 passengers at appraisal or 524,000 passengers at the time of reassessment. It is too early to assess the growth potential of the Phase 1 system over the long run, but the current ridership is significantly lower than projected. However, the current operations are still in an interim phase. The PAD estimated the total value of time to be saved at US$10.8 million per year. The actual savings are of a similar order of magnitude even though the current daily ridership is lower than projected. Since the commencement of operations in May 2016, the new BRT system has saved US$16.1 million, or TZS 35 billion, which is equivalent to US$22.7 million, or TZS 49.6 billion, on an annual basis. In real terms, this is equivalent to US$11.5 million in 2008 constant U.S. dollars, which is 6.7 percent higher than expected at the appraisal.

49. **Operational cost savings of *daladala.*** At appraisal, it was estimated that a total of about

7,000 *daladalas* were operating along 192 routes in Dar es Salaam, out of which 45 routes were affected by the Phase 1 project. Thus, about 1,600 *daladala* were to be removed. However, only a fraction of these were displaced as of end-2016. The realized partial benefits are only estimated at TZS 20 billion or US$9 million.

50. **Reduction of pollution.** Given the limited local data, the current analysis is focused on CO_2 emissions. At the appraisal, the pollution cost of bus operations was assumed to be the same, US$0.25 per km, regardless of whether it was a new BRT bus or a *daladala*.

51. Based on the above data, the economic efficiency of the project was reevaluated over the 29-year period of evaluation, which comprises four years for construction and preparatory works (2012–15) and 25 years for operations (2016–41), which is consistent with the original economic analysis at the appraisal. Under the original assumption of daily ridership (406,000 passengers per day), the current model estimates the project's EIRR at 14.4 percent. Given the current level of average daily ridership (125,809 passengers), the EIRR is 1.8 percent, much lower than expected. This is simply because of the lower-than-expected ridership. Evaluated at a discount rate of 12 percent, the NPV of the project is negative at TZS 44 billion.

52. Realistically, these results may be underestimated, because the future ridership is likely to pick up as the city's economic growth accelerates and the BRT system expands to other corridors. If the ridership is doubled to 250,000, the estimated EIRR will be 8.4 percent with an NPV of about TZS 150 billion. If the ridership accelerates quickly to achieve the target of 524,000 passengers per day, as planned, the EIRR will be 18 percent, well above the conventional threshold, with an NPV of about TZS 570 billion. This said, it is too early to assess which scenario will materialize. Given the current daily ridership, the net cash flow revenue is negative at TZS 59 billion. Again, the project's financial viability depends on future ridership growth. If the ridership is doubled, the net revenue will be TZS 390 billion, generating a strong financial rate of return (FIRR) of 31.9 percent. With the initial target ridership, the project would be highly profitable to DART and potential operators, essentially because the Government has already shouldered significant infrastructure investment costs. Over and above the quantifiable benefits used in this evaluation, there are many less tangible benefits related to urban form, cleaner air, and the quality of urban living not taken into account in this analysis.

Zanzibar Airport

53. An economic evaluation was conducted at appraisal under the assumption that the traffic would increase in a fairly linear fashion. The investment cost was estimated at US$16.1 million. Passenger growth rates were assumed to be 12.5 percent for 2008–15, 10 percent for 2016–19, and 5 percent during 2020–27. The assessment was made based on a 20-year project life. Three types of economic benefits were considered: (a) airport sales operational revenues (US$1 per international passenger), (b) airport tax (US$30 per departing international passenger), and (c) value addition of tourism (estimated at US$50 per tourist). The appraisal estimated the FIRR, with airport sales operation revenue and airport tax taken into account, at 39 percent, with an NPV of US$11.8 million. When tourism value addition is also considered, the EIRR was estimated to be 650 percent.

54. The runway rehabilitation and expansion works were completed and the runway was

opened in August 2010. However, the actual investment was US$39.3 million, more than double the original cost estimate. This was partly due to the need to rehabilitate rather than repair the runway following accelerated deterioration over several years, and partly due to increased construction costs in the interim.[18] Actual airport traffic also turned out to be lower than expected. The appraisal had anticipated (highly optimistically) more than 1.6 million passengers for 2016, but the actual traffic that materialized amounted to about 950,000 passengers.

55. The reassessment for the ICR was based on the average actual growth rate for the preceding 10 years, of 7.5 percent. It was assumed that the total passenger numbers would increase at 5 percent per year for the rest of the project evaluation period (that is, until 2028). With airport taxes and revenues, the FIRR was estimated at 16.7 percent, which while lower than expected, is well above the threshold. The NPV was about US$15 million over the 20-year period. When tourism value addition was also considered, the EIRR is calculated at over 90 percent. This project component was therefore both economically and financially viable.

Operational and Administrative Efficiency

56. Given that the project took twice as long to complete at nearly double the cost, the operational and administrative performance was low. The process of removing the *daladala* owners in the BRT Phase 1 is also not yet complete and until the interim operator phase is ended, the number of passengers will remain well short of target. This said, the worldwide experience in introducing BRT in developing countries shows that the issues in Dar es Salaam were not dissimilar from those reported elsewhere and the World Bank team is acknowledged to have played a crucial role in helping to resolve the various problems that arose, particularly the resumption of the competitive tendering process. Many BRT projects in developing countries experienced similar start-up problems to Tanzania. Colombia and Mexico, for example, experienced implementation that was slower than forecast and where the project scope expanded way beyond the provision of segmented busways, encompassing traffic management measures, route organization, information and communication technology, and extensive community engagement.

3.4 Justification of Overall Outcome Rating

Rating: Moderately Satisfactory

57. Despite a shaky start and significant issues in implementation leading to missing the targets on several indicators, this project emerged as a landmark on the road to the modern reform of urban transport in Dar es Salaam and a significant boost to tourism in Zanzibar through an important increase in aircraft capacity. The BRT design was a bold one, not formerly attempted in a country officially classified as low income, and had to take into account the complex environment in the city of Dar Salaam with all the risks of land acquisition, traffic management, unmapped utilities, and other urban dynamics such as unplanned settlement, street vendors, lack of sewerage and inadequate solid waste collection systems. Despite these challenges, the team was able to turnaround this project and lay the foundation of an expanded BRT program. The current operations of the BRT system have increased the number of people

[18] An earlier attempt to rehabilitate the airport runway was to be financed under the Second Integrated Roads Project, (which closed in December 2006). However, it failed after the contractor was terminated due to lack of performance.

with access to the center of the city (opportunities) in 60 minutes using public transport from 42 to 50 percent[19]; a 21 percent increase from the baseline. Three further phases are now in implementation, one funded by AfDB and two by the World Bank. The BRT required vision, high-risk tolerance, and an adaptive approach for such a pioneering endeavor. It is considered a big success, not only in Tanzania, but also in the region. For this reason it should not be judged solely on the overambitious M&E framework.

58. The relevance of the objectives to the GoT and for the World Bank strategy for Tanzania was high and applied to both pre-and post-restructuring. Similarly, the relevance of design was substantial. Against the original objectives performance was modest mainly due to serious delays and cost overruns, leading to the dropping of the trunk road component. Against the revised objectives performance was largely satisfactory – the airport component was successful, but there were some minor shortcomings in the achievement of the BRT component. Using the formula for disbursements against the original and revised objectives (39.7 × 3.6) + (60.3 × 4.3) = 4.02 the overall efficacy achieved was moderately satisfactory. Efficiency was modest — for the BRT Phase 1 it is currently low (1.8 percent) and will remain so until the additional operator is in place and more buses are put into service, after which an EIRR of between 8 percent and 18 percent is confidently expected. The airport investment is Satisfactory, yielding an FIRR of 16.7 percent and an EIRR of around 90 percent depending on actual tourist arrivals.[20] Overall, the outcome is rated Moderately Satisfactory.

4. Assessment of Risk to Development Outcome
Rating: Significant

59. The risk rating at appraisal of CTCP2 was high. Of the 25 identified project risks, 23 were associated with the introduction of the BRT. There were specific concerns about the procurement of bus operating and fare collection contracts, the capacity of DART, interference in the setting of fares, and protest action by *daladala* owners. Cost overruns and time delays were not anticipated on the scale that actually occurred. By project closure, the infrastructure was successfully completed for both the airport and the BRT, the relocation of PAPs was carried out except for a handful of pending court cases, and an interim operating service was in place albeit with a lower number of buses than planned and without the competitive arrangement originally intended. An agreement was made with the *daladala* owners affected by Phase 1, whereby 400 out of 1,800 were paid disturbance allowances not to compete on the main routes, while the Government committed in writing to consultatively rerouting the remaining 1,400 before the feeder services of Phase 1 started operating.

60. The users of the BRT are generally positive about the service and the Government has endorsed the expansion of the system. In March 2017, the World Bank approved Phases 3 and 4 in the DUTP[21] and this was followed by a ceremony in which President John Magufuli of Tanzania and President Jim Kim of the World Bank witnessed the signing of agreements and confirmed their support for the program. Meanwhile, the AfDB is funding Phase 2, while the Japan International Cooperation Agency (JICA) and the Korea Exim Bank are supporting other related aspects of urban transport development. In recognition of the transformation as a result of

[19] Bank staff simulation through the Open Trip Planner Analyst (OTPA) tool developed by the World Bank.
[20] Excluding tourist value addition.
[21] Report PAD1464, February 14, 2017,

the first year operations of the first phase of the BRT system, Dar es Salaam city also become the first African city to be awarded the Global Sustainable Transport Award (2018).

61. Although these developments are positive and additional resources will increase the likelihood of a successful program, there remain several challenges to be overcome. The Transport Master Plan for Dar es Salaam, adopted in 2008, recommended the establishment of a single coordinating authority. The DUTP provides for technical support to complete the process for this by December 20, 2020. It also makes provision for strengthening DART's capacity to enable the agency to operate at arm's length from the Government with a decentralized staffing, decision-making, and accountability system.[22] Road infrastructure will remain under the jurisdiction of TANROADS, which will be responsible for maintenance. A dedicated fuel levy under the Roads Fund Board provides assurance that funds will be available for this purpose.

62. Regarding *daladala* operations, a different approach will be required for further phases because all the existing *daladala* routes entering the central business district will be displaced and the owners will see the BRT as a serious threat to their livelihoods. The DUTP will support the consolidation of existing operators to form companies, cooperatives, or franchises and the existing *daladala* owners company formed through their association will be considered for a noncompetitive contract award as one of the BRT operators if it can meet the basic operational requirements. In turn this will mean that transaction advisers will be required to support a fairly complex PPP procurement of these operators. While all this may seem ambitious, the model has been successfully used in Latin America and elsewhere in Africa in both Nigeria and South Africa.

63. For the Zanzibar Airport, the risk is lower. The recently inspected runway is in good condition, ICAO safety and security standards have been met, and arrangements are in place to ensure that appropriate maintenance is carried out as needed by MoICT.

5. Assessment of Bank and Borrower Performance

5.1 Bank Performance

(a) Bank Performance in Ensuring Quality at Entry

Rating: Moderately Unsatisfactory

64. During project preparation, a financing gap of US$20.6 million became evident. The gap was due to continued inflation in the construction sector and devaluation of the U.S. dollar. Although the Government was required to fill this gap within 24 months after project effectiveness, (either through its own funding or that of a development partner), this gap increased project riskiness. In the event, these funds did not materialize, and the gap was eventually eliminated as part of the AF.

65. The team recognized that this was a high-risk project and accordingly undertook a detailed risk analysis, but insufficient thought was given to the cost estimations, especially as the market was subject to serious cost inflation pressures. It is also unclear why the project was made unnecessarily complicated by having three separate components covering diverse transport subsectors (aviation, roads and urban transport). However, it appears to have been accepted

[22] An Organization and Management Review Study is ongoing.

practice to bundle IDA funded projects in this way in East Africa. The BRT was sufficiently complex to warrant being a standalone project. Indeed, the BRT infrastructure contract proved to be too large for the capacity of the local construction industry, while the trunk road component was dropped because the increased cost after bidding (nearly double the estimate) could no longer be accommodated in the project. In an Aide Memoire before the restructuring in 2011, it was admitted that the original time frame for implementation of the BRT was unrealistic, based on experience from other countries. The team drew on the World Bank's expertise in BRT from operations elsewhere in the world. However, looking at the team composition, there did not appear to be a BRT expert in the preparation team. The team also did not foresee the impact of a lack of working drawings, extensive unmapped utilities, land and compensation issues not being fully resolved at entry. The M&E was over ambitious.

66. An environmental factor that was not anticipated in the preparation for BRT Phase 1 was the potential risk of flash flooding at Jangwani along the Msimbazi river basin. This could not reasonably have been foreseen at project level, but became a problem as flooding actually occurred during implementation. This risk is now being addressed under the DUTP that supports the development of BRT Phases 3 and 4.

67. Preparation for the Zanzibar Airport was satisfactory and proceeded smoothly, albeit the forecast numbers of passengers were overestimated and this important indicator was surprisingly not included in the results framework.

(b) Quality of Supervision
Rating: Satisfactory

68. The main bus roadworks contract experienced a number of challenges because of preparation failures, including the quality of design, (lack of working drawings for several areas), changes of design, and a significant number of unmapped utilities, especially water and sewerage requiring relocation. This led to implementation delays and claims. The implementation of the BRT infrastructure also suffered delays due to procurement and social safeguards challenges. The prequalification procurement process failed in September 2008 due to the unavailability of qualified applicants. However, the team was highly adaptive considering the poor preparation it inherited. The scope of works was extensive for a country with limited capacity and so it was repackaged into seven smaller lots, also splitting major building-related works from roadworks and then re-tendered.

69. Apart from delays in procurement, social safeguards also delayed the implementation of the project. Delays in the RAP implementation caused two contracts for construction of a BRT terminal (Kariakoo) and a bus depot (Ubungo) to expire due to unavailability of the chosen sites. Also, two feeder transfer stations were not acquired and the operational design had to be changed. The PAPs at the Kariakoo terminal site filed a court case in 2008 and secured an injunction that blocked the Government from accessing the site. Nonetheless, the site, with 106 families, was cleared by the Government in March 2012 after the PAPs' case was dismissed by the High Court, on technical grounds. The PAPs filed a separate civil suit and sought an injunction, but the High Court provided a ruling in December 2013 that formally released the site to the Government for public use (BRT terminal), even though the case of the main suit was still pending judgment.

70. The World Bank team was proactive in trying to ensure the project could still be delivered. It ensured that the compensation funds were deposited to the escrow account and thereafter most PAPs collected their compensation. A Tanzanian practicing lawyer was also present to represent the World Bank in court hearings, as an observer. The supervision team visited the sites frequently and developed a strong rapport with the GoT, MoICT, and the implementing agencies. According to the Borrower's ICR (annex 7),[23] the local World Bank office played a "leadership role" among donors in supporting road and transport sector reforms and capacity building, while its "attention to fiduciary measures and safeguards was invaluable." It is possible that adding BRT experts to the team at an earlier stage could have accelerated assistance.

71. The supervision team was diligent in finding a solution to the problem of flooding that arose in the Jangwani area. In this regard, a short-term strategy was put in place to protect the BRT infrastructure, while a longer-term strategy to deal with the cause of the problem was worked out. The decision on the way forward between multiple versus a single service provider was delayed until October 2014 when the Government decided to have a single ISP. This was not the preferred solution from the World Bank's viewpoint, but the supervision team vigorously tried to resolve issues as they arose and was flexible in its approach. The team showed wisdom and pragmatism in helping steer the project in a positive direction and actually laid the foundation for the further planned phases of the BRT.

72. After signing the contract, the ISP supplied the BRT buses and systems beyond the agreed contractual scope. In September 2015, the ISP shipped 140 BRT buses—39 with trunk and 101 with feeder specifications. The supervision team with the support of top management helped to provide alternative options for the continued support of the BRT project by the World Bank. The new Government elected in 2015 restructured the management of DART and cleared the way for the competitive process to proceed. In February 2016, an addendum was signed that contractually legalized the entire bus fleet provided. The ownership of the 'AFCS and ITS' were shifted to the Government subject to successful independent technical and financial due diligence. Competitive bidding for operations of the remainder of the BRT Phase 1 bus fleet and other services should be completed by December 30, 2017. The request for qualifications was launched in June 2016 for three packages: (a) supply and operation of 138 trunk buses of 18 m each and capacity of 140–150 passengers, (b) fare collection and station management vendor, and (c) a fund manager.

73. Credit should be given to the supervision team's strong support to the Zanzibar Airport project, which went smoothly with the contract being finished ahead of time. The team was able to add to the benefits of this component by ensuring the completion of the detailed design and preparation of tender documents for 78 km of Zanzibar town entry roads, a review of the planning of institutional improvements set out in the ZTMP, detailed engineering design for the rehabilitation of the taxiways and apron, and a design review of the problematic airport terminal building funded by another financier.

(c) Justification of Rating for Overall Bank Performance

Rating: Moderately Satisfactory

[23] TANROADS, April 2017, CTCP2, Project Completion Report (PCR).

—

74. Despite the poor quality at entry, the supervision team managed to ensure that Zanzibar Airport was completed successfully and that the BRT made sufficient progress to lay the foundation for subsequent phases of the BRT program. The commitment by the World Bank and Borrower to pursue further phases of the BRT is now supported at the highest levels in both the Government and the World Bank. The overall World Bank performance rating is moderately satisfactory, however, although there were modest shortcomings, the team was highly adaptive and in the end helped deliver a positive outcome.

5.2 Borrower Performance

(a) Government Performance

Rating: Moderately Satisfactory

75. The Government demonstrated its commitment to the project by meeting all the conditions of effectiveness and disbursement and ensured that the proven capacity in financial management of TANROADS was used, even though the BRT systems were unfamiliar to them. A high-level interministerial and interagency committee was appointed that helped facilitate decision making as the project proceeded. The GoT's contribution to funding was to cover the costs of compensation and relocation of PAPs. Insufficient funding was set aside for this, however, and land acquisition proved to be a major problem because some contractors could not gain access to the construction sites, as they had not been formally handed over. This in turn led to some contract terminations and increased costs due to the delays. These problems should have been resolved at an earlier stage.

76. It was also decided not to proceed with the competitive tendering process until there had been substantial progress with the BRT infrastructure. This ensured there was something for the GoT to showcase to potential bidders, but it also showed that it was difficult to keep road users from illegally using the completed infrastructure. This led to some road accidents and acts of vandalism. The Government opted for an ISP to overcome this problem. This did have some benefits in demonstrating the concept of BRT to the public and to iron out operating issues, but it was not the World Bank's preferred course of action. The GoT signed an interim service contract in April 2015 that excluded the adviser's suggested clauses prohibiting the ISP from scope increase and participating in the competitive service provider bidding. In the event, the GOT acted promptly to resolve difficulties when buses and systems were supplied beyond the scope agreed. It restructured the management of DART and cleared the way for the competitive process to proceed. The positive reaction of the users also had a profound impact at the political level and efforts are under way to expand the BRT system through Phase 2 (AfDB) and Phases 3 and 4 (World Bank). The meeting in Dar es Salaam between the Presidents of Tanzania and the World Bank cemented this renewed commitment and all parties have agreed to accelerate progress.

77. Both the GoT and the RGOZ were strongly supportive of the upgrades to Zanzibar Airport. The additional studies requested, such as preparation of the tender documents for the upgrading of Zanzibar town's entry roads, were agreed and conceptual planning for institutional changes under the ZTMP were supported.

—

(b) Implementing Agency or Agencies Performance
Rating: Moderately Unsatisfactory

78. DART was the executing agency for the urban transport component of the project, but TANROADS was responsible for procuring and managing the infrastructure contracts because of its experience with previous World Bank-funded infrastructure projects. DART was responsible for procuring the services of bus operators, the fare collector, and the fund manager. MoICT was the implementing agency for the Zanzibar Airport. Overall responsibility for project monitoring and evaluation resided with TANROADS, while SUMATRA was responsible for fare setting and implementation of the policies regarding *daladala*. A general observation regarding the BRT component, is that implementation could have been improved by more effective project management planning between the agencies and stakeholders. In addition, a formal institutional strengthening plan should have been in place.

79. The prequalification procurement process for the BRT failed in September 2008 due to the unavailability of qualified applicants. The scope of works was extensive for a country with limited capacity and had to be repackaged into seven smaller lots, also splitting major building-related works from roadworks and then re-tendered. Apart from delays in procurement, social safeguards also delayed the implementation of the project and caused cost overruns. The delays in the RAP implementation caused two contracts for construction of one BRT terminal (Kariakoo) and one bus depot (Ubungo) to expire due to unavailability of sites. Also, two feeder transfer stations were not acquired and the operational design had to be changed. The PAPs at the Kariakoo terminal site filed a court case in 2008 and secured an injunction that blocked the Government from accessing the site. Nonetheless, the site, with 106 families, was cleared by the Government in March 2012 after the PAPs' case was dismissed by the High Court, on technical grounds. The PAPs filed another civil suit and also sought an injunction, but the High Court provided a ruling in December 2013 that formally released the site to the Government for public use (BRT terminal), while the hearing of the main suit is ongoing. The PAPs' compensation funds were deposited to the escrow account and thereafter most of them collected their compensation. The case is still pending judgment (2017).

80. One of the mitigation measures proposed for the Jangwani Depot in CTCP-2 was that construction be done during the dry season. Though difficult to implement, the recommended mitigation measure would likely have averted the losses incurred due to flooding.

81. Following difficulties when buses and systems were supplied beyond the scope anticipated, the management of DART was restructured clearing the way for the competitive process to proceed, but in the meantime the project suffered from delays.

82. Regarding the Zanzibar Airport, MoICT satisfactorily facilitated the infrastructure improvements, detailed engineering design for the rehabilitation of taxiways and apron, conducted a customer satisfaction survey, and benefited from technical assistance under the project.

—

(c) Justification of Rating for Overall Borrower Performance

Rating: Moderately Unsatisfactory

83. Despite the strong commitment by the Government to the project and the gradual improvements to overcome a lack of experience in public transport in TANROADS, and taking into account the eventual outcome of the project, overall Borrower performance was on balance still moderately unsatisfactory. There were significant shortcomings, but these were also learning experiences that should have a mitigatory effect on similar issues in the current follow on projects. Taken into account is the gradual enhancement of institutional capacity during the life of the project.

6. Lessons Learned

Project Planning and Design

84. **The quality of engineering designs at appraisal caused considerable delay during the BRT Phase 1 implementation. For further phases, an independent review of designs will be the first assignment by the supervision consultants.** Any amendments will be provided to contractors before or during the bidding process. Further, because the PAP's census and property inventory was done against the initial and not the final design, coupled with ready funds to compensate the PAPs, the RAP implementation was quite a challenge.

85. **In times of volatile price inflation, it is important to take additional measures to ensure the accuracy of cost estimations.**

86. **The challenges faced during the launching of the operation of Phase 1 of the BRT system showed that it is important to incorporate road safety as part of the design when new systems are introduced.** This includes road safety audits and other road safety measures such as training of drivers, communications, and awareness campaigns about the BRT operations. Last-mile investments can be made to protect vulnerable users and improve walkability. Moreover, aspects such as the quality of public spaces and accessibility need to be integral activities planned as part of the project.

87. **When planning aiport projects the design passenger volume is a critical indicator that should be assessed realistically and monitored throughout implementation.**

Implementation and Institutional

88. **In crosscutting projects like CTCP2, involvement of the main stakeholders, especially those at the leadership level, is essential for smooth project implementation.** As noted during implementation, after some delays at the start of the works contracts, the progress improved remarkably upon the introduction of a BRT Steering Committee as a high-level coordination and decision-making body. The arrangement also helps ensure adequate maintenance and sustainability of the project.

89. **Capacity building is an ongoing activity that yields many benefits, although CTCP2 shows that such benefits are not always measured meaningfully during project**

—

implementation. Further capacity building for TANROADS, DART, and SUMATRA will be essential for further BRT expansion and an institutional strengthening plan is a critical factor for successful BRT projects.

Operational Challenges

90. **Competition between operators on BRT trunk lines is the preferred strategy.** The challenge of delays in the PPP procurement of the operator(s) that led to complications of interim service operations in the BRT Phase 1 should be avoided. Recruiting transaction advisers and issuing requests for qualifications before commencement of further BRT trunk corridor works should address this. The intention is to ensure that the potential bus operators are short-listed within one year of commencement of works. This would enable the PPP contract to be signed at least one year before completion of infrastructure works and the timing for commencement of operations would coincide with the handing over of the completed infrastructure. This strategy should also apply to ensuring the procurement bidding processes of the soft components (such as the AFCS and fund manager) as well as the procurement of buses, to ensure that there can be timely capacity building ahead of deployment. Future close collaboration and commitment between the Government and the World Bank can find appropriate solutions to strengthen this process.

91. **The challenges of relocation and/or incorporation of *daladala* (minibuses) in the operation of the BRT system need to be invigorated and a different approach is required for further phases to manage competition**, (up to now *daladala* have been re-routed and paid a disturbance allowance or have been scrapped and compensation has been paid). The reason for a new approach is because *daladala* will be displaced on all key corridors entering the Dar es Salaam central business district. The proposal is to support the consolidation of the *daladala* owners and help the formation of companies, cooperatives, and franchises. A *daladala* owner's company or cooperative that will be jointly established through the *daladala* association will be considered, subject to fulfillment of qualification criteria for being awarded with a noncompetitive operation contract as one of the three operators of BRT Phases 3 and 4. The noncompetitive contract will be awarded after completion of the competitive tendering process, as the contracts need to have the same terms and conditions.[24]

Safeguards issues

92. **Adequate preparation in the resettlement of PAPs is a critical requirement for a well-performing project.** Delays in the implementation of the RAP for the BRT, due to lack of funding, led to contractual disputes and termination of some the works contracts as the site was not available to the contractor. For BRT Phases 3 and 4, the compensation resources are to be released by the Government before the advertisement of tenders for works, so that the RAP can be implemented before the works contracts are awarded.

93. **Follow-through with the recommendations of ESMPs is essential to ensure that "the project does not leave the people and environment worse off than before the project."** One

[24] The noncompetitive contracting of a *daladala* owners company will be for the same operation duration as the two competitively awarded operators. However, upon expiry of the initial contract duration, the *daladala* owners company can only be contracted in subsequent periods through participation in a competitive tendering process.

of the mitigation measures proposed for the Jangwani Depot in CTCP-2 was that construction be done during the dry season. Though difficult to implement, the recommended mitigation measure would likely have averted the losses incurred due to flooding.

7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners

(a) Borrower/implementing agencies (NA)

The Borrower ICR (see annex 7) gives a rating of satisfactory because of the project's contribution to support Tanzania's efforts to support economic growth by providing reliable and cost effective mass passenger transport in Dar es Salaam and airport facilities in Zanzibar Island. It finds that the PDOs were in line with government planning, but recognizes there was inadequate performance in resolving land acquisition issues and problems with insufficient reviewing of designs, leading to valid contractors' claims. The report notes that the World Bank played a leadership role among donors that has led to transport sector reforms and capacity building in sector institutions. It also refers to delays in providing "no objections," but notes that safeguards and fiduciary measures were compliant.

(b) Co-financiers

(c) Other partners and stakeholders

'Not applicable'

—

Annex 1. Project Costs and Financing

(a) Project Cost by Component (in US$, Million equivalent)

Components	Appraisal Estimate (US$, millions)	Additional Finance Estimate (US$, millions)	Actual/ Latest Estimate (US$, millions)	Latest % of Appraisal	Latest % of Revised Estimate
A. Dar es Salaam Urban Transport	158.2	225.6	253.6	160.3	112.4
B. Trunk road improvements – Support to TANROADS	64.3	4.3	4.7	7.3	109.3
C. Zanzibar Airport and Transport studies	17.6	39.3	39.4	223.8	100.3
Total Baseline Cost	240.1	269.2	299.6	124.0	111.3
Contingencies (7% price; 4% physical)	24.3	20.8	—	—	—
Resettlement	10.7	10.7	10.3	96.2	96.2
Buses and fare collection	40.9	40.9	42.2	103.2	103.2
Financing gap	22.8	22.8	—	—	—
Total Project Costs	264.4	341,6	—	—	—
Total Financing Required	264.4	341.6	—	—	—

(b) Financing

Source of Funds	Appraisal Estimate (US$, millions)	Revised Estimate at AF (US$,	Actual/Latest Estimate (US$, millions)	Latest % of Appraisal	Latest % of Revised Estimate
Borrower (Resettlement)	10.7	10.7	10.3	96.2	96.2
IDA	190.0	290.0	297.7	156.7	102.7
Private sector (buses/fare collection)	40.9	40.9	42.2	103.2	103.2

—

Annex 2: Outputs by Component

1. **Component A: The Dar es Salaam Urban Transport Component.** This included implementation of Phase 1 of a BRT system in Dar es Salaam, including strengthening of the responsible agency, DART. Implementation of the BRT Infrastructure – Phase 1, was divided into seven Works Packages. This came about when the tendering process failed in September 2008 after receipt of nonqualified applications and re-tendering was done after splitting the initially large single package into seven smaller packages with buildings-related works separated from roadworks. The packages and implementation details are provided in the following paragraphs.

Package 1: Roadworks

2. The scope of works included construction of Morogoro Road (Kimara-Kivukoni), Kawawa Road (Magomeni-Morocco), and Msimbazi Street (Fire-Kariakoo). It involved construction of 20.9 km of roads, 27 (originally 29) bus stations, three terminals, and three pedestrian bridges at Kimara, Ubungo, and Morocco and the widening of Msimbazi Bridge at Jangwani. The overall payment to the contractor was US$210,053,400.

Package 2: Ubungo Depot, Feeder Station, and Up-country Bus Terminal

3. The scope of the works included construction of four facilities, that is, a bus depot, a feeder station, ticket offices, and an up-country bus terminal and included the following: demolition of existing buildings and construction of concrete- and asphalt-finished road and parking (107,970 m^2). The works could not start immediately due to delayed land acquisition. Negotiation with the contractor to revive the project, when the site was finally available, failed and the contract was terminated in December 2013. The net amount paid to the contractor after repayment of an advance was US$1,540,000.

Package 3: Jangwani Depot

4. The scope of the additional works included construction of an administration block, a main building, a fuel shed, a visual inspection shed, generator houses, an ablution block, and associated services; construction of concrete-finished access road and parking areas; and construction of a block wall fence. The start date was April 11, 2011, but the works restarted on January 16, 2012, following suspension by the Government to settle land use issues. Flooding of the Msimbazi River and silting of the Jangwani flood plains happened on two occasions and caused damage to the works because the southern wing of the perimeter fence collapsed. The contractor also suffered loss and damage of equipment. The net amount paid to the contractor was US$11,970,000.

Package 4: Kivukoni Terminal and Feeder Station

5. The scope of the works included the construction of a terminal building—main shed, control building, ablution block, gate house, and associated site works; construction of concrete-finished access road and parking for terminal station; construction of feeder station, including access road and parking; and construction of block wall fence and foul and surface water drainage. The employer terminated the contract on March 17, 2014, due to nonperformance and

non-compliance by the contractor when the achievement was 90 percent. In its place the contractor for Package 5 was engaged in November 2015 to execute and complete the remaining works and rectification of defects through variations to his contract. The cumulative payment was US$3,160,000.

Package 5: Kariakoo Terminal and Feeder Station

6. The original completion date was extended to January 2016, following the issuing of Addenda 1, 2, and 3 for execution of the works remaining on Packages 4 and 6, as well as the desilting of the Msimbazi River in the Jangwani area to avoid the risk of flooding to the depot following warnings on expected abnormal rains in December 2015. The works were completed within the contractual period with a revised contract amount of US$5,430,000.

Package 6: Feeder Stations

7. The scope of works included the construction of six feeder station sheds, Shekilango, Urafiki, Magomeni-Mapipa, Fire, Kinondoni ‘A’, and Mwinyijuma and construction of bituminous-finished access roads. There was no progress on any of the six sites for feeder stations from January 2012 to February 2014. Work on four feeder stations, Shekilango, Mwinyijuma, Magomeni, and Kinondoni 'A', was mainly carried out before 2012. Work did not commence at the Urafiki and Fire stations allegedly due to the sites not being handed over to the contractor. The employer terminated the contract on March 24, 2014, due to a fundamental breach of the contract by the contractor. To execute the remaining works the contractor for Package 1 was instructed to construct the access roads to the four feeder stations and the contractor for Package 5 was asked to remedy the defects noted and ensure completion of the outstanding building works as a variation to his contract. The cumulative payment made to the original contractor was US$1,320,000.

Package 7: Relocation of Power Utilities

8. The tasks for Package 7 included conducting a field survey and providing profiles for the new lines; cutting of trees, including cutting of trunks, branches, and removal of stumps and roots, including disposal; demolition of existing structures as indicated on drawings and hand over of useful materials to the Tanzania Electric Supply Company (TANESCO); supply and erection of new 33 kV structures, including installation of various support components and stringing of cables and provision of stays as shown on drawings; supply and erection of equipment, for example, transformers, load break switches, dropout fuses, and so on, as noted in the drawings; laying in of piping under the roads at positions shown in the drawings using trenchless technology, including the provision of the necessary equipment; supply and installation of underground cables drawn in ducting, including terminations and termination accessories; construction of manholes at all road crossings; demolition of some existing service lines and reconnection of service lines to match the relocated lines and services; and testing and commissioning of the systems. The works were substantially completed on August 3, 2011, and it was agreed that the remaining works that could not be executed due to obstructions on-site be executed during implementation of Package 1 (works). The remaining works were relocated by TANESCO as space for relocation became available after the removal of physical obstructions. The total payment made to the contractor was US$3,920,000.

—

Supervision of BRT Works

9. The cumulative payment to the consultant, including final account, was US$9,235,000.

DART Agency Operations - BRT System Operation

10. The system operation envisaged using both the Government and private players to promote PPPs. The system, as set out in the PAD, has five partners: DART, a public agency, two private sector bus companies, one private sector fare collector company, a fund manager, and an auditor. All the private partners were to be competitively selected. The procurement of the full-time service providers, that is, bus operator, fare collector, and fund manager, was at different stages of procurement, as follows:

(a) Bus operator, advertisement for submission of application for qualification was in progress, following receiving unresponsive qualifications from an earlier notification.

(b) Fare collector, Request for Proposals documents were issued in March 2017 to the short-listed firms. The same status applied to the fund manager

(c) An auditor was not procured because an internal auditor within the Ministry of Local Government provided the service

11. A chief technical adviser was engaged in November 2012 for a contract of two years. The position was not specified in the PAD, but it was found important to have an experienced person in place to guide DART in the preparations for the BRT operation. The establishment of the ISP was a Government decision by using the existing *daladala* (minibus) operators to provide interim services on the DART project ahead of full operations. An agreement between the DART Agency and the ISP was signed on April 24, 2015, and commercial operations started on May 16, 2016, with a fleet of 140 buses (18 m [39 buses] and 12 m [101 buses]). The main reasons for this move were to (a) make use of the completed infrastructure to avoid vandalism, (b) gain experience to be used in the contracting for full operations, and (c) provide an opportunity for the affected *daladala* operators to build capacity for tendering for the full service provider.

Table 2.1. Support for DART (US$, millions)

Item	Contract Amount	Actual Cost
DART operating costs	1.442	0.143
TA and studies	4.912	4.277
Training	0.500	0.462
Furniture and equipment	0.692	0.385
Total	7.546	5.267

—

Component B: Support of Tanzania National Roads Agency (TANROADS)

Table 2.2 Support for TANROADS

Contract	Estimated Cost During Appraisal (US$, millions)	Original Contract Price (US$, millions)	Revised Contract Price (US$, millions)	Actual Contract Completion Cost (US$, millions)
Technical assistance and studies for TANROADS	n.a.	2.757	3.537	3.240
Training for TANROADS	0.50	0.500	0.497	0.497
Furniture and equipment for TANROADS	0.29	0.316	0.385	0.385
Operating costs for TANROADS	0.50	0.800	0.700	0.696

Component C: Zanzibar Airport and Transport Studies

12. **This component involved the rehabilitation and extension of the Zanzibar Airport runway, transport studies, and TA to the MolCT.**

Rehabilitation and Extension of Zanzibar Airport Runway

13. The works was divided into three major phases:

- Phase 1: 560 m of new construction (extension of the existing runway to the south)
- Phase 2: Rehabilitation of 560 m of the existing runway (northern tip)
- Phase 3: Rehabilitation of 1,900 m of the existing runway (midway section)

14. The works contract for rehabilitation and extension of the Zanzibar Airport runway was signed on April 17, 2009, for the contract amount of TZS 42,591,362,189. The contract amount was later revised to TZS 44,958,107,123. This contract was successfully completed approximately two weeks ahead of the planned completion date of August 14, 2010. The cumulative amount certified and paid to the contractor was US$36,120,000.

Supervision Consultancy Services for the Rehabilitation and Extension of Zanzibar Airport Runway

- The cumulative amount certified and paid to the consultant was GBP 390,528.

Renovation of Kisauni Office for Master Plan Implementation Team

- Renovation and furniture was US$20,000.
- Purchase of vehicles was US$49,500.

Miscellaneous

- TA for staff services to the MoICT was US$261,000.
- Detailed engineering design of the existing and extension of the Zanzibar Airport apron and taxiways was US$331,716.
- Design review report of the Zanzibar Airport terminal building was US$331,716.
- Feasibility, detailed design, and preparation of tender documents for the upgrading of Zanzibar Town entry roads was US$1,440,387.
- Review and conceptual planning of institutional changes set out in the ZTMP was €110,600.
- Finalization of the RAP for implementation of Zanzibar 'Three Roads' was US$3,800.
- Customer satisfaction survey at the Zanzibar International Airport was US$36,000.
- Staff training at the MoICT was US$192,881.
- Operating costs at the MoICT was US$98,000.

Table 2.3. CTCP2: Final Cost Table (US$, millions)

Component	Description	Value
Component A. Dar es Salaam Urban Transport (DART) - Category 1		**253.584**
A.1	**Civil works**	**237.393**
A.1.1	Roadworks (Kimara - Magomeni), (Magomeni - Kivukoni), Kawawa, and Msimbazi Roads	210.053
A.1.2	Ubungo Depot, Feeder Station, and Up-country Bus Terminal	1.540
A.1.3	Jangwani Depot	11.970
A.1.4	Kivukoni terminal building and feeder Station	3.160
A.1.5	Kariakoo terminal building and feeder station	5.430
A.1.6	Feeder stations (Shekilango, Urafiki, Magomeni, Fire, Morocco, Kinondoni, and Mwinjuma	1.320
A.1.7	Relocation of power utilities	3.920
A.1.8	De-silting of Msimbazi River at Jangwani	
A.2	**Supervision of construction of BRT Infrastructure**	**9.235**
A.3	**Technical assistance and studies**	**4.277**
A.3.1	Technical assistance to DART Agency	
A.3.2	Legal advisor to DART	0.022
A.3.3	Study of alternative fuels	0.018
A.3.4	Study of local operators' participation in DART system	0.042
A.3.5	Study for beach promenade and non-motorized transport (NMT) ways	-
A.3.6	Magogoni and Busisi ferries crowd and access control study by TEMESA	0.316
A.3.7	Consultancy services for architectural and engineering design for DART Agency and control tower	0.080
A.3.8	Consultancy services for detailed engineering design of Phases 2 and 3 BRT system in Dar es Salaam	1.180
A.3.9	Consultancy service for *daladala* relocation and grievances plan	0.050
A.3.10	DART corporate image/branding	0.050
A.3.11	Updating RAP	0.010
A.3.12	Consultancy services - sociologist	0.072
A.3.13	RAP implementation support	0.080
A.3.14	Chief technical advisor to DART Agency	0.266
A.3.15	Transaction advisor to DART Agency	0.988

—

Component	Description	Value
A.3.16	Training needs assessment and preparation of training program	0.010
A.3.17	Update communication strategy consultant	0.017
A.3.18	Review of RAP implementation	0.050
A.3.19	Review *daladala* policy	0.050
A.3.20	Review operational plan for DART Phase 1	0.144
A.3.21	Implementation of communication strategy	0.007
A.3.22	Procurement of communication specialist for DART Agency	0.095
A.3.23	Procurement of infrastructure management expert for BRT system	—
A.3.24	Procurement of finance management and business development expert	—
A.3.25	Additional services to finalize operational plan, transportation modeling tests, bus, and AFCS and specifications for BRT	0.500
A.3.26	Procurement of bus operation expert for BRT system	0.230
A.4	**Training for DART**	**0.462**
A.4.1	Short term training to DART staff	0.450
A.5	**Furniture and Equipment for DART**	**0.335**
A.5.1	Lot 1: 5 laptops and 7 desktop computers (US$22,000) and Lot 2: 5 printers and 1 photocopier (US$21) for DART Agency	0.016
A.5.2	Motor vehicles for DART Agency; Lot 1: 4 nos. station wagon STD and Lot 2: GX Station Wagon - 1 no.	0.282
A.5.3	Furniture and equipment for TA DART	0.037
A.6	**Operating costs for DART**	**1.432**
Component B. Support to TANROADS		**4.652**
B.1	Technical assistance and studies for TANROADS	3.074
B.1.1	Project manager – TANROADS BRT Team	0.040
B.1.2	Senior project engineer	0.048
B.1.3	Senior procurement specialist	0.067
B.1.4	Project engineer - 1	0.046
B.1.5	Project engineer - 2	0.045
B.1.6	Support Staff to TANROADS	
B.1.7	Secretary 1	0.003
B.1.8	Driver - 1	0.003
B.1.9	Driver - 1	0.007
B.1.10	Driver - 2	0.007
B.1.11	Driver - 3	0.007
B.1.12	Procurement specialist	0.060
B.1.13	The Central Transport Corridor television documentary	0.099
B.1.14	Design review and preparation of tender documents for rehabilitation of Korogwe-Mkumbara-Same Road	0.098
B.1.16	Technical Audit of WAN and LAN for TANROADS and Zanzibar	0.053
B.1.17	Toll road study	0.050
B.1.18	Post construction evaluation of projects completed under CTCP	0.010
B.1.19	Design review and preparation of tender documents for rehabilitation of Arusha-Minjingu Road	0.010
B.1.20	Procurement specialist	0.216
B.1.21	Project manager for BRT	0.455
B.1.22	Cost control engineer	0.300
B.1.23	Pavement/materials engineer	0.072
B.1.24	Highway engineer	0.141
B.1.25	Structural engineer	0.141
B.1.26	Office management secretary	0.042
B.1.27	Record management assistant	0.021
B.1.28	Driver - 1	0.029
B.1.29	Driver - 2	0.029

—

Component	Description	Value
B.1.30	Driver - 3	0.029
B.1.31	Driver - 4	0.029
B.1.32	Design review focusing on issued technical queries	0.073
B.1.33	Design revision and preparation of tender documents - Ubungo Depot	0.076
B.1.34	Economic evaluation, preliminary design and detailed engineering design of Ubungo Intersection	0.593
B.1.35	Supervision of Ubungo Flyover	0.020
B.1.36	Social environment consultant for BRT	0.055
B.1.37	Communication specialist for BRT/TANROADS	0.037
B.1.38	Detailed ESIA for Ubungo Intersection	0.023
B.1.39	Security of BRT bus stations	—
B.1.40	ESIA for BRT - Phase 3	—
B.1.41	Consultancy services for design of performance-based contract for maintenance of BRT infrastructure	0.040
B.2	**Training for TANROADS**	**0.497**
B.3	**Furniture and equipment for TANROADS**	**0.385**
B.3.1	Motor vehicles for TANROADS BRT team	0.2348
B.3.2	Furniture for TANROADS BRT team	0.005
B.3.3	Desktop computers - 3 nos., laptops - 3 nos., and printers - 2 nos. for TANROADS TBT	0.013
B.3.4	Fax machine - 1 no., photocopier - 1, scanner - 1, and camera - 1 n.o for TANROADS BRT	0.039
B.3.5	Supply of rolling shelves 9 nos.	0.011
B.3.6	Supply of ICT equipment of TBT office	0.014
B.3.7	Supply of furniture for TBT Office	0.068
B.4	**Operating costs for TANROADS/TBT**	**0.696**
Component C. Zanzibar Airport		**39.380**
C.1	Runway rehabilitation and extension works	36.120
C.2	Supervision of runway rehabilitation and extension works	0.610
C.3	Renovation of office for Master Plan Implementation Unit	0.020
C.4	**TA and Studies for MoICT Zanzibar**	**2.268**
C.4.1	Project manager 1	0.029
C.4.2	Project manager 2	0.192
C.4.3	Technical assistance	0.164
C.4.4	Survey of airline and passenger satisfaction rating for Zanzibar Airport	0.036
C.4.5	Design of Zanzibar urban roads	1.440
C.4.6	Consultancy for implementing Zanzibar Transport Master plan	0.099
C.4.7	Design of Zanzibar Airport taxiways and apron	0.300
C.4.8	Finalization of the RAP implementation report for Zanzibar Three Roads	0.008
C.5	**Training for MoICT**	**0.193**
C.6	**Operating costs for MoICT**	**0.098**
C.7	**Equipment and furniture for MoICT**	**0.077**
C.7.1	ZTMP office car	0.050
C.7.2	ZTMP office Furniture	0.005
C.7.3	Master Plan office equipment	0.022
	Grand Total	**297.615**

—

Annex 3. Economic and Financial Analysis

Project Economic Analysis

I. Introduction

1. Tanzania has been experiencing robust growth in the past decade. Particularly in Dar es Salaam, urbanization was expected to accelerate with rapid motorization, resulting in significant congestion around the city. In 2003 when the Dar es Salaam City Council decided to adopt a BRT system, the city population was about 2.5 million, which increased to about 3.5 million when the project was appraised in 2008. The city's population growth rate was about 4.4 percent per year, one of the highest in the region. The current population exceeds 5 million at a growth rate of more than 5.5 percent. According to a UN-HABITAT estimate, it is expected to continue growing to 6.2 million by 2025, with an annual growth rate of between 3.9 percent and 4.1 percent.

2. To deal with the city's increasing congestion, the project aimed at supporting Phase 1 of Dar es Salaam BRT from both physical and institutional aspects. The project also supported the repair of the Zanzibar Airport runway. Through the restructuring process, one of the initial components to support the trunk road rehabilitation and upgrading between Korogwe and Same Road was excluded from the project and the resources allocated to the component were used to support the road infrastructure component for the BRT system.

3. The current economic analysis is focused on two major investment components: Dar es Salaam BRT Phase 1 and Zanzibar Airport rehabilitation. These two components account for 98.4 percent of the total final project costs.

II. Dar es Salaam BRT Phase 1

4. The BRT Phase 1 extends 20.9 km from the central business district, including Kariakoo, Kisutu, and Mchafukoge, to highly dense residential areas, such as Magomeni, Manzese, and Ubungo through Morogoro Road (17.2 km), and Morocco through Kawawa Road (3.7 km). Along the corridors, two segregated exclusive bus lanes with ordinary Portland cement concrete pavement were installed at the middle of the road.

5. Using high-capacity buses with low emissions, the envisaged capacity was 40,000 passengers per hour per direction, which was expected to contribute to efficient, comfortable, and safe transportation in the city. Before the project, a total of 292,000 passenger trips were observed with 15 percent on large buses and 85 percent on traditional minibuses (*daladala*) on Morogoro Road. The corridors were already congested: the average travel time was 95 minutes at the Ubungo bus terminal, and average traffic speed was 10–12 km per hour during peak hours along the corridors. Particularly at major intersections, the average speed was only 4.8 km per hour.

6. In general, the BRT systems have been acknowledged as a cost-effective option to transport a large number of people efficiently in a large urban setting. Traditional minibuses, which are often loosely regulated in developing countries, are inefficient in both operational and fuel efficiency terms. Under the project, 45 *daladala* routes (out of a total of 192) were to be

replaced with 7 new trunk bus lines and 15 feeder bus lines, which were supposed to be served by 148, articulated buses with a capacity of 140 passengers and 100 10-m buses with a capacity of 60 passengers, respectively. The average operating speed of the BRT system was expected to increase to 27 km per hour, which could reduce a typical travel time from 45 minutes to 25 minutes. In addition, bus-operating costs were also expected to reduce. The BRT systems may also decrease external costs, such as environmental pollution and accidents, and induce further land developments along the systems, stimulating economic growth and agglomeration.

Assessment at Appraisal

7. At the appraisal stage, an initial financial and economic assessment was carried out in 2006, to evaluate the economic and financial viability of the BRT Phase 1, in which economic benefits were calculated by taking into account two direct benefits: (a) passenger time savings and (b) reduction of vehicle operating costs, and two indirect benefits: (a) reduction of air pollution and (b) reduction of accidents. The main assumptions made are as follows:

- Daily ridership: 406,000 passenger-trips per day
- Trip time savings: decrease from 45 minutes to 25 minutes
- Peak factor: 9.35 percent
- Value of time: US$0.25 per passenger-hour
- Equivalent days per year: 31.2 days
- Project life: 25 years

8. When these economic benefits were compared with a total cost of BRT investment estimated at US$183 million, the EIRR was estimated at 14.52 percent, with an NPV of US$22.51 million (table 3.1).

9. The financial model showed that the BRT system would be profitable enough to attract two private bus operators and one fare collection company, based on the following additional assumptions:

- Fares: TZS 400 per trunk or feeder trip, plus TZS 100 per transfer
- Buses to be purchased: 148 trunk buses and 100 feeder buses
- Bus acquisition costs: US$ 257,000 per trunk bus; US$82,350 per feeder bus
- Interest rate: 14 percent
- Equity finance to bus operations: 40 percent
- Exchange rate: TZS 1,198 per US$

10. Under these assumptions, the first-year annual revenue was estimated at about US$39.8 million. On the other hand, the total operating expenditure was estimated at US$38.4 million, leaving US$1.49 million to a contingency fund, which would increase to US$3.5 million in the fifth year of operations.

Table 3.1. Economic Indicators and Main Assumptions at Appraisal

Daily ridership	406,000
Fare (TZS per ride)	400
Additional transfer fare (TZS per transfer)	100
Tariff revenue (US$, millions) in 1st year	39.9
Total investment costs (US$, millions)	183.1
Economic indicators:	
NPV (US$, millions)	22.5
Benefits	165.0
Costs	142.5
EIRR (%)	14.5

Assessment Updated

11. When the project was restructured in 2012, the economic and financial model was updated with some actual data incorporated, such as the BRT roadworks, for which the cost estimate increased by 70 percent from US$110 million to US$177 million. The expected ridership was also updated to 524,000 passenger trips per day. While the Project Paper does not provide detailed information on what else was changed, the updated EIRR was estimated at 12.4 percent with and the NPV increased substantially to US$417.3 million. The first-year contingency fund was also reestimated at US$2.5 million (or TZS 3.9 billion), 60 percent higher than originally expected.

In-between Analysis

12. During the project implementation, the economic and financial model was further updated in 2014, which is conceptually similar but uses a slightly different framework. The new model is focused on four economic benefits:

- **Reduction of travel time.** This is a main economic benefit from the new BRT system. Because of efficient and streamlined BRT operations, the BRT passengers were expected to reduce their travel times.

- **Operational cost savings of *daladalas*.** Along the new BRT corridors, traditional minibuses were supposed to be replaced and rerouted. Thus, their operating costs should be eliminated.

- **Auxiliary revenues.** The new BRT system was expected to bring various economic opportunities for DART and bus operators to generate extra revenues, for instance, from advertisement.[25]

- **Reduction of pollution.** This is a major positive externality from the project. The BRT system could contribute to reducing CO_2 emissions. Per capita fuel efficiency

[25] For consistency purposes, this benefit from auxiliary revenues will be omitted from the following analysis, because the original economic analysis in the PAD does not include this kind of benefit.

of new BRT buses would be much better than that of the current minibuses and individual passenger cars.

Ex Post Evaluation

13. The current assessment is based on the in-between assessment model with actual figures reflected. It is ideal to rely on the initial model that was used at the appraisal. However, it is difficult to replicate it because the initial model is not available. The in-between assessment model is considered more accurate and DART is currently using this model to evaluate the following phases of the Dar es Salaam BRT.

14. After long delays in construction of bus lanes, appointment of bus operators and acquisition of required equipment, including buses, the interim operations of BRT Phase 1 commenced on May 10, 2016. The current evaluation is carried out with the information that was available as of end-2016.

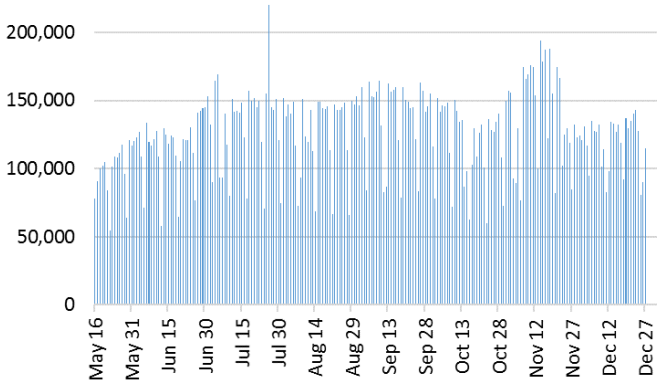
15. **Reduction of travel time.** The passengers' travel time savings are basically depending on ridership and average reduction of travel time. Before the project, the daily ridership was expected at 406,000 passengers at appraisal or 524,000 passengers at the time of reassessment. Since the commencement, the actual daily ridership has been increasing with an average of about 126,000 passenger trips per day (table 3.2). In total, the BRT Phase 1 served 28.4 million passenger-trips during the first eight months. The ridership grew gradually by 72 passengers or at an annual growth rate of 0.06 percent (figure 3.1).[26]

Table 3.2. Total Daily Ridership: Estimate and Actual

	Appraisal in 2006	Updated Assessment in 2012	Actual in 2016 [a]
Daily passenger trips	406,000	524,000	125,809
Annual passenger trips (million)	129.1	166.6	40.0

Note: a. The figures are based on a first eight-month average, under the assumption that the number of annual equivalent days is 318.

Figure 3.1. Actual Daily Ridership after the Commencement, 2016



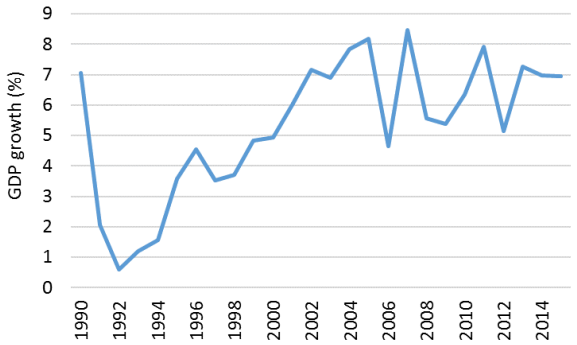
Source: DART

[26] This is the result after the weekly trend is controlled.

16. It is too early to assess growth potential of the Phase 1 system over the long run, but the current ridership is significantly lower than projected. While the revised full operations are supposed to use 177 trunk buses and 128 feeder buses, only 39 trunk buses and 101 feeder buses are operational for the current interim services. In addition, traditional minibus services that are competing against the Phase 1 corridors have not fully been removed despite the original plan (see the following section for more details). As BRT Phase 1 and other lines are being developed and integrated, more economic activities and land value capturing commercial developments may be expected to take place along the BRT corridors. Certainly, this has not picked up yet.

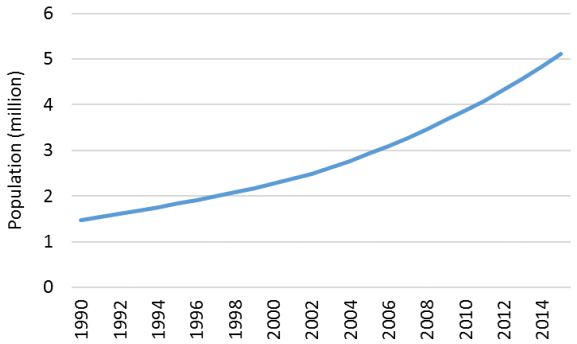
17. In the following ex post analysis, the different levels of daily ridership will be examined, including the current ridership and a projected target of 524,000 passengers per day. The future ridership remains uncertain and depends on a number of internal and external factors, such as the Government's commitment to rerouting competing *daladala* services, as well as the economic growth of the country and Dar es Salaam. Tanzania's economic growth remains strong, though fluctuating (Figure 3.2). The city's urbanization has been accelerated and the city population exceeded 5 million in 2015 (figure 3.3).

Figure 3.2. Tanzania: GDP Growth Rate (%)



Source: World Development Indicators.

Figure 3.3. City Population of Dar es Salaam



Source: World Development Indicators.

18. At appraisal, it was expected that the vast majority of passengers would use trunk buses only. A recent ridership survey shows that 89 percent of the total demand is for trunk-only services. Only 1 percent of the passengers were using feeder buses. The rest were using both

trunk and feeder services, out of which about 85 percent were using trunk and feeder buses once for each. About 15 percent use trunk once and feeder buses twice.

Table 3.3. Daily Ridership by Trunk and Feeder Bus

	At Appraisal in 2006	Updated Assessment in 2012	Actual Average in 2016 (first 8 months)	
	Number	Number	Number	Share (%)
Passenger trips	406,000	524,000	125,809	
Of which, trunk only			111,970	89
Feeder only			1,258	1
Both trunk and feeder			12,581	10
Of which, T + F			10,694	85
F + T + F			1,887	15

19. Regarding people's travel timesavings, the PAD assumed that typical commuting time would decline from 45 minutes to 25 minutes (table 3.3). Given the annual ridership forecast, this translated into a total time saving of 43 million hours per year. In reality, more drastic timesavings were achieved especially in per passenger-trip. This is partly because traffic congestion in the city continues getting worse even during the project implementation period. Comparing travel time just before and after the project, the actual average travel time over the Kimara-Kivukoni corridor was reduced from over 2 hours to 50 minutes. Given the actual ridership figure, this means that 46.7 million hours could be saved on an annual basis.

Table 3.4. Passengers Travel Timesaving

	Appraisal	Actual
Average commuting time (minutes)		
Before the project	45	120
After the project	25	50
Annual passenger-trips (million)	129.1	40.0
Total hours saved (million hours per year)	43.0	46.7

20. Passengers' value of time does not seem to have changed much in real terms. At appraisal, the passengers' value of time was assumed to be US$0.25 per hour (table 3.4). A recent study conducted by DART in 2011 shows that the value of time in Tanzania was US$0.33 per hour. With inflation taken into account, this value is about the same as the estimate at appraisal. The current analysis assumes that the time value would remain the same in 2016 and afterward. Note that the current analysis compares costs and benefits in current monetary terms. Therefore, the value of time is adjusted to be US$0.49 or TZS 1,063 per hour in 2016.[27]

21. The PAD estimated the total value of time to be saved at US$10.8 million per year. The actual savings are of a magnitude despite the fact that the current daily ridership is much lower than projected. Since the commencement of its operations in May 2016, the new BRT system has saved US$16.1 million or TZS 35 billion, which is equivalent to US$22.7 million or TZS 49.6

[27] In the current analysis, the assumed exchange rate is TZS 2,188 per U.S. dollar.

billion on an annual basis. In real terms, this is equivalent to US$11.5 million in 2008 constant U.S. dollars, which is 6.7 percent higher than expected at the appraisal.

Table 3.5. Value of Time and Timesaving

	Appraisal	2011	2016
Value of time			
2008 constant US$/hour	0.25	0.25	
Current US$/hour		0.33	0.49
Total value of time saved per year			
2008 constant US$, millions	10.8		11.5
Current US$, millions			22.7

22. **Operational cost savings of *daladala*.** In the original plan, when the BRT system became operational, traditional minibuses (*daladala*), which are generally inefficient, were supposed to be rerouted and eliminated from the BRT corridors. This has not fully happened yet. At the appraisal, it was estimated that a total of about 7,000 *daladala* were operating along 192 bus routes in Dar es Salaam, out of which 45 bus routes were considered affected by the Phase 1 project (table 3.5). Thus, about 1,600 *daladala* were to be removed. According to a recent *daladala* consultation study conducted in 2011, there were actually 6,600 minibuses operating along 482 routes in the city and 1,800 *daladalas* should be displaced from the Phase 1 corridors. As of end-2016, only about 400 *daladala* have been removed.

Table 3.6. *Daladala* Routes and Buses to be Removed

	Appraisal	Actual
Total routes	192	482
Of which, routes to be removed	45	n.a.
Total *daladala*	7,000	6,600
Of which, ones to be removed	1,641	1,800

23. This is not only negatively affecting the BRT's daily ridership but also hampering efficiency gains in bus operations as a whole.[28] *Daladala* operating costs per passenger-km are much higher than new buses for the BRT system. The majority of *daladala* that are operating in Dar es Salaam are poorly maintained and more than 10 years old. By replacing *daladala* with new BRT buses, significant efficiency gains were expected. Little explanation on this effect is available in the PAD, but the BRT operating costs were estimated at US$1.07 per km for trunk and US$0.78 per km for feeder buses.

24. Per recent DART data, the average annual cost of operating *daladala* was about TZS 64 million or US$30,000 per bus in 2015 (table 3.6). The largest cost factor of their operating costs was associated with driver salaries and other labor costs, which account for 60 percent of the total operating costs. This is followed by fuel costs, which account for about one-quarter of the total operating costs. Each *daladala* consumes 40 litres of gasoline per day and operates for 300

[28] Another implication of this delay is that remaining *daladala* along the Phase 1 corridors are imposing negative externalities on other general traffic, leaving non-BRT lanes congested. However, this impact is not taken into account in the in-between assessment model.

days per year. The fuel price is TZS, 745 per liter. Fuel levies and value added tax are excluded for economic costs.

25. Based on these figures, in theory, an economic cost of TZS 89 billion or US$40 million could have been saved if 1,800 *daladala* had been removed. However, only a fraction of these were displaced as of end-2016. The realized partial benefits were only estimated at TZS 20 billion or US$9 million. For the current analysis, given the Government's commitment to smooth implementation of the whole BRT project, it is assumed that 1,400 remaining *daladala* would be displaced shortly, realizing full benefits from savings of *daladala* operating costs afterward. Technically, in the model, it is assumed that they would be removed in January 2018.

Table 3.7. Annual Operating costs of *Daladala* (TZS, millions per *Daladala*)

	Including Tax	Excluding Tax
Fuel costs[a]	20.94	12.56
Service oil[b]	2.94	2.49
Tire costs[b]	3.78	3.20
Inspection, insurance, and so on[b]	2.10	1.78
Operating labor costs[b]	34.65	29.36
Total	64.41	49.40

Note: a. Fuel levies and excise duties account to 40 percent of the total fuel costs.
b. Value added tax is 18 percent.

26. **Reduction of pollution.** The reduction of air pollution is an important external benefit from the BRT project. Mass transit systems can generally contribute to reducing not only CO_2 emissions but also other pollutants, such as PM, SO_X and NO_X. Given limited local data, the current analysis is focused on CO_2 emissions. At the appraisal, the pollution cost of bus operations was assumed to be the same, US$0.25 per km, regardless of whether it is a new BRT bus or *daladala*. Although the PAD does not provide further detailed explanation on this, it implies that the expected emission reduction only depends on the size of bus fleets, holding traveled vehicle-miles constant.

27. The actual impact is more complex than suggested earlier. Fuel efficiency per fleet is different between *daladala* and BRT buses. Because *daladala* are much smaller, their fuel efficiency is higher: the average fuel efficiency is estimated at 8.5 km, 1.5 km, and 2.5 km per liter for a *daladala*, trunk, and feeder bus respectively. With a CO_2 emission coefficient of 2.7 kg per liter and a carbon price of US$30 per ton,[29] the pollution unit costs are much higher for the BRT buses than *daladala* (table 3.7). Under the current operational scenario, the average daily mileage is 240 km for trunk buses and 200 km for feeder buses. Thus, each trunk bus is estimated to emit 136 tons of CO_2 per year (table 3.8). On the other hand, *daladala* emits about 32 tons of CO_2 based on its annual average fuel consumption (that is, 12,000 l per bus).

Table 3.8. Pollution Unit Costs (US$/km)

	Appraisal	Revised
Trunk bus	0.07	0.053
Feeder bus	0.07	0.032

[29] The World Bank recommended a social carbon price of US$30 per ton (World Bank 2014).

Daladala	0.07	0.009

Table 3.9. Emissions Per Bus and Number of Buses to be Added or Removed

	Per Bus Calculation			Number of Buses Added/Removed		
	Daily Average km	**Fuel Consumption (liter/km)**	**CO_2 Emission (ton/year)**	**Appraisal**	**As of 2016**	**Revised Plan**
New buses						
Trunk bus	240	0.66	136.0	148	39	177
Feeder bus	200	0.40	68.7	100	101	128
Daladalas			32.4	1,641	400	1,800

28. However, the total emissions from the new BRT system are expected to be lower than *daladalas*, because the BRT system requires a smaller number of buses. Each BRT bus has a greater capacity. The PAD assumed that each trunk and feeder bus could accommodate 130 and 23 passengers during peak hours, respectively. Therefore, once all the planned BRT buses are operational and the targeted *daladala* are displaced as planned, about 25,500 tons of CO_2 could be reduced per year, of which the social value would be US$0.76 million or TZS 1.67 billion (table 3.9). Currently, this full benefit has not materialized yet, because of the delays of bus acquisition and compensation to *daladalas*. The realized benefit is only estimated at US$22,000 or TZS 47 million.

Table 3.10. Estimated Total Emission Reductions and Economic Benefits

	Annual CO_2 Emission (1,000 tons)		
	Appraisal	**As of 2016**	**Revised Plan**
New buses			
Trunk bus	20.1	5.3	24.1
Feeder bus	6.9	6.9	8.8
Daladalas	53.2	13.0	58.3
Reduction of emission			
CO_2 (1,000 tons)	26.2	0.7	25.5
Value of reduced CO_2 (US$, millions)	0.785	0.022	0.764
(TZS, billions)	1.717	0.047	1.671

29. **Capital investment costs.** On the cost side, the following capital and operating costs were required to establish and operate the new BRT system. Phase 1 of the BRT system comprises capital investment in corridor roads, bus stations and depots, bus fleet, and fare collection and information systems. At the appraisal, the total infrastructure investment costs were estimated at about TZS 190 billion (table 3.10).

30. The BRT roadwork contract was signed on December 22, 2011, and commenced on March 9, 2012. It was completed by November 7, 2015. Other major infrastructure works were also completed between 2012 and 2015. During the project implementation period, the actual costs increased by 80 percent to TZS 342 billion in Tanzanian shilling terms. In the current

analysis, the total capital investment costs are equally distributed across years, from 2012 to 2015. The unit cost of trunk buses turned out cheaper than expected; however, the number of fleets to be purchased increased (table 3.11).

Table 3.11. Major Capital Investment

	Appraisal		Actual	
	No. of Units	**Cost (TZS, millions)**	**No. of Units**	**Cost (TZS, millions)**
Roadworks (km)	20.9	75,587	20.9	103,209
Trunk stations	29	46,131		61,178
Feeder stations	6			13,240
BRT bus depot	2			24,006
BRT trunk terminals	5			35,072
Bus fleet	248	55,428	305	80,693
Fare collection system		2,875		8,197
Land acquisition		10,302		16,810
Total		190,322		342,404

Table 3.12. Bus Acquisition Costs

	Appraisal		Actual		
	Number	**Unit cost (US$)**	**Number**		**Unit Cost (US$)**
			Plan	**Shipped** [a]	
Trunk buses	148	257,000	177	39	144,000
Feeder buses	100	82,350	128	101	89,000
Total cost (US$, millions)		46.3			36.9

Note: a. As of end-2016

31. **Operating costs.** The operating costs of the new BRT system mainly comprise three elements: (a) bus service operating expenditures, (b) operation and maintenance (O&M) costs of fare collection, and (c) DART Agency management costs. At the appraisal, it was estimated at US$25.2 million or TZS 30.2 billion in total. No detailed explanation is provided in the PAD.

32. With the actual operational data used, the total operating cost of the BRT system is estimated at TZS 59 billion per year (table 3.12). This includes bus service operating costs, O&M costs of fare collection, O&M costs of other station systems and equipment, and DART operating costs. Bus service operating costs are primarily composed of staff salaries (table 3.13), other benefits (that is, TZS 40 million per staff and year), vehicle license and insurance fees (table 3.14), and mileage-dependent operating costs, such as fuel and lubricant and tire costs (table 3.15), with indirect operating costs (3.9 percent of the total operating costs assumed) and back office expenditures (10 percent of the total operating costs) added.

Table 3.13. Summary of Annual BRT Operating Costs

	TZS, millions
Bus service operating expenditures	42,405
O&M expenditures fare collection	5,803
Operating expenditures infra (other system and equipment)	8,775
Opex incurred by DART	2,627
Of which, fund management costs	548
Total	59,610

Table 3.14. Average Salaries by Type of Worker

	Required Staff Per Bus	Monthly Salary (TZS)
Trunk bus driver	2.16	876
Traffic control	0.1175	1,056
Mechanics	0.4225	804
Administrative personnel	0.1	948
Directors and partners	0.005	21,000

Table 3.15. Vehicle License Fees and Insurance Costs

	TZS Per Bus
Vehicle license fee (per year)	290,000
Road transport license fee (per year)	37,000
Garage depot maintenance (per year)	4,522,376
Vehicle cleaning costs (per day)	634
Vehicle insurance fees (% of vehicle value)	30
Vehicle registration fee	150,000
Vehicle inspection fee	5,000

Table 3.16. Kilometer-dependent Operating costs

	TZS. 1,000 per km	
	Trunk Bus	Feeder Bus
Fuel cost	676.2	409.8
Lubricant cost	33.8	20.5
Tire cost	95.4	57.3
Parts and replacements	306.3	105.0
Other maintenance costs	45.1	25.3

33. The fare collection expenditure amounts to TZS 5.7 billion, which is calculated under the assumption that 23 persons would be employed at a monthly salary of TZS 1.928 million (table 3.16). The same level of annual benefits is assumed (that is, TZS 40 million per person). As

other operating costs, 1.5 percent of the total fare revenue to be incurred. In addition, another 1.5 percent is assumed for fare collection system maintenance. In total, TZS 6.37 billion would be incurred per year.

34. DART operating costs amount to TZS 2.1 billion per year (table 3.17). This is assumed to have incurred from the beginning of the project (that is, 2012). Other BRT O&M costs were incurred once the bus services became operational (that is, 2016).

Table 3.17. Annual Fare Collection O&M Costs

	TZS, millions
Staff cost	532.2
Other operating costs	1,710.6
System maintenance costs	1,710.6
Card renewal costs	1,770.2
Total	5,723.6

Table 3.18. Annual DART Operating Costs

	TZS, millions
Staff salary	1,289.4
Staff benefits	2.0
Social security contributions	193.0
Administrative expenses	193.0
Equipment	168.0
Office lease	154.0
BRT police unit	80.0
Total	2,079.4

35. **Results of the economic analysis.** Based on the above figures, the economic efficiency of the project was reevaluated over the 29-year period of evaluation, which comprises 4 years for construction and preparatory works (2012–15) and 25 years for operations (2016–41), which is consistent with the original economic analysis at the appraisal. First, under the original assumption of daily ridership (that is, 406,000 passengers per day), the current model described earlier estimates the project's EIRR at 14.4 percent, which is, not surprisingly, close to the original estimate at the appraisal. Although the framework of the model is slightly different, it captures the same benefits and costs.

36. Given the current level of average daily ridership (that is, 125,809 passengers), the EIRR is 1.8 percent, much lower than expected (table 3.18). This is simply because of the lower-than-expected ridership. Evaluated at a discount rate of 12 percent, the NPV of the project is negative at TZS 44 billion.

37. These economic indicators may be underestimated, because the future ridership is likely to pick up if the city's economic growth is accelerated and the BRT system is expanded to other corridors. Future ridership remains uncertain.[30] If the ridership is doubled to 250,000, the

[30] The benefits from savings of *daladala* operating costs have already been included under the assumption that all remaining *daladalas* would be removed in January 2018.

estimated EIRR will be 8.4 percent with an NPV of about TZS 150 billion (table 3.19). If the ridership picks up quickly to achieve a target of 524,000 passengers per day, as planned, the EIRR will be 18 percent, well above a conventional threshold, with an NPV of about TZS 570 billion. It is still early to assess which scenario would materialize.

Table 3.19. Cost benefitAnalysis with the Current Ridership (TZS, billions)

	Gross	NPV (12%)
Costs	1,895.7	678.3
Ground infrastructure costs	342.4	291.2
Other capital costs (buses, fare collection systems)	123.5	73.9
Bus service operating costs	1,018.1	222.5
Fare collection O&M costs	123.4	26.7
Other infrastructure O&M costs	220.0	48.0
Major maintenance costs of other infrastructure	0.5	0.2
DART operating costs	67.8	15.7
Benefits	3,289.9	633.9
Savings of *daladala* operating costs	2,102.1	410.9
Travel time savings	1,163.5	219.6
Reduction of CO_2 emission cost	24.3	3.3
NPV (TZS billion)		–44.4
Internal rate of return (%)		1.81

Table 3.20. Summary of Cost-benefit Analyses under Different Scenarios

	Daily Ridership	EIRR (%)	NPV @12% (TZS, billions)
Appraisal	406,000	14.42	390.7
Current	125,809	1.81	–44.4
Revised target	524,000	18.00	573.9
Memorandum	250,000	8.44	148.5

Financial Evaluation

38. The PAD provides some financial assessment from the operators' cash flow point of view. Based on the assumed daily ridership, the total tariff revenue was estimated at US$39.8 million, or TZS 47.8 billion, for the first year of operation. No analysis was conducted on the operating cost side.

39. Based on the same figures earlier, a financial analysis is carried out. This aims at assessing the financial viability of the BRT bus service operators and fare collection service providers. Because the Government shoulders capital spending in ground infrastructure, such as roadworks, stations, bus depot, and terminals, these costs (that is, about TZS 342 billion) are not included in the financial analysis. Other costs are assumed borne by DART and (future) service providers.

40. Major adjustments from the above economic analysis are made for revenues and taxes. In theory, financial unit costs can be different from economic ones, for instance, labor costs.

However, no sufficient data are available to distinguish them in Tanzania. Thus, no adjustment is taken in this regard.

41. The current fares vary between TZS 500 and TZS 900, depending on combination of trunk and feeder buses (table 3.20). In total, the fare revenue of TZS 2,370 billion could be expected over 25 years of operations. On the cost side, bus service operating costs need to be adjusted, because fuel prices include 40 percent of tax. This is a large expense for bus operators. In addition, DART and service providers have to pay corporate tax based on net profits. A corporate tax rate of 30 percent is assumed throughout the entire project life. Dividends are calculated based on the projected financial statements and its withholding tax rate is 10 percent. In total, the total cash flow cost is estimated at about TZS 2,600 billion over the project life (table 3.21).

42. Given the current daily ridership, the net cash flow revenue is negative at TZS 59 billion. Again, the project's financial viability depends on future ridership growth. If the ridership is doubled, the net revenue will be TZS 390 billion, generating a high FIRR of 31.9 percent (table 3.22). With the initial target ridership, the project would be highly profitable to DART and potential operators, essentially because the Government has already shouldered significant infrastructure investment costs.

Table 3.21. Daily Ridership and Current Fares

	Daily Ridership	Fare (TZS per person)
Total	125,809	
Of which, trunk only	111,970	700
Feeder only	1,258	500
Both trunk and feeder	12,581	
Of which, T + F	10,694	800
F + T + F	1,887	900

Table 3.22. Summary of Financial Assessment under the Current Ridership

	TZS, billions
Cash flow revenue	
Gross fare revenues	2,373.1
Gratuities discount	–168.7
Cash flow costs	
Other capital costs (buses, fare collection system)	123.5
Bus service operating costs	1,018.1
Fuel tax (40%) adjustment	
Trunk bus	207.1
Feeder bus	60.5
Fare collection O&M costs	123.4
Other infrastructure O&M costs	220.0
Major maintenance of infrastructure	0.5
Corporate tax (30%)	155.2
Dividends paid	319.5
Dividends withholding tax (10%)	35.5

—

	TZS, billions
Net revenue	–59.0

Table 3.23. Summary of Financial Analyses under Different Scenarios

	Daily Ridership	Net Revenue (TZS, billions)	FIRR (%)
Appraisal	406,000	955.0	62.75
Current	125,809	–59.0	—
Revised target	524,000	1,382.0	81.75
Memorandum	250,000	390.4	31.87

III. Zanzibar Airport Rehabilitation

43. The Zanzibar Airport component aimed at rehabilitating the existing runway pavement and constructing a 560 m extension to support the increasing aviation traffic at the Zanzibar Airport. Between 2001 and 2007, the international traffic increased at 21.2 percent per year. The domestic traffic also grew at 25.3 percent per year. The rapid traffic growth is attributed to the increasing local business activities, as well as the increased tourism demand for the island. With a longer runway (in total, 3,000 m), it was expected that a greater number of passengers could be served with larger airplanes.

Assessment at Appraisal

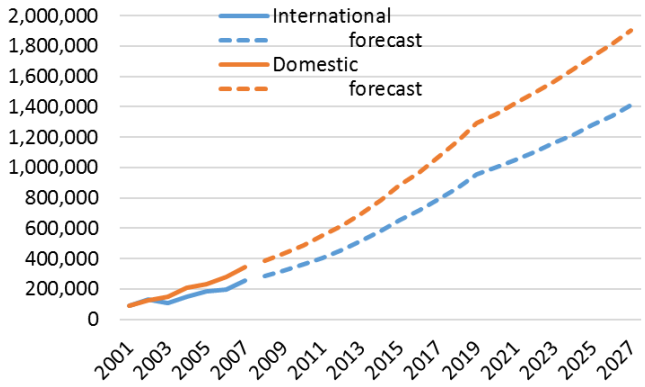
44. A simple economic evaluation was conducted under the assumption that the traffic would increase in a fairly linear fashion. Passenger growth rates were assumed to be 12.5 percent for 2008–15, 10 percent for 2016–19, and 5 percent in 2020–27. The assessment was made based on a 20-year period of project life (figure 3.4). Three types of economic benefits were considered: (a) airport sales operational revenues (US$1 per international passenger), (b) airport tax (US$30 per departing international passenger), and (c) value addition of tourism (US$50 per tourist).[31]

45. The investment cost was estimated at US$16.1 million at the appraisal. The baseline scenario was ‘do nothing’, which was assumed to result in a closure of the airport and a complete collapse of the tourism industry in the island. This seems an extreme assumption. From a cost-benefit analysis point of view, it means that benefits can be measured by gross values of all these revenues, not incremental values caused by the investment. For consistency purposes, however, the same methodology is followed in the analysis in paragraph 46 below.

46. The appraisal estimated the rate of return with airport sales operation revenue and airport tax taken into account, which is considered as an FIRR from an airport operator point of view, at 39 percent, with an NPV of US$11.8 million (table 3.23). When tourism value addition is also considered, the rate of return was estimated at 650 percent, which seems to resemble a broader economic rate of return.

[31] In the PAD, it is not clear whether the last benefit is calculated based on the international or domestic tourist figures. Given the result in the PAD, it seems that both international and domestic tourists are taken into account.

Figure 3.4. Airport Passengers: Actual and Forecast at Appraisal Stage



Source: RGOZ

Table 3.24. Estimated Rates of Return at Appraisal

	(1)	(2)	(3)
	Airport income only	**(1) + Airport tax**	**(2) + Tourism value addition**
IRR (%)	<1	39	650
NPV (US$, millions)	–11.2	11.85	396.2

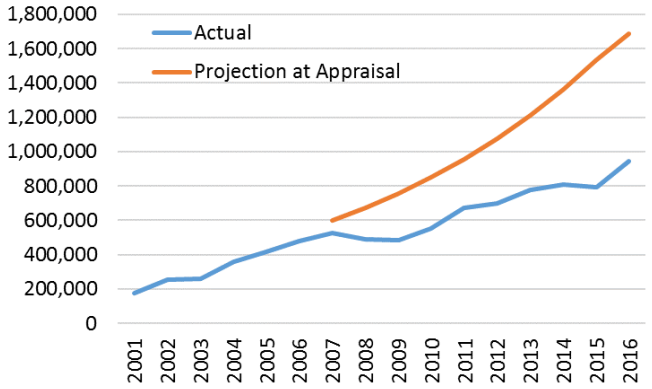
Ex Post Assessment

47. The runway rehabilitation and expansion works were completed and the runway was opened in August 2010. The actual investment was US$39.3 million, more than double compared to the original cost estimate.

48. Actual airport traffic has been lower than expected. While the appraisal expected more than 1.6 million passengers for the year of 2016, the actual traffic amounted to about 950,000 passengers (figure 3.5). The average growth rate for the last 10 years was 7.5 percent, 20 percent to 50 percent lower than expected. Given the relatively modest actual growth, it is assumed that the total passengers would increase at 5 percent per year for the rest of the project evaluation period (2009–28). The project life is the same as the ex ante evaluation, that is, 20 years.

—

Figure 3.5. Actual Airport Passengers after the Project



Source: Zanzibar Airports Authority

49. The same unit benefits are used as the appraisal (that is, airport income of US$1 per international passenger, airport tax of US$30 per departing international passenger, and tourism value addition of US$50 per passenger).

50. **The result.** With only airport income taken into account, the NPV is estimated to be negative at US$36.1 million with a discount rate of 12 percent (table 3.25). When airport taxes are added, the FIRR is estimated at 12.4 percent, with is lower than expected but above the conventional threshold. The NPV is about US$1.54 million over the 20-year period. When tourism value addition is also taken into account, the rate of return is calculated at as high as 87 percent. Thus, from a broader economic point of view, the project is still viable despite the lower-than-expected airport traffic after the project.

Table 3.25. Actual Rates of Return Ex Post Project

	(1)	(2)	(3)
	Airport income only	**(1) + Airport tax**	**(2) + Tourism value addition**
IRR (%)	—	12.40	87.6
NPV (US$, millions)	–36.1	1.54	340.0

Annex 4. Bank Lending and Implementation Support/Supervision Processes

(a)Task Team members

Names	T i	Unit	Responsibility/ Specialty
Lending			
Dieter Schelling	Lead Transport Specialist	AFTTR	Task Team Leader
Solomon Muhuthu Waithaka	Senior Highway Engineer	AFTTR	Highway Engineer
Yonas Eliesikia Mchomvu	Transport Specialist	AFTTR	
Zena Ahmed Said	Consultant	AFTTR	
Mercy Mataro Sabai	Senior Financial Management	AFTFM	
Edith Ruguru Mwenda	Senior Counsel	LEGAF	
Pascal Tegwa Senior	Procurement Specialist	AFTPC	
Luis Schwarz Senior	Finance Officer	LOAFC	
Donald Mneney	Procurement Specialist	AFTPC	
Samuel Zimmerman	Sr. Urban Transport Specialist	ETWTR	Peer Reviewer
Juan Gaviria	Sector Leader AFTTR	AFTTR	Peer Reviewer
England Rogasian Maasamba	Team Assistant	AFCE1	
Grace Mayala	Team Assistant	AFCE1	
Nina Jones	Program Assistant	AFTTR	
Nina Chee	Senior Environmental Specialist	AFTEN	
Yvette Djachechi	Senior Social Development	AFTEN	
Mary Bitekerezo	Senior Social Development		
Mwenda, Edith Ruguru	Senior Counsel	LEGAM	Country Lawyer
Supervision/ICR			
Afsharnia, Firouzeh	Social Consultant	AFTCS	Social safeguards
Agarwal, Om Prakash	Senior Transport Specialist	AFTTR	Urban Institutional Specialist
Archondo-Callao, Rodrigo	Senior Highway Engineer		Highway Engineer
Bello Quintero, Elkin Kenneth	Consultant		Bus Rapid Transit
Bitekerezo, Mary C.K.	Sr. Social Development Specialist	AFTCS	Social Safeguards
Bofinger, Heinrich	Consultant	AFTTR	Aviation Consultant
Delmon, Jeffrey John	Senior PPP Specialist	GTPSH	Public Private Partnership
Delmon, Victoria Hilda Rigby	Senior Counsel	GWA02	Public Private Partnership
Escalante Hernandez, Cecilia Nallely	Consultant	GTI01	Monitoring and Evaluation
Finn, Brendan	Consultant	AFTTR	Bus Rapid Transit
Freeman, Peter Nigel	Consultant	GTI01	ICR Author
Gericke, Petrus Benjamin	Lead Transport Specialist	AFTTR	Highway Engineer
Gorham, Roger	Transport Economist	AFTTR	Urban Transport
Gui, Benqing Jennifer	Senior ICT Specialist	GTI11	ICT
Guitink, Paulus A.	Consultant	AFTTR	Bus Rapid Transit
Henriquez Fernandez, Virginia Maria	Consultant	GTI01	Transport Economist
Limi, Atsushi	Senior Economist	GTI01	Transport Economist
James, Emmanuel A.	Lead Transport Specialist	AFTTR	Program Leader

Jones, Nina M.	Program Assistant	AFTTR	Team Assistant
Kaboyo, Felly Akiiki	Operations Officer	AFTTR	Operations Analyst
Kaiza-Boshe, Theonestina	Consultant	AFTTR	Environmental Safeguards
Kamukala, Godfrey Lweyemamu	Consultant	AFTTR	Social Safeguards
Kayonko, Juma	Consultant	AFTEN	Environmental Safeguards
Khan, Farida	Operations Officer	AFTTR	Operations Analyst
Kibbassa, Jane A. N.	Senior Environmental Specialist	AFTEN	Environmental safeguards
Kinyero, Gisbert Joseph	Senior Procurement Specialist	AFTPC	Procurement Specialist
Lee, Sangjoo	Senior Transport Specialist	AFTTR	Urban Specialist
Lewi, Negede	Snr. Highway Engineer	GTI01	Highway Engineer
Liaplina, Aleksandra	Consultant	GTI01	PPP Specialist
Luhanga, Baruany Elijah A. T.	Consultant	AFTTR	Electrical Engineer
Mayala, Grace Anselmo	Team Assistant	AFCE1	Team Assistant
Mchome, Beatrice Solomon	Consultant	AFTCS	Social Safeguards
Mchomvu, Yonas Eliesikia	Senior Transport Specialist	GTI01	Task Team Leader
Mukaindo, Stephen Mugendi	Senior Legal Counsel	LEGAM	Country Lawyer
Natai, Allen David	Senior Transport Specialist	GTI01	Highway Engineer
Nkya, Fredrick Manase	Consultant	GTI01	Highway Engineer
Obongo, Jacob Omondi	Consultant	GSU07	Social Safeguards
Raffo, Veronica Ines	Senior Infrastructure Specialist	GTI04	Road Safety Specialist
Riverson, John D.	Lead Transport Specialist	AFTTR	Highway Engineer
Robinson, Shalonda	Team Assistant	AFTTR	Team Assistant
Rubiano Barrero, Luis Fernando	Consultant	GTI01	Bus Rapid Transit Operations
Rwechungura, Charles R.B.	Consultant	GTI01	Safeguards Lawyer
Rwenbangira, Theophil	Consultant	GTI01	Highway Engineer
Sabai, Mercy Mataro	Sr. Financial Management Specialist	AFTFM	FM Specialist
Sawyer, Monica	Operations Officer	GTI01	Operations Officer
Schelling, Dieter E.	Lead Transport Specialist	AFTTR	Task Team Leader
Schliessler, Andreas	Senior Economist	AFTTR	Transport Economist
Schwarz, Luis M.	Senior Finance Officer	WFALN	Finance Officer
Segerlin, Steven Craig	Consultant	GTI01	Urban Specialist
Sengerema, Sylvester Jaja Lugiko	Consultant	AFTTR	Safeguards Lawyer
Seth, Subhash C.	Senior Highway Engineer	AFTTR	Highway Engineer
Shahriari, Helen Z.	Senior Social Specialist	AFTCS	Social Safeguards Specialist
Simbeye, Finnigan Frazer	Consultant	GTI01	Communication
Waithaka, Solomon Muhuthu	Senior Highway Engineer	AFTTR	Highway Engineer
Waters, Warren	Consultant	AFTTR	Social Safeguards Specialist
Wolde Woldearegay, Desta	Program Assistant	AFTTR	Team Assistant
Matumbo, Faith-Lucy	Program Assistant	AFCE1	Team Assistant
Mziray, Judith Elimhoo	Team Assistant	AFCE1	Team Assistant

Nabeta, Loy	Communications Officer	AFCE1	Communication Specialist
Bald, Andre	Snr. Urban Specialist	AFTU1	Urban Specialist
Gomez, Arturo Ardila	Lead Transport Economist	GTI10	Bus Rapid Transit
Wang, Mei	Senior Counsel	LEGAM	Country Lawyer
Dodero, Abel Lopez	Urban Transport Specialist	GTI04	Bus Rapid Transit
Harsi, Naima	Social Development	AFTCS	Social Safeguards
Tegwa, Pascal	Senior Procurement Specialist	AFTPC	Procurement Specialist
Mneney, Donald	Senior Procurement Specialist	AFTPC	Procurement Specialist
Said, Zena Ahmed	Consultant	AFTTR	Transport Consultant
Mwenda, Edith Ruguru	Senior Counsel	LEGAM	Country Lawyer
Maasamba, England Rogasian	Team Assistant	AFCE1	Program Assistant
Chee, Nina	Senior Environmental Specialist	AFTEN	Environmental Safeguards
Djachechi, Yvette	Senior Social Development Specialist	AFTCS	Social Safeguards

(b)Staff Time and Cost

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No of Staff Weeks	US$, thousands (including travel and consultant costs)
Lending		
Bofinger, Heinrich (97254)	0.0	4.1
Mchomvu, Yonas Eliesikia (319906)	20.5	16.4
Riverson, John D. (19056)	0.0	2.0
Sabai, Mercy Mataro (20258)	3.2	3.4
Schelling, Dieter E. (80672)	14.3	94.7
Schliessler, Andreas (61723)	1.5	7.1
Waithaka, Solomon Muhuthu (257836)	2.1	4.6
Total:	**41.5**	**133.2**
Supervision/ICR		
Bello Quintero, Elkin Kenneth (491600)	0	7.0
Delmon, Victoria Hilda Rigby (291801)	27.98	154.4
Escalante Hernandez, Cecilia Nallely (507893)	0	5.4
Freeman, Peter Nigel (112402)	0	31.6
Gui, Benqing Jennifer (165941)	3.88	19.8
Henriquez Fernandez, Virginia Maria (430757)	0	4.4
Iimi, Atsushi (282057)	1.1	5.9
Liaplina, Aleksandra (452205)	0	4.6
Mchomvu, Yonas Eliesikia (319906)	123.49	168.7
Natai, Allen David (495952)	0	9.2
Nkya, Fredrick Manase (513120)	0	3.1
Raffo, Veronica Ines (240591)	4.5	10.5
Rubiano Barrero, Luis Fernando (370401)	0	13.3
Segerlin, Steven Craig (489878)	0	6.7
Shahriari, Helen Z. (88064)	18.23	96.3
Simbeye, Finnigan Frazer (508343)	0	0.3
Kibbassa, Jane A. N. (267250)	13.67	19.4
Bitekerezo, Mary C.K. (151276)	0.77	4.1
Kajubi, Gibwa A. (21585)	0.55	4.1
Obongo, Jacob Omondi (505630)	0	4.1
Afsharnia, Firouzeh (313126)	0	9.7
Agarwal, Om Prakash (73998)	0.5	4.7
Archondo-Callao, Rodrigo (16387)	0.7	3.0
Delmon, Jeffrey John (264475)	0.73	3.9
Finn, Brendan (280979)	0	60.3
Gericke, Petrus Benjamin (248597)	0	0.8
Gorham, Roger (182173)	0.13	0.5
Guitink, Paulus A. (71466)	0	7.8

James, Emmanuel A. (11452)	0.52	6.3
Jones, Nina M. (82342)	0	0.1
Kaboyo, Felly Akiiki (23072)	2.03	5.3
Kaiza-Boshe, Theonestina (160241)	0	1.0
Kamukala, Godfrey Lweyemamu (253471)	0	35.7
Kayonko, Juma (361251)	0	2.2
Kedia, Yash Pal (21171)	0	6.9
Khan, Farida (3229)	0.63	0.4
Kinyero, Gisbert Joseph (218064)	0.5	0.5
Lee, Sangjoo (443660)	0	1.7
Lewi, Negede (153025)	25.97	132.2
Luhanga, Baruany Elijah A. T. (292695)	0	1.1
Mayala, Grace Anselmo (334648)	0	0.9
Mchome, Beatrice Solomon (441203)	0	0.6
Mpita, Thabit (170544)	0.13	0.0
Mukaindo, Stephen Mugendi (322812)	0	1.8
Robinson, Shalonda (154367)	0	0.4
Rubiano Barrero, Luis Fernando (370401)	0	13.3
Rwechungura, Charles R.B. (429356)	0	15.0
Rwenbangira, Theophil (217599)	0	8.7
Sabai, Mercy Mataro (20258)	0.43	0.5
Schelling, Dieter E. (80672)	12.01	87.5
Schwarz, Luis M. (82804)	0	1.1
Sengerema, Sylvester Jaja Lugiko (428348)	0	2.5
Seth, Subhash C. (81250)	0	18.3
Waithaka, Solomon Muhuthu (257836)	1.6	3.5
Waters, Warren (178462)	0	12.7
Wolde Woldearegay, Desta (259485)	0	0.2
Total:	**240.05**	**1,024.2**

Annex 5. Beneficiary Survey Results

Not Applicable

—

Annex 6. Stakeholder Workshop Report and Results

Not applicable

—

Annex 7. Summary of Borrower's ICR and/or Comments on Draft ICR

Project Context, Development Objectives, and Design

Introduction

1. This PCR is the contribution of the GoT in the ICR of the CTCP2 appraised in 2008 with the support of the GoT IDA. Both the Government and the development partner attached great importance toward the achievement of the PDOs. The PCR provides an evaluation of the CTCP2 implementation and operation against the costs and benefits that have been derived from the project finances. The PCR also provides an assessment of lessons learned, the financiers' performance in relation to their respective obligations under the financing agreements, and the extent to which the purpose of the finances was achieved. It is intended that the project performance data provided in this PCR will assist the World Bank in the preparation of its final ICR.

Context at Appraisal

2. The GoT prepared a 10-year TSIP and based on it a three-year rolling investment plan commensurate with the Medium-term Expenditure Framework. The planned annual investments and operating costs in the sector amount to about US$1 billion per year (8 percent of GDP), of which about US$300 million per year would be O&M costs to be financed from user charges and US$700 million are planned investments, including US$100 million envisaged to be financed by the private sector through PPP arrangements. About US$300 million equivalent of the investment needs to be annually financed from the GoT's budget resources and a further US$300 million per year is needed from development partners. Although ambitious, it is assessed that such investments are required to achieve the Millennium Development Goals for poverty reduction. The components to be financed under this project are high-priority items under the TSIP.

3. This project contributes to Tanzania's poverty reduction strategy (MKUKUTA), Tanzania's National Vision 2025, and Zanzibar's Vision 2020, all of which aim at reducing absolute poverty by 50 percent in 2010 and eradicating it by 2025. The CTCP2 mainly supported the Mkukuta cluster one 'Growth of the Economy and Reduction of Income Poverty', which aimed among others at resolving infrastructure bottlenecks, particularly in transport and energy.[32] All three CTCP2 components contributed in an important manner to the MKUKUTA and MKUZA (*Mkakati wa Kukuza Uchumi, Zanzibar*) cluster one goals.

4. **Component A.** The urban transport component, contributed in addressing the rapidly growing urban transport congestion that threatens to stifle the attractiveness of Dar es Salaam as a business center of the country and imposes huge costs on the economy.

5. **Component B.** Support of TANROADS ensured the capacity building to TANROADS for implementation of activities under Component B.

6. **Component C.** The Zanzibar Airport component ensures that this airport can cope with

[32] World Bank. *Joint Assistance Strategy for the United Republic of Tanzania* Report 38625-TZ.

the rapidly growing demand triggered by tourism, which is the mainstay of the economy of the island. The CTCP2 is a Specific Investment Loan. It follows on from the CTCP, under which Components A and B of this project were prepared. Component C, the Zanzibar Airport runway repair works, was originally under the Second Integrated Roads Project. However, the contractor charged with the works failed to perform and his contract was cancelled. The Second Integrated Roads Project credit was closed on December 31, 2006, and it was decided to finance the Zanzibar airport runway under the CTCP2 credit.

7. The GoT, in its letter dated May 22, 2007, requested IDA financing for the above components[33] of US$170 million. Meanwhile, mainly due to inflation in the construction sector and the devaluation of the U.S. dollar, the amount needed to finance the project has increased to US$213 million, while the IDA amount available in this financial year (for this sector) is only US$190 million. This leaves a financing gap of US$23 million which the Government will be required to fill within 24 months after effectiveness of the credit through either its own funding or that of a development partner.

Project Development Objective and Key Indicators

8. The World Bank Board of Directors approved the CTCP2 on May 27, 2008, and the Financing Agreement in SDR 115.4 million (US$190,000,000 equivalent) inclusive of all taxes was signed on July 10, 2008, and became effective on November 28, 2008. The effectiveness deadline was extended beyond 90 days after the World Bank introduced new effectiveness conditions related to a Project Implementation Plan, Subsidiary Agreement, a Memorandum of Understanding, and Filling Finance Gap. The funds were made available for disbursement on January 19, 2009. The original credit closing date was on December 31, 2011.

9. The original project was restructured in August 2011 by strengthening of institutional arrangement for implementation of Component A, dropping rehabilitation of Korogwe-Same Road, formalizing design review for Zanzibar Airport, dropping legal covenant for filling the financing gap, and extending the credit closure to December 31, 2014, to accommodate smooth completion of the project. The Board approved the CTCP2 AF in the amount of SDR 64.9 million (US$100 million equivalent) on January 15, 2013.

10. The AF credit is financing the cost overrun associated with the implementation of the BRT system. The approval included extension of the closing date of the project from December 31, 2014, to December 31, 2016, to facilitate completion of the BRT infrastructure works and cover the first year of operation of the BRT system. Therefore, the revised credit amount is US$290 million and the revised credit closing date is December 31, 2016.

11. The rationale for AF was to finance the cost overruns for completion of the CTCP2 activities, which was necessary to fully achieve the PDO. The cost overruns under the project were primarily a result of the following:

(a) Higher costs than initially expected on the contractors' general obligations for

[33] IDA funding was also requested to cover a fourth component, consisting of performance-based management and maintenance of roads. Meanwhile, this has been covered through an amendment of the parent project, the CTCP, and respective contracts have been awarded.

execution of works, including fixed obligations (establishment of camps, accommodation, mobilization and demobilization, and so on); value-related obligations (financing costs, risks, and so on); and time-related obligations (bonds, guarantees, traffic management, running costs of site, and so on)

(b) Increase of cost of inputs. The contractors' obligations accounts for 16.7 percent, while the works items account for the remaining 83.3 percent of the updated cost estimate. For the major items, the 44.8 percent cost increase for roadworks and 36.3 percent for bus station buildings could be explained by the 33 percent cumulative inflation in Tanzania between October 2009 and December 2011.[34] Within the same period, the inflation for housing, water, electricity, gas, and other fuels was 36.3 percent. In addition to the above inflation factor, the contractors' general obligations were also affected by the risk margins by the contractors, which could explain the 668 percent increase.

12. The World Bank financed the project 100 percent inclusive of all local taxes.

13. CTCP2 was proposed as a Specific Investment Loan. This instrument was selected as the most appropriate to support sector reforms and capacity building, complemented by targeted infrastructure investment, all to be accomplished within a defined period.

14. The original PDO was to support Tanzania's economic growth by providing enhanced transport facilities that are reliable and cost-effective, in line with MKUKUTA and the National Transport Policy and Strategy. The revised PDO was to support the recipient's efforts to achieve economic growth by providing reliable and cost-effective (a) mass transit system to the selected corridor in Dar es Salaam City and (b) airport facilities to Zanzibar Island.

15. The original key outcome indicators were (a) average rush hour travel time of public transport users in Dar es Salaam, (b) average vehicle operating cost on the Korogwe to Same trunk road, and (c) satisfactory rating of Zanzibar Airport facilities by both airlines and passengers.

16. The revised key outcome indicators were (a) average rush hour travel time of public transport users in Dar es Salaam, (b) satisfactory rating of public bus transport users between Kimara and Kariakoo and Kivukoni along the BRT corridor, and (c) satisfactory rating of Zanzibar Airport facilities by both airlines and passengers.

Project Components

Component A: Dar es Salaam Urban Transport

17. This component involved the establishment of the Dar es Salaam BRT system, studies, and capacity building of DART. The works component involved construction of the Dar es Salaam BRT infrastructure - Phase 1 (20.9 km), consisting of Kimara-Ubungo-Kivukoni route (15.7 km), Msimbazi-Kariakoo terminal (1.5 km), and Kawawa road from Magomeni-Morocco terminal (3.7 km). The works component was supervised by TANROADS, while the DART

[34] Tanzania National Bureau of Statistics (www.nbs.go.tz).

Agency was involved in management of the studies, capacity-building activities, and managing of the operation of the BRT system.

18. The construction provided a segregated lane in the middle of the respective trunk routes dedicated for the BRT buses. The capacity building to DART Agency was necessary as the DART Agency was young (established about a year before commencement of the project) and because of the 'newness' of the project. IDA, with an estimated amount of US$87.2 million, financed the component.

Component B: Support of Tanzania National Roads Agency (TANROADS)

19. The component involved capacity building to the TANROADS for implementation of the BRT infrastructure under Component A. TANROADS was also responsible for the overall coordination of the project and financial management. IDA, with an estimated amount of US$0.5 million, financed the component.

Component C: Zanzibar Airport and Transport Studies

20. The component involved rehabilitation and extension of the Zanzibar Airport runway, carrying out transport studies and engagement of TA to the Zanzibar MolCT. IDA, with an estimated amount of US$15.5 million, financed the component.

Risk Assessments and Mitigation at Appraisal

21. The project risks were as detailed in the PAD, for CTCP2, April 30, 2008.[35]

Implementation Arrangements

22. TANROADS was the implementing agency of the project. All aspects of project management, including procurement, contract management, financial management, and safeguards procedures were executed in a fully mainstreamed manner within TANROADS' organizational structure. TANROADS procured and managed the civil works and supervision contracts for the DART infrastructure. The chief executive of TANROADS was the accounting officer for the project, assuming overall responsibility for accounting for the project funds. TANROADS managed the project's Designated Account. Disbursement from the IDA credit was made based on quarterly interim financial reports. Disbursement from the Designated Account was made based on certified invoices received from the executing entities DART and the MoICT, Zanzibar.

Partnership Arrangement

23. The operation of the BRT system was to be conducted under PPP, with a private sector investment of about US$40.9 million for bus operation and fare collection contracts. The AfDB financing, under Roads Sector Support Project -1 (RSSP-1), was extended to the MoICT to support the institutional reforms program. The reforms were being implemented in three stages: Stage 1: review and conceptual planning for the institutional changes set out in the ZTMP with

[35] World Bank. 2008. *PAD, Second Central Transport Corridor Project*. Report 43399-TZ.

formulation of comprehensive proposals for the sector restructuring, Stage 2: development of the detailed planning required for the preparation of the institutional reforms, and Stage 3: actual implementation of institutional changes comprising (a) a reformed MolCT, (b) a new transport regulatory authority, (c) a new road authority, and (d) rationalization of excessive staff with provision to offer them alternative employment through labor-based contractors. The World Bank funded Stage 1, whereas the AfDB through RSSP-1 funded Stages 2 and 3.

24. Stage 2 of the assignment was completed in March 2015 and the recommendations were received and approved by the RGoZ. Specifically, the RGoZ approved implementation of a reformed ministry, staff rationalization, and the creation of one transportation regulatory authority for maritime and road. In September 2016, the RGoZ requested further inputs on the formation of a road authority.

Sustainability

25. Critical for the sustainability of the components of this project was the continuation of implementation of reforms in the sector. The most important of these are as follows: (a) the strengthening of the policy setting, strategic planning, and sector oversight and monitoring capacity of MolCT; (b) the transformation of TANROADS into a truly autonomous and effective road authority through the passing of a respective bill; (c) the adoption and implementation of the Road Safety Policy and Strategy; (d) the adoption by the GoT of a PPP policy and institutional framework; (e) the setting up of effective urban transport management capacity in Dar es Salaam (through DART and/or the proposed urban transport authority); and (f) the implementation of the reforms in the transport sector in Zanzibar as proposed in theZTMP, including the focus of the MoICT on policy setting and sector oversight, the creation of appropriate executive and regulatory agencies (the proposed Zanzibar Roads Authority and Zanzibar Transport Regulatory Authority), and the implementation of PPPs in the airport and ports sector. These reforms were part of the sector dialogue between sector stakeholders. They were also linked to the various general budget support instruments existing, including the Poverty Reduction Strategy Credity of the World Bank.

Implementation and Outcomes

Outputs by Component

26. For outputs by component, see annex 2.

Fiduciary Issues

Procurement

27. The borrower complied fully with all loan covenants of the restructured project. The fiduciary compliance was satisfactory as the procurement was completed for all works and consultancy services. Also, the audits are current with no material issues.

Financial Management

28. The project implementation arrangements were mainstreamed into the existing

—

TANROADS structure and system, including financial management. The TANROADS' chief executive assumed overall financial management responsibility for project funds. The system ensured that the project financial management activities were carried out efficiently and in accordance with acceptable international accounting standards, the Government Public Finance Act 2001, and the IDA Financing Agreement. TANROADS' computerized accounting system was used to report on project finances. The project finances were released and used in accordance with the agreed financial schedule. The World Bank support missions reviewed the Project Financial Management arrangements in correct recording of all transactions and balances and found them to be in order.

Environment and Safeguard Compliance

29. Package 3 (Construction of Depot at Jangwani) required an ESIA. Package 3 entailed construction of an administration block, a main building, a fuel shed, a visual inspection shed, generator houses, an ablution block, and associated services; construction of concrete-finished access road and parking area and construction of block wall fence. The proposed depot site is located in the Jangwani flood plains within the larger Msimbazi River Basin. The area is environmentally sensitive and has a tendency to get flooded during the long rains.

30. The DART Agency commissioned Professor Jamidu Katima in 2008, through a one-year contract, to carry out the ESIA study for the proposed bus depot and associated facilities and services. In fulfillment of the Tanzania Environmental Impact Assessment procedure, the project was registered with the National Environment Management Council and after screening it was found that the project required an Environmental Impact Assessment study.

31. The contractor's ESMP was prepared for the projects to guide implementation of the ESMP and monitoring activities on a continuous basis throughout project implementation.

32. The RAP was prepared and approved by the chief government valuer to guide mitigation of social impacts and implementation of compensation for the PAPs. The contractor engaged HIV/AIDS service providers to mitigate against social impacts, mainly HIV/AIDS, resulting from interaction of workers and the local communities.

Decommissioning Plans

33. Only Package 3 (Construction of Depot at Jangwani) prepared a decommissioning plan. The plan was included in the ESIA report.

Assessment of Outcomes

Project Development Objective Indicators

34. The revised PDO was to support the recipient's efforts to achieve economic growth by providing reliable and cost-effective (a) mass transit system to the selected corridor in Dar es Salaam City and (b) airport facilities to Zanzibar island.

35. The revised key outcome indicators were (a) average rush hour travel time of public transport users in Dar es Salaam, (b) satisfactory rating of public bus transport users between

Kimara and Kariakoo and Kivukoni along the BRT corridor, and (c) satisfactory rating of Zanzibar Airport facilities by both airlines and passengers. At project closure, that is, December 31, 2016, all the project components had been completed. The BRT had started operations on May 16, 2016 while Zanzibar rehabilitation and extension works were completed by August 2010. The project, on the whole, met most of the outcome indicators as detailed in the CTCP2 Results Framework.

Relevance of Objectives, Design, and Implementation

36. The relevance of objectives is Substantial. As stated in the PAD, the PDO is consistent with the national development strategy in Tanzania popularly known as MKUKUTA. In November 2010, the GoT finalized a new five-year National Strategy (2010/11–2014/15), MKUKUTA II, based on Tanzania's Development Vision 2025. This strategy aims to transform Tanzania into a middle-income country by 2025. The strategy notes that the private sector is constrained by poor infrastructure and an inadequate business environment and recommends, among others, improving the infrastructure for road and railway transport, ports and harbors, and facilitating transit traffic. The BRT system goes a long way in the improvement of the roads infrastructure and facilitating transit traffic for economic growth.

37. The key PDO indicators may also be rated Substantial. The original indicators were modified mainly to take into account changes in the components, notably dropping of component B (Korogwe-Same Road) and replacing it with 'Support to TANROADS' and changing the design of the Zanzibar International Airport. A Dar es Salaam Transport Master Plan study funded by JICA (2007), found 80 percent dissatisfaction rating with the overall present transport arrangements. The main aspects for which the respondents showed higher concern were waiting time (and access time), comfort, and safety. So, including a comparison of the time used to travel between Ubungo and the central business district and the extent of satisfaction of passengers address the public concerns well.

Justification of Overall Outcome Rating

38. CTCP2 is rated Satisfactory because of its contribution to support Tanzania's efforts to achieve economic growth by providing reliable and cost-effective (a) mass transit system to the busiest corridors in Dar es Salaam City and (b) airport facilities to Zanzibar Island.

Overarching Themes, Other Outcomes, and Impacts

Policy and Institutional Reforms in Transport Sector

39. Among the subprojects financed under CTCP2 were the consultancy services for review and conceptual planning of institutional changes set out in the ZTMP. The ZTMP states, "The base for sustainable growth is institutional reform with a clear separation of Policy from management of Regulation and Operations." The outcome of the consultancy service would not only contribute to the implementation of the institutional framework but also guide the implementation of the reform process.

Other Transport Sector Development and Capacity Support

—

40. The project had taken into account high priority projects, which were stipulated in the implementation of the Zanzibar Transport Policy and the ZTMP. These include

- Major upgrading of the Zanzibar Airport involving new terminal building, new taxiways, apron, and landside facilities; and

- Upgrading of the principal entry roads into Zanzibar Town plus development of new urban access roads. The design of this project in preparation for its implementation was carried out.

41. Support for capacity building was also taken into account through the subcomponent of support to TANROADS, DART Agency, and the MoICT, Zanzibar. Apart from formal training provided to some of the agencies' and MoICT staff, informal training was gained through working with the Technical Assistants working in the respective institutions.

Assessment of the Government Performance

42. The performance of the GoT can be assessed as follows:

Positive

- The PDOs were consistent and in conformity with the National Development Vision 2025, the Millennium Development Goals (2015), and the country's Poverty Reduction Strategy, the National Transport Master Plan, and the National Development Plan. It was therefore consistent with the government planning and legal frameworks.
- The Government demonstrated its commitment by meeting all the conditions of effectiveness and disbursement.
- Reliable and adequate systems for financial management were put in place.

Negative

- Contractual non-compliance unsatisfactory progress with respect to the speed in handling the claims and pending payments.
- Compensation - the Government did not adequately resolve land acquisition issues before handing over sites to contractors.
- Review of designs was not adequately performed leading to claims due to design shortfalls.

Assessment of IDA Performance

43. The performance of IDA in the project can be assessed as follows:

Positive

—

- Project was consistent with the CAS.
- The World Bank played a leadership role among donors in supporting road sector reforms and capacity building in the country.
- Regular implementation support missions were timely and provided the necessary support in the project implementation. They were invaluable in enforcing fiduciary measures and safeguards.

Negative

- Some delays in providing 'no-objections'
- No convincing reasons were provided for the borrower's request for second AF

Economic and Financial Analysis (See Annex 3 for results)

Challenges, Lessons Learned, and Conclusion

Challenges

(a) Many design reports, notably for the BRT infrastructure were found to be faulty or missing adequate details for proper implementation of the project. The anomaly has led to substantial implementation delays and claims.

(b) Contractual disputes resulted in the termination of four works contracts out of seven. All the four contracts were awarded to the same contractor.

(c) Physical obstructions in the form of power lines, telecommunication cables, water pipes, and sewerage pipes constituted major obstacles to the implementation progress. This could be attributed to lack of proper coordination among service providers and the road owners during design and project implementation.

Lessons Learned

(a) Adequate preparation in resettlement of PAPs is a major requirement for a well-performing project. All the parties should involve themselves more deeply in the preparation stage to avoid disputes later. Where the cost of resettlement action is relatively high, the financier may consider assisting in financing RAP implementation (as is currently the case for taxes) to ensure achievement of the PDO.

(b) Ensure that designs are complete by picking the right consultant and carrying out extensive reviews before using the designs.

(c) In crosscutting projects such as this one, involvement of the main stakeholders, especially those at the leadership level, is essential for smooth project implementation. As noted during implementation, after some delays at the start of the works contracts, the progress improved remarkably upon the introduction of a BRT Steering Committee as a high-level coordination and decision-making body.

The arrangement also helps ensure maintenance and sustainability of the project.

(d) ESMPs should always be abided by to ensure that "the project does not leave the people and environment worse off" than before the project. Furthermore, ignoring the environmental management recommendations may lead to costly damages to the works as experienced at Jangwani Depot construction. One of the mitigation measures proposed for the Jangwani Depot was for the construction to be done during the dry season. Though it was difficult to implement, the recommended mitigation measure could have averted the loss incurred due to flooding.

(e) Capacity building of the project implementing agencies was key to success of the project, which we recommend for IDA to continue supporting.

Conclusion

44. The Dar es Salaam City is the most populated city and an important economic and commercial center in the Country. Studies show, however, that the population is growing much faster than forecasted and largely unproportional to the growth of the transport infrastructure. A Dar es Salaam Urban Transport study conducted by JICA in 2008, estimated the future population in Dar es Salaam in 2018 to be 4.3 million. However, it had already reached 4.3 million in 2012.[36] Furthermore, according to the data in 2014, the population will be over 10 million in year 2030.[37]

45. The Transport Master Plan included in the JICA study, (now under revision), targeting 2030, proposed a number of projects to alleviate the transport problem. The proposed projects included TAZARA junction Fly-Over, New Bagamoyo Road Widening, the Nelson Mandela Widening, BRT, and Kigamboni Bridge. Some of the projects have been implemented and others are at different stages of execution.

46. The completed BRT project is Phase 1 out of six similar projects covering a total of 300.3 km in the Dar es Salaam City. The successful implementation of this phase has paved the way to a smoother implementation of the other five phases. It is recommended that similar facilities be considered for the other fast growing cities in the country—notably, Arusha, Mwanza, and Mbeya—to avoid reaching a traffic crisis similar to the current situation in Dar es Salaam.

[36] Population and Housing Census, 2012

[37] United Nations Department of Economic and Social Affairs, Population Division, World Urbanization Prospects, 2014

—

Annex 8. Comments of Co-financiers and Other Partners/Stakeholders

Comments from the Government of Tanzania

Comments from Co-financiers

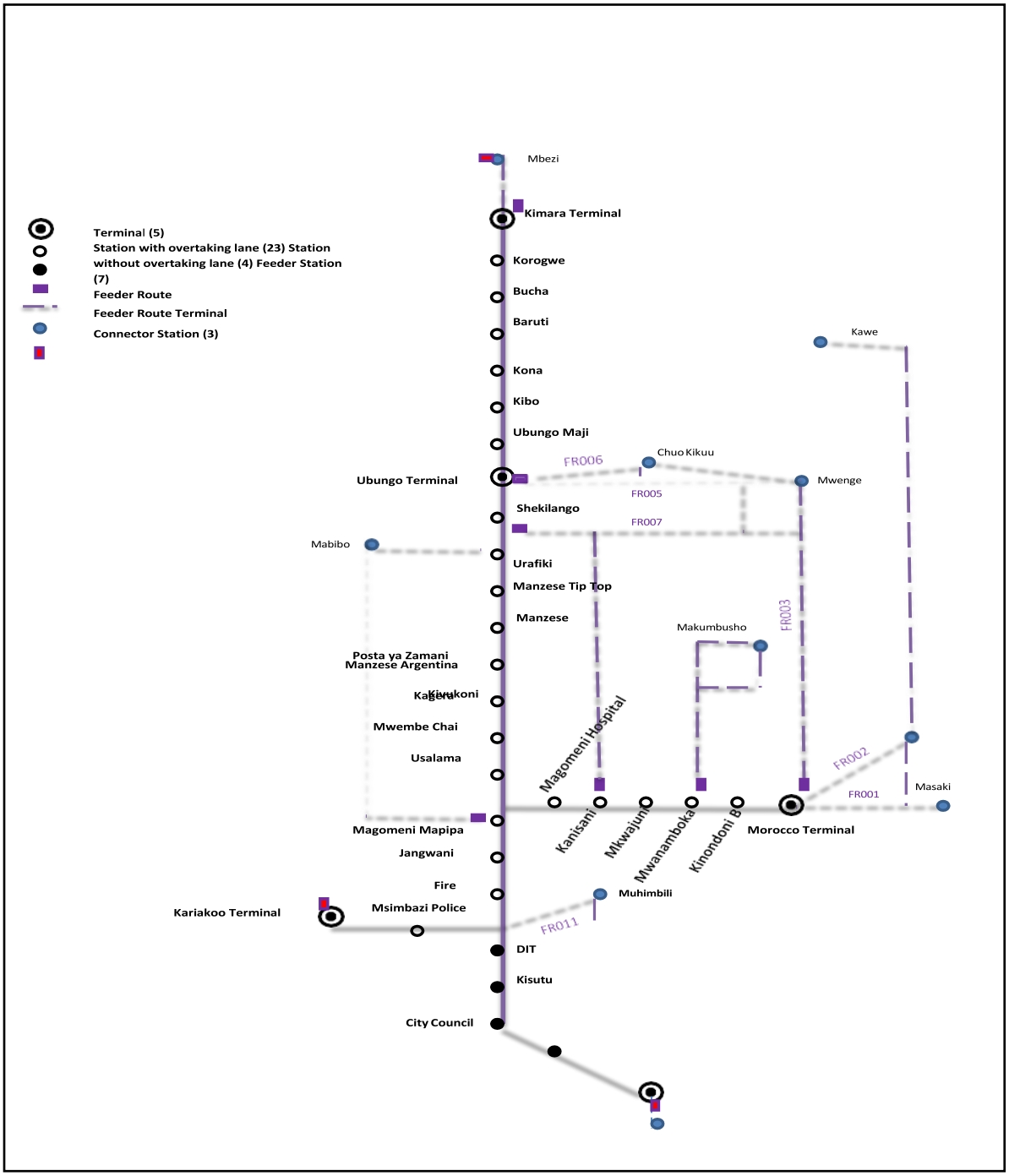
—

Annex 9. List of Supporting Documents

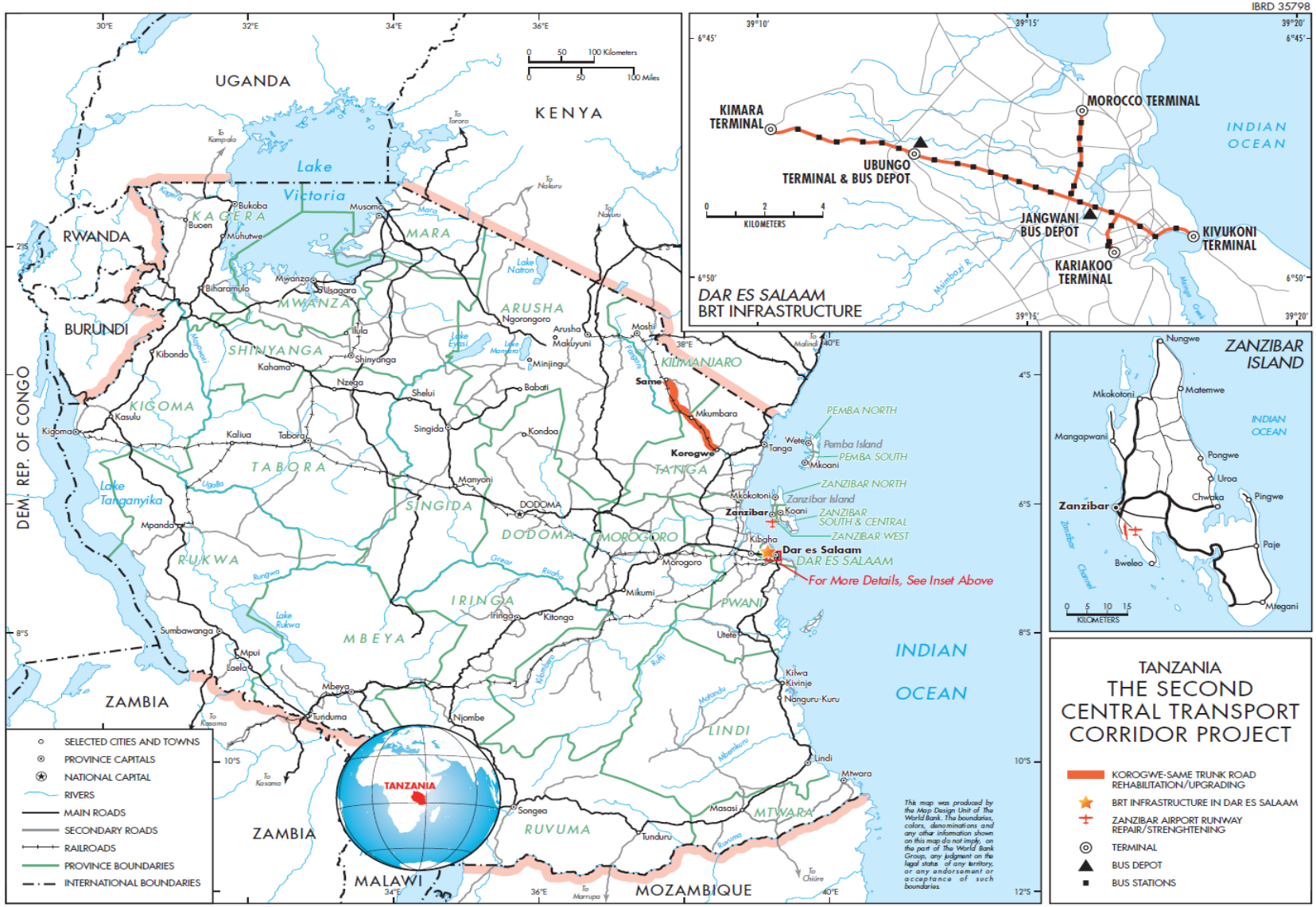
- African Development Bank. 2015. *Tanzania, Dar es Salaam Bus Rapid Transit System Project, Phase 2*, Appraisal Report.
- African Development Bank. 2014. *Study on Road Infrastructure Costs: Analysis of Unit Costs and Cost Overruns of Road Infrastructure Projects in Africa.* Chief Economist Complex, Abidjan.
- Aide Memoires, Project Progress Reports, and Implementation Status and Results Reports.
- Country Assistance Strategy (CAS) for the United Republic of Tanzania, FY12–FY15.
- CAS Progress Report. 2014. Report 80313-TZ.
- CAS, Joint Assistance Strategy for the United Republic of Tanzania, FY07–FY10, Report 38625-TZ
- Cloete R et al, 2010, *Africa's Rapid Growth: Infrastructure Sector*, McKinsey and Co
- Dar Rapid Transit Agency. 2014. *Report on Consultations with Existing Daladala Operators and the Mitigation Measures, Prime Minister's Office, Regional Administration and Local Government*, Dar es Salaam, Tanzania.
- Dar Rapid Transit Agency. 2013. *Short Term Technical Assistance Regarding the Implementation of Phase 1 of the DART project*, Dar es Salaam, Tanzania.
- Japan International Cooperation Agency (JICA). 2008. *Dar es Salaam Transport Policy and System Development Master Plan.*
- Ministry of Infrastructure, Communications and Transport, Zanzibar. 2013. *A Survey of Airline and Passenger Satisfaction Rating for Zanzibar International Airport*, Final Report. Economic and Social Research Foundation, Dar es Salaam, Tanzania.
- Surface and Marine Transport Regulatory Authority. 2011. *Study on User Needs and Management of Public Transport Services in Dar es Salaam*, Final Report www.sumatra.go.tz.
- Tanzania Planning Commission, *Tanzania Development Vision 2025*, www.tzonline.org.
- World Bank. 2017. *Dar es Salaam Urban Transport Improvement Project*, Project Appraisal Document, Report PAD1464.
- World Bank. 2016. *Experimental Evidence on Urban Transport and Mobility: Impact Evaluation of the Dar es Salaam System*; Concept Review, P158912: Grant by i2i DIME.
- World Bank *Tanzania Overview*. 2016. http://beta.worldbank.org/en/country/tanzania.
- World Bank. 2013. Amended and Restated Project Agreement, *Second Central Transport Corridor Project.*
- World Bank. 2012. *Second Central Transport Corridor Project*, Project Paper Additional Finance, Report 68914-TZ.
- World Bank. 2011. *Second Central Transport Corridor Project*, Restructuring Paper, Report 62520-TZ.
- World Bank. 2011. *Tanzania Transport Sector Support Project*, Project Paper, Additional Finance, Report 60183.
- World Bank. 2008. *Second Central Transport Corridor Project*, Financing Agreement.
- World Bank. 2008. *Second Central Transport Corridor Project*, Project Appraisal Document, Report 43399-TZ.
- World Bank. 2007. *Tanzania Integrated Roads Project 2*, Report ICR 502, P002770.

MAPS

Schematic Diagram of Dar es Salaam BRT Phase 1



IBRD 35798



APRIL 2008