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**Terminal Evaluation of the UN Environment-GEF Project  
“Reducing Greenhouse Gas Emissions with Bus Rapid Transit  
and Non-Motorized Transport”**

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**Final report**



**Evaluation Office of UN Environment  
April 2018**



## Evaluation Office of UN Environment

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(Reducing Greenhouse Gas Emissions with Bus Rapid Transit and Non-Motorized Transport)  
(GEF Project ID 1917)  
(04/2018)  
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## ACKNOWLEDGEMENTS

This Terminal evaluation was prepared for the Evaluation Office of UN Environment by Mr. Roland Wong, Climate Change Mitigation Specialist as the Evaluation Consultant. The report benefits from a peer review conducted within Evaluation Office of UN Environment.

The Evaluation Office of UN Environment would like to thank the BRT Project teams and in particular, the BRT Project team in Dar es Salaam (Dar Rapid Transit Agency, Dar es Salaam City Council, Tanzania National Roads Agency, and the World Bank Group in Dar es Salaam), and the BRT Project team in Cartagena (the Technological University of Bolivar in Cartagena, TransCaribe, Transambiental, Ciudadatos and Despacio) for their contribution and collaboration throughout the Evaluation process. Sincere appreciation is also expressed to other project stakeholders in Columbia, Dar es Salaam and other locations who took time to provide comments to the draft report. The Evaluation Office of UN Environment would also like to thank the Institute for Transportation and Development Policy (namely the Africa Program and Latin America Region) as well as colleagues at the Climate and Technology Branch and the Air Quality and Mobility Unit of UN Environment in Nairobi.

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## ABOUT THE EVALUATION<sup>1</sup>

**Joint Evaluation:** No

**Report Language(s):** English

**Evaluation Type:** Terminal Project Evaluation

**Brief Description:** This report is a terminal evaluation of a UN Environment-GEF project implemented between 2005 and 2016. The project aimed to increase overall knowledge of planning, designing and implementing Bus Rapid Transit systems in cities in developing countries, and reduce GHG emissions from the transport sector globally. The evaluation sought to assess project performance (in terms of relevance, effectiveness and efficiency), and determine outcomes and impacts (actual and potential) stemming from the project, including their sustainability. The evaluation has two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote learning, feedback, and knowledge sharing through results and lessons learned among UN Environment, the GEF and their executing partner ITDP and the relevant agencies of the project participating countries.

**Key words:** Project Evaluation; Climate Change; TE; Terminal Evaluation; GEF; GEF Project; Transportation; Bus Rapid Transit; Non-motorized Transit

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<sup>1</sup> This data is used to aid the internet search of this report on the Evaluation Office of UN Environment Website

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## List of acronyms and abbreviations

AIT	DART Agency Interim Team
BRT	Bus rapid transit
BSP	Bali Strategic Plan (UN Environment)
CDM	Clean Development Mechanism
DART	Dar es Salaam Rapid Transit
DCC	Dar es Salaam City Council
DTIE	Division of Technology, Industry and Economics (in UN Environment)
EOP	End-of-Project
ESES	Environment, Social and Economic Sustainability
FMO	Fund Management Officer (UN Environment)
GEB	Global environmental benefit
GEF	Global Environment Facility
GHG	Greenhouse Gas
GIZ	German Cooperation
GoT	Government of Tanzania
I-CE	Interface for Cycling Expertise
INDC	Intended Nationally Determined Contributions
ITDP	Institute of Transportation and Development Policy
JICA	Japan International Cooperation Agency
M&E	Monitoring and Evaluation
MTE	Mid-term Evaluation
MTR	Mid-Term Review
MTS	Medium Term Strategy (UN Environment)
NAMA	Nationally Appropriate Mitigation Actions
NGO	Non-government organization
NMT	Non-motorized transport
NTP	National Transport Policy (Tanzania)
NUTP	National Urban Transport Policy (Colombia)
OP	Operational program
PCFV	Partnership for Clean Fuels and Vehicles (UN Environment)
PIF	Project Identification Form
PIR	Project Implementation Review
PMO-RALG	President’s Office for Regional Administration and Local Government (Tanzania)
PMU	Project management unit
PRF	Project Results Framework
ROtI	Review of Outcomes to Impacts
SMART	Specific, Measurable, Achievable, Realistic and Tangible
SSCo	South-South Cooperation
SUMATRA	Surface and Marine Transport Regulatory Authority (Tanzania)
TANROADS	Tanzania National Roads Agency
TDM	Traffic demand management
TE	Terminal evaluation
TEEMP	Transport Emissions Evaluation Models for Projects
TOC	Theory of Change
TOD	Transit oriented development
UDA-RT	Shirika La Usafiri Dar Es Salaam - DART BRT service operator
UNDP	United Nations Development Program
UN Environment	United Nations Environment Program (also UNEP)
VAT	Value added tax
WB	World Bank

**Table 1: Project Identification Table**

GEF project ID:	1917	Project Type:	Medium-sized project
Sub-programme:	Climate Change	Expected Accomplishment(s):	-
UNEP approval date:	17-Mar-05	PoW Output(s):	-
GEF OP #:	11	Focal Area(s):	Climate Change
GEF approval date:	7-Feb-05	GEF Strategic Priority/Objective:	OP 11: Promoting Environmentally Sustainable Transport
Expected Start Date:	20-Jan-03	Actual start date:	April 2005
Planned completion date:	30-Nov-2009	Actual completion date:	2016 June
Planned project budget at approval:	US\$ 3,777,459	Total expenditures reported:	
GEF Allocation:	US\$ 724,595	GEF grant expenditures reported as of Sept 2017:	US\$724,595
PDF GEF cost:	US\$ 25,000	PDF co-financing:	US\$ 28,500 (ITDP)
Expected MSP co-financing:	US\$ 2,999,864	Secured MSP co-financing:	US\$ 2,949,994
First Disbursement:	22 March 2005	Date of financial closure:	2018
No. of revisions:	2	Date of last revision:	7-Feb-11 <sup>2</sup>
Date of last Steering Committee meeting:	n/a		
Mid-term review/evaluation (planned date):	n/a	Mid-term review/evaluation (actual date):	n/a
Terminal Evaluation (actual date):	June 2017 to March 2018		

<sup>2</sup> The project closure was delayed until 2016 and terminal evaluation was conducted in 2017, see para 115-116.



## Executive Summary

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### Project Background

The medium-size Global Environment Facility (GEF) Project entitled “Reducing Greenhouse Gas Emissions with Bus Rapid Transit and Non-Motorized Transport” (herein referred to as the Project) was implemented by UN Environment with its partner, the Institute of Transportation and Development Policy (ITDP) as the executing agency. The Project commenced operations in April 2005 but was not completed until 2016, 7 years after the original planned completion date of April 2010. In 2005, the Project was considered unique and “pioneering” in nature given that there were few sustainable transport projects under GEF’s Operational Program 11. The Project was designed to bring additional support to national governments and BRT initiatives supported by the World Bank in Cartagena, Colombia and Dar es Salaam, Tanzania. Support was in the form of technical assistance from international experts to the planning and design stages of the new Bus Rapid Transit (BRT) and Non-Motorized Transport (NMT) infrastructure development for these cities. A global reach of this Project was to further disseminate best practices of implementing BRT systems through the issuance of a BRT Planning Guide.

A key development driver behind this Project was increasing evidence that Bus Rapid Transit (BRT) systems coupled with Non-Motorized Transport (NMT) facilities as a feeder system were the only means of managing the rapid growth of private motor vehicle use and related emissions, including CO<sub>2</sub>. Established BRT systems, notably those in Bogota, Curitiba and Quito, did not sufficiently integrate NMT facilities as a part of the BRT system, cited as a likely cause of ridership loss. Though BRT systems are less costly than other public transit options, they are technically complex to implement to ensure maximum public utility. In addition, cities in developing countries are likely poorly resourced without access to the necessary planning and consulting services required to develop effective BRT/NMT infrastructure.

### Purpose of Terminal Evaluation

This Terminal Evaluation was prepared in 2017 to assess the performance of the Project towards its intended goal of “reducing transport-related greenhouse gas emissions with Bus Rapid Transit” and meeting 3 objectives including:

- Implementation of a pilot BRT system in Dar es Salaam, Tanzania that will serve as Africa’s first and most extensive BRT system;
- Implementation of the first fully developed NMT feeder system as an integral part of a planned 12 km pilot BRT system in Cartagena, Colombia; and
- Documentation of the BRT planning process in a “BRT Planning Guide” to enable other cities in developing countries to develop BRT projects and estimate their projected greenhouse gas and other emissions on their own without having to rely on costly consultants from developed countries.

Key issues for this Terminal Evaluation include:

- The relatively small size of the Global Environment Fund (GEF) grant of US\$724,595 requiring the evaluation to focus on specific incremental activities funded by GEF, and the impact of these activities to the overall performance of the pilot BRT systems in Dar es Salaam and Cartagena, and the impact of the quality of the BRT Planning Guide;
- Immediate and long-term impacts of NMT infrastructure to the BRT systems in both Dar es Salaam and Cartagena. The evaluation was conducted only after the 2016 completion of the pilot BRT systems in Dar es Salaam and Cartagena enabling the observation of the impact of NMT infrastructure with the BRT systems. While immediate effects indicate less than maximum use of NMT infrastructure, long

term impacts need to be assessed for the likelihood of impact of NMT infrastructure on the municipalities on the importance of NMT in their current urban mobility planning; and

- The evaluation challenge of meeting stakeholders with long corporate memories of the Project from more than 10 years ago.

To improve the understanding of the outputs, drivers and assumptions as contributors towards the intended long-term impacts of the project, a Theory of Change approach was undertaken to strengthen the description of project logic from a baseline prior to the commencement of the Project, towards the intended long-term impact of “reduced greenhouse gas emissions from transport sector globally” that results from “increased confidence in BRT projects”, “replication of quality BRT projects globally with regional BRT experts using the BRT Planning Guide that is updated to include BRT experiences from Dar es Salaam and Cartagena” and “reduced use of fossil fuels from urban transportation, resulting in improvement in local air quality and quality of urban life”. Five direct outcomes were identified:

- Dar es Salaam completes planning and design for full BRT networks and NMT feeder systems;
- Dar es Salaam develop their own expertise in BRT/NMT design, implementation and operation;
- Cartagena completes planning and design for full BRT networks and NMT feeder systems;
- Cartagena develops their own expertise in BRT/NMT design, implementation and operation;
- Increased access for cities in developing countries to BRT system plans using the BRT Planning Guide and lessons learned from other developing countries on BRT development.

### Evaluation Findings

The overall project performance is rated as Satisfactory. The grant was successfully utilized to influence BRT designs in Dar es Salaam and Cartagena through proper integration with NMT infrastructure, and to strengthen institutional and business arrangements to effectively implement the BRT projects (Paragraph 147). One of the key contributions of this Project work was approval of World Bank financing of the Dar es Salaam BRT in 2008 (Paragraph 64) as well as the Cartagena BRT system. Although full implementation of the BRT systems was not part of this project, project outputs did lead to the development of two operational BRT systems that developed healthy ridership, further demonstrating the benefits of BRT as a means of improving urban mobility in cities in developing countries, and inherently generating urban transport-related GHG emission reductions.

Dar es Salaam. Delivery of all intended outputs contributed to an operational BRT system in Dar es Salaam with ridership that grew from 155,000 passengers per day in January 2017 to 179,000 in August 2017. Key technical assistance to Dar es Salaam included preparation of the BRT business plan (Output 1) and technical specifications for procurement (Output 2), establishment of the BRT authority (Output 3), preparation of public outreach plans and customer services (Output 4), tender documents for civil contracts and ticketing systems (Output 5), NMT master plan (Output 6) and the delivery of training services for Dar es Salaam personnel (Output 7) (Paragraphs 62-75).

This strengthened capacities of local expertise in managing the BRT system, allowing BRT operational personnel under the Dar es Salaam Rapid Transit (DART) agency to continually update their business plan with newly updated cost figures from the various civil contracts. In addition, the personnel have been proactive in managing the growth of their total bus fleet to just over 300 vehicles increasing the utilization of Phase I of the system close to its capacity, and in strengthening operations involving a full IT system for automatic fare collection, real-time passenger information, vehicle tracking, and synchronized signaling along BRT corridors with BRT bus priority. Key to this success is the full support from the President’s Office for Regional Administration and Local Government and the Office of the Prime Minister who have led and facilitated consultations with several key stakeholders from the donor community and public entities including the traffic police (Paragraph 106).

The award to Dar es Salaam of the 2018 Sustainable Transport Award for its BRT system<sup>3</sup>, is a significant reflection of the quality of the system that was developed through the resources of this GEF grant as well as technical and financial assistance from the World Bank, German development agency (GIZ), and strong political will from the Government of Tanzania and Dar es Salaam municipality. The civic pride of the Dar es Salaam BRT system is evident given the cleanliness of the system, the compliance of its patrons to the general rules, and the general passion of operating personnel. The Dar es Salaam BRT is now emerging as an excellent demonstration of implementing a BRT system in a developing country in East Africa from which lessons can be collected and shared with other countries. This includes well-designed pedestrian walkways and cycle paths to BRT stations. Lastly, the Dar es Salaam BRT is a demonstration of the benefits of BRT, transforming the quality of life along the BRT corridors, improving local air quality, and reducing urban transport-related greenhouse gas emissions. The Government of Tanzania (through the Ministry of Housing) and the Dar es Salaam City Council have also been catalyzed towards urban planning for the development of additional BRT corridors and larger public housing projects along these corridors as transit-oriented development (Paragraph 149).

The use of NMT infrastructure constructed along most of the corridors of the Dar es Salaam BRT system, however, are mainly used for walking while cycling in Dar es Salaam has not yet become a mainstream mode of transport for cultural and economic reasons. The agency personnel as well Government officials, however, felt that the presence of the bicycle lanes lays a foundation for changing citizen’s perceptions towards cycling as a main mode of transport (Paragraph 89).

Cartagena. “An operational BRT system in Cartagena with healthy ridership” was considered achieved with ridership ranging from 40,000 passengers per day since its opening in March 2016 to 90,000 in January 2017 (Paragraph 95). Key technical assistance contributions by the Project to the Cartagena BRT system and its operators, TransCaribe, includes delivery of a BRT operational plan (Output 8), marketing plans for public outreach and customer services (Output 9), an NMT feeder network integrated with the BRT (Output 10) and training services for local personnel on NMT integration (Output 10) (Paragraph 77-83).

Similar to Dar es Salaam, the Project provided technical assistance to TransCaribe personnel in Cartagena with the tools and plans to promote and market the BRT to the inhabitants of the city. Though the TransCaribe BRT was not operational until 2016, TransCaribe’s personnel responsible for community outreach had used these tools and plans since 2006 to promote the BRT system. This sustained promotion was instrumental in achieving community acceptance of the BRT system, especially in the lower income neighborhoods of eastern Cartagena where there was initially opposition to BRT from bus drivers living there. The sustained public outreach and public inputs activities resulted in TransCaribe implementing hybrid bus services, an innovation which has TransCaribe operating 12 m buses along both the trunk and feeder routes to increase the average speeds of these buses; this was made possible by purchasing buses that load from both the left and right sides of the buses (for BRT stations and feeder bus stops respectively). The evaluator also observed public transport etiquette aboard TransCaribe buses including single file lines for tickets and boarding and giving up seats for the elderly and women with younger children (Paragraph 107).

The impact of the TransCaribe BRT system along the BRT corridor has been significant according to TransCaribe personnel who claim improved air quality, reduced traffic congestion and accidents, improved security, and improved employment conditions and benefits for bus drivers. However, the TransCaribe BRT corridor has been implemented without having fully adopted all best international practices. This includes difficulties of integrating NMT for cycling with the BRT system, mainly due space constraints in certain locations along the corridor (Paragraph 107 and Picture 3). Notwithstanding, Cartagena is an example of a longer time for cycling policies to be created in cities where such policies are absent. It is encouraging that since mid-2016, TransCaribe’s Director has been speaking on the need for integrate bicycle infrastructure in the near future. This led to a recent study by Despacio<sup>4</sup>, an Non-Governmental Organization in

<sup>3</sup> <https://www.itdp.org/dar-es-salaam-wins-2018-sta/>

<sup>4</sup> <http://www.despacio.org/>

collaboration with the Royal Netherlands Embassy on alternatives for a cycling network that is integrated with the BRT, including a corridor that parallels the BRT line (Figure 3). Considerations are now being given to a pilot investment in bicycle parking stations at the eastern terminus of the TransCaribe BRT system along with the NMT corridor suggested by the Despacio study (Paragraphs 98-100).

BRT Planning Guide. The small contribution of GEF grant funds to the development of the BRT Planning Guide was significant in content and contributing towards the intended impact. The 1<sup>st</sup> edition of the Guide issued in 2008 was widely disseminated and downloaded, resulting in catalyzed interest in the development of BRT systems in a number of cities in developing countries (Paragraph 84-87). In 2017, ITDP issued the 4<sup>th</sup> Edition of the BRT Planning Guide that includes the positive experiences from the completed BRT system in Dar es Salaam, covering more contemporary topics related to transit-oriented development and other green city aspects, and attracting more development partners. The efforts of continual improvement of the BRT Planning Guide and other related topics such as BRT standards, parking policies and NMT integration appear to be sustainable with strong development partners (Paragraph 153).

In particular, the 4<sup>th</sup> edition includes the most innovative aspects of the Dar es Salaam BRT development including the financial model and business plan development, making it one of the first BRT projects to explicitly include these elements. Prior to Dar es Salaam, the sole focus in BRT planning was on infrastructure development and contracting. The specific work done under this project changed BRT professional approaches to BRT planning by explicitly focusing on the other key elements of planning (namely institutional and financial arrangements during the operational phase as opposed to infrastructure financing). As a result of this, other BRT systems including some existing BRT corridors (such as in Mexico City and Johannesburg), started the creation of financial models moving the dialogue from only infrastructure design to the design of operations and institutions. This only further ensures that there will be minimal reliance of municipalities of developing countries on international consultants from developed countries (Paragraph 102).

#### Recommendations and Lessons Learned

The BRT Project provided the support to enhance the effectiveness of the pilot BRT systems in Dar es Salaam and Cartagena to improve urban mobility and to reduce transport-related greenhouse gas emissions. To ensure the compliance of best international practices for developing and operating BRT systems, both BRT agencies in Dar es Salaam and Cartagena should retain the services of a reputed BRT specialist on an annual basis (Recommendations #1 and #2). Furthermore, cities in developing countries developing BRT systems should recruit a reputable BRT specialist to provide design and implementation oversight *with the aim of maximizing their compliance to best international practices for developing BRT systems*, notwithstanding that the BRT Planning Guide does provides guidance in the design of BRT systems but does not serve as a replacement for experienced BRT practitioners (Recommendation #3).

With the completion of UN Environment's involvement on this Project, they are in position to scope further assistance to Dar es Salaam City Council to create a long-term strategic vision for Dar es Salaam that includes Transit Oriented Development with subsequent phases of the BRT network. The vision should include the inputs from the Ministry of Housing with their plans for public housing along BRT corridors and enhanced economic retail zones around BRT stations. Long-term plans should also be made for minimizing DART operational costs that may include electrification of the bus fleet (either through trolley or electric (battery) buses), from power sources that may include renewables (Recommendation #4).

In consideration of the large number of projects that focus on developing "green cities", UN Environment is in a position to scope a global or regional project that could be formulated to assist various governments of developing countries to respond to challenges of identifying new revenue streams related to reducing the costs of municipal operations and green urban development. Such a project could consist of a review of municipal expenditures as a holistic approach to green urban development. Reducing municipal expenditures may consist of developing programs for energy efficiency of public assets, renewable energy

development, and other efficiencies in the use of natural resources, all of which have the potential for the realization of cost savings to municipal operating budgets. (Recommendation #5).

Key lessons learned from the Project include:

- Strong political will is a pre-requisite for a successful sustainable transport project complete with NMT infrastructure. In the case of Dar es Salaam, political support for the BRT system was extended to the top leaders of the country, trickling down to the lower levels of government. In the case of Cartagena, the municipality bore more responsibilities to drive the TransCaribe project with the Government of Colombia only providing policies to encourage BRT development (Lesson #1);
- Success of a new BRT system is highly dependent on engagement of existing public transport personnel from the old systems. Failure to successfully engage the majority of these public transport owners will increase the risk of opposition to the new system and operational disruptions (Lesson #2);
- GEF funds can be effectively used to leverage financing of larger capital cost projects by providing soft support to strengthen designs, improve institutional arrangements, and reducing risks to complex administrative and contractual issues that can delay implementation of such projects. More importantly, GEF support can be used to complement and strategically influence projects with large capital costs towards meeting global environmental objectives (Lesson #5).

## 1 Introduction

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1. The UN Environment-GEF Project entitled “**Reducing Greenhouse Gas Emissions with Bus Rapid Transit and Non-Motorized Transport**” (herein referred to as the “BRT Project” or “Project”) was implemented by UN Environment with its partner, the Institute of Transportation and Development Policy (ITDP) as the executing agency. The BRT Project commenced operations in April 2005 with an expected completion date within 5 years to April 2010. However, as has been the case with numerous projects involving several levels of government and a wide spectrum of stakeholders, the BRT Project did not conclude its activities until 2016.
2. While terminal evaluations (TE) of GEF projects are normally conducted not earlier than 6 months from the operational completion and no later than 6 months after operational completion, the BRT Project Terminal Evaluation is taking place during the period of June to December 2017. The task of the BRT Terminal Evaluation was to assess the overall BRT Project as described in the July 2004 BRT Project document. This Terminal Evaluation consists of an evaluation of:
  - GEF Project support for the planning and implementation of BRT projects in Dar es Salaam and Cartagena to demonstrate improved planning techniques that integrate NMT with BRT systems;
  - The BRT Planning Guide that was developed as a guide for cities in developing countries for implementing a BRT planning process based on lessons learned from pilot BRT projects as well as BRT projects developed in Dar es Salaam and Cartagena;
  - Dissemination and consultation strategy of the BRT planning guide.
3. The TE for the BRT project was conducted by Mr. Roland Wong serving as the independent evaluation consultant for the overall evaluation of the BRT Project.

### 1.1 Evaluation objectives

4. This BRT Terminal Evaluation was conducted to comply with the UN Environment Evaluation Policy<sup>5</sup> to assess project performance (in terms of relevance, effectiveness and efficiency), and determine outcomes and impacts (actual and potential) stemming from the project, including their sustainability. This Terminal Evaluation was undertaken in 2017, delayed by approximately one year after the 2016 completion of the Project. This evaluation served two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote operational improvement, learning and knowledge sharing through results and lessons learned from UN Environment, ITDP and other executing partners. As such, the Terminal Evaluation was intended to identify lessons of operational relevance for future project formulation and implementation. There is currently no follow-up project in the UN Environment scope.

### 1.2 Evaluation approach and methodology

5. This Terminal Evaluation was approached by using information primarily from the following sources:
  - In person or phone interviews with selected stakeholders ranging from the implementing agency (UN Environment), the executing partner (ITDP), government counterparts in the two BRT demonstration cities (Dar es Salaam and Cartagena), Civil Society Organizations (CSOs) and other important stakeholders involved in BRT development activities and preparations of the BRT Planning Guide. For a number of stakeholders, interviews were conducted more than once in an

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<https://wedocs.unep.org/bitstream/handle/20.500.11822/7100/UNEP%20Evaluation%20Policy%202016.pdf?sequence=1&isAllowed=y>

effort to triangulate the evidence received, and to provide assurance that the conclusions of the evaluation are robust;

- Field observations in Dar es Salaam (5 days) and Cartagena (2 days);
  - Unstructured interviews with BRT beneficiaries in Dar es Salaam and Cartagena during the field observations. These types of interviews were planned to provide an indication of public perception of operational BRT systems in the two pilot cities;
  - Project documentation including all project reports and information posted on the relevant websites were assessed for its value in disseminating information on the implementation of BRT systems to global stakeholders and in improving the quality of implemented BRT systems (Annex III).
6. This Terminal Evaluation also uses a modified **Review of Outcomes to Impacts** (ROtI)<sup>6</sup> method to assess the likelihood of impact that identifies project's *intended impacts* against a *review of the project's logical framework analysis*, followed by the analysis and modelling of the project's *outcomes-impact pathways*. To analyze and model these pathways, the evaluation employs a **Theory of Change** (ToC) approach to depict the impact pathways of the project. With the absence of a logical framework analysis for this Project, a thorough review of the Project document was required to extract the Project's intended impacts, outputs and outcomes. A reconstructed ToC for this evaluation is provided in Section 2.8.
7. Limitations to this evaluation include:
- the difficulties of accessing key stakeholders who were involved with implementation of the various activities on this Project between 2005 and 2008;
  - recollection of detailed information on NMT designs and baseline information from more than 10 years ago. This was especially true for the stakeholders in Cartagena, many of whom could not be contacted. There were also some limitations in certain aspects of the documentation of the project notwithstanding that the level of documentation for the Project was reasonably satisfactory; and
  - Limited number of days available to the evaluator to meet personnel involved with BRT development and operations in Dar es Salaam (5 days) and Cartagena (2 days).

Due to these limitations, the evaluation of the likelihood of impact of the operational BRT systems in Dar es Salaam and Cartagena, and more specifically, NMT infrastructure integration with BRT systems was viewed as a primary and important aspect of this evaluation. In addition, the evaluation was conducted with due considerations the impacts of this project to women and children and under the principle of protecting the anonymity and confidentiality of individual informants<sup>7</sup>.

### 1.3 Main evaluation criteria and questions

8. The evaluation assesses the project performance against the following criteria: (1) strategic relevance; (2) quality of project design; (3) nature of external context; (4) effectiveness, which comprises assessments of the achievement of outputs, achievement of outcomes and likelihood of impact; (5) financial management; (6) efficiency; (7) monitoring and reporting; (8) sustainability; and (9) factors

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<sup>6</sup> GEF Evaluation Office (2009). ROtI: Review of Outcomes to Impacts Practitioners Handbook. [https://www.thegef.org/gef/sites/thegef.org/files/documents/M2\\_ROtI%20Handbook.pdf](https://www.thegef.org/gef/sites/thegef.org/files/documents/M2_ROtI%20Handbook.pdf)

<sup>7</sup> This refers to Evaluators needing to respect people's right to provide information in confidence, and ensuring sensitive information cannot be traced to its source.

affecting project performance. The evaluation follows the guidance provided by the Evaluation Office of UN Environment in 2017, the evaluation criteria has been adapted as required.

9. The assessment of Project performance were based on a set of key questions within the evaluation framework<sup>8</sup> including:

- Did project design incorporate the realities of participating countries in terms of institutional and policy framework and if so, was the project approach relevant in terms of linkages between outputs and outcomes?
- Were all outputs and targets achieved and were there any deviations from planned activities?
- What were the actual impacts of the project against the targets and outcomes achieved against intended targets and outcomes and in the absence of a project results framework?
- What was the overall approach to risk management strategies of the project?
- To what extent will the generation of benefits from implementing the Project's activities be sustained?
- To what extent has the project facilitated catalytic actions being taken resulting in replication and scale up?
- To what extent has the project been implemented in a cost effective and timely manner?

10. Responses to these key questions were influenced by the following project specific factors:

- The relatively small size of the GEF grant of US\$724,595. The evaluation placed importance on the specific incremental activities being funded by GEF funds, the impact of these activities to the overall performance of the pilot BRT investments in Dar es Salaam and Cartagena, and the impact of the quality of the BRT Planning Guide (with respect to the guidance provided on traffic modelling, BRT legal issues and financial planning). Without this, the evaluation would have easily become unfocused with other BRT implementation aspects;
- The immediate impact of NMT infrastructure to the BRT systems of both Dar es Salaam and Cartagena. This evaluation took place more than 12 months after the 2016 completion of the pilot BRT systems in Dar es Salaam and Cartagena. There were conflicting accounts of the use of NMT infrastructure and its impact on the ridership of the systems. This relates directly to less than optimal use of NMT infrastructure possibly related to the lack of public awareness of the purpose of NMT infrastructure, or the lack of a cycling culture in these respective cities due to hot weather conditions that may be deemed unsuitable for such an activity. The evaluation made efforts to determine reasons for the low use of NMT infrastructure and lack of feeder routes to the BRT systems, wherever appropriate;
- The long-term impact of NMT infrastructure on the BRT systems of both Dar es Salaam and Cartagena. While information received during the evaluation indicates that NMT infrastructure is likely not being fully utilized to feed ridership into the BRT systems, the evaluation was to assess the likelihood of impact of NMT infrastructure on the current urban mobility planning of the municipalities. In Cartagena, there were initial reports of the enthusiasm of the TransCaribe operators to further develop bicycling infrastructure as feeder routes into the eastern BRT terminal station as a means of increasing ridership. In Dar es Salaam, walking appears to be the main mode of transport while cycling is still not viewed as a safe or mainstream mode of transport. This preliminary information indicated the need to develop pilot segregated cycling lanes as feeder routes to and cycle parking facilities at selected BRT stations;
- The likelihood of insufficient data to estimate energy saving and GHG reduction impacts of the BRT Project. This terminal evaluation has made an assessment of the GHG emission reduction impact

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<sup>8</sup> These questions were in line with the strategic questions provided in the evaluation ToR and were revised/ specified to better serve the purpose of the evaluation



of both the DART system and the Cartagena system against targets of 430,000 tonnes CO<sub>2</sub>/year and 63,000 tonnes CO<sub>2</sub>/year respectively. This needed to be done due to the delayed completion of both BRT systems until 2016, and the lack of opportunity and funds to provide credible quantitative estimates of the BRT Project’s Global Environmental Benefits (GEBs)<sup>9</sup>. As such, this TE has used available data information as well as regional default values for baseline transport emission estimates as well as BRT transport emission estimates made available by the BRT operators in both Dar es Salaam and Cartagena;

- The ability of the evaluator to meet with stakeholders with long corporate memories of the project. With the long duration of the Project since 2005, the evaluation was challenged to meet Project participants with long corporate memories of BRT development since 2005. To identify such stakeholders, thorough preparations were required prior to the field missions to get a good understanding of the BRT scenarios in each city, and the roles and responsibilities of each stakeholder in the development of the BRT systems in each city. In Dar es Salaam, key stakeholders included DART and the bus operator of the DART system, UDA-RT as well as various staff from the World Bank, tasked with assisting national and municipal government personnel in BRT development. In Cartagena, a key stakeholder was the NGO, Despacio<sup>10</sup>, to serve as a main conduit to key stakeholders at the national government level as well as the municipal government, BRT operators, and NGOs who are working with the BRT operators. Through these focal points, the evaluation team sought to improve its access to key stakeholders in each city. For the impact assessment of the BRT Planning Guide, the evaluation relied on a network of contacts globally on sustainable transport as well as information from various ITDP contacts.

## 2 Project Background

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### 2.1 Context

11. At the time the BRT Project was designed in 2002, there was an increasing body of evidence indicating Bus Rapid Transit (BRT) systems coupled with Non-Motorized Transport (NMT) facilities as a feeder system were the only means of managing the rapid growth of private motor vehicle use and related emissions, including CO<sub>2</sub>. During this time, BRT systems were becoming increasingly common in Latin America as well as in Asia to a certain extent with no emerging systems on the African continent. Furthermore, established BRT systems, notably those in Bogota, Curitiba and Quito, did not sufficiently integrate NMT facilities as a part of the BRT system that was a likely cause of a loss of ridership on these systems. Despite BRT systems being less costly than other public transit options, experience from past completed BRT systems indicates that they are technically complex to implement for ensuring maximum public utility. While wealthier cities in Latin America and Asia have access to world-class international consultants to design and implement BRT systems, poorer cities do not have the required physical resources for planning and consulting services required to develop effective BRT/NMT infrastructure.
12. The BRT Project was initiated over 10 years ago in 2004 as a medium-size GEF project, designed to bring additional support to national governments and BRT initiatives supported by the World Bank (WB) in Cartagena and Dar es Salaam. In addition, at this time, there were few sustainable transport projects under GEF’s Operational Program OP-11. With baseline activities ongoing in both Dar es Salaam and Cartagena, the benefits of BRT Project incremental assistance to introduce NMT infrastructure designs into BRT could be realized, notably the prospect of maximizing transport modal switches from inefficient modes of public transport to efficient BRT systems. The BRT Project was designed to bring in experts to support the planning and design stages of the new BRT and NMT infrastructure

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<sup>9</sup> This issue is further elaborated in Para 31

<sup>10</sup> [www.despacio.org](http://www.despacio.org)

development and to further disseminate best practices of implementing BRT systems through the issuance of a BRT Planning Guide.

13. Furthermore, in achieving one of the intended outcomes of the BRT Project, "*Dar es Salaam and Cartagena complete the planning and design for full BRT networks and NMT feeder systems*", lessons could be learned from implementing these pilot BRT systems, and in-house technical capacities of developing countries would be developed to implement, expand, and maintain their own BRT and NMT systems. This in-house confidence would allow for indefinite expansion of these systems globally, and decrease the GHG emissions per capita generated by the daily transport usage:
  - In Dar es Salaam, the BRT Project resources were planned as a contribution to the overall BRT project which had several confirmed funding sources for BRT planning and design that included the World Bank and USAID. GEF resources were to complement the overall BRT development effort to support development of the financial feasibility study, business plan, technical specifications for procurement, as well as cycling and pedestrian master plans. In addition, resources were also used to support development of required legislative and regulatory frameworks;
  - In Cartagena, the Project focused on complementing existing BRT plans with engineering plans of an NMT feeder system that would contribute to improved access to the BRT through a bicycle/pedestrian feeder network integrated with the BRT;
  - The BRT planning guide was to be developed and published to guide each step of the BRT planning process to encourage and guide other cities wishing to develop BRT systems;
  - A dissemination and consultation strategy was planned to focus on developing a systematic approach to disseminate the reports, presentations and other outputs, and specifically the BRT Planning Guide.
14. At the time of the design of the BRT Project in 2004, there were few sustainable transport projects in the GEF portfolio (under GEF's Operational Program OP-11). With ongoing baseline activities in both Dar es Salaam and Cartagena, the benefits of GEF incremental assistance to introduce NMT infrastructure designs into BRT could be realized, notably the prospect of maximizing transport modal switches from inefficient modes of public transport to efficient BRT systems. Furthermore, the duration of the Project was tied to the completion of World Bank loans and other investments at which time concrete measurements of emission reductions could be made to assess the impact.
15. In 2004, Dar es Salaam was on track to be the first city in Africa to have a fully integrated BRT and NMT system. The National Government, the Mayor, and the City Council have all been on record as being committed to implementing the BRT system. These statements and commitment to funding attracted interest from various donors including GEF who provided PDF-A funds to support 3 workshops on BRT and NMT in Dar es Salaam. These workshops advanced the goals and targets of an earlier "Sustainable Dar es Salaam Project", a joint UN Habitat/UN Environment project, which led to the development of the Dar es Salaam Strategic Urban Development Plan. The Vice-President's Office on 9 July 2002 stated that after consultation with the President's Office, they supported implementation of the BRT project in Dar es Salaam as it conforms to national development objectives as articulated in their National Transport Policy (NTP).
16. Implementation of the BRT and NMT infrastructure in Dar es Salaam City falls under the responsibility of the Dar es Salaam City Council (DCC) and its three Municipalities. The City Council established three development priorities, one of which was implementing Bus Rapid Transit. In January 2003, the DCC funded a visit by the Mayor of Dar es Salaam and 12 other decision makers and technical experts to Bogota, Colombia, and organized by ITDP. After the visit, official commitments to implement a BRT system in Dar es Salaam were rapid with the BRT project receiving endorsement from National

Parliament in July 2003. In June 2004, the tendering process for the ToRs for the physical planning and detailed engineering of the Phase 1 BRT corridor commenced under a World Bank loan. The ToR under the World Bank loan, however, did not include funds for a number of other critical elements required for the preparation of a full BRT system including:

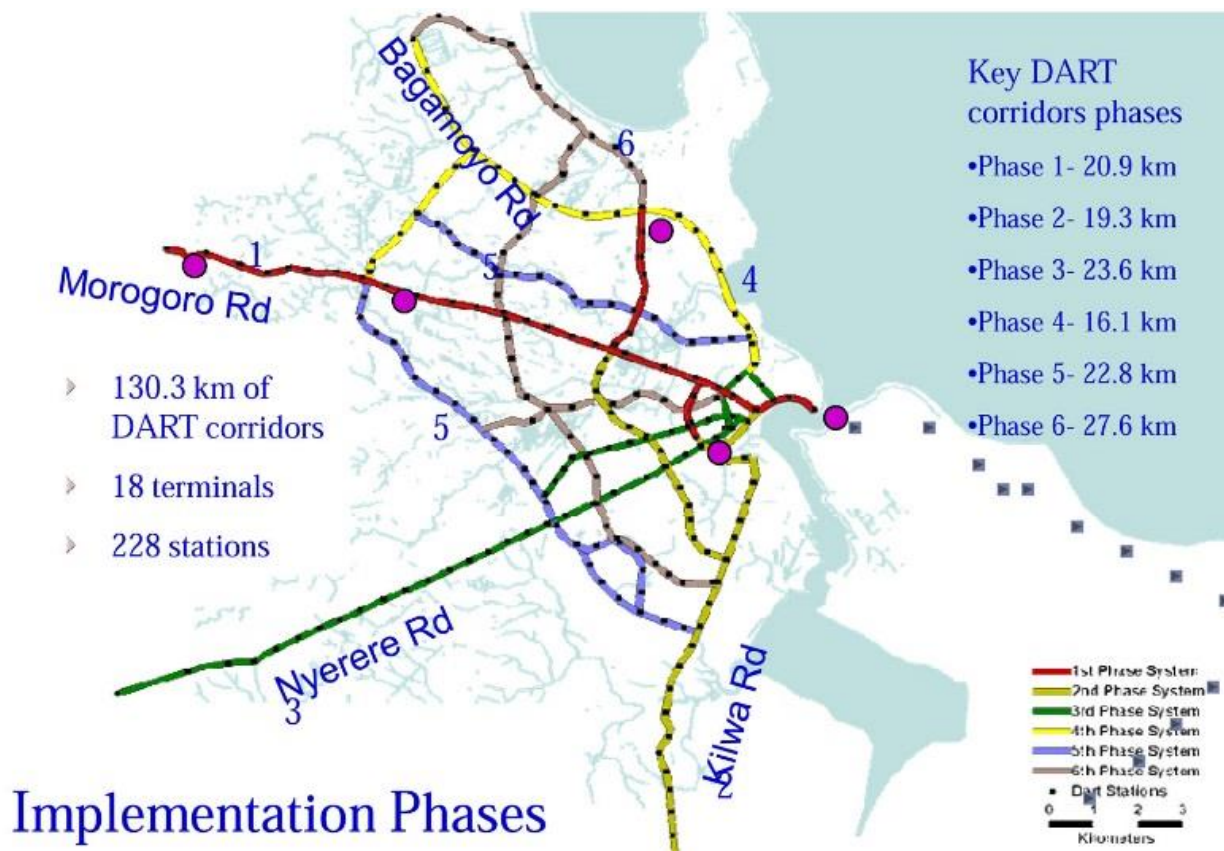
- a business plan for the BRT system;
- the structuring and drafting of the contracts for the regulatory authority, the operators, the feeders, and the ticketing system;
- the procurement of traffic modeling software by the project unit;
- training of the staff; and
- the detailed design of pedestrian and cycling facilities in the corridor.

Figure 1 illustrates the completed Phase 1 of the DART system as well as the proposed Phases 2 and 3.

17. The genesis of the Cartagena BRT system came from 2002 funding from the Government of Columbia's National Urban Transportation Programme (NUTP), a program which receive technical assistance from the World Bank. The NUTP in many ways is a by-product of the success of Bogota's Transmilenio system that became operational in late 2000, and the government's desire to improve public passenger transport throughout Colombia. In early 2002, the Municipality of Cartagena received technical assistance from German Development Cooperation (GIZ) and ITDP in 2002 to host an international seminar on sustainable transport options in Cartagena, building on capacity development efforts in Cartagena by JICA (from 1992) and UNDP (transport sector capacity building). In addition, the city had also managed the successful permanent pedestrianization of the historical core of Cartagena. In March 2002, the Municipality of Cartagena published its vision statement for a sustainable transport future, strongly linking accessibility to development and poverty eradication. The document, *Movilidad Para Todos* (Mobility for All), sets out the municipality's investment and planning priorities. These priorities include the development of:

- A more prosperous, competitive, sustainable and equitable urban centre by permanent pedestrianization and urban regeneration efforts;
- Pedestrian corridors throughout the city that will allow all segments of society to comfortably and cost-effectively access economic opportunities, mass transit facilities, and public services;
- A bicycle network that will integrate with other transport modes and provide full coverage to major destinations such as businesses and schools; and
- A Bus Rapid Transit system that will provide a low-cost, quality transit service to all income sectors.

Figure 1: Map of the DART system



18. After approval of the Movilidad Para Todos, the Mayor’s office contracted BRT experts Logit from Brazil to prepare a BRT Plan in 2003. This plan envisioned a 25.75 km BRT system to be built in two phases, the first being 12 km. Cartagena submitted these preliminary plans to the National Government, and the National Government then included the implementation of this BRT system in its negotiations with the World Bank for its Integrated Mass Transit Systems Loan, which was signed in June of 2004. The IBRD had committed US\$ 46.7 million for the implementation of the first 12 km BRT system, with the Municipality committing an additional US\$ 35.3 million in matching funds. The Municipality of Cartagena, however, did not complete the necessary detailed designs for their BRT system, with the primary deficiency of these plans being a comprehensive design for pedestrians and bicycle facilities both inside the bus corridor and as a feeder to the corridor. The Municipality approached ITDP and the UN Environment/GEF to fund these activities to complement and improve the design. Figure 2 provides a depiction of the Cartagena BRT system.

Figure 2: Map of the Cartagena BRT system



19. In consideration of the interest in BRT systems globally in 2003, notably with large cities in developing countries, large potential for growth in the number of BRT systems existed. The quality of these systems, however, would depend largely on the capacities of local governments to implement such systems. With numerous local governments requesting assistance to undertake prefeasibility and feasibility studies of BRT and NMT, and with the absence of any documentation on the implementation of integrated BRT and NMT systems, ITDP in its design of the BRT Project included project activities for the preparation of a global *BRT Planning Guide*. This would facilitate cities in developing countries to design a BRT system on their own, reduce their reliance on expensive international experts, and provide them with an authoritative guide to best practices of BRT planning with the intention of eliminating serious mistakes that compromise emissions benefits of those systems (municipal governments often are misled into believing that designing a BRT system is simple, and that they can use local experts). Previous efforts to prepare the BRT Planning Guide were undertaken in 2002-03 by the GIZ-supported Sustainable Urban Transport Project (SUTP). The majority of the funding for the preparation of the BRT Planning Guide came from the Hewlett Foundation (US\$215,000) with additional resources coming from GEF to assist in the documentation of the more complex elements of BRT system design that included traffic modelling, legal issues and financial planning.

## 2.2 Project Objectives and Components

### 2.2.1 Objectives

20. The **goal of the BRT Project** was to “reduce GHG emissions with Bus Rapid Transit” (inherent in the name of the Project). To achieve this goal, the **objectives of the BRT Project** were to:

- implement a pilot BRT system in Dar es Salaam, Tanzania, as the first stage of a 100 km trunk system that will serve as Africa's first and most extensive BRT system;
- implement the first fully developed NMT feeder system as an integral part of the planned 12 km pilot BRT system in Cartagena, Colombia; and
- document the BRT planning process in a "BRT Planning Guide" to enable other cities in developing countries to develop BRT projects and estimate their projected greenhouse gas and other emissions on their own without having to rely on costly consultants from developed countries.

## 2.2.2 Components

21. The BRT Project consisted of 3 components: (1) Dar es Salaam BRT Project; (2) BRT with NMT Feeder System for Cartagena, Colombia; and (3) Bus Rapid Transit Planning Guide:

- Component 1: Dar es Salaam BRT Project: This component consisted of targeted GEF incremental support for the planning and design phase of the Dar es Salaam BRT. This included support for the completion of a financial feasibility study, business plan, technical specifications for all procurement, legislative changes required for a BRT authority, regulatory changes plans with the financial feasibility study, tendering documents and contracts (for trunk line operators, feeder operators, ticketing system operator and construction contracts), and a bicycling and pedestrian master plan. Other critical aspects of the planning and design of the BRT system were supported by the World Bank (for traffic modelling of the BRT system, detailed physical design and engineering and operational plan) and USAID (for stakeholder meeting support and press conferences);
- Component 2: BRT with NMT Feeder System for Cartagena, Colombia: This component also consisted of targeted GEF incremental support for the Cartagena BRT/NMT system. This primarily included support for demand estimates for each corridor under different pricing and design scenarios, a bicycle and pedestrian feeder network plan, and detailed engineering plan for a bicycle and pedestrian basic network along the shore. Other critical aspects of the BRT design for Cartagena were mainly supported by the Municipality of Cartagena (for stakeholder meetings, press conferences, financial feasibility study, business plan, technical specifications for all procurement, legislative changes for a functional BRT authority, regulatory changes for compliance with the financial feasibility study, and tendering documents and contracts for trunk line operators, feeder operators, ticketing system operator and construction contracts) and the World Bank (mainly for the tendering and construction of the BRT system);
- Component 3: BRT Planning Guide: This component provided incremental support to document detailed steps of the planning process identified from other existing BRT projects and provided linkages to BRT documentation and resources. With the total cost of the BRT planning guide in the order of US\$269,000, GEF's contribution was US\$45,300 with the remainder of the funds coming from the Hewlett Foundation.

## 2.3 Target Areas/Groups

22. Targeted stakeholders of the BRT Project included a diverse subset of stakeholders involved with the planning and implementation of pilot BRT projects in Dar es Salaam and Cartagena, from central government to the municipal levels of government and entities that plan, design, implement and operate the systems. In this regard, the primary challenge for the evaluation was finding key stakeholders involved with Project activities, considering these activities were implemented more than 10 years ago. Moreover, this evaluation was conducted by planning for the likelihood of not meeting some of these key stakeholders. As such, *this Terminal Evaluation placed more focus on the impact of*

*the work of these key stakeholders on their integration of NMT infrastructure with the planned, implemented and operationalized BRT systems in both Dar es Salaam and Cartagena.* In addition, there are also stakeholders involved with the BRT planning guide, and the beneficiaries of these guides that include numerous BRT development teams in developing cities throughout the world.

23. For Dar es Salaam, relevant stakeholders targeted in the BRT Project document for involvement with development of the DART system included:

- President's Office for Regional Administration and Local Government (PMO RALG) who are responsible for driving the development of the existing Phase 1 of the DART system and the approval of plans for Phases 2, 3 and 4;
- Traffic police on managing traffic, both vehicles and NMT, and issues regarding compliance to traffic rules for segregated corridors for buses and NMT traffic;
- Stakeholders related to the operations of DART System including the DART agency (system operators), UDA-RT (interim bus service operator), Surface and Marine Transport Regulatory Authority or SUMATRA (fare regulation of public transport systems including DART system), Regional Licensing Authority (currently responsible for bus route licensing), and the Rebel Group (Transaction Advisor to DART to help attract potential investors to the system);
- World Bank for the provision of partial financing for DART Phase 1, undertaking of an impact evaluation of DART Phase I on any measurable impacts on BRT usage with the addition of NMT infrastructure, and the planning and design of Phases 3 and 4 of DART;
- AALOCOM (a local NGO promoting non-motorized and sustainable transport) on their information collected on public opinion of the DART system and the impact of NMT infrastructure;
- Tanzania Drivers Association to gauge the level of support or opposition to the DART system, and their views on the impact of the BRT on the vehicular traffic volumes in Dar es Salaam;

24. For Cartagena, relevant stakeholders targeted in the BRT Project document for involvement with the development of the Cartagena BRT included:

- The Colombian national government, specifically the Ministry of Transportation with oversight responsibility of the NUTP and Cartagena's BRT plans, policies and standards;
- The Cartagena municipal government including the Mayor's Office and City Council who have oversight on the operations of the Cartagena BRT system and monitor the impacts of the BRT system, notably the improvements on the quality of life and urban mobility in Cartagena;
- Stakeholders related to the operation of the Cartagena BRT system including TransCaribe (system operators), city bus operators, and the Integrated Mass Transit System of Cartagena;
- UNDP and GIZ (both of whom provided capacity building assistance to the municipality prior to 2003);
- The World Bank who provided technical assistance for the preparation of the NUTP where Cartagena is included and proposals regarding financing of additional BRT phases;
- Private consultants (with the most recent ones working with a Netherlands-based cycling NGO to integrate cycling networks with BRT in Cartagena) on current municipal efforts to integrate NMT

infrastructure with the Cartagena BRT system, and gauging the impact of this integration on BRT ridership.

25. Stakeholders targeted in the BRT Project document for involvement with the BRT planning guide included:

- TransMilenio S.A. who had provided considerable inputs to the Guide based on their successful implementation of BRT in Bogota;
- Government officials in Asia, Africa and Latin America, a number of whom had benefited from the BRT Planning Guide in their implementation of BRT projects;
- A large number of international BRT and transportation consultants (including those at ITDP) who provided technical assistance in the preparation of the guide;
- Nationally-based international development organizations such as GIZ who have provided previous technical assistance in the preparation of ITDP’s BRT Planning Guide.

26. Stakeholders with an overarching interest in the BRT Project includes personnel from UN Environment ranging from former task managers to financial personnel on maintaining the performance of the Project and its alignment with UN Environment’s Program of Work, to personnel on the Partnership for Clean Fuels and Vehicles (PCFV).

## 2.4 Milestones in Project Design and Implementation

27. Table 2 presents the milestones and key dates in the BRT Project design and implementation. The evaluation notes that this medium-sized project did not have an inception phase or a midterm evaluation.

**Table 2: Milestones and key dates in BRT Project design and implementation**

Milestones	Applicable dates
Preparation grant approved	18 November 2002
Concept approved (under GEF-3)	2 August 2006
Approval of Project by GEF	7 February 2005
Actual commencement date	21 March 2005
Commencement of planning and design of Dar es Salaam BRT	July 2005
Commencement of planning and design of Cartagena BRT	July 2005
Commencement of preparation of BRT Planning Guide	July 2005
Completion of the BRT Planning Guide	1 June 2007
Completion of main planning activities funded by Project	2010
Commencement of operations of DART system	16 May 2016
Commencement of operations of Cartagena BRT	27 March 2016
Terminal date of BRT Project	2016 June

## 2.5 Implementation Arrangements and Project Partners

28. The BRT Project was implemented by UN Environment from its offices in Nairobi, Kenya. The role of UN Environment on the Project was to review project annual work plans, provide advances to its executing agency for carrying out planned works, and to report to GEF on project progress. In addition, UN Environment was to serve as a linkage for the BRT Project to other related programs on sustainable



transport including UN Environment’s Partnership for Clean Fuels and Vehicles (PCFV), a prominent program for the promotion of clean fuels and vehicles in developing countries, and other donor projects such as GIZ’s Sustainable Urban Transport Asia initiative. Through UN Environment’s network, linkages with these programs were to benefit the BRT Project by bringing together implementing personnel with common and shared objectives for information exchanges and participation at sustainable urban transport seminars and events.

29. The executing agency for the Project’s activities was ITDP who managed contracts for the planning and development of the pilot BRT systems in Dar es Salaam and Cartagena. The value of their role as the executing agency was their access to a global network of transport expertise and their reputation for mobilizing other donors for technical assistance provision for the development of BRT systems in developing country cities such as Dar es Salaam and Cartagena.

## 2.6 Project Financing

30. The total Project cost was US\$3,707,588<sup>11</sup>. This cost has been broken down into the GEF grant of US\$724,595 and co-financing of US\$2,982,993 as detailed on Table 3. It is important to note that the financing discussed in this section only includes enhanced planning and design of the Dar es Salaam and Cartagena BRT systems as well as a preparations of the BRT Planning Guide, not any of the capital costs or equipment procurement of the pilot BRT systems.

**Table 3: Project budget summary<sup>12</sup>**

Particulars	Amount (USD)
Dar es Salaam City Council	681,819
I-ce	105,000
World Bank	1,276,374
USAID	98,800
CIM	78,000
GIZ	138,500
Hewlett Foundation	214,500
Rockefeller Foundation	300,000
Climate Works	60,000
Ford Foundation	30,000
<b>Total Co-financing of the BRT Project</b>	<b>2,982,993</b>
GEF grant to UNEP	724,595
<b>Total Cost of BRT Project</b>	<b>3,707,588</b>

## 2.7 Changes in design during implementation

31. Considering the majority of the GEF resources were devoted to enhancing the planning of pilot BRT systems in Dar es Salaam and Cartagena within a 5-year period of implementation, there were generally no significant changes in design during implementation. The only changes during implementation involved:

- deferral of monitoring GHG emissions from operational BRT systems. Although the design of the BRT Project was not specific in terms of monitoring GHG emission reductions from the pilot BRT

<sup>11</sup> Excludes PDF funds of US\$25,000 from GEF and US\$28,500 from ITDP

<sup>12</sup> This summary is missing the contribution of the City of Cartagena which was estimated to be US\$542,230 in the original project budgets of 2004. This was not declared on the 2016 summary of ITDP in 2016 but was likely provided as co-financing for the salaries of local staff, office premises and personnel for preparing a process for public consultation and participation.

systems and in consideration of the small grant amount of US\$724,595, there were no available resources after the 11-year implementation period to monitor GHG emission reductions generated from these pilot BRT systems that benefitted from GEF grant resources;

- resources expended in 2008 for the integration of aquatic transport services in Cartagena with the TransCaribe BRT system at the request of the Mayor’s office (see Paragraphs 79, 80, 99 and 103).

## 2.8 Reconstructed Theory of Change of the Project

32. A Theory of Change (TOC) for the BRT Project was not prepared nor was it a requirement of GEF or UN Environment for the approval of its projects in 2004. Moreover, the 2004 BRT Project Document did not contain a project results framework (PRF). Notwithstanding that the Project Document provided essential Project information, intended goals, objectives, outcomes and outputs of the BRT Project, this information needed to be extracted from the Project Document to prepare a re-constructed TOC for the BRT Project. This required a scan of the Project Document for key phrases that were determined to be results from activities funded by the GEF grant. These key results are summarized on Table 4 and categorized into various levels of outcomes needed to construct a TOC.
33. Figure 3 provides a depiction of a TOC diagram constructed for this BRT Project evaluation. The logic of the diagram flows in an upward direction from the baseline to expected long term impacts of the project. In between, there are the BRT Project outputs combined with Project drivers (in yellow boxes) and Project assumptions (in red boxes) as well as Project technical assistance inputs and improved technical knowledge of the municipal governments and system operators, all of whom were to be enhanced by the Project. BRT Project outputs were not specifically listed in the Project Document; as such, they were derived from several sections of the Project Document including:
- Section 1.11 that describes Project activities to generate changes through its outputs. Indicators are provided on the right column that can be considered as outputs;
  - Section 2.4 (pgs 23-26) that discusses incremental activities that are funded by GEF; and
  - Section 4.1 that itemizes activities to be funded by GEF amongst other activities funded by other project partners including DCC, I-CE, the World Bank, USAID (through ITDP), the City of Cartagena, and GIZ. GEF-funded items did not necessarily match the indicators provided in Section 1.11<sup>13</sup>. As such, the outputs created by the evaluator were more in line with activities funded in Section 4.1.
34. As mentioned in Paragraph 20, the objectives of the BRT Project were to implement a pilot BRT system in Dar es Salaam, Tanzania, implement the first fully developed NMT feeder system as an integral part of the planned 12 km pilot BRT system in Cartagena, Colombia, and document the BRT planning process in a “BRT Planning Guide” to enable other cities in developing countries to develop BRT projects and estimate their projected greenhouse gas and other emissions on their own without having to rely on costly consultants from developed countries.
35. To achieve the objective of implementing a pilot BRT system in Dar es Salaam, activities were implemented to generate outputs to enhance the planning process, business and institutional arrangements, NMT infrastructure design, and training of local personnel that would lead to direct outcomes of “Dar es Salaam completes planning and design for full BRT networks and NMT feeder systems” and “Dar es Salaam develop their own expertise in BRT/NMT design, implementation and

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<sup>13</sup> This would include “legislative changes for a functional BRT authority” and “regulatory changes for compliance with financial feasibility study” for DART, and “demand estimates for corridors under different pricing and design scenarios” and “basic physical design of BRT system” for Cartagena BRT.

operation", and a medium-term outcome of "an operational BRT system in Dar es Salaam with healthy ridership".

36. Similarly for the objective of implementing a pilot BRT in Cartagena, activities were implemented to generate outputs for the enhancement of the BRT planning process in Cartagena including the operational design study, plans and designs for pedestrian and bicycle infrastructure and its integration to the BRT, plans for public outreach education and customer services to enhance ridership on the BRT, and training services to local personnel on NMT integration with the BRT system. This would lead to direct outcomes of "Cartagena completes planning and design for full BRT networks and NMT feeder systems" and "Cartagena develop their own expertise in BRT/NMT design, implementation and operation", and a medium-term outcome of "an operational BRT system in Cartagena with healthy ridership".
37. To achieve the objective of "reducing the planning costs of BRT systems in developing country cities", activities to be implemented and funded by the BRT Project included actual preparation of the BRT Planning Guide, conducting dissemination and consultation events, and distributing and disseminating the BRT Planning Guide to a wider audience. This would lead to an direct outcome of "increased access for cities in developing countries to BRT system plans using the BRT Planning Guide and lessons learned from other developing countries on BRT development", and a medium-term outcome of "an updated BRT Planning Guide with implementation experiences of DART and Cartagena reduces municipality reliance (in developing countries) on costly consultants from developed countries".

**Table 4: Intended results extracted from the BRT Project Document**

<b>Result #</b>	<b>Result Detail</b>	<b>Reference in BRT Project Document</b>	<b>Comments</b>
1	Dar es Salaam and Cartagena will complete the planning and design for full BRT networks and NMT feeder systems	Pg 9	This is an direct outcome
2	Cities develop in-house technical capacity to implement, expand, and maintain BRT and NMT systems on their own, and decreasing per person GHG emissions generated by the populations daily transport needs into perpetuity	Pg 9	This an direct outcome that would contribute to increased confidence of cities in implementing BRT and NMT systems
3	Latin American cities will learn from the Cartagena project on how to use the development of the NMT system as pollution free and desirable feeder systems	Pg 9	This is replication of a direct project outcome
4	NMT integration with existing and developing BRT systems will be spread first to Brazilian and Mexican cities	Pg 9	This is related to result #3
5	Experience in Dar es Salaam will induce development of similar BRT demonstration projects elsewhere in East Africa	Pg 9	This is replication of a direct project outcome
6	BRT professionals with African specific experience	Pg 10	This contributes to increased confidence of African cities in implementing BRT and NMT systems
7	At least 3 African experts involved with the project with NMT/BRT integration experience will work on other projects around Africa	Pg 10	This is related to result #5
8	At least 5 Latin American experts involved with the project with NMT/BRT integration experience will work on other NMT/BRT integration projects.	Pg 10	This is related to result #3
9	Project specific experience in Dar es Salaam and Cartagena will be incorporated directly into the development of the BRT Planning Guide along with the participation of other cities working on BRT.	Pg 10	An medium-term outcome directly related to improving the quality of results #3, #4 and #5.
10	Better quality of urban transport systems with a greater GHG emission reduction impact.	Pg 10	Directly related to the BRT Planning Guide of result #9.
11	Regional replication of successful BRT and BRT/NMT integration through dissemination of project successes	Pg 10	This is an intermediate state directly related to result #3, #5 and #9
12	In Dar es Salaam under Phase 1, 100 km of feeder lines will be implemented along with 30 km of integrated NMT feeder systems.	Pg 22	This is actually an output
13	In Dar es Salaam, CO <sub>2</sub> and other emission reductions will result primarily from a shift of 24,000 daily passengers from private vehicles to buses	Pg 22	Modal shifts

<b>Result #</b>	<b>Result Detail</b>	<b>Reference in BRT Project Document</b>	<b>Comments</b>
14	In Cartagena, the first 12 km BRT will be completed along with 10 km of waterfront NMT facilities, integrated on road bicycle and pedestrian facilities leading to the main BRT stations and bicycle parking facilities at key BRT stations.	Pg 22	This is an output of the Cartagena BRT project
15	In Cartagena, current modal split will be slightly reduced to increase by cycle use from less than 1% to 3% with bus use falling marginally from 78% to 77% (with some passengers switching to cheaper bicycles).	Pg 23	This is related to a medium-term outcome.
16	The BRT Planning Guide will be used by a minimum 12 major BRT projects globally significantly increasing the chances of project successes.	Pg 23	This result is also related to results #4, #5, #7, #9 and #11
17	The BRT Planning Guide will give confidence to 5 additional cities to launch BRT projects based on the tools from the planning guide to set up, manage and implement a successful BRT Project.	Pg 23	This result is also related to results #4, #5, #7, #9 and #11
18	The BRT Planning Guide will significantly raise knowledge and awareness about BRT planning and about the emission reduction potential of BRT.	Pg 23	This can be considered an intermediate state.

**Figure 3: Re-Constructed Theory of Change Diagram for BRT Project**

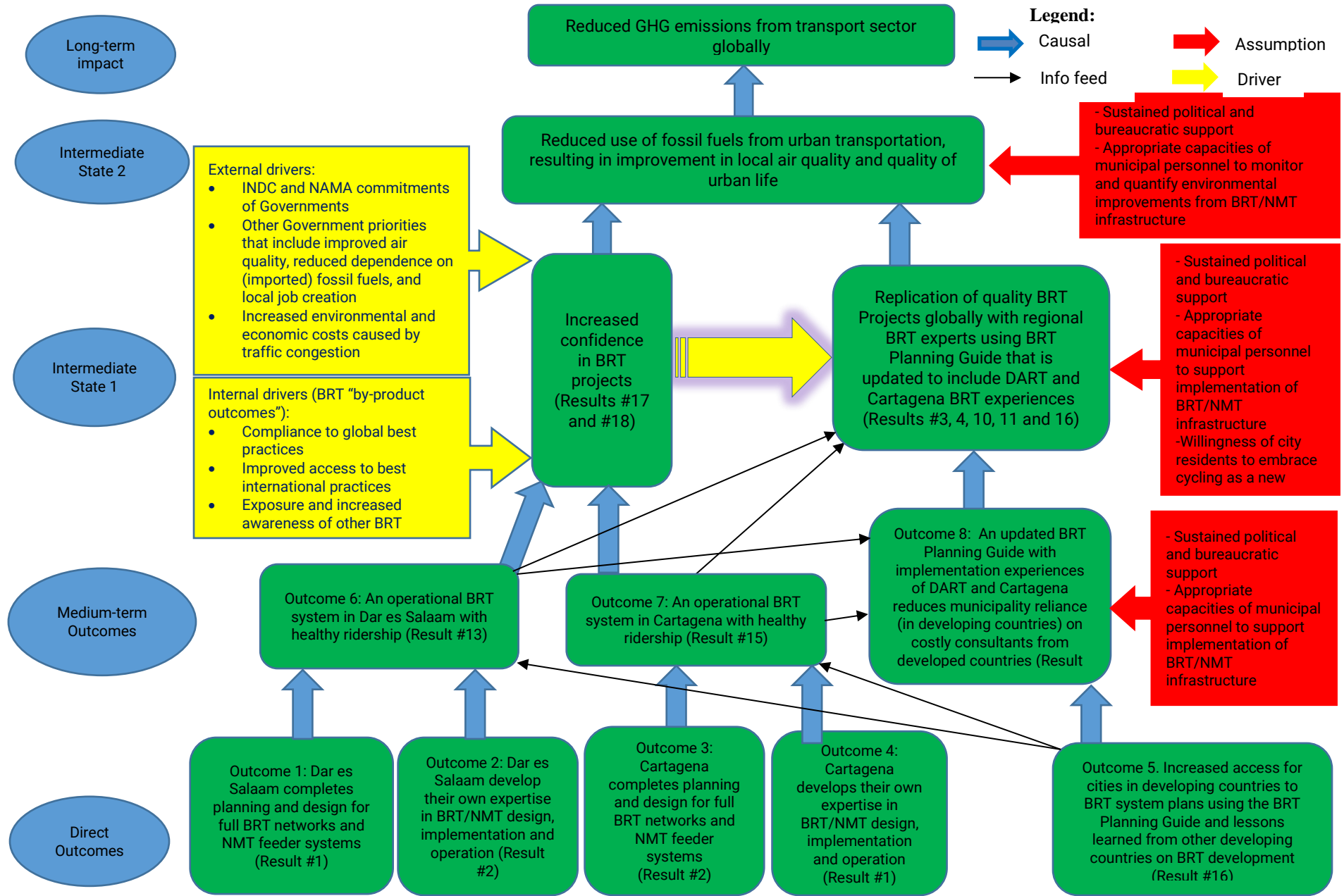
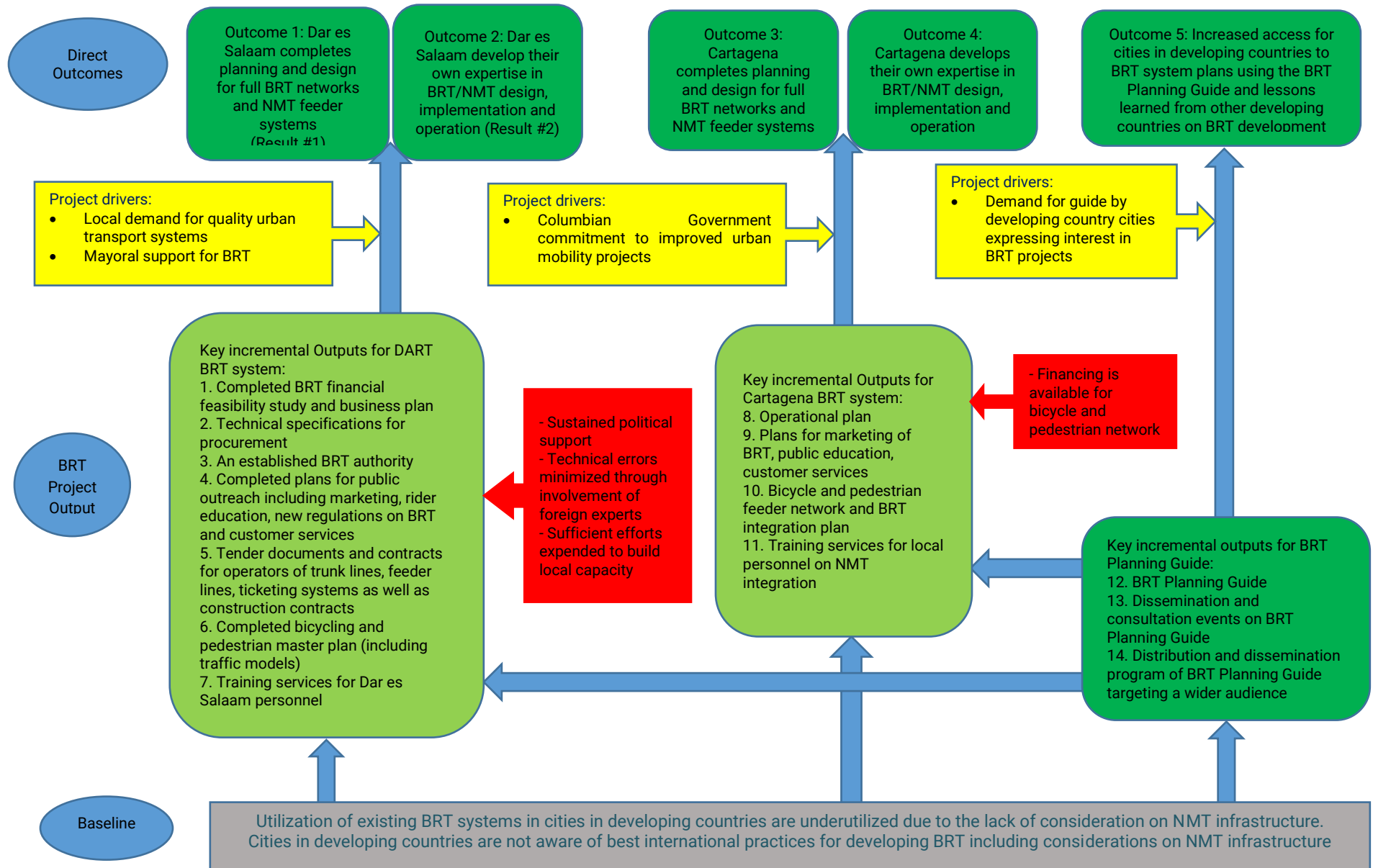


Figure 3: Re-Constructed Theory of Change Diagram for BRT Project (con'd)



38. Assuming sustainability of the BRT Project’s direct and medium-term outcomes, there will be expected “intermediate states” after the end-of-project (EOP), all of which would be driven by “internal drivers” that are considered here as “outcome by-products” of the BRT Project (that includes compliance to global best practices, improved access to best international practices and exposure and increased awareness of other BRT systems globally), and “external drivers” that are beyond the control of the Project and would include government commitments to low carbon development (that would generally be expressed as a NAMA or more recently, as INDCs) and the increasing national costs of using conventional and imported fossil fuel sources. A first level of intermediate states would include:
- “Increased confidence in BRT projects” ;
  - “Replication of quality BRT Projects globally with regional BRT experts using BRT Planning Guide that is updated to include DART and Cartagena BRT experiences”.
39. These first level intermediate states will then lead to a second level intermediate state of “reduced use of fossil fuels from urban transportation, resulting in improvement in local air quality and quality of urban life” or conditions within the country programs where there is reduced use of fossil fuels for urban transportation.
40. From this second level intermediate state, there would be a long-term impact of “reduced GHG emissions from transport sector globally”. A key assumption in the TOC diagram towards achievement of the medium-term outcomes and intermediate states from the BRT Project is sustained political and bureaucratic support, and appropriate capacities of municipal personnel to support implementation and operations of the BRT system that will sustain ridership of the BRT systems. Without this oversight, ridership confidence of BRT would be eroded with a stronger likelihood that there would be a reversal of the intended long-term impact of GHG emission reductions from reduced fossil fuel use in urban transportation.
41. Based on actual direct Project outcomes identified during the evaluation inception stage, some TOC issues were identified for further discussion with project stakeholders including:
- Has the original BRT Planning Guide from 2006 been updated to include successful BRT implementation experiences from other cities in developing countries?
  - Are there plans to update the BRT Planning Guide to include the BRT implementation experiences of DART and Cartagena?

## **3 Evaluation Findings**

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### **3.1 Strategic Relevance**

#### **3.1.1 Alignment with UN Environment’s strategy, policies and mandate**

42. The 2004 BRT Project aligns with the UN Environment Medium-Term Strategy (MTS) of 2010 to 2013, specifically that “countries make sound policy, technology, and investment choices that lead to a reduction in greenhouse gas emissions and potential co-benefits, with a focus on clean and renewable energy sources, energy efficiency and energy conservation” to meet a climate change objective of



“strengthening the ability of countries to integrate climate change responses into national development processes”<sup>14</sup>.

43. The BRT Project also aligns with the UNEP Medium-Term Strategy (MTS) 2014 to 2017 that specifies an Expected Accomplishment (EA2/low emission growth) through the use of renewable energy in partner countries to reduce GHG emissions and other pollutants as part of their low emission development pathways. The 2004 approval date of the BRT Project actually predates the earliest UN Environment Medium-Term Strategy (MTS) of 2010 to 2013.
44. The Bali Strategic Plan (BSP)<sup>15</sup> has objectives to “strengthen the capacity of governments of developing countries through targeted capacity building within the mandate of UN Environment, using and sustaining the capacity of technology obtained through training or other capacity building efforts, and developing national research, monitoring and assessment capacity that supports national institutions in data collection, analysis and monitoring of environmental trends and in establishing infrastructure for scientific development and environmental management (that will ensure sustainability of capacity building efforts)”.
45. The BSP also has other specific objectives of “promoting, facilitating and financing as appropriate, access to and support of environmentally sound technologies and corresponding know-how, especially for developing countries as well as countries with economies in transition”, and “strengthening cooperation amongst UN Environment, multilateral agreement secretariats (that take into account their autonomous decision-making processes), and other bodies engaged in environmental capacity building including GEF”. The BRT Project was strongly aligned to the BSP through its emphasis and efforts to achieve these objectives through local capacity building activities, citing lost opportunities if planning for BRT developments were implemented solely by the Project’s consultants<sup>16</sup>. The results of local capacity building are discussed in the Section 3.4.4 of this report.
46. With regards to South-South Cooperation (SSCo), the BRT project was designed to utilize the lessons learned from implementing the successful Transmilenio BRT system in Bogota, Colombia, to implement pilot BRT systems in Dar es Salaam and Cartagena. In addition, expertise of BRT professionals from Columbia, Brazil and developed countries (mainly the United States) were utilized in the preparation of the BRT Planning Guide, targeting transport professionals in developing countries. The BRT Planning Guide has served as a platform for SSCo with numerous developing countries with plans for developing BRT systems.
47. Safeguard management instruments were not completed for this Project at the time of its design in 2004. The UNEP ESES only came into effect in 2015. Despite the lack of compliance to both the ESES and SES, the BRT Project was designed to increase access to, introduce and sustain the use of international best practices for the planning, design and implementation of BRT systems for developing countries.

**The overall rating for alignment to UN Environment’s strategic priorities is Highly Satisfactory.**

### 3.1.2 Alignment with GEF focal areas and strategic priorities

48. The GEF provides grants for projects in focal areas of biodiversity, climate change, international waters, land degradation, the ozone layer, persistent organic pollutants, and chemicals and waste. The GEF funds for the BRT Project were approved midway through the GEF-3 Operational Phase (2003 - 2006).

<sup>14</sup> Page 26 on [http://www.preventionweb.net/files/14460\\_FinalMTSGCSSX81.pdf](http://www.preventionweb.net/files/14460_FinalMTSGCSSX81.pdf)

<sup>15</sup> <http://staging.unep.org/south-south-cooperation/pdfs/Bali-Strategic-Plan-GC23-6-add-1.pdf>

<sup>16</sup> See Section 2.5.3 on Page 27 of BRT Project Document

As such, with the commencement of the BRT Project in 2005, the BRT Project was to deliver outcomes consistent with the strategic programming objectives of the overlapping GEF-4 (2007 - 2010), GEF-5 (2011 - 2014) and GEF-6 (2015-2018). For GEF-3, the BRT Project was highly relevant to Operational Program 11 (OP-11) on “promoting environmentally sustainable transport”<sup>17</sup>. For GEF-4, the BRT Project was highly relevant with Strategic Program 5 for “promoting sustainable innovative systems for urban transport”. For GEF-5, the BRT Project was highly relevant to the Climate Change Objective 4: “Promote energy efficient low carbon transport and urban systems”. For GEF-6, the BRT Project supports Climate Change Objective 2: “Demonstrate systemic impacts of mitigation options under its Program 3: Promote integration of low emission urban system”. The BRT Project also intended, with its output of a BRT Planning Guide as depicted in the causal pathways in Figure 3, to increase access of best international practices for development of BRT systems to cities in developing countries. The BRT Planning Guide was indeed used in many cities in developing countries for the development of BRT systems (as further detailed in Paragraph 109).

**The overall rating for alignment to UN Environment and GEF strategic priorities is Highly Satisfactory.**

### 3.1.3 Relevance to global, regional and national environmental issues and needs and complementarity to other interventions

49. The pilot BRT system in Dar es Salaam has relevance to the Government of Tanzania’s (GoT) 2003 National Transport Policy (NTP) to achieve “efficient and cost-effective domestic and international transport services to all segments of the population and sectors of the national economy with maximum safety and minimum environmental degradation” and to create “safe, reliable, effective, efficient and fully integrated transport infrastructure and operations which will best meet the needs of travel and transport and improving levels of service at lower costs in the manner, which supports government strategies for socioeconomic development whilst being economically and environmentally sustainable”<sup>18</sup>. The NTP also advocates an integrated approach that links transport with long-term development goals of the country as expressed in the Tanzania Development Vision 2025 and a range of other national guidelines related to poverty reduction, rural development and civil service reform. In particular, the NTP applies to the modernization of transport systems in Dar es Salaam that encompass long-term visions of social and economic development for the city. To this end, Dar es Salaam has prepared its approach through a transfer policy and system development master plan that includes<sup>19</sup>:

- a *Vision for Dar es Salaam 2030* providing a general framework of development strategies;
- a *Strategy for Dar es Salaam* that provides more details to the general framework that would contribute to transforming Dar es Salaam into a world-class city;
- *Actions necessary to create a sustainable and attractive city* that includes concrete actions including an urban transport strategy, the “Dar es Salaam Transfer Vision 2030” that emphasizes efficient governance, broad societal benefits to ensure the modernized transport system is accessible to all, affordability of the transport system as a guiding principle to its development, and environmental sustainability that would contribute to the attractiveness of the city;
- The GoT *updating of its 2003 NTP in 2017* to include establishing measures to increase smooth traffic flow and carrying capacity of public transport to move passengers quickly, efficiently, and

<sup>17</sup> [https://www.thegef.org/sites/default/files/documents/OP\\_11\\_English.pdf](https://www.thegef.org/sites/default/files/documents/OP_11_English.pdf)

<sup>18</sup> <http://www.tzonline.org/pdf/nationaltransportpolicy2.pdf> (go to Part 3)

<sup>19</sup> Dar es Salaam: Transport Policy and System Development Master Plan – Final Report by PCI Consultants, June 2008, JICA, available on: [http://open\\_jicareport.jica.go.jp/pdf/11897535\\_01.pdf](http://open_jicareport.jica.go.jp/pdf/11897535_01.pdf) (see Section 2.1)

safely at minimum cost in large cities. The policy statement requires the GoT to develop integrated transport systems in cities; discourage the use of private vehicles by promoting the use of high-occupancy public transport; and provide enough space in cities to cater for infrastructure facilities to support public transport<sup>20</sup>.

50. In Cartagena, Colombia, the pilot BRT system was implemented to follow-up on the success of the Transmilenio system in Bogota. In 2002, the Government of Colombia adopted the National Urban Transport Policy (NUTP) as a means of leveraging the success of the Transmilenio system, and to provide competitive, efficient, affordable, safe and environmentally sustainable mobility options for urban populations<sup>21</sup>. One of these options for implementation was BRT systems. In March 2002, the Municipality of Cartagena published its vision statement for a sustainable transport future, strongly linking accessibility to development and poverty eradication. The document, Movilidad Para Todos (Mobility for All), sets out the municipality's investment and planning priorities. These priorities include the development of:

- A more prosperous, competitive, sustainable and equitable urban center by permanent pedestrianization and urban regeneration efforts;
- Pedestrian corridors throughout the city that will allow all segments of society to comfortably and cost effectively reach economic opportunities, mass transit facilities, and public services;
- A bicycle network that will integrate with other transport modes and provide full coverage to major destinations such as businesses and schools; and,
- A Bus Rapid Transit system that will provide a low-cost, quality transit service to all income sectors.

51. Finally, the efforts to prepare a BRT Planning Guide for the benefit of cities in developing countries were complementary to previous and ongoing efforts to prepare a compendium of experiences for bus rapid transit systems globally. The success of the Bogota's Transmilenio BRT system provided much of the impetus behind the preparation of the ITDP BRT planning guide supported by this project. The preparation of this BRT planning guide benefited from contributions from personnel from Bogota's Transmilenio, as well as numerous other transport professionals involved with global BRT systems and with support from other donors such as GIZ, all mentioned in the acknowledgements of the BRT Planning Guide.

***The overall rating for relevance to national issues and needs is Highly Satisfactory.***

***The overall rating for complementarity to existing interventions is Highly Satisfactory.***

### **3.2 Quality of Project Design**

52. A review of the BRT Project design (as summarized in Section 2.2) has been crucial towards a comprehensive understanding of intended BRT Project outcomes and the actual outcomes achieved. The framework for the review of the BRT Project design follows the standard UN Environment Evaluation Office approach to review the Project design. Factors contributing to this analysis is contained in the following paragraphs.

BRT Project Design Strengths:

<sup>20</sup> <http://documents.worldbank.org/curated/en/539461484768044001/pdf/PID-Appraisal-Print-P150937-01-18-2017-1484768041090.pdf> (see pg 2)

<sup>21</sup> <http://documents.worldbank.org/curated/en/300991468026973091/pdf/596650PAD0P1170e0only0900BOX361497B.pdf> (see Para 15)

53. The BRT Project was designed in 2002 and 2003 and was one of the first GEF projects within the Operation Programme 11 for sustainable transport. At this time, there were a number of operational BRT systems globally, mainly in developed countries, on which the BRT Project could draw experiences for use in implementing BRT projects in developing countries. At that time and as well as today, transport remains one of the fastest growing sectors of GHG emissions globally where the least progress has been made in the context of cost-effective reductions.
54. At the time of the design of the BRT Project, there was an increasing body of evidence from existing BRT systems in developed countries indicating that Bus Rapid Transit (BRT) systems coupled with Non-Motorized Transport (NMT) facilities as feeder systems would serve as primary and effective measures to counterbalance the rapid growth of private motor vehicle use and related CO<sub>2</sub> and other emissions. Completed BRT systems in cities in developing countries such as Bogota, Curitiba, and Quito had earlier ignored cycling and pedestrian networks altogether or have developed parallel cycling facilities that were not integrated as part of a planned feeder system for the BRT system. A powerful statement on the necessity of NMT infrastructure was made by the current mayor of Bogota, Mr. Enrique Penalosa who had stated (in 2004 during one of his previous terms as mayor of Bogota) that one of his greatest regrets was not designing cycling facilities as a feeder system to the world's first successful BRT system, TransMilenio. Currently, the city of Bogota has completed the retrofitting of such a system to accommodate NMT infrastructure with the TransMilenio BRT system.
55. As such, the focus of the BRT Project was providing incremental planning to support ongoing designs of BRT systems in developing countries that would include NMT infrastructure integration, provision of best experiences based on best practices to developing countries in implementing BRT projects, and to demonstrate their positive impact on the quality of urban life:
- The DART system in Dar es Salaam, Tanzania, which would have a high probability of being Africa's first BRT system; and
  - Cartagena, Colombia, which was also developing a BRT system as a replication to the successful TransMilenio BRT system in Bogota;
56. Criteria for the selection of pilot BRT cities mainly included a reasonable probability of successful implementation and replication potential. As such, the selection of both Dar es Salaam and Cartagena for BRT support was related to:
- strong mayoral support for the development of BRT systems in both cities since the commencement of the BRT Project design in 2002;
  - past and ongoing support from several foreign and donor organizations, many of whom are listed throughout this document;
  - the strong likelihood that the BRT system in Dar es Salaam would become Africa's first BRT system, and serve as a model for replication for other African cities, many of whom have expressed plans for implementing BRT systems similar to the TransMilenio in Bogota;
  - the opportunity for the BRT system in Cartagena to serve as an example to other Latin American cities with BRT and those planning to implement a BRT system, on integrating NMT feeder systems into BRT operations<sup>22</sup>.

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<sup>22</sup> Cartagena NMT infrastructure for the BRT system was planned and implemented. The issue of this infrastructure, however, has been the lack of implementation of the cycle network throughout Cartagena that is integrated with the existing cycling infrastructure at the BRT stations. Although NMT is mentioned in Cartagena's document on its transport vision, "Movilidad Para Todos (Mobility for All)", it has not mentioned in policy documents until recently. This is an indication of the growing recognition of NMT as a main mode of transport (see Para 8), possibly due to the availability of NMT infrastructure at highly visible BRT stations.

57. Furthermore, the strategy of the BRT Project was formulated to include the preparation and dissemination of a global BRT planning guide to assist cities in developing nations to implement BRT projects with some level of consistency and based on best international practices. While foreign and donor organizations had provided support in the detailed planning of the respective BRT systems in 2005, the designs were not yet completed with the integration of NMT infrastructure, nor was local capacity at a level to absorb the technical support of international experts in a sustainable manner. The greatest risk to these BRT projects in 2005 was to repeat the old designs from previous BRT systems without NMT infrastructure that would have resulted in sub-optimal ridership, minimal positive impacts on the quality of urban life in these cities, and higher risks to sustainability of BRT systems.
58. In conclusion and considering the size of GEF support of US\$724,595, the design of the BRT Project was clearly scoped to provide incremental support to enhance BRT planning for both Dar es Salaam and Cartagena by integrating NMT infrastructure with the system. In addition, the incremental support was intended to reduce the costs of and minimizing the time to develop BRT management systems including assistance with contracting and regulatory frameworks related to BRT operation, and preparing and disseminating a BRT planning guide targeting cities in developing countries that have expressed intentions to implement BRT systems in their respective cities. The intended impact of this assistance was to increase the likelihood of operational and functional BRT systems in both cities, and to use the successes of these developments as examples for replication of BRT systems in cities in developing countries globally.

BRT Project Design Weaknesses:

59. There are few weaknesses in the BRT project design considering that the Project in 2004 had taken into consideration all available global information on BRT implementation experience, and that this GEF grant was one of the first OP 11 projects in the GEF portfolio. Some of the design weaknesses, given the knowledge of BRT as of 2017, are addressed in the following points:
- *Timeframe of 5 years for the BRT Project.* Given the level of stakeholder consultations and agreements required amongst numerous municipal level stakeholders as well as donor agencies, there was a high risk of not completing the Project within a 5-year timeframe. The BRT Project was most likely intended to influence the BRT designs funded under the World Bank (as well as other future BRT projects) to include NMT infrastructure. At the time of the BRT Project design in 2002-2003, there was likely not a large body of evidence of the long gestation periods required for planning and designing a BRT project. In retrospect, this risk was high considering the complexities of local political processes, integration of plans with cultural issues (such as the lack of cycling culture in Dar es Salaam), numerous agreements required between several municipal stakeholders, substantial risks of delay on public tenders as well as tenders from donor agencies, and high risk of delays during implementation (such as delays in supply of equipment, and completion of labor and other stakeholder agreements). These delays could result in Project activities not being implemented in a logical and sequential manner (such as training operators in one year without them being able to use these skills for several more years due to delays in the actual operationalization of the BRT) that would lead to a longer implementation period of the system. This could be one of the key lessons garnered from implementing this GEF project;
  - BRT Project designers likely did not have a robust and diverse set of baseline information on which to design a BRT project. Notwithstanding that both Dar es Salaam and Cartagena had capacity building projects that preceded the BRT Project, these cities likely did not have a critical mass of officers with the technical knowledge and skills to collect information useful in the planning of the BRT system. This would have included amongst other relevant datasets, data on:
    - detailed origin-destination analysis;

- traffic volumes disaggregated into vehicle types and passengers carried;
  - passenger information including journey times, distances and modes of travel; and
  - energy consumption information of baseline urban transport modes.
- Lack of clarity on activities to support the monitoring of GHG emission reductions resulting from the support of pilot BRT projects. While crude estimates of GHG emission reductions were provided on Page 6 of the BRT Project Document, there were no specific activities mentioned in the Project Document on how to estimate these emission reductions. This is likely due to such methodologies being under development in 2004 including the methodology for CDM for the BRT of Transmilenio in Bogota. With no resources allocated for this monitoring (as mentioned in Paragraph 31), this Terminal Evaluation does provide crude emission reduction estimates using the prescribed methodology for GEF transport projects<sup>23</sup> (developed by ITDP) that can be found on Figures IV-1 to IV-6 in Annex IV.

***The overall rating for project design is Satisfactory.***

### **3.3 Nature of External Context**

60. Project operations can be affected by externalities beyond the control of the Project. This may include externalities such as severe and unexpected climatic events, high-risk security situations, poor or lack of supporting infrastructure, economic instability, and politics. The nature of external context for the BRT Project was assessed for the 2 sites of the pilot BRT project systems in Dar es Salaam and Cartagena:

- in Dar es Salaam, strong support of the Government significantly reduced a number of high risk externalities that would have increased the likelihood of an extended planning period for the BRT system as well as increased disruptions to BRT operations. The strong support of the Government included strong statements of penalties for non-compliance to new traffic rules within BRT corridors. The evaluation observed the efficient operations of the BRT system, and the relatively low number of accidents of BRT buses with other vehicles and pedestrians (as reported by DART personnel). The Government was also instrumental in resolving, in collaboration with Project personnel, disputes of residents and store keepers along the BRT corridors within the congested areas of downtown Dar es Salaam through instituting new parking policies adjacent to the BRT corridor (see Paragraph 73) accelerating the stakeholder agreement to BRT plans throughout the downtown areas. Infrastructure such as power supply and road access to the BRT has been of satisfactory quality to the extent that operations of the DART system have not yet been adversely affected. Local residents of the city have strongly embraced the use of the system, minimizing the risks of poor economic conditions as significant factors in disrupting implementation of the Project. As such, the nature of the external context for Dar es Salaam is assessed as highly favorable;
- in Cartagena, the TransCaribe system was only affected by slow approvals from the municipal government which had changed several times during implementation of the TransCaribe BRT system from 2005 to 2016. However, with strong public support for the BRT systems in Cartagena, security risks to the planning and operations of TransCaribe were viewed as minor. Furthermore, economic conditions are viewed as stable, and the political support for the planning of TransCaribe and its operations were generally favorable. As such, the nature of external context for Cartagena is assessed as favorable.

<sup>23</sup> <https://www.itdp.org/transport-emissions-evaluation-model-for-projects-teemp-brt/>

**The overall rating for nature of external context is favourable.**

### 3.4 Effectiveness

#### 3.4.1 Delivery of Outputs for Component 1: Dar es Salaam BRT

61. Delivery of key incremental outputs specified by the Project Document for the planning and design of the DART BRT system are described in this section. Project activities were implemented in parallel with:
- a World Bank consulting contract (represented by Logit Consult from São Paulo, Brazil, a team that included Mr. Enrique Penalosa, the former mayor of Bogota who is the "father" of Transmilenio). This contract included the planning, physical design and engineering of the BRT systems;
  - USAID financed activities implemented by ITDP for institutional restructuring, business plan, data collection, downtown parking and traffic circulation plan, capacity building for municipal officials, public relations and integration with NMT facilities design, all of which are covered in some ways with the GEF funded BRT Project in Dar es Salaam;
  - Interface for Cycling Expertise (I-CE) from the Netherlands who were undertaking a similar assignment for an integrated bicycle master plan for Cartagena.
62. Output 1: Completed BRT business plan combined with the financial feasibility of the system. Delivery of this output was achieved, commencing in July 2005 with the preparation of the terms of reference for an international management consulting firm to prepare the bankable business plan for the DART authority as well as private operating companies. A contract was awarded to Deloitte and Touche for preparing this business plan for the BRT system. With the initial drafts of the business plan indicating higher anticipated costs of the system, the Project in close collaboration with Logit and Deloitte provided inputs to strengthen the business plan which was submitted to both the Government of Tanzania and Dar es Salaam City Council (DCC) for approval in March 2007. In addition, final financial models of the system were stressed tested by the Project personnel and Deloitte in April 2007 followed by presentations of both operational and financial plans to stakeholders.
63. This business plan (that included operational and financial plans) facilitated the Project's creation of a document for investors that could be used for marketing the system and attracting private investment. The financial models and operational plan needed revision in December 2007 to reflect the increased size of the DART system (from initial 10 km to 21 km) that was deemed to be more financially viable. Financial models also indicated that non-air conditioned buses were a key to the financial viability of Phase I of the system. In addition, the revised financial model also indicated financial viability of the system would be enhanced if there were no special fares paid for by the system (with the other passengers cross-subsidizing the special fares), and if import duty or VAT applied to the buses were exempt. Development of these business plans was undertaken during a time when the Project faced challenges related to the rising costs of bus procurement and financing, possible compromises in the quality of buses procured, and working with donor agencies to ensure financial feasibility of the system.
64. The Project contribution to the DART business plan (with operational plan and financial models) was significant and vital in shaping the development of a functional DART agency and BRT system in Dar es Salaam. This could be attributed to the inputs and technical oversight from highly experienced personnel in BRT development that included Mr. Edgar Sandoval (the former managing director of Transmilenio), a Brazilian consultant from Logit, and Dr. Walter Hook (former head and founder of ITDP). With a strengthened DART Agency that included a full time staff member working on the Project and led by a Chief Executive Officer with experience managing large urban projects for the World Bank,

the World Bank was able to approve a US\$ 91.9 million loan for DART Phase 1 infrastructure in May 2008.

65. Output 2: Technical specifications for procurement. Delivery of this output was achieved by early 2007. Initial pricing of buses for the trunk corridors as well as feeder routes was undertaken in late 2005. Based on analyses conducted in late 2005 on BRT demand estimates, initial pricing of buses for trunk corridors and feeder routes, and the number of buses required for DART, the Project found that replacement of all feeder buses on Phase I was not practical. This provided the Project with the rationale for preparing technical specifications in early 2006 for bus type, BRT infrastructure design (bus stops in particular) along with pavement requirements all of which were different from international norms and necessary modifications required for adaptation to the Tanzanian business environment. The fact that these were studied early in the development of the DART system benefited the design team to adapt to technically sound international best practice for BRT systems, and to take into consideration the best technologies within the framework of implementation success and sustainability.
66. An important sub-study to the technical specifications for bus procurement was the completion of a fuel study, given the existing fuel infrastructure in Tanzania. Diesel was determined to be the most appropriate fuel for the BRT system if used with higher quality engines. Technical specifications for the fleet of trunk buses were finalized in early 2007. As of early 2008, technical specifications for feeder buses included the need for 10 m length buses as a means to address concerns of bus crowding with an on-board fare collection. Technical specifications also considered the complications of refinancing the modernization of feeder bus fleets due to the fragmented and informal nature of feeder bus services. The outcome to this study was the procurement of buses with Euro III engines, a decision made by DCC with support from ITDP in 2015, considering the available fuel quality and the mechanical and technical capacity within Tanzania<sup>24</sup>. UN Environment remains involved with DCC to improve fuel quality in Tanzania for future fleets with the aim of renewing the fleets to Euro 4 engines or better<sup>25</sup>.
67. Output 3: An established BRT authority. Delivery of this output was achieved by 2008 with assistance to DCC to set up the institutional structure required for the efficient development of an operational BRT system. This assistance was commenced in 2005 with the recruitment by the Project of the former managing director of Transmilenio, Mr. Edgar Enrique Sandoval. With his experience with the successful set up and operation of Transmilenio, he developed an institutional structure for the DART authority that was converted into legislation for adoption by the Government of Tanzania. A key part of the institutional structure was the role of DART in the oversight of bus operations, as opposed to them being a bus operations manager as well as an operator. Similar to Transmilenio, DART would serve as the entity responsible for the procurement of bus services, and of service providers for fare collection, customer information, maintenance of BRT stations and security. With this institutional structure, DART could focus on serving as the manager of the BRT system as well as monitoring and enforcing compliance to standards set for the quality of the BRT system.
68. In August 2006, the cabinet approved the creation of the DART Agency Interim Team (AIT) that was tasked to set up the formal DART agency, complete with an organogram and job descriptions, and 10 government officers seconded to the AIT. By August 2007, the formal DART Agency was legally established with a full-time CEO hired as of November 2007. By April 2008, key positions of the DART Agency were fully staffed including directors for operations, financial operations, legal matters, public relations and planning. When the infrastructure of the BRT system was ready in 2015, DART served this mandate resulting in direct Project outcomes as elaborated in Paragraphs 91-96.

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<sup>24</sup> The quality of the fuel in Tanzania contained 500 ppm of sulphur, too high to work well in a Euro IV or higher engine, which needs a minimum of 50 ppm of sulphur to deliver the air quality benefits (based on the project stakeholder feedback).

<sup>25</sup> Further information on this consultation is also provided on: [http://staging.unep.org/Transport/new/PCFV/africa/dart\\_2015.asp](http://staging.unep.org/Transport/new/PCFV/africa/dart_2015.asp)



69. Output 4: Completed plans for public outreach including marketing, rider education, information on new regulations on BRT and customer services. Delivery of this output was achieved in 2007 with work on the delivery of this output commencing in 2005 with ITDP undertaking initial efforts to prepare the DART public relations plans in partnership with the Dar es Salaam City Council (DCC). Project funds were utilized for the development of visual materials as well as branding and marketing presentations for Logit Consult's work on public outreach on behalf of the Government and in compliance with the World Bank's social safeguard policies for the infrastructure being developed along the Phase 1 corridor of the BRT system. In addition, the Project created a draft investor's document of the BRT system for potential investors and private operators who may be interested in operating feeder routes or even become trunk line operators.
70. Output 5: Tender documents and contracts for operators of trunk lines, feeder lines, ticketing systems as well as construction contracts. Delivery of this output was achieved by 2010. Preparation of the tender documents for Phase I construction commenced in 2007 with draft legal contracts for private operations prepared by Deloitte and an international expert, reviewed in late 2008 and 2009 after approval of the World Bank loan, and completed for release in mid-2010. While assistance in the preparation of these tender documents and contracts was timely after approval of the World Bank loan (with 7 out of 8 contracts having been awarded by late 2011, with only a major road works contract to be awarded), actual construction of the BRT road works did not commence until early 2012. This outcome has been elaborated in Paragraph 92.
71. Output 6: Completed bicycling and pedestrian master plan (including traffic models). Delivery of this output was achieved by 2010, commencing with activities in 2005 involving the supervision of survey teams for the collection of data necessary for constructing a traffic model<sup>26</sup>. In 2005, the layout of the initial phases of the BRT system was finalized connecting the system with municipal and intercity bus terminals at Ubungu, the Central business District market of Kariakoo, and the Kaukauna ferry terminal. Strong consideration was given in the location of this initial network to service both low income households in the north as well as wealthy and politically powerful households in the north-eastern part of the city, thereby providing a wide range of the household income levels being serviced by the BRT system with immediate benefits. By 2006, a modal integration plan was completed for incorporation into the design and engineering plans, along the entire BRT corridor. These plans included high quality footpaths, cycle paths and traffic-calmed road crossings at BRT stations, along the entire length of the proposed BRT corridors and adjacent to the BRT lanes. These NMT facilities were designed to ease passenger's access to and from BRT stations, allowing passengers to make short-distance local trips by non-polluting modes, and improving safety at pedestrian crossings, all of which should have the impact of increasing ridership of the BRT system.
72. A Traffic Demand Management (TDM) plan consisting of a parking plan and NMT facilities design was prepared and completed by September 2006 by the firm Nelson Nygard. This work included close collaboration with Logit Consult engineers and I-CE representatives to integrate NMT facilities into the detailed plans of the BRT system. In late 2005, the original 10 km of the BRT corridor was expanded to 23 km to improve the financial viability of Phase I of the BRT. This also extended the workload of Logit Consult which was in position to integrate NMT designs into its detailed designs of the additional BRT corridors.
73. The most contentious segment of the BRT NMT plan was through the downtown area of Dar es Salaam where a parking plan was necessary to remove cars from a proposed BRT corridor that was previously a congested roadway with numerous small businesses. Approval of this plan in early 2008 through this segment was necessary to address the concerns of shopkeepers along this corridor, and the impact of the detailed parking plans on their businesses. The outcome of these meetings with shopkeepers and

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<sup>26</sup> Traffic survey data collection supervision was undertaken by an international consultant supported by the GEF Project instead of Logit Consult to build local capacity of data collection personnel and to reduce their reliance on outside consultants.

other businesses along the corridor was positive with the basic outlines of the parking plan receiving widespread approval.

74. During the preparation of detailed designs of the BRT system, Project staff from ITDP in 2009 and 2010 provided technical oversight assistance for TANROADS to integrate proposed NMT facilities with Logit's detailed BRT infrastructure plans. With additional co-financing support from Rockefeller Foundation, ITDP also helped to ensure that a new NMT master plan under the DART Agency's mandate would be coordinated with the BRT plans. This assistance was essential towards the outcome of "Dar es Salaam completing planning and design for full BRT networks and NMT feeder systems", which as elaborated in Paragraph 89.
75. Output 7: Training services for Dar es Salaam personnel. Delivery of this output was achieved with training for DART staff provided through ITDP in the form of oversight management and on-the-job training (with ITDP personnel embedded within DART offices) in delivery of Outputs 1 to 6. Other training services delivered by the Project included a study tour for DART personnel to Bogota and Curitiba in 2007 to view operational BRT systems. While it is difficult to assess the quality of these training services that were delivered over 7 years ago, there are indications that the training services were effective based on the outcome of a functional BRT system in 2017 in Dar es Salaam as well as positive testimonials from some of the attendees (who are now with DART and TANROADS).

***The overall rating for delivery of outputs for Component 1: Dar es Salaam BRT is Satisfactory.***

### **3.4.2 Achievement of Outputs for Component 2: Cartagena BRT system**

76. Delivery of key incremental outputs specified by the Project Document for the Cartagena BRT system are described in this section. These outputs were derived from the Project Document as outputs that were to be financed by GEF, and were to complement ongoing activities of the Government of Colombia (GoC) and the Municipality of Cartagena (MoC) in the planning, design and implementation of the Cartagena BRT system. Specific baseline activities being supported by the GoC and MoC included demand estimates for corridors under different pricing and design scenarios, and the basic physical design of the Cartagena BRT system.
77. Output 8: Operational plan. Delivery of this output was not achieved until after 2010 when GEF resources were exhausted. The BRT Project undertook preparation of the TransCaribe BRT operational plan that commenced in May 2005, received conditionally acceptance by TransCaribe in November 2005, and fully accepted in 2011 after further changes to the original plan of 2005. In 2005, consultants recruited by the Project provided oversight and review services to TransCaribe and the Ministry of Transport in the preparation of this operational plan. The results of the accepted operational plan were positive in that the design of the BRT corridor was to have resulted in a substantial reduction in the cost of the system. Much of this was due to a reduction in the number of properties and land acquisition deals required for the construction of the proposed corridor, and avoidance of public works through changing the direction of neighboring streets along the corridor. These changes in design also provided an opportunity for the City to initiate the development of bicycle paths to feed the BRT system. The operational plan also informed the City that their proposed programme to operate public taxi boats in the vicinity of the old town and Boca Grande areas was not economically viable and should not be integrated with BRT operations<sup>27</sup>.

<sup>27</sup> Notwithstanding, the mayor in 2008 continued to push for integration with taxi boats or aquatic services. In the first half of 2008, ITDP provided technical assistance to identify the best routes for the taxi boats through surveys, site visits and modeling, as well as suggestions for design of the boats.

78. In 2006-2007, ITDP hired international consultants<sup>28</sup> to provide technical assistance in integrating the old buses into the BRT system. In late 2007, ITDP mainly focused on giving technical assistance to TransCaribe to adjust the operational design to include an integrated fare and capture more of the city's entire demand to the system. ITDP also evaluated the impact of this integrated fare in the system's finances. For most of the first half of 2008, the Project provided technical assistance to the City to implement taxi boats and its integration with the BRT system at the request of the MoC.
79. In 2010 when GEF Project resources were close to exhaustion, ITDP continued to provide technical assistance on the operational plan and on NMT integration utilizing other fiscal resources. Specifically, the government requested assistance with fare integration with the conventional bus service and the bid for the ticketing system that took place in late 2010. This resulted in the award of a consulting contract for the design of the public transit fare collection system that was to be an integrated payment system for the entire city. Other Project technical assistance in the operational design of the BRT included assessment of the entire public transport demand, and a suggested inventory of buses for the City including 20 articulated buses, 220 12-meter both-sides door buses and 361 conventional buses (totaling 601 buses in the integrated fleet).
80. Output 9: Plans for marketing of BRT, public education, customer services. Delivery of this output was achieved by 2008. Activities supporting this output had commenced in July 2006 when both the Ministry of Transport and TransCaribe faced delays in constructing the first phase of the BRT corridor. Both the MoT and TransCaribe requested assistance in the process of sensitizing people to the new BRT system that resulted in ITDP recruiting a local producer to produce a video of the BRT system including several animations of what the system will look like and how to use it. In 2006, there were no qualified NGOs in Cartagena to support this BRT public campaign. ITDP worked with GYROS, an advertising company contracted by the city, to develop a campaign in early 2007 to improve the image and social benefits of the BRT Project, including ads in newspapers and TV and radio commercials. By mid-2008, remaining resources on the GEF project were more focused on promoting ferry services and its integration with the BRT at the request of the City of Cartagena. The current popularity and high ridership of the TransCaribe BRT system can be partially attributed to these efforts by the Project. This is further discussed in Paragraph 97.
81. Output 10: Bicycle and pedestrian feeder network and BRT integration plan. Delivery of this output was achieved by 2007. Plans for cycling and pedestrian feeder networks began in earnest in mid-2005 with feasibility level designs of bike paths along the BRT corridor<sup>29</sup>. In 2006, ITDP hired the consultants who developed the Bogota bicycle master plan to develop the Cartagena Bicycle Master Plan. Delays were experienced in the completion of this Master Plan and a design of this bicycle path along the BRT corridor in 2006, due to delays in the construction of the first phase of the BRT corridor (caused by an error in a topographical survey of this corridor reach). In 2007, based on surveys of local travel behavior, ITDP developed bike parking facility recommendations for TransCaribe and proposed them to the corridor's contractors. However, since 2007, the City had not awarded the study for the pedestrian and bicycle master plan notwithstanding the availability of city resources to conduct the study, for reasons not available to the evaluation but possibly due to a lack of political will. In 2007, ITDP shifted its focus of assistance to the Municipality of Cartagena to improving their BRT operations.
82. Output 11: Training services for local personnel on NMT integration. Delivery of this output was achieved by 2006. The Project developed training courses through TransMilenio for TransCaribe personnel which were delivered in both Cartagena and Bogota. This training consisted of 10 sessions in 2006 covering the experience of TransMilenio personnel in managing the organizations administration, ticket operation, management and financing of system, operating system, and contracting of 3<sup>rd</sup> parties involving transparent bidding processes. In addition, training of TransCaribe's

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<sup>28</sup> Mr. Wilmer Pipicano, Mr. Remi Jeanneret and Mr. Pedro Szasz

<sup>29</sup> Completed by Ms. Alicia Naranjo.

Operations Manager and Ticketing Director was provided at TransMilenio in 2006 for two weeks to familiarize them with the infrastructure and operations of a BRT system.

83. Training services on integration of the NMT with the new BRT system was mainly delivered in 2006 by the international experts who designed the NMT feeder network as well as the Colombian based NGO, “Foundation for the Country that we Want” (Por el País que Queremos). Training was delivered to local municipal personnel, many of whom had been working with TransCaribe in intense and effective community outreach activities related to feeder routes and community feedback on their designs (for routes and location of bus stops). Despite the delivery of training services for the integration of NMT with the new BRT system, the TransCaribe BRT system does not have a fully functional NMT network to feed most of its BRT stations. This outcome is further discussed in Paragraphs 93, 95, 98 to 100 and 107 and Table 5.

***The overall rating for the delivery of outputs for Component 2: Cartagena BRT is satisfactory.***

### **3.4.3 Achievement of Outputs for Component 3: BRT Planning Guide**

84. The delivery of key incremental outputs for BRT Planning Guide complemented donor efforts of GIZ prior to 2005 in preparing this Planning Guide prior to the BRT Project, and co-financing efforts by the Hewlett Foundation and USAID (through ITDP).
85. Output 12: BRT Planning Guide. Delivery of this output was achieved by February 2008. Commencement of the preparations for the draft of the BRT Planning Guide draft was in mid-2005. The Planning Guide provided detailed plans in English of over 800 pages in 18 chapters on the development of BRT systems based on best international practices from developed countries as well as the recent experiences of the Transmilenio BRT in Bogota Colombia. The English version can be found at: <https://www.itdp.org/the-brt-planning-guide/>.
86. Output 13: Dissemination and consultation events on BRT Planning Guide. Delivery of this output was achieved in 2008 with the completion of the BRT guide in 2007, the release of a short print run to the Transportation Research Board meeting in Washington, D.C. USA in January 2008, and the finalization of the BRT Planning Guide by the Board for dissemination in February 2008.
87. Output 14: Distribution and dissemination program of BRT Planning Guide targeting a wider audience. Delivery of this output was achieved in 2007 and 2008. In December 2007, the William and Flora Hewlett Foundation gave a grant to translate the BRT Planning Guide into four languages: Portuguese, Spanish, Russian and Chinese, which are publically available on <https://www.itdp.org/the-brt-planning-guide/>. Project PIRs report that over 1,100 guides have been distributed in Brazil to cities with over 100,000 inhabitants and University libraries and over 40,000 downloads of the BRT Guide or its chapters have been downloaded in English.

***The overall rating for the achievement of outputs for Component 3: BRT Planning Guide is highly satisfactory.***

***The combined overall rating of the achievement of outputs for all three project components is satisfactory.***

### **3.4.4 Achievement of direct outcomes as defined in the reconstructed TOC**

88. As discussed in Section 2.8 (Reconstructed TOC), the BRT Project sought to achieve outcomes that would contribute to an overall objective of “reduced GHG emissions from the transport sector globally”.

The evaluation of the effectiveness of the BRT Project in achieving intended direct outcomes from its implemented activities, is based on the reconstructed TOC (in Figure 3), and assessing causal pathways from the baseline to the outputs of the Project that would generate intermediate and direct outcomes towards long-term impacts. The intended direct outcomes of the BRT Project include:

- Intended Direct Outcome 1, "Dar es Salaam completes planning and design for full BRT networks and NMT feeder systems";
- Intended Direct Outcome 2, "Dar es Salaam develop their own expertise in BRT/NMT design, implementation and operation";
- Intended Direct Outcome 3, "Cartagena completes planning and design for full BRT networks and NMT feeder systems";
- Intended Direct Outcome 4, "Cartagena develops their own expertise in BRT/NMT design, implementation and operation";
- Intended Direct Outcome 5, "increased access for cities in developing countries to BRT system plans using the BRT Planning Guide and lessons learned from other developing countries on BRT development".

89. The intended Direct Outcome 1 was achieved with BRT Project outputs making substantial contributions to an outcome of Dar es Salaam completing planning and design for full BRT networks and NMT feeder systems. This outcome was achieved through the delivery of key outputs during the planning and design phase of the DART system between 2005 and 2009 with the able assistance of ITDP, as described in Section 3.4.1 including:

- the delivery of Output 4 with regards to the administrative set up and legislative changes for a functional DART authority that used the successful Transmilenio institutional structure from Colombia for its BRT system (with technical assistance from ex-TransMilenio personnel). This resulted in the DART Authority being able to provide oversight on bus operations by private operators in the setting and enforcement of standards for the provision of public transit on BRT systems;
- the delivery of Outputs 1 and 2 (completed financial feasibility study and DART business plan respectively) that were essential in preparing DART in managing the development of the BRT system. The financial feasibility study and business plans were essential in determining the range of feasible capital and operational costs of buses operating on the BRT, expected revenue from collected bus fares (based on Output 5 related to studies on affordable fares on the BRT system), and required subsidies for the operation of the BRT;
- delivery of Output 5 (tender documents and contracts related to operators of trunk lines, feeder lines, ticketing systems and construction contracts) which likely had the impact of removing years of delay in executing supply and construction contracts of the BRT, notwithstanding that there were years of delay in awarding the first construction civil contract (which was related to poor response for the first tender call with more details in Paragraph 105) and delays in the award of the first bus operations contract (due to nonresponse to the first tender call and possible collusion amongst operators);
- the delivery of Output 6 (completed bicycling and pedestrian master plan) which was key to the design and implementation of cycling and pedestrian walkways throughout most of the 21 km of the BRT system. While bicycle lanes were constructed along most of these corridors, cycling in Dar es Salaam has not yet become a mainstream mode of transport within the city due to cultural and

economic reasons. While walking remains the primary NMT mode of transport in Dar es Salaam, the presence of the bicycle lanes is a foundation for changing citizen's perceptions towards cycling as a main mode of transport<sup>30</sup>.

90. The intended Direct Outcome 2 was achieved with BRT Project outputs making substantial contributions to Dar es Salaam developing their own expertise in BRT/NMT design, implementation and operations. This outcome was achieved through the working style of ITDP which was to develop local capacity through a combination of formal training services (from Output 7) and "guided implementation" in the delivery of other outputs (Outputs 1 to 6) with ITDP personnel and BRT professionals embedded within the operations of DART and TANROADS. This management setup enabled GoT and DCC personnel to setup DART and manage the development of the BRT system in Dar es Salaam. These outputs also facilitated the delivery of Output 3 (technical specifications for procurement, mainly for buses) and assisted DART BRT managers in a critical decision to defer procurement of air-conditioned BRT buses.
91. A key sub-outcome to the delivery of Output 5 was the developed understanding of DART of the need to successfully engage service providers whose livelihoods were threatened by the new BRT system as an essential action towards successful BRT operationalization that essentially replicates the experience of Bogota's TransMilenio system. The involvement of these service providers has been and is currently monitored by DART personnel. Negotiations with these service providers consisting of daladala companies commenced in 2011 and concluded in 2013 with the integration of several of these companies with international operating companies.
92. Despite these positive indications on strengthened capacities of local BRT implementers, there is still evidence that best practices for NMT infrastructure and environmental monitoring have not yet been fully adopted within the DART BRT system. For example:
  - Not all pedestrian crossings at BRT stations have humped zebra crossings (an example shown on Picture 1);
  - There is an absence of parallel pedestrian/cycling infrastructure between Ubongo and Kimara BRT stations<sup>31</sup>;
  - Several intersections have right turn signals across the busway. Reducing this number of intersections or minimizing stoppages at these intersections would be of interest to DART in their efforts to improve mobility efficiencies of buses along the BRT corridors;
  - At some stations, platform length between sub-stops appears to be excessive for some BRT stations where there is no passing lane (see Picture 2). Capital costs can be reduced if these platforms are shortened to a length that still meets the BRT standard for minimizing saturation<sup>32</sup>;

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<sup>30</sup> From DART and TANROADS personnel

<sup>31</sup> Financing for this infrastructure is being addressed in Phase II.

<sup>32</sup> <https://brtguide.itdp.org/branch/master/guide/system-speed-and-capacity/understanding-station-saturation>

Picture 1: Pedestrian Crossing at Fire BRT Station along Mongoro trunk line in Dar es Salaam



**Picture 2: Posta BRT Station near Kivkoni Ferry Terminal along Mongoro trunk line in Dar es Salaam**



- As previously mentioned in Paragraph 10, no funds were available on the Project to determine GHG emission reductions from Dar es Salaam’s BRT system. Future assistance in this area will be required to train local consultants on this topic. This will enable DART to estimate GHG emission reduction potential, monitor actual GHG emission reductions from future BRT systems, and to set targets for their system to reach their full potential in the context of operational efficiency, which would also reduce the revenue-operations cost gap of public transport services.

DART personnel are aware of these shortcomings, and informed the evaluation that these some of these issues will be addressed with financing for Phases 2 and 3.

***The overall rating for achievement of Direct Outcomes 1 and 2 for Component 1: Dar es Salaam BRT is Satisfactory.***

93. The intended delivery of *Direct Outcome 3* was achieved with BRT Project outputs (as described in Section 3.4.2) making contributions to Cartagena in the completion of planning and design of the TransCaribe system for full BRT networks and NMT feeder systems. These outputs were crucial in the actual implementation of the BRT system implemented between 2010 and 2016:



- Delivery of Output 8 or the operational plan of TransCaribe has been significant to the success of current TransCaribe operations and its current high ridership. The Project did experience challenges in this area brought on by some of the mayors of Cartagena including one mayor in 2008 who with best of intentions, had requested ITDP to focus on also integrating a planned ferry service with the BRT systems that was economically not feasible (as mentioned in Paragraph 80). Despite this diversion, Project personnel imparted its experience of TransMilenio operations to BRT personnel in Cartagena after 2009;
  - Delivery of Output 9 or plans for marketing of the BRT system, public education and customer services has been crucial to Cartagena-based personnel in utilizing a planned process for sensitizing people to the new BRT system and build political will. TransCaribe personnel have been undertaking public outreach since 2006, well before operation of the BRT system. Further details are provided on Paragraphs 97 and 107;
  - Delivery of Output 10 or the plan for the bicycle and pedestrian feeder network and BRT integration, was instrumental in improving the pedestrian access to the BRT stations according to best practices that were used in TransMilenio system in Bogota. This has contributed to the healthy and growing ridership on TransCaribe. However, there was a lack of importance placed on cycling during the time of design and construction of TransCaribe in 2008-10, resulting in cycling infrastructure (serving as a feeder to the BRT system) not being implemented.
94. Personnel involved with the development of the TransCaribe BRT system benefitted from the operational plan prepared using GEF grant resources (Output 8). With technical assistance from TransMilenio, TransCaribe personnel setup the first bus operating company through a consortium consisting of a mix of former public transit operating companies and owners. In 2009 and 2010, the Project's funds were utilized by ITDP to prepare the operational plan which needed to respond to the Government's request for assistance with fare integration between conventional bus services and the BRT, procurement of a service provider for an integrated ticketing system, and BRT design that would meet the passenger demands (including the estimate of 20 articulated buses, 220 12-meter both-sides door buses and 361 conventional for an integrated fleet of 601 operating along the BRT corridor). Problems, however, were experienced in implementation of these plans in 2015 (mainly a flawed process for awarding operations contracts and delays in the appointment of the management unit head within the city government) which delayed the opening of the TransCaribe BRT system to the public until March 27, 2016.
95. The intended *Direct Outcome 4* was achieved with BRT Project outputs making contributions to Cartagena developing the expertise of TransCaribe in BRT/NMT design, implementation and operation. Similar to the development of BRT in Dar es Salaam (see Direct Outcome 2 in Para 91), ITDP delivered formal training services on NMT integration for local personnel (as a part of Output 11), and closely "guided implementation" in the delivery of operational plans (Output 8) and BRT marketing plans (Output 9) with TransCaribe management and operations personnel. With Output 11 being delivered over 10 years ago, the evaluation can only surmise that the satisfactory quality of NMT training has led to an improvement of designs at BRT stations (partially linked with delivery of Output 10) and the healthy and growing ridership of the TransCaribe BRT from 40,000 passengers per day since its opening in March 2016 to 90,000 in January 2017. The resulting TransCaribe system consists of 10.5 km of segregated bus lanes along Aveniu de Pedro de Heredia with 52 buses with feeder services operating to El Pozón, Crespo and Bocagrande. Some of the design shortcomings of the system includes areas of congestion along the corridor due to a lack of signal synchronization, and the lack of safe pedestrian crossings at some BRT stations (using humped zebra crossings).
96. Planning and design activities of the Project, however, did raise awareness amongst personnel at TransCaribe and academic institutes in Cartagena of the potential of BRT systems for reducing GHG emissions and improving the local air quality and the quality of life in Cartagena. In addition, the

Colombian National Council of Economic and Social Policy has made estimates of GHG emission reductions for Cartagena prior to implementation of the TransCaribe BRT system. In Colombia, there are several cities that have determined GHG emission reductions from BRT systems including Transmilenio in Bogota that initially used a CDM methodology to determine emission reductions from an operational BRT system. The Evaluation surmises that TransCaribe and the Colombian Ministry of Environment (or the Colombian National Council of Economic and Social Policy) will undertake efforts to determine GHG emission reductions from Cartagena's BRT system, especially if there is political will to improve the efficiencies of or expand the current BRT corridor.

97. Local personnel also benefitted from ITDP's work with GYROS in 2006 and 2007 (see Paragraph 80) to produce a BRT promotional video in 2008 (with several animations for the public on the system's look and how the passenger were to use it), which was widely disseminated in Cartagena. ITDP and GYROS also developed an awareness raising campaign for the TransCaribe BRT including ads in newspapers and TV and radio commercials. While the BRT was not to be operational until 2016, these plans for marketing the BRT system, public education and customer services were retained by TransCaribe's personnel responsible for community outreach.
98. In 2006, ITDP hired the consultants who developed the Bogota bicycle master plan to develop the Cartagena Bicycle Master Plan as shown on Figure 3. Unfortunately, these plans, though, have not yet resulted in any cycling integration with TransCaribe BRT though sufficient space was allocated to pedestrians and the full segregation of the BRT corridor. ITDP's plans for hiring a local consultant for training local personnel in the development of future bicycle projects in Cartagena (a part of Output 10) were side-tracked by the City's request to work on identification of the best routes for the taxi boats. As a result, ITDP were forced to divert some their efforts to conduct surveys, site visits and modeling, and suggestions for the boat's design all of which resulted in an outcome that a taxi boat scheme not being economically viable.
99. Despite the fact that cycling has not yet been effectively integrated with the Cartagena BRT infrastructure, Cartagena is an example of a longer time for cycling policies to be created in cities where such policies are absent. It is encouraging that since mid-2016, the Director of TransCaribe, Mr. Humberto Ripoll, has been speaking on the need for integrate bicycle infrastructure in the near future. Demand for a cycling network in Cartagena and its integration with the BRT was recently studied by Despacio<sup>33</sup>, an NGO in collaboration with the Royal Netherlands Embassy. Preliminary reaction to this study by TransCaribe management has been positive with conclusions that the use of the bicycle in Cartagena is not strictly recreational nor is its use affected by climatic conditions. As a result, the report provided a proposal for a pilot investment in bicycle parking stations at the eastern terminus of the TransCaribe BRT system along with dedicated corridors for cycle paths along Olaya Herrera Avenue (also known as Pedro Romero), San Martin Avenue and Crisanto Luque Avenue (as seen in Figure 3). This proposal will need to undergo a traffic study and a detailed engineering design phase. In addition, the proposal will need a design that incorporates the unique characteristics of each corridor segment, and avoids the common error of applying a common profile along the entire corridor. These dedicated corridors were not proposed along the Avenida Pedro de Heredia corridor due to the physical difficulties of routing a cycling path (see Picture 3)<sup>34</sup>.
100. As such, the current absence of cycling infrastructure along the TransCaribe BRT corridor is not a reflection of the quality of Output 11 or NMT training services delivered by the Project. Rather, from the perspective of the evaluator, it is a reflection of the lack of a "transport planning culture" in Cartagena combined with recent economic growth in the city and the increasing number of motorcycles to meet the demand for short and quick transport within Cartagena. In addition, the Project

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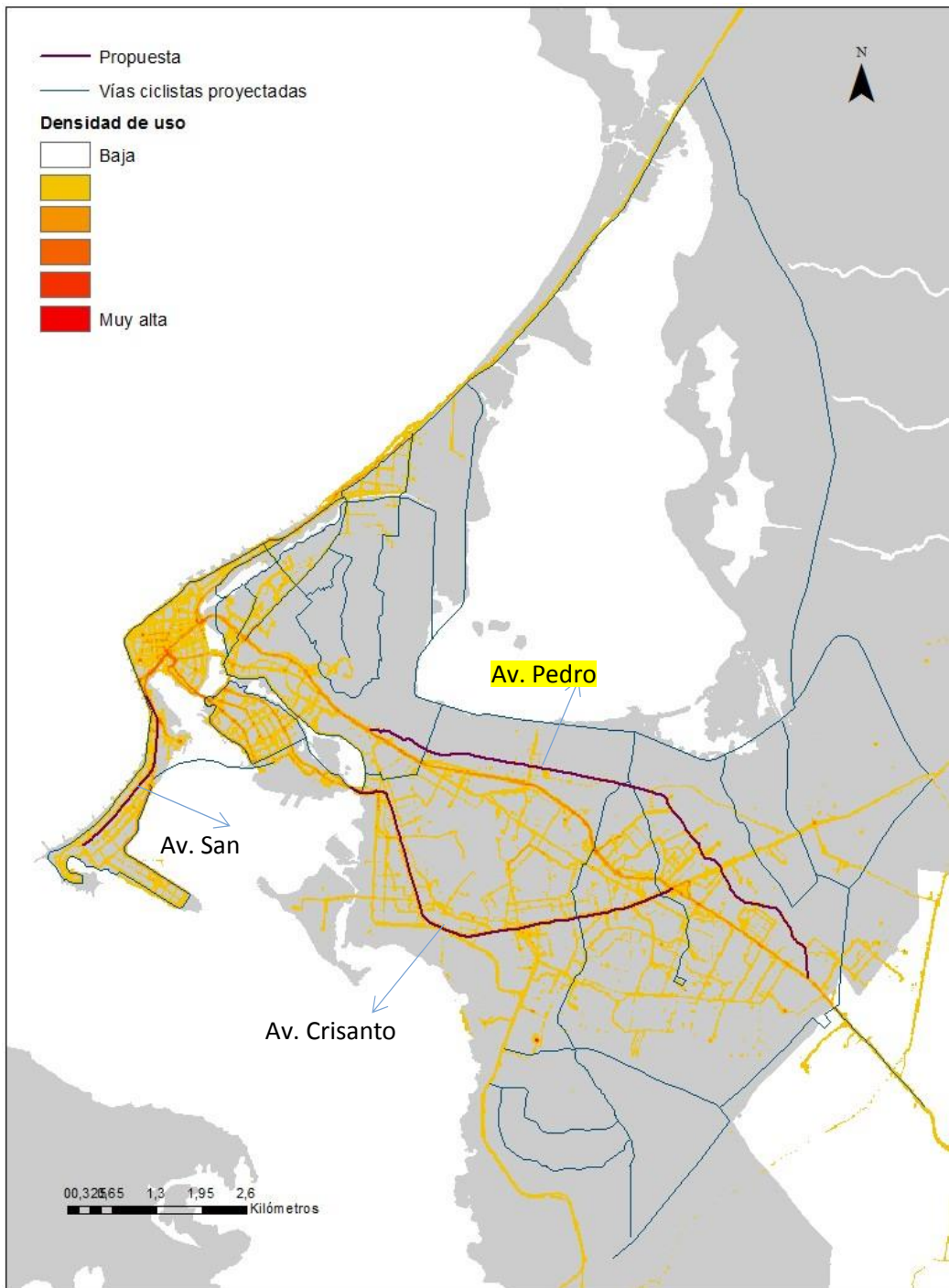
<sup>33</sup> <http://www.despacio.org/>

<sup>34</sup> Difficulties would include certain sections being too narrow for cycling and pedestrian pathways, obstruction of sidewalks with vendors, encroachment of residential properties onto the sidewalks, and heavy traffic volumes that cannot be moved to another corridor.

experienced difficulties with numerous personnel changes in Cartagena's municipal government between 2006 and 2016 which hampered adaptive management during construction phase of the Project for any changes needed. These personnel changes also weakened the political will required to implement changes necessary to engineer and build the cycling infrastructure. However, the ongoing discussions concerning a proposal for a pilot investment in bicycle parking stations and the approval for a cycling corridor as mentioned in the previous paragraph, is another positive indication of the effectiveness of the earlier training delivered on NMT infrastructure that was supported by the GEF grant.

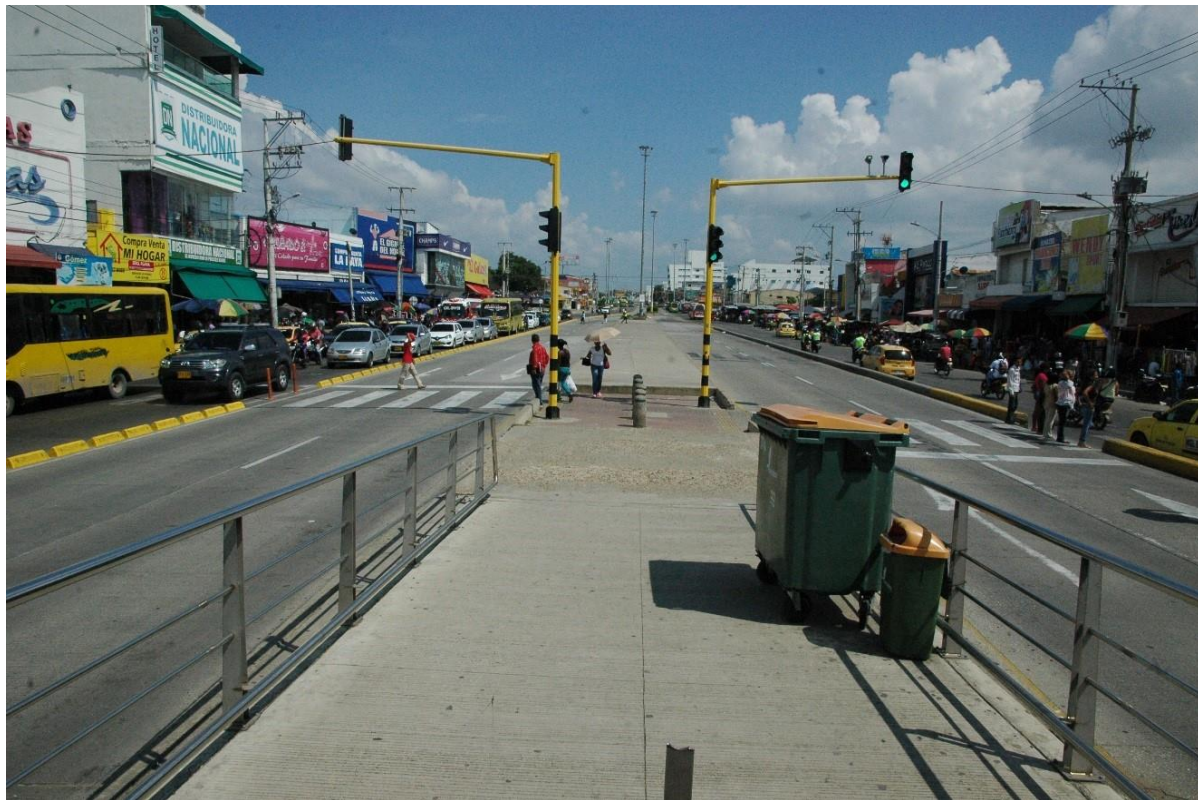
***The overall rating for achievement of Direct Outcomes 3 and 4 for Component 2: Cartagena BRT is Moderately Satisfactory.***

Figure 3: Proposed cycling corridors for Cartagena<sup>35</sup>



<sup>35</sup> Courtesy of Despacio. Map is from pg 37 (Figure 29) of their April 2017 report on "Plan Estratégico para promover el uso de la bicicleta como transporte urbano en la ciudad de Cartagena, Producto 5: Analisis de datos y produccion de informacion"

**Picture 3: Eastward view from Bazurto BRT Station depicting difficulties of integrating cycling infrastructure along BRT corridor in Cartagena**



101. The intended *Direct Outcome 5* on increased access to BRT system plans was achieved with the Project providing a contribution to the BRT Planning Guide that was completed as of June 2007 as the 1<sup>st</sup> edition<sup>36</sup>. Due to the comprehensiveness and high quality of the BRT Planning Guide being available on-line, the outcome of the dissemination of the Guide has been increased access for cities in developing countries to BRT system plans. This has led to a medium-term outcome of reduced reliance of municipalities in developing countries on costly consultants from developed countries (Outcome 8) as evidenced by its translation into several languages including Chinese, Spanish and Portuguese and its extensive use including Ghana, Uganda, Ethiopia, Iran, South Africa, Nigeria, India, China and Brazil (see Paragraph 109 for further details).

102. Due to the delays in implementing and completing the BRT systems in Dar es Salaam and Cartagena until 2016, early editions of the Guide (up to the 3<sup>rd</sup> edition) did not benefit from the experiences of the Dar es Salaam and Cartagena BRT systems. However, the new 4<sup>th</sup> edition of the BRT Planning Guide of October 2017<sup>37</sup> was the first major revision of the document and included a number of BRT planning modules that used the positive planning experiences from the development of DART, including the appropriate use of international BRT consultants, advantages of diverse sources for BRT financing, methods of baseline data collection for demand analysis (including origin-destination or OD surveys), institutional structures for BRT management, options for BRT operations, outreach to impacted operators, financing BRT capital costs, BRT roadway and station configurations, and depots for the maintenance of rolling stock. In particular, the most innovative aspects of DART were in the

<sup>36</sup> Available at <https://www.itdp.org/brt-planning-guide-english/>

<sup>37</sup> Available at <https://www.itdp.org/the-brt-planning-guide/>

financial model and business plan development, making it one of the first BRT projects to explicitly include these elements and the work done in developing these models and plans, as covered by 3 chapters in the Guide. Prior to DART, the sole focus in BRT planning was on infrastructure development and contracting. The specific GEF work done with DART changed BRT professional approaches to BRT planning by explicitly focusing on the other key elements of planning (namely institutional and financial arrangements during the operational phase as opposed to infrastructure financing). As a result of this, other BRT systems including some existing BRT corridors (such as in Mexico City and Johannesburg), started the creation of financial models moving the dialogue from only infrastructure design to the design of operations and institutions. This is a significant contribution to the improved quality of the 4<sup>th</sup> Edition of the BRT Planning Guide, further ensuring that there will be minimal reliance of municipalities of developing countries on international consultants from developed countries.

**The overall rating for achievement of Direct Outcome 5 for Component 3: BRT Planning Guide is Highly Satisfactory.**

**The overall rating for achievement of direct outcomes for all components is Satisfactory.**

### 3.4.5 Likelihood of impact

103. A modified "Review of Outcomes towards Impacts" (ROtl) approach was used to assess the likelihood of impact by using the reconstructed Theory of Change (Figure 3 and Section 2.8) and its outcomes (both direct and medium-term), intermediate states, and long-term impacts as a basis for assessment<sup>38</sup>. The ROtl approach in this section provides ratings for the likelihood of impact from actual medium-term outcomes 6, 7 and 8 achieved by the BRT Project and the pathways towards the intermediate states that includes "increased confidence in BRT projects", "replication of quality BRT projects globally with regional experts using BRT Planning Guide that is updated to include DART and Cartagena BRT experiences", and "reduced use of fossil fuels from urban transportation, resulting in improvement in local air quality and quality of urban life" and the long-term impact of "reduced GHG emissions from the transport sector globally".

104. The ROtl analysis is provided in Table 5. This includes an analysis of the likelihood of impact from medium-term outcomes of the 2 demonstration BRT systems (Medium-term Outcomes 6 and 7), and the updated BRT Planning Guide (Medium-term Outcome 8). Details on the achievement of the medium-term outcomes from the direct outcomes is provided in the following paragraphs.

105. Actual Medium-term Outcome 6 of "an operational BRT system in Dar es Salaam with ridership ranging from 155,000 to 179,000 passengers per day" was achieved with the contributions from the actual Direct Outcomes 1 and 2 through a pathway of events and issues that required the involvement of DART personnel and assistance from their various donor partners:

- Output 5 provided assistance to DART in the preparation of tender documents and civil contracts. This output was completed after approval of the World Bank loan for DART's BRT system (with 7 out of 8 contracts having been awarded by late 2011, with only a major road works contract to be awarded) with actual construction of the BRT road works not commencing until early 2012. This was due to complications in the first tender for major road works along the BRT corridor that had resulted in one of the bidder's prices being significantly lower. The Chinese firm whose bid was US\$60 million less than the next bidder, withdrew prior to signing a contract. The Government opened negotiations with the second lowest bidder, a German firm, whose bid was re-negotiated

<sup>38</sup> A modified ROtl approach was used considering the rating system conditions specified in the GEF guidance note did not exist on this Project, and hence, could not be applied in full.

to lower their price by extending the contract timeline from 2 to 3 years for construction. The work of the German contractor was concluded in mid-2015;

- The delivery of Output 5 also prepared DART for the contracting of a service provider in October 2015 for BRT operations along Phase I trunk lines (Kivukoni-Kimara trunk line along Morogoro Road and its trunk spur lines to Gerezani and Morocco). By May 16, 2016, the first BRT service provider, UDA-RT, was fully operational with responsibilities for operating the buses that reach an system average speed of 23 km/hr, collecting fares, and maintaining the stations. UDA-RT consists of an association with an existing bus operator (Shirika La Usafiri Dar Es Salaam or UDA), the Dar es Salaam Commuter Bus Owners Association (DARCOBOA), and the Association of Transporters in Dar es Salaam (UWADAR)<sup>39</sup>. DART has also issued contracts for the provision of feeder bus services from the numerous BRT operators;
- Output 4 provided local personnel with plans for conducting an effective public outreach campaign in support of a new mode of urban transport. The evaluation has evidence of regular communication with the public by the DART agency and government stakeholders around the launch of the system, resulting in extensive positive media coverage, and more acceptance of BRT system by all stakeholders. This has contributed to the growth in high ridership of the system where public transport etiquette has been observed within the DART system including single file lines for tickets and boarding, and passengers giving up seats for women with younger children. As also confirmed by system users (includes 6 randomly selected BRT passengers for interviews during the evaluation mission consisting of 3 women and 3 men), the DART BRT system:
  - has reduced congestion along the BRT corridor (as seen on Picture 4);

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<sup>39</sup> UDA-RT are responsible for bus operations, fare collection, vehicle tracking, and station maintenance.

**Picture 4: Southward view from Morocco BRT Terminus Station in Dar es Salaam**



- has reduced time traveling to the downtown area of Dar es Salaam, notably to the shopping area of Karikoo;
- is easy to access with clear and safer pedestrian access and well integrated with easy connections to feeder buses;
- has improved security of passengers using public transport, notably for women and school children; and
- can further improve its efficiency with additional buses which would reduce waiting times which can be as long as 15 minutes.

106. An indicator of the achievement Medium-term Outcome 6 of “an operational BRT system in Dar es Salaam with healthy ridership” is the growth of the ridership, ranging from 155,000 to 179,000 passengers per day that has been steadily rising since January 2017<sup>40</sup>. With the business plan (Output 1) and strengthened capacities of local expertise in managing the BRT system, DART personnel have been and are currently managing the updating of the DART business plan (Output 1) with newly updated cost figures from the various civil contracts<sup>41</sup>. DART personnel are actively managing the growth of

<sup>40</sup> DART ridership data from May 2016 to August 2017, courtesy of the World Bank.

<sup>41</sup> This includes the involvement of the Surface and Marine Transport Regulatory Authority (SUMATRA) who have been careful to limit fare increases to maintain the affordability of the DART system. DART’s financial model shows little room for large increases in bus or fuel prices.



their total bus fleet to just over 300 vehicles that will increase the utilization of Phase I of the system close to its capacity<sup>42</sup>. DART personnel are also active in strengthening DART operations involving a full IT system for automatic fare collection<sup>43</sup>, real-time passenger information, vehicle tracking, and synchronized signaling along BRT corridors with BRT bus priority. Full support of the planning of future DART phases is being provided by the President's Office for Regional Administration and Local Government (PMO-RALG) and the office of the Prime Minister who are facilitating consultations with multiple entities including traffic police, TANROADS, PMO-RALG, and donor agencies.

107. The actual Medium-term Outcome 7 of "an operational BRT system in Cartagena with healthy ridership" was achieved with ridership ranging from 40,000 passengers per day since its opening in March 2016 to 90,000 in January 2017 (see Paragraph 95) with contributions of the actual Direct Outcomes 3 and 4 through a pathway of events and issues that required the involvement of TransCaribe personnel and assistance from their various donor partners:

- Output 9 provided TransCaribe personnel with the tools and capacities to promote and market the BRT to the inhabitants of Cartagena. While the BRT was not to be operational until 2016, these plans for marketing the BRT system, public education and customer services were retained by TransCaribe's personnel responsible for community outreach. They have continued to use these plans since 2006 and were instrumental in achieving community acceptance of the BRT system, especially in the lower income neighborhoods of eastern Cartagena including El Pozon where there was initially opposition to BRT from bus drivers living there. Public inputs also resulted in TransCaribe implementing hybrid bus services, an innovation which has TransCaribe buses (only 12 m length) operating along both the trunk and feeder routes to increase the average speeds of these buses which is possible by purchasing buses that load from both the left and right sides of the buses (for BRT stations and feeder bus stops respectively). TransCaribe also implements feeder services for some of their stations using 8 m length feeder buses. In addition, the evaluation observed public transport etiquette aboard TransCaribe buses including single file lines for tickets and boarding, and giving up seats for the elderly and women with younger children;
- While the evaluation did not have access to baseline data prior to the operations of the BRT system, TransCaribe personnel have claimed the BRT system has generated numerous benefits including:
  - Improved air quality along the BRT corridor;
  - Reduced traffic congestion and accidents (see Picture 5) with average speeds of buses reaching 242.9 km/hr (from a baseline speed of 11-21 km/hr)<sup>44</sup>;
  - Robberies have been significantly reduced;
  - Integrating bus operators and drivers from the informal sector into the new system that has resulted employment benefits consisting of shorter work days for bus drivers from 14 to 8 hours;
  - Transport professionals in Cartagena with enhanced BRT expertise engineered and managed the completion of the TransCaribe BRT corridor, which is very popular amongst the citizens of Cartagena. However, the TransCaribe BRT corridor has been implemented without having fully adopted all best international practices as provided from the Project including integration of cycling infrastructure with the BRT system (details of shortcomings are provided in Paragraphs 98-100 and 154 under Lesson #3). Without

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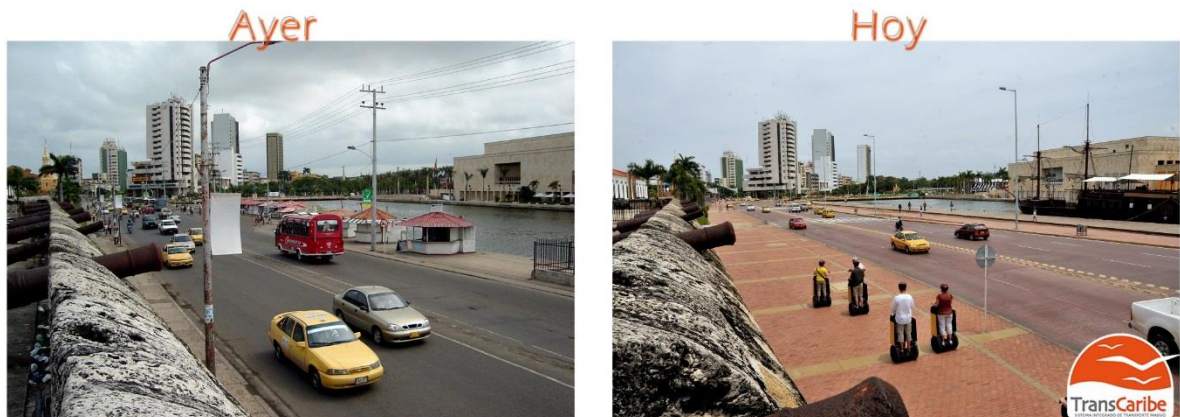
<sup>42</sup> This involves the issuance of a competitive tender for a second operator to procure and operate additional buses in the system

<sup>43</sup> This currently involves integrated fare payments across the system after May 2016 for passengers who use both trunk and feeder services. This has led to use of smart cards for fare collection, reducing bus loading delays and revenue leakage.

<sup>44</sup> <https://www.itdp.org/brt-transcaribe-improved-transport-cartagena/>

strong political will, Cartagena’s transport professionals will not be able to fully develop their potential expertise without being able to fully adopt in Cartagena, the best international practices for developing BRT systems.

**Picture 5: Before and After Photos of BRT Corridor between Parque Marina and Venezuela BRT Stations (outside of Old City)<sup>45</sup>**



108. As previously mentioned in Paragraph 10, no funds were available on the Project to build local capacity for determining GHG emission reductions from Cartagena’s BRT system. Transport professionals in Cartagena are aware that well-managed and operational BRT systems will reduce transport related GHG emissions Cartagena. However, they currently do not have the ability to quantify these GHG emission reductions, despite the BRT Planning Guide providing technical guidance in calculating these emission reductions. The Evaluation was also informed of personnel within the federal government in Colombia with oversight of the NUTP (but could not confirm the existence of such personnel) who have the capacity for oversight of estimating emission reductions in the urban transport sector.

109. Achievement of the actual Medium-term Outcome 8 of “a 2017 version of the BRT Planning Guide updated with planning, implementation and operational experiences and lessons learned from DART to strengthen the quality of the Guide” from the actual Direct Outcome 5 has led to an intermediate state where a number of notable examples where the Guide has been utilized for development of BRT systems in developing countries that either led to urban transport-related GHG emission reductions or has provided these cities with the potential to generate such emission reductions including (as of 2016):

- Accra, Ghana who are currently moving forward with BRT construction after a US\$ 4.5 million planning phase;
- Kampala who are a part of the UN Environment GEF project “Promoting Sustainable Transport Solutions for East African Cities” along with Nairobi and Addis Ababa. Kampala is in the stages of planning their BRT with US\$ 3.5 million from WB and US\$ 700,000 from the GEF;
- Several cities in South Africa that were supported under the UNDP-GEF Project “Sustainable Public Transport and Sport: A 2010 Opportunity” to implement BRT systems including Johannesburg with their successful Rea Vaya BRT system. Urban transport professionals from South Africa used the

<sup>45</sup> Courtesy of TransCaribe Community Outreach Group

BRT Planning Guide and travelled to Colombia around 2007 and 2008 to observe the TransMilenio BRT system;

- Tehran who used the BRT Planning Guide for technical support. The city subcontracted the University to do the planning and UNDESA brought a delegation from Tehran to Bogota in 2003. They currently have 102 km of BRT with a 1.6 million passenger capacity, many of whom shifted transport modes from shared taxis;
- China that has several systems including the completed Guangzhou BRT system that was planned over a span of 4 years and constructed in less than 1 year. Chinese-based transport professionals on this project benefitted from the use of Chinese translations of the BRT Planning Guide;
- Buenos Aires, Mexico City, Belo Horizonte and Rio de Janeiro all of whom have recently opened BRT corridors with technical assistance from local transport professionals exposed to the BRT Planning Guide.

110. The BRT Planning Guide does contain a chapter on calculating GHG emission reductions from BRT systems. This has raised awareness of transport professionals in cities in developing countries on the significance of determining GHG emission reductions from BRT systems to the extent that they would recruit a GHG emission specialists to provide these calculations. However, there is not yet a critical mass of local transport professionals in several of these cities to quantify GHG emission reductions from BRT systems.

111. The 4<sup>th</sup> edition of the BRT Planning Guide of 2017 was updated to include state-of-the-art BRT planning and design examples using completed BRT systems and BRT systems in development. This edition also includes the various planning activities of the DART system as detailed in Paragraphs 61 to 75 and 89.

***The overall rating for likelihood of impact of the BRT Project is Moderately Likely.***

**Table 5: ROtl Summary**

Actual Medium-Term Outcomes	Contribution towards Intermediate States	Assessment	Projected Long-Term Impact
<p><u>Actual Medium-Term Outcome 6:</u> An operational BRT system in Dar es Salaam with ridership ranging from 155,000 to 179,000 passengers per day. These ridership numbers were determined to be healthy given that there is increasing demand for additional BRT services throughout Dar es Salaam. (see also Paragraphs 95-98 for details)</p>	<p>The increase in the ridership ranging from 155,000 to 179,000 passengers per day is an indicator of the increased confidence in the DART BRT project in Dar es Salaam.</p> <p>Through increased demand of the BRT transport mode, more fuel-efficient buses (that only meet EUR-3 emission standards due to high sulphur content of the fuel available in Tanzania) have reduced the usage of fossil fuels to transport these passengers. This has resulted in an improvement in air quality (less traffic jams) and an improved quality of life notably along BRT corridors (as discussed in Paragraph 106).</p> <p>However, the full potential of BRT systems (in the context of passenger capacity of the system) in Dar es Salaam will not yet be reached due to the assumption that “capacity of municipal personnel to support implementation of BRT/NMT infrastructure” only partially holds,</p>	<p>Moderately Likely</p>	<p>While the system to formally monitor and quantify GHG emission reductions from the DART BRT system has not yet been formally developed, the DART BRT system is inherently reducing GHG emissions from the urban transport sector, estimated to be in the order of 70,000 tonnes CO<sub>2eq</sub> annually (against a target of 430,000 tonnes CO<sub>2eq</sub>) on the basis of passenger volume of 178,000 passengers/ day, and setting an example in East Africa for development of BRT systems using best practices for replication in developing countries, and reducing GHG emission reductions from urban transport projects regionally and globally. The methodology to roughly calculate these emission reductions is from TEEMP that has its limitations<sup>47</sup>.</p> <p>GHG emission reductions from BRT systems in Dar es Salaam, however, will not reach its full potential due to:</p> <ul style="list-style-type: none"> <li>the assumption that “capacity of municipal personnel to support implementation of BRT/NMT infrastructure to support implementation of BRT/NMT infrastructure” only partially holds, and where the driver of “compliance to global best practices” is only partially in place. As a result, periodic oversight by global BRT professionals may be required to improve and sustain capacities of municipal personnel to comply with best practices and maximize GHG emission reductions from urban transport;</li> </ul>

<sup>47</sup> The TEEMP calculation for Dar es Salaam can be found in Annex IV. A significant proportion of BRT emission reductions result from transport modal switches from private cars and inefficient daladalas to diesel BRT buses that are Euro 3. The traditional tools and methodologies for evaluating the emissions impacts of such projects require a lot of time, data requirements and financial resources which the Project did not have. As such, the TEEMP model has been approved by GEF for use on GEF projects to enable a rapid but sound assessment of the emission impacts of transport projects using readily available data. The TEEMP model used for this estimation contained a “shortcut method” considering the availability of only passenger volumes and a length of BRT corridor for the DART BRT system.

Actual Medium-Term Outcomes	Contribution towards Intermediate States	Assessment	Projected Long-Term Impact
	<p>and where the driver of “compliance to global best practices” is only partially in place. As a result, continued oversight by global BRT professionals is required. Level of compliance to best practices in DART is further discussed in Paragraph 93.</p> <p>Notwithstanding, the operational DART BRT system will likely have a positive demonstrative effect of increasing confidence in BRT systems particularly in Africa (DART will be one of the first successfully operated BRT systems in East Africa). The profile of DART has been considerably raised through being the winner of the 2018 Sustainable Transport Award<sup>46</sup>. Lessons from the implementation of DART can be applied to other potential BRT cities, particularly in East Africa.</p>		<ul style="list-style-type: none"> <li>• cycling infrastructure (i.e. cycling paths along feeder routes and cycling parking facilities at BRT stations) not yet being fully developed by DART and the assumption that the “willingness of city residents to embrace cycling as a new mode of urban transport” only holds partially. With cycling having the potential to lower the carbon footprint of urban transport in Dar es Salaam, the Project grant has provided plans which were implemented for designating space for cycling, raising possibilities for local residents that cycling is a real and viable transport mode in Dar es Salaam. Time is required to change local behavior and perceptions to cycling where educational outreach can accelerate behavioral changes;</li> <li>• DCC has not yet commenced long-term strategic planning to create a long term development vision for Dar es Salaam that includes the benefits of a focus on Transit-Oriented Development (TOD) from a growing BRT network in Dar es Salaam; this would have an impact benefit of maximizing GHG emission reductions from urban transport. Meeting the higher demand for BRT services in Dar es Salaam will require different skill sets in DART, TANROADS and DCC to identify innovative means of reducing the revenue-operations cost gap of public transport services;</li> <li>• a system for quantifying GHG emission reductions from BRT systems not yet being institutionalized. Further technical assistance for DART, TANROADS and DCC will be required to quantify transport-related GHG emission reductions from BRT and TOD to enhance their</li> </ul>

<sup>46</sup> <https://staward.org/winners/2018-dar-es-salaam-tanzania/>

Actual Medium-Term Outcomes	Contribution towards Intermediate States	Assessment	Projected Long-Term Impact
			opportunities to qualify for additional BRT funding through climate finance or INDC registration of additional DART phases <sup>48</sup> .
<p><u>Actual Medium-Term Outcome 7:</u> An operational BRT system in Cartagena with ridership in the order of 90,000 passengers per day. These ridership numbers were determined to be healthy given the buses along the system appear to always be fully occupied and that local residents have all expressed an opinion of high satisfaction of the system, and there is increasing demand for BRT services in Cartagena.</p>	<p>The 90,000 ridership per day of TransCaribe is an indicator of the increased confidence in the TransCaribe BRT project in Cartagena. This popular system transports these passengers using more fuel-efficient BRT mode using buses that meet EUR-5 standards that has reduced the urban transport-related fossil fuel consumption. This has resulted in an improvement in air quality (less traffic jams by reducing the number of trips made by inefficient minibuses more commonly used for transport in Colombia) and an improved quality of life notably along this BRT corridor that is discussed in more detail in Paragraph 108.</p> <p>However, the full potential of the TransCaribe BRT system (in the context of passenger capacity of the system) will not be reached due to the assumption that “capacity of</p>	<p>Moderately Likely</p>	<p>The TransCaribe BRT system is inherently generating GHG emission reductions. This Evaluation, using the GEF-approved TEEMP model with only TransCaribe passenger data available, estimates GHG emission reductions from TransCaribe’s BRT system have been reduced by an estimated 43,000 tonnes CO<sub>2eq</sub> per year (against a target of 63,000 tonnes CO<sub>2eq</sub> per year)<sup>49</sup>.</p> <p>There is, however, unconfirmed institutionalization of quantifying GHG emission reductions from BRT systems in Colombia by the Ministry of Environment. Since there are a number of successfully operationalized BRT systems in South America, the development of TransCaribe’s BRT systems can be added to lessons learned for replication in developing countries, and contribute to reducing GHG emission reductions from urban transport projects regionally and globally. Notwithstanding, GHG emission reductions from BRT systems in Cartagena will not reach its full potential due to:</p> <ul style="list-style-type: none"> <li>the assumption that “capacity of municipal personnel to support implementation of BRT/NMT infrastructure” only partially holds, and where the driver of “compliance to global best practices” is only partially in place (as discussed in more detail in Paragraphs 108, 109 and</li> </ul>

<sup>48</sup> Current capacities of DART personnel do not include the ability to quantify these GHG emission reductions, despite the BRT Planning Guide providing technical guidance in calculating these emission reductions.

<sup>49</sup> The TEEMP calculation for Cartagena can be found in Annex IV. A significant proportion of BRT emission reductions result from transport modal switches from private cars and inefficient public buses to natural gas-powered BRT buses that are Euro 5. Similar to Footnote 40, the TEEMP model approved by GEF for use on GEF projects contained a “shortcut method” considering the availability of only passenger volumes and a length of BRT corridor for the TransCaribe BRT system.

Actual Medium-Term Outcomes	Contribution towards Intermediate States	Assessment	Projected Long-Term Impact
	<p>municipal personnel to support implementation of BRT/NMT infrastructure” only partially holds, and where the driver of “compliance to global best practices” is only partially in place. Level of compliance to best practices in TransCaribe is further discussed in Paragraphs 96, 108 and 154</p> <p>The completion of the TransCaribe BRT system in 2016 adds to a list of successfully implemented BRT systems in Colombia as well as other cities in Latin America. With Colombia having operational BRT systems in Bogota, Pereira, Barranquilla, Bucaramanga, and Medellin, the demonstrative effect of Cartagena is somewhat blunted. The implementation of TransCaribe, however, does further increase the confidence in BRT systems and provides useful information and lessons learned on BRT implementation that can be applied to other emerging BRT systems in Latin America.</p>		<p>154). As a result, periodic oversight by BRT professionals (there are several in Colombia) may be required to improve and sustain capacities of municipal personnel to comply with best practices and maximize GHG emission reductions from urban transport;</p> <ul style="list-style-type: none"> <li>• cycling infrastructure (i.e. cycling paths along feeder routes and cycling parking facilities at BRT stations) not yet developed by TransCaribe although there are ongoing discussions amongst TransCaribe management to undertake a pilot cycling corridor that is integrated with the BRT stations. This has the potential to further increase BRT ridership in Cartagena and other low carbon modes of urban transport. This will enhance the impact of the BRT system by increasing its GHG emission reductions.</li> </ul>
<p><i>Actual Medium-Term Outcome 8:</i> A 2017 version of the BRT Planning Guide updated with planning,</p>	<p>The first edition of the BRT Planning Guide in 2008 was widely used to assist a number of cities (see Paragraph 110 for listing) in developing countries to develop BRT</p>	<p>Moderately Likely</p>	<p>GHG emissions from BRT systems globally will be reduced but not to its full potential on the assumption that “capacity of municipal personnel in several cities of developing countries is only partially in place to support implementation of BRT/NMT infrastructure”, and that the driver of</p>

Actual Medium-Term Outcomes	Contribution towards Intermediate States	Assessment	Projected Long-Term Impact
<p>implementation and operational experiences and lessons learned from DART to strengthen the quality of the Guide. However, the TransCaribe system has not yet generated a high profile of its BRT system that could benefit other cities in developing countries, and provide increased confidence in BRT projects. As a result, the experiences of the TransCaribe system were not used in the most updated version of the BRT Planning Guide.</p>	<p>systems resulting in more fuel-efficiency of urban transport systems and improvements in the quality of urban life in those cities.</p>		<p>“compliance to global best practices” is only partially in place.</p> <p>The Evaluation is aware of some cities making estimates of GHG emission reductions generated from BRT systems. With many of these systems being high profile, interest in other developing country cities has been generated to implement similar BRT developments to further reduce transport-related GHG emissions globally. However, in most cases, the Evaluation surmises that BRT managers have some awareness of the need to undertake GHG emission estimates for BRT systems (which would include baseline data collection and estimation of the project scenario), but usually recruit GHG emission consultants for this task. Capacity building of local transport professionals is still required, likely through donor or international support, to ensure full compliance to best international practices for BRT systems development that can be leveraged towards its full potential to maximize the generation of GHG emission reductions from transport globally.</p>



## 3.5 Financial Management

### 3.5.1 Completeness of project financial information

112. The following financial information was made available to the evaluation:

- Proposed Project budget costs for each of the 3 components for both the GEF grant as well as budgets from co-financing partners such as GIZ, World Bank and USAID. Detailed project budgets, however, were only available at the commencement of the project, and not on an annual basis;
- Five Project fund disbursement reports from GEF Division of UN Environment to the Executing Agency, ITDP, which were issued between 2005 and 2008 totaling US\$711,892 of grant disbursements. Notwithstanding that annual work plans were not available to the evaluation, there is evidence that the fund requests were based on the needs of the project which were adjusted from actions to adaptively manage the Project;
- Expenditure reports signed by UN Environment’s FMO which provided detailed expenditures against budget lines on a quarterly basis from 2005 up to September 2008 at which time the budget was more than 90% expended;
- Annual audit reports from 2005 to 2008 where no irregularities were reported;
- Summary co-financing report consisting of cash and in-kind contributions from co-financing partners as monitored by ITDP during the entire Project duration from 2005 to 2016;
- Project revision reports one of which is from 2008 requesting reallocation of grant budget from 2007 to the remainder of the Project until 2009 due to under expenditure of allocated budgets for 2005 and 2006.

113. Overall, the completeness of financial information for the Project is rated **satisfactory**. While most of the financial information made available was detailed and complete, detailed project budgets by budget line for the grant were not available on an annual or quarterly basis, nor were the expenditures allocated into specific component expenditures<sup>50</sup>. Otherwise, all other financial information listed in UN Environment’s Evaluation Criteria from 2017 was made available to the evaluation as further detailed in Annex V.

***The rating for completeness of financial information is Satisfactory.***

### 3.5.2 Communication between finance and project management staff

114. In rating the communication between UN Environment finance personnel and project management staff of ITDP, the evaluation made an effort to assess the communication aspects between finance and project management staff notwithstanding the difficulties of interviewing the relevant personnel from a project implemented over 7-12 years ago. There is, however, evidence to suggest the following:

- The size of the GEF grant of US\$724,595 spread over a period of 5 years as a soft complement to World Bank loans for BRT projects did not create complexities in comparison with larger multimillion dollar GEF grants. Notwithstanding that over 90% of the grant fund disbursements were scheduled during 2005 and 2006, only 41% was actually spent during this period necessitating a request by ITDP’s Project Manager for a reallocation of the remaining funds to 2009;

<sup>50</sup> Component level expenditures have not been a requirement in the past

- Project revision reports issued by ITDP provided evidence of the Project Manager and UN Environment Task Manager having strong awareness of the financial status of the project, the disbursements of grant funds made against detailed quarterly financial reports and annual PIRs;
- Awareness of ITDP Project Manager of the need for operational BRT systems in Dar es Salaam and Cartagena prior to the closing of the GEF grant. This is reflected in the letter from ITDP to UN Environment in October 2008, a time when the GEF grant was more than 95% exhausted and all scheduled activities completed. The letter requested a hibernation of the grant and a no-cost extension from 1 October 2008 to 1 April 2011 to allow the project an opportunity to monitor the operations and benefits of these BRT systems.

***The rating for communication between finance and project management staff is Satisfactory.***

## 3.6 Efficiency

### 3.6.1 Timeliness

115. The Project was originally scheduled for a period of 5 years (from April 2005 to March 2010). There appears to be 3 “no-cost extensions” that were either requested or approved:

- By April 2008, ITDP reported that the Project would not be able to complete its activities including the monitoring of operational BRT systems by the scheduled terminal date of March 2010. It is important to note that by the end of 2008, only US\$14,622 remained in the GEF grant budget. At that time, they requested a “hibernation” of the GEF grant until April 2012, a time that would be closer to the operational dates of the BRT systems, and an opportune time to conduct a Terminal Evaluation with a year of operational experience;
- The 2011 PIR reported that a no-cost extension was approved until April 2012 when the Project experienced further delays in the BRT systems becoming operational;
- The 2014 PIR reported that a no-cost extension was agreed upon between UN Environment and ITDP from April 2012 to a date when the systems are completed, at that time estimated to be 2015 at the earliest.

116. The BRT Project grant resulted in the influencing of BRT designs through proper integration with NMT infrastructure, and strengthening institutional and business arrangements to effectively implement the BRT projects. This has improved the attractiveness of financing BRT systems in Dar es Salaam and Cartagena to the World Bank. While the delays mentioned in Paragraph 115 in the completion of the Project had a high potential for negative impacts on BRT Project stakeholders, this did not appear to occur on this Project due to the high usage and popularity of the systems after their openings in 2016. Moreover, the delays were mainly related to factors outside the control of the project such as delays in public tendering processes for civil works and operational control of the system, and delays caused by poor performance of contractors (as was the case in Cartagena where a gross surveying error caused a 12 to 18 month delay in completing the TransCaribe BRT). Despite UN Environment’s evaluation criteria on efficiency casting a negative view on the timeliness dimension<sup>51</sup>, the Evaluation also notes that more than 95% of the GEF funds were spent within the intended 5-year duration, with the completion of the Project delayed for 7 years (due to the aforementioned reasons beyond the control of the Project) to monitor results. As such, the timeliness of this Project is rated as **moderately satisfactory**.

<sup>51</sup> Ratings in this section do not closely follow the UN Environment criterion since the criteria does not include the scenario for a project without a project results framework. As such, ratings criterion was adapted for efficiency rating.

### 3.6.2 Cost Efficiencies

117. Cost-effectiveness of the Project was gauged by the use of well-qualified specialists from Colombia, United States and Brazil who had previous experience in setting up the Transmilenio BRT system in Bogota. Most of these funds were used on consultants to deliver Outputs 1 to 7 that were highly effective in achieving the outcome of an operational BRT system in Dar es Salaam with healthy ridership. All activities leading to the delivery of these outputs were implemented between 2005 and 2008 that provided crucial guidance for personnel from Dar es Salaam City and TANROADS in the development of the infrastructure for the DART BRT system. This crucial guidance also ensured that the sequence of steps to develop the DART BRT system was efficiently managed, including the first important step of setting up the umbrella BRT management structure of DART.
118. There was a similar utilization of well-qualified specialists in developing the TransCaribe BRT system in Cartagena, specifically the operational plan and the BRT marketing strategy for TransCaribe (Outputs 8 and 9 respectively) which are still being used today to operate and promote the use of the system to citizens of Cartagena. With cycling infrastructure not yet integrated with BRT stations, the cost effectiveness of funds spent on consultants for training local personnel on NMT integration with BRT stations cannot be fully assessed. The ongoing dialogue initiated by TransCaribe personnel with the Despacio (mentioned in Paragraph 104) is a good indicator for the cost effectiveness of the training, if an investment is made in the near future. ITDP personnel did utilize some of its high qualified expertise to assist in the development of aquatic taxi services in Cartagena at the request of its Mayor, a departure from the planned activities of strengthening TransCaribe’s operational plan. In addition, the funds spent on the first edition of the BRT Planning Guide in 2007 led to the delivery of an excellent BRT resource for numerous cities in developing countries. Due to the small GEF investment resulting in the enhancement of the BRT planning process within a 5-year period (notwithstanding delays in the delivery of medium-term outcomes after 10 years), the cost efficiency of this Project was rated as **satisfactory**.

***The overall rating for efficiency is Moderately Satisfactory.***

## 3.7 Monitoring and Reporting

### 3.7.1 Monitoring design and budgeting

119. Section 7.2 of the BRT Project Document provides the description of the monitoring plan. It includes the various Project monitoring reports (such as half yearly and annual progress reports and reviews, annual work plans, financial reports and audits) which would be prepared to ensure intended Project outcomes and impacts. Moreover, the frequency of the collection of information was defined. The larger issue of this monitoring plan, however, is the lack of a project results framework (PRF) which can better define the parameters which should be monitored. This evaluation needed to develop a Theory of Change in the absence of a PRF (Section 2.8), and develop a list of intended outputs and outcomes based on the BRT Project document narrative.
120. With most of the Project activities related to the provision of technical assistance from highly qualified BRT professionals for the development of BRT systems in Dar es Salaam and Cartagena, the monitoring plan seems to be mainly based on ensuring the delivery of the work plan and outputs from the technical assistance, with no indicators for outcome monitoring. Without the PRF, the Project document implicitly acknowledges the need for monitoring the operational BRT systems of the 2 cities (as evidenced in the PIRs in the request for extension to a date when the 2 BRT systems are completed and can be monitored for their operations). On Page 6 of the Project Document, there are indicators listing the expected GHG emission reductions resulting from the development of the BRT systems in Dar es Salaam of 430,000 tonnes CO<sub>2</sub> in the first year of operation and Cartagena of 63,000 tonnes CO<sub>2</sub> annually (both of these estimates were acknowledged to be crudely estimated, which is understandable since during 2004 when the Project Document was being developed, methodologies to estimate GHG emission reductions from BRT were being

developed). With the small size of the GEF grant, it was not realistic to expect that there would have been specific activities within the monitoring plan for estimating these GHG emissions from BRT in these 2 cities. The estimation of these GHG emission reductions was undertaken by the Evaluation using the recent TEEMP model developed by ITDP (see Table 5 and Annex IV for further details).

121. Lastly, there were no budgets for the monitoring and evaluation activities within the BRT Project as mentioned in Section 7.5 of the Project Document nor was there sufficient budget available in 2016 for conducting this Terminal Evaluation. This was likely due to the small size of the GEF grant, and thus M&E was viewed as a routine task of the members of the core team. Due to the long duration of this Project, M&E requirements of GEF had changed from 2004 to 2017, leaving the Project ill prepared for complying with new M&E requirements.

**The rating monitoring design and budget is Moderately Unsatisfactory.**

### 3.7.2 Monitoring of project implementation

122. Considering the use of the GEF grant was to prepare BRT projects for implementation through World Bank loans, monitoring of the implementation was conducted by reporting on the delivery of Outputs 1 to 11 as an end product to the technical assistance provided by the GEF grant for BRT development. In addition, ITDP also monitored the actual construction and operationalization of the BRT systems of the 2 cities and provided technical backstopping for these activities; these activities were funded by other agencies such as GIZ, World Bank, USAID, and the municipal governments of Dar es Salaam and Cartagena.

123. The monitoring of project implementation has been rated as **satisfactory**. Primary reasons for this rating includes the collection of some project implementation information that provides clear information on the progress of the operationalization of the BRT systems. However, *in terms of best practices for monitoring UN Environment and GEF projects*, the monitoring of the BRT Project implementation does follow the monitoring work plan of Section 7.5 in the Project document, but has not had the benefit of specific GEF grant allocations for monitoring activities and lacks gender considerations in the information collected.

**The rating for monitoring project implementation is Satisfactory.**

### 3.7.3 Project reporting

124. The evaluation has viewed documentation of the monitoring of BRT project implementation through:

- *Progress reports*. Only 4 of these reports were viewed by the evaluation covering 4 periods of the project implementation between April 2005 and June 2008 during which more than 95% of the GEF grant funds were spent. These reports provided fairly detailed accounts of project activities including names of consultants and the tasks that they undertook;
- *Project Implementation Reviews or PIRs*. The evaluation had access to these PIRs from 2006 to 2016 which provided details of progress in the planning of the BRT systems during the period of 2005 to 2009. PIRs continued to be issued after the near exhaustion of the GEF grant in 2009 to provide progress reviews on the construction and operationalization of the 2 BRT systems. This was viewed as important since the terminal evaluation could not be conducted until operationalization of these systems. The quality of these PIRs was satisfactory and provided an adequate level of detail on the progress of activities funded by the GEF grant.

125. Project reporting for the BRT Project has been rated as **satisfactory** in consideration of the quality of information provided in the PIRs and the progress reports on planning preparations for BRT development.

**The rating for project reporting is Satisfactory.**

## 3.8 Sustainability of Outcomes

### 3.8.1 Financial sustainability

126. The financial sustainability of Direct Outcomes 1 and 2 (Completed planning and design for full BRT networks in Dar es Salaam and Dar es Salaam developing its own expertise in BRT/NMT design, implementation and operation) and benefits deriving from these outcomes is moderately dependent on future funding. With the Project succeeding in influencing the World Bank to finance Phases 1, 3 and 4, and the African Development Bank to finance Phase 2, as well as DCC in funding staff for DART, sufficient funds will be available for both planning and capital costs for building future BRT systems using the successes of the completed Phase 1 of the DART BRT system. Funds are still required, however, for the technical oversight of the development of the subsequent phases of the DART BRT system to ensure optimal generation of environmental benefits from BRT systems. As such, mitigation is rated as 75-99% of future funding secured. Technical oversight should include:

- strengthening system monitoring for fuel consumption of the new BRT systems constructed, and the calculation of the GHG emission reduction benefits;
- ensuring all infrastructural requirements related to maximizing ridership on the BRT systems are implemented. This would include the development of efficient and reliable feeder bus services, safe and secure pedestrian and cycling access to BRT stations, synchronized signaling along the BRT corridors to minimize trip times, and shortening loading platform lengths along narrow corridors where bus passing lanes are not feasible.

127. Similar comments can be made for the financial sustainability of Direct Outcomes 3 and 4 (Completed planning and design for full BRT networks in Cartagena and Cartagena developing its own expertise in BRT/NMT design, implementation and operation) that is also moderately dependent on future funding but with mitigation rated as 75-99% of future funding secured.

128. With regards to the financial sustainability of Direct Outcome 5 (increased access for cities in developing countries using the BRT Planning Guide), there is a low dependency on future funding with mitigation rated as 75-100% of future funding secured, given the recent release of the 4<sup>th</sup> edition of the BRT Planning Guide by ITDP in September 2017.

129. Notwithstanding that the financial sustainability of BRT operations in Dar es Salaam and Cartagena was not to be included in this Evaluation (this Evaluation rating is based on the financial sustainability of direct outcomes of the Project that includes the planning and design phases of a BRT system), a future challenge for sustained BRT operations for the cities as well as other cities in developing countries is minimizing the subsidies required to bridge the operations-revenue cost gap of public transport services. While nearly all cities globally experience a revenue-operations cost gap for public transport services, BRT managers will find it increasingly difficult to sustain quality public transport services as a result of increasing costs. Without increases in fiscal resources for subsidies, compromises are often made in the quality of public transport services. For BRT systems, this may include a reduced number of buses and reduced maintenance on buses. This may eventually lead to a gradual loss in public confidence in BRT systems and public transport in general. There is a need to provide assistance to BRT managers in Dar es Salaam and Cartagena as well as cities in developing countries, on innovative means of generating revenue from public transport in an effort to minimize the operations revenue cost gap.

130. In conclusion, the financial sustainability of Direct Outcomes 1 and 2 is **likely** based on an assessment of moderate dependency (75-99% mitigation) coupled with an exit strategy without any financial component to address technical oversight issues mentioned in Paragraph 126.

**The financial sustainability rating is Likely.**

### 3.8.2 Socio-Political sustainability

131. For Direct Outcomes 1 and 2, there is strong support throughout the Tanzanian Government as well as Dar es Salaam City Council (DCC) for planning and designing the operation and continued expansion of the DART BRT system. In addition, the DART BRT system is extremely popular amongst city dwellers. As such, sociopolitical sustainability for Dar es Salaam is rated as **highly likely** due to the moderate degree of dependency on sociopolitical factors, and 100% mitigation based on the strong ownership and interest of all government levels in Tanzania and the Dar es Salaam city dwellers who have benefited from the system.

132. For Direct Outcomes 3 and 4, public support for the TransCaribe BRT is very high and there is strong ownership of the BRT system by the Municipality of Cartagena through its efforts to continually improve its operations. The commitment of the Municipality, however, is weakened through frequent changes of personnel in the Mayor’s office. While there are ongoing discussions between TransCaribe management and the Mayor’s office on integrating the cycling network with BRT stations (see Paragraph 99), there are ongoing concerns and uncertainties regarding regulatory approval and implementation of this proposal. In addition, the development of the TransCaribe BRT has demonstrated difficulties in implementing all BRT features including difficulties in constructing and integrating NMT infrastructure with BRT stations (these appear to be related to attempts to implement cycling lanes and pedestrian walkways along the Avenida Perdo de Heredia) and the difficulties of constructing segregated BRT lanes from the old city into Boca Grande. As such, sociopolitical sustainability of the TransCaribe BRT system is rated as **moderately unlikely** due to its high dependency on socio-political factors with a 50-75% mitigation (due to only fairly strong ownership). Direct Outcome 5 is not dependent on socio-political aspects.

**The overall socio-political sustainability rating is Moderately Likely.**

### 3.8.3 Institutional framework sustainability

133. For Direct Outcomes 1 and 2, strong policies do exist that are supported in the development of BRT systems for cities in Tanzania, notably Dar es Salaam which the government has targeted development of the city to become world class. Furthermore, the experience of implementing the Phase 1 of the DART BRT has provided the Project development teams in Dar es Salaam with confidence and a template for the planning, design of Phases 2, 3 and 4. There is also strong evidence of the enhancement of the capacity of a number of individuals within these project development teams who will likely stay in their positions long enough to support continued reduction of GHG emissions from BRT systems. As such, the institutional framework sustainability is rated as **highly likely** for Tanzania due to the moderate dependency and strong mechanisms in place to support institutionalization of outcomes, and dedicated BRT professionals within these institutions to support the continued reduction of GHG emissions from BRT systems.

134. For Direct Outcomes 3 and 4, there are strong national policies in Colombia to encourage and support the development of the BRT systems in all of its cities including Cartagena. In addition, the Municipality of Cartagena has the experience of developing the TransCaribe BRT, albeit with difficulties experienced in the integration of NMT infrastructure with BRT stations. The institutional framework sustainability is rated as **moderately likely** for Cartagena. These difficulties are indicators of the moderate dependency of future improvements. On institutional support, TransCaribe personnel whose capacities have been enhanced will continue to stay in that position and support continued improvements in the performance of the TransCaribe BRT system. Direct Outcome 5 is not dependent on institutional framework aspects.

**The institutional framework sustainability rating is Likely.**

## 3.9 Factors affecting performance

### 3.9.1 Preparation and readiness

135. The BRT Project grant was implemented mainly to assist in the Project preparations for BRT systems in Dar es Salaam and Cartagena. As such, evidence suggests that activities implemented between the Project approval date of 7 February 2005 and the first disbursement of April 2005 do not coincide with normal project preparations associated with other GEF grant projects. There is also evidence that there was a fair amount of freedom provided to the management of this Project (as it was a “pioneering” GEF projects implemented to support the development of sustainable transport) to ensure effectiveness of the GEF grant in enhancing planning aspects for the development of the 2 BRT systems.

136. There is evidence that the following had occurred:

- no inception meeting was held;
- an annual cost the work plan was developed with appropriate detail;
- no steering committee was established although there were inauguration ceremonies held in Dar es Salaam and Cartagena marking the initiation of the BRT projects in each of these cities. However, no documentation was available to confirm if any substantive technical or administrative issues were discussed at these ceremonies;
- absence of ESE safeguards. These were not deemed necessary at this stage of project development and were to be done by the World Bank at the loan approval stage;
- no stakeholder analysis was reviewed or revised prior to the first disbursement. The analysis in the Project Document was deemed to be sufficient;
- ITDP staff and consultants were already mobilized to support BRT development in the 2 cities;
- the period between project approval on the first disbursement was less than 2 months.

137. As such, preparation and readiness for the BRT Project is rated as **satisfactory**, given that normal preparations for GEF projects (as noted in Paragraphs 135 and 136) were not conducted. However, first grant disbursements were made in less than 2 months to provide valuable technical assistance to the development of these 2 BRT systems, and generated positive outcomes 10 years later of these BRT systems being operational with high ridership<sup>52</sup>.

***The rating for preparation and readiness is Satisfactory.***

### 3.9.2 Quality of project management and supervision

138. Management and supervision of the BRT Project took place mainly between April 2005 and April 2008 when more than 95% of the GEF grant funds were disbursed. UN Environment as the implementing agency, provided oversight of the BRT Project while the executing agency, ITDP, provided strong oversight management, leadership and supervision in the delivery of technical assistance to develop BRT systems in both Dar es Salaam and Cartagena:

- ITDP set up all aspects of the DART BRT system including GEF-funded activities (institutional, business and legal support, NMT network planning and design, and training of local personnel) that complemented World Bank-funded activities (BRT transport planning and engineering),

<sup>52</sup> Compliance with UN Environment assessment criteria for “preparation and readiness” was difficult given that the evaluation criteria described does not fits into what occurred on BRT Project. As such, ratings were subjectively made in light of the Project being able to deliver outputs and achieve most of the intended direct outcomes.

and activities related to the design of civil works and infrastructure by DCC, the World Bank and USAID;

- The development of the TransCaribe BRT system was also set up by ITDP for GEF-funded activities (operational plan, public awareness raising campaigns, and NMT network designs) to complement activities funded by the City of Cartagena (design of civil works for the system), and GIZ (transport modeling and training for BRT planning);
- ITDP initiated and managed the development of the BRT Planning Guide including GEF-funded activities (baseline data collection, demand estimates, optimization of transit services, and traffic modeling and impact analysis) to complement the activities funded by the Hewlett Foundation (salaries of project personnel, preparation of all other sections of the Guide), and GIZ-funded activities (group training);
- UN Environment provided Project implementation oversight to ensure compliance to GEF requirements for implementation of a GEF grant project (requirements that mainly involved regular monitoring and evaluation activities, and GEF fund management). Where required, UN Environment also assisted ITDP with linkages to other global fuel efficiency programs and visited project sites (only DART programme was visited by UN Environment Task Manager in March 2008) to resolve pace of project delivery. Due to the small size of the GEF grant, the satisfactory delivery of the Project and the ITDP’s strong network of international agencies and consultants on BRT, involvement of UN Environment personnel was minimal.

139. The quality of leadership was characterized as:

- a well-managed implementation structure that includes the working relationship between UN Environment, the Project Management and Project partners and consultants leading to effective delivery of all outputs;
- no staff turnover during the short duration of many of the consulting assignments;
- speedy responses to the UN Environment regarding the requests for a change in status of the project, notably in 2008 when the ITDP requested a hibernation of the GEF grant until the attainment of operational status of the 2 BRT systems on the Project; and
- delivery of quality outputs which has been influential in achieving operational status of the 2 BRT systems;
- oversight management after 2008 when GEF funds were exhausted until 2016 (when the BRT systems became operational). This was important to the exit strategy of the GEF grant consisting of the need to monitor the benefits of the BRT systems funded by the BRT Project. The monitoring included progress reporting of the BRT system construction and operations of the BRT systems that would generate global environment benefits (GEBs), important indicators to the success of the BRT Project grant.

***The rating for quality of project management and supervision is Highly Satisfactory.***

### 3.9.3 Stakeholder participation and cooperation

140. Evidence based on available documents and discussions with available former Project personnel indicates that the executing agency, ITDP, had the key role in bringing in stakeholders to participate and cooperate in the development of the two BRT projects and the preparation of the BRT Planning Guide:

- for the development of the BRT system in Dar es Salaam, brought in DCC municipal staff for guidance and advice to spearhead the various BRT development activities including



professionals involved with BRT development with TransMilenio, civil engineers on the design of BRT infrastructure, traffic engineers on modeling and planning the system, and legal advisors on the creation of institutional entities supporting operations of the system. There is also evidence of a collaborative working environment between the executing agency and personnel from TANROADS, the central government agency responsible for roadway and station designs of the system;

- for the development of the TransCaribe BRT system in Cartagena, personnel from the City of Cartagena who were beneficiaries of periodic visits from the executing agency for targeted assistance in the development of the system. While the City was responsible for design of the entire system, ITDP involvement was targeted in agreements with the City to strengthen operational plans of the BRT, enhance the system design through integration of NMT infrastructure and accelerate its development through effective public awareness campaigns. ITDP also involved former Transmilenio staff and core staff members of ITDP to assist in the setting up BRT institutional arrangements and strengthening the operational plans;
- for the BRT Planning Guide, ITDP involved various consultants within its network for its preparation as well as those involved with the GIZ-supported phases of the Guide preparation. This included former Transmilenio staff, and core staff members of ITDP, all with extensive global experience in the BRT development.

141. Overall, stakeholder participation and cooperation was effective in delivering the outputs required for the development of the two BRT systems, and preparation of the BRT Planning Guide. In conclusion, stakeholder participation and cooperation was rated as **highly satisfactory**.

***The rating for stakeholder participation and cooperation is Highly Satisfactory.***

#### 3.9.4 Responsiveness to human rights and gender equality

142. There is no reference in the project document to human rights and gender equality, related to the fact that this Project was designed as a GEF-3 Project, during which no emphasis was placed on gender. In the context of gender, the BRT Project document does not address issues related to gender inequalities, specific vulnerabilities of women and children to urban mobility issues within cities in developing countries. As such, the rating for this project’s responsiveness to human rights and gender equality based on current UN Environment evaluation criteria would be **0 or gender blind**. Despite the absence of consideration of these issues in the Project Document, the benefits of improved urban mobility through BRT systems is assessed by the evaluator to generate significant benefits to vulnerable sectors of the population of these cities. Despite not being part of the design of this GEF project, the gender considerations were a concern in the planning stage of these BRT systems. The Evaluator notes that based on the field observations the system design has and is currently having a positive effect on some vulnerable groups i.e. women with level boarding and safety being important design considerations. These are also mentioned in this report in Paragraphs 105 and 107. Since the human rights and gender were not as such programming requirements nor part of the corporate strategies at the time of the project design, the “gender blind” rating is not included in the overall rating of this Project.

#### 3.9.5 Country ownership and drivenness

143. For the DART BRT system, country ownership and drivenness by the Government of Tanzania were **highly satisfactory**. Reasons for this rating are related to the strong political support of the DART BRT system from the country’s President and Prime Minister, provision of co-financing and in-kind assistance as originally intended, collaboration with ITDP on the strategic guidance of project delivery, securing of additional resources (from the World Bank and the African Development Bank specifically for the subsequent phases 2, 3 and 4), endorsement of project results, and evidence of efforts to improve operations of the system and maximize ridership through transit-oriented development (with the Ministry of Housing).

144. For the TransCaribe BRT system, country ownership and drivenness of the City of Cartagena were **satisfactory**. This rating is related to past mayors who were closely involved with the development of the system but also downgraded due to the frequent changes in municipal government officials during the period of 2006 to 2016. Moreover, the institutional environment required to improve the integration of NMT infrastructure with the BRT stations still is not optimal, in part due to political will not being strong and issues related to slow approval by the municipal government to additional space taken by NMT infrastructure.

***The rating for country ownership and drivenness is satisfactory.***

### 3.9.6 Communication and public awareness

145. For both the DART and TransCaribe BRT systems, the GEF grant was highly effective in providing plans and strategies for the setup of public awareness campaigns. Considering the need to bridge the awareness gap of the general public in these 2 cities on BRT systems, the benefits of BRT systems and how to use and behave on these systems, the GEF grant provided the strategy for these cities that has resulted in sustained efforts by DART and TransCaribe to continually inform the public of developments in these BRT systems. This has resulted in the outcomes of robust ridership on each system. Interviews conducted on an adhoc basis with the ridership indicate a majority of favorable opinions of these system for urban transport, and hopes for increased frequency of buses and reduced wait times at stops.

146. The dissemination of the BRT Planning Guide targeted local governments and educational institutes of developing countries. By making the Guide available on-line on ITDP’s website coupled with verbal communication with ITDP’s partners in several developing countries, demand for the Guide has created demand for the Guide in other languages. This has resulted in the Guide being available in Spanish, Portuguese, Chinese and Russian.

***The rating for communication and public awareness is Highly Satisfactory.***

## 4 Conclusions, Recommendations and Lessons Learned

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### 4.1 Conclusions

147. The GEF grant for the BRT Project approved in 2004 was one of the first GEF OP-11 projects. The grant was utilized to influence BRT designs in Dar es Salaam and Cartagena through proper integration with NMT infrastructure, and to strengthen institutional and business arrangements to effectively implement the BRT projects. In 2008, these grant outputs contributed to the approval of World Bank financing of these BRT systems. This led to the development of two operational BRT systems that developed healthy ridership, further demonstrating the benefits of BRT as a means of improving urban mobility in cities in developing countries, and inherently generating urban transport-related GHG emission reductions. These BRT systems, particularly the one in Dar es Salaam, are contributing to a growing knowledge base on the development of BRT systems in cities in developing countries. The grant has supported activities towards these outcomes through providing best practices on BRT management arrangements (DART only), operational plans and integration of NMT infrastructure with BRT systems. In combination with the support of other co-financing partners, the executing agency, ITDP, have made significant contributions to the development of the DART and TransCaribe BRT systems.

148. The completion of these systems to become operational, however, took 12 years, 7 more years than the design of the GEF grant of 5 years. Reasons for these delays were related to overambitious targets (with an outcome of operational BRT systems after 5 years), and factors beyond the control of the implementers that included issues related to delays in the public procurement systems in developing nations, and the need for additional time to develop the capacities of local personnel to

efficiently manage the processes of BRT development. By 2016 when both DART and TransCaribe systems became operational, global knowledge of BRT had significantly improved with the experience of planning for the DART system contributing to this knowledge in the 4<sup>th</sup> edition (2017) version of the BRT Planning Guide, and the benefits of closely following the designs of the TransMilenio BRT system in Bogota.

149. The award to Dar es Salaam of the 2018 Sustainable Transport Award for its DART BRT system<sup>53</sup>, is a significant reflection of the quality of the system that was developed through the resources of this GEF grant as well as technical and financial assistance from the World Bank, GIZ, and strong political will from the Government of Tanzania and Dar es Salaam municipality. The civic pride of the DART system is evident given the cleanliness of the system, the compliance of its patrons to the general rules, and the general passion of operating personnel. The DART BRT is now emerging as an excellent demonstration of implementing a BRT system in a developing country in East Africa from which lessons can be collected and shared with other countries. This includes well-designed pedestrian walkways and cycle paths to BRT stations. Lastly, the DART BRT is a demonstration of the benefits of BRT, transforming the quality of life along the BRT corridors, improving local air quality, and reducing urban transport-related GHG emissions. The Government of Tanzania (through the Ministry of Housing) and the DCC have also been catalyzed towards urban planning for the development of additional BRT corridors and larger public housing projects along these corridors as transit-oriented development (TOD)<sup>54</sup>. Despite the absence in the BRT Project design to address the important aspects of gender and the human rights based approach, the evaluation observed benefits to vulnerable groups and women residing in these demonstration cities.

150. Notwithstanding these positive attributes of the DART system, a number of operational inefficiencies and issues in DART were observed by this evaluation which could be broadly characterized as “growing pains” and a temporary lack of funds:

- Shortages of buses to meet passenger demand of the BRT as evidenced by some of the long wait times at the BRT stations for buses (sometimes more than 10 minutes);
- Wait times at signal crossings that could be minimized;
- Lack of parking facilities for park-and-ride at outlying BRT stations where there is poor public transport availability to travel to these BRT stations, and where there may be sufficient demand for such facilities by private car owners;
- Procurement of the first 150 buses with a Euro III standard, which was justified on the basis of available fuel whose quality that had high sulphur content that cannot operate on Euro 4 engines or higher;
- Institutional capacity issues related to sufficient numbers of qualified DART technicians and UDA-RT monitoring officers required for monitoring and maintaining the system<sup>55</sup> as well as systematic and institutional reporting of GHG emission reductions generated by BRT systems;
- The current lack of utility of cycling infrastructure in Dar es Salaam that is mainly due to the lack of time to develop a cycling culture in Tanzania.

151. For Cartagena, the TransCaribe BRT system also is experiencing healthy ridership which has benefitted from the presence of a steady public awareness campaign from 2005. The excellent and long-standing work carried out by the TransCaribe public consultations group (since 2004) had resulted in feedback and support in favor of BRT from numerous impacted communities along the main trunk line as well as feeder routes to the BRT stations. With this feedback, the TransCaribe system has been able to operate a hybrid transport service with BRT buses operating along both

<sup>53</sup> <https://www.itdp.org/dar-es-salaam-wins-2018-sta/>

<sup>54</sup> Personal communication with DART personnel.

<sup>55</sup> With UDA-RT being a private sector entity, they bear the responsibility of recruiting these types of qualified personnel.

feeder and trunk routes in addition to buses that only operate on trunk and feeder routes. This leads to the likelihood of increasing urban-transport related GHG emission reductions in Cartagena.

152. Notwithstanding the popularity of the BRT system with the residents of Cartagena, TransCaribe are also experiencing similar “growing pains” which if addressed, could result in further increases in ridership, utilization of the BRT system to its full design capacity, and generate higher levels of GHG emission reductions. These issues include:

- an insufficient number of buses;
- long wait times (at times more than 15 minutes);
- areas of congestion along the corridor due to a lack of signal synchronization;
- the lack of safe pedestrian crossings at some BRT stations (using humped zebra crossings);
- lack of cycling parking facilities and cycling feeder lines to BRT stations, despite popularity of cycling in Cartagena;
- improved security along BRT lanes (reflecting a need for more safe pedestrians crossings along BRT corridor); and
- need for systematic and institutionalized reporting of GHG emission reductions from the TransCaribe BRT which can be used to leverage further support for expansion of the BRT to other areas of the city.

153. The contribution of these grant funds to the development of the BRT Planning Guide (though small in size) was significant in content and resulting impact. The 1<sup>st</sup> edition of the Guide was widely disseminated and downloaded, resulting in catalyzed interest in the development of BRT systems in a number of cities in developing countries. Positive experiences from the completed DART system was leveraged into additional information into the 4<sup>th</sup> edition of the Guide being issued in 2017, covering more contemporary topics related to TOD and other green city aspects, and attracting more development partners. The efforts of continual improvement of the BRT Planning Guide and other related topics such as BRT standards, parking policies and NMT integration appear to be sustainable with strong development partners.

**Table 6: Summary of the evaluation criteria ratings**

Evaluation criteria	Rating	Score	Weight	Weighted Score
<b>Strategic Relevance (select the ratings for sub-categories)</b>	Highly Satisfactory	6	6	0.3
<i>Alignment to MTS and POW</i>	Highly Satisfactory	6	1	
<i>Alignment to UNEP/GEF/Donor strategic priorities</i>	Highly Satisfactory	6	1	
<i>Relevance to regional, sub-regional and national issues and needs</i>	Highly Satisfactory	6	2	
<i>Complementarity with existing interventions</i>	Highly Satisfactory	6	2	
<b>Quality of Project Design</b>	Satisfactory	5	4	0.2
<i>Nature of External Context</i>	Favourable	2		
<b>Effectiveness (select the ratings for sub-categories)</b>	Satisfactory	5	45	2.2
<i>Delivery of outputs</i>	Satisfactory	5	5	
<i>Achievement of direct outcomes</i>	Satisfactory	5	30	
<i>Likelihood of impact</i>	Moderately Likely	4	10	
<b>Financial Management (select the ratings for sub-categories)</b>	Satisfactory	5	5	0.3
<i>Completeness of project financial information</i>	Satisfactory	5		
<i>Communication between finance and project management staff</i>	Satisfactory	5		
<i>Compliance with UNEP standards and procedures</i>	n/a <sup>56</sup>	n/a		
<b>Efficiency</b>	Moderately Satisfactory	4	10	0.4
<b>Monitoring and Reporting (select the ratings for sub-categories)</b>	Satisfactory	4.3	5	0.2
<i>Monitoring design and budgeting</i>	Moderately Unsatisfactory	3		
<i>Monitoring of project implementation</i>	Satisfactory	5		
<i>Project reporting</i>	Satisfactory	5		
<b>Sustainability (select the ratings for sub-categories)</b>	Moderately Likely	4	20	0.8
<i>Socio-political sustainability</i>	Moderately Likely	4		
<i>Financial sustainability</i>	Likely	5		
<i>Institutional sustainability</i>	Likely	5		
<b>Factors Affecting Performance (select the ratings for sub-categories)</b>	Highly Satisfactory	6	5	0.2
<i>Preparation and readiness</i>	Satisfactory	5		
<i>Quality of project management and supervision</i>	Highly Satisfactory	6		
<i>Stakeholder participation and cooperation</i>	Highly Satisfactory	6		
<i>Responsiveness to human rights and gender equity<sup>57</sup></i>	n/a	n/a		
<i>Country ownership and driven-ness</i>	Satisfactory	5		
<i>Communication and public awareness</i>	Highly Satisfactory	6		
			100	4.66
<b>Overall Rating:</b>			<b>Satisfactory</b>	

<sup>56</sup> Since revision of the UN Environment evaluation guidance in 2017 ‘compliance’ no longer rated under financial management criterion

<sup>57</sup> Not included in ratings assessment. See Paragraph 142 for details.

## 4.2 Lessons Learned

154. The following are some lessons that have been learned from some of the project’s successes as well challenges:

Context:	For the DART BRT system, country ownership and drivenness by the Government of Tanzania and Municipality of Dar es Salaam were <b>highly satisfactory</b> . Reasons for this rating are related to the strong political support of the DART BRT system from the country’s President and Prime Minister, provision of co-financing and in-kind assistance as originally intended (Paragraph 143). For the TransCaribe BRT system, country ownership and drivenness of the City of Cartagena were <b>satisfactory</b> . This rating is related to past mayors who were closely involved with the development of the system but also downgraded due to the frequent changes in municipal government officials during the period of 2006 to 2016. This has resulted in an institutional environment that needs improvement to integrate NMT infrastructure with the BRT stations, in part due to political will not being strong and resulting in slow approval by the municipal government to additional space taken by NMT infrastructure (Paragraph 144).
Lesson # 1:	Strong political will is a pre-requisite for a successful sustainable transport project complete with NMT infrastructure. In the case of Dar es Salaam, political support for the BRT system was extended to the top leaders of the country, trickling down to the lower levels of government. In the case of Cartagena, the municipality bore more responsibilities to drive the TransCaribe project with the Government of Colombia only providing policies to encourage BRT development. Unfortunately for Cartagena, political will was not as strong as Dar es Salaam due to frequent changes of the mayor and other key positions in the municipality, and the need for more time to receive approvals for various permits during implementation. As a result, Cartagena was not able to integrate NMT infrastructure with the BRT system to the extent that Dar es Salaam has managed.
Application:	Selection of jurisdictions of future pilot projects on sustainable transport or green city projects.
Context:	<p>In Dar es Salaam, the Project successfully engaged service providers whose livelihoods were threatened by the new BRT system, an essential action to successful BRT operationalization that essentially replicates the experience of Bogota’s TransMilenio system (Paragraph 91).</p> <p>In Cartagena, plans for marketing the BRT system, public education and customer services were retained by TransCaribe’s personnel responsible for community outreach. They have continually used these plans since 2006 and were instrumental in achieving community acceptance of the BRT system, especially in the lower income neighborhoods of eastern Cartagena including El Pozon where there was initially opposition to BRT from bus drivers living there. Public inputs also resulted in TransCaribe implementing hybrid bus services, an innovation which has TransCaribe buses (only 12 m length) operating along both the trunk and feeder routes to increase the average speeds of the these buses which is possible by</p>

<p>Lesson # 2:</p> <p>Application:</p>	<p>purchasing buses that load from both the left and right sides of the buses (for BRT stations and feeder bus stops respectively) (Paragraph 107).</p> <p>Success of a new BRT system is highly dependent on engagement of existing public transport personnel from the old systems. Failure to successfully engage the majority of these public transport owners will increase the risk of opposition to the new system and operational disruptions.</p> <p>Design of future sustainable transport projects and during early phases of development and implementation of new BRT systems.</p>
<p>Context:</p> <p>Lesson # 3:</p> <p>Application:</p>	<p>Delivery of Output 6 (completed bicycling and pedestrian master plan for Dar es Salaam) was key to the design and implementation of cycling and pedestrian walkways throughout most of the 21 km of the BRT system. While bicycle lanes were constructed along most of these corridors, cycling in Dar es Salaam has not yet become a mainstream mode of transport within the city due to cultural and economic reasons. While walking remains the primary NMT mode of transport in Dar es Salaam, the presence of the bicycle lanes is a foundation for changing citizens perceptions towards cycling as a main mode of transport (Paragraph 89).</p> <p>For Cartagena, delivery of Output 10 (the plan for the bicycle and pedestrian feeder network and BRT integration) was instrumental in improving the pedestrian access to the BRT stations, contributing to the healthy and growing ridership on TransCaribe. However, there was a lack of importance placed on cycling during the time of design and construction of TransCaribe in 2008-10, resulting in cycling infrastructure to serve as a feeder to the BRT system not being implemented (Paragraph 93). In addition, the current absence of cycling infrastructure along the TransCaribe BRT corridor is a reflection of the lack of a “transport planning culture” in Cartagena combined with recent economic growth in the city and the increasing number of motorcycles to meet the demand for short and quick transport within Cartagena (Paragraph 100). Demand for a cycling network in Cartagena and its integration with the BRT was recently studied by Despacio, with preliminary reaction to this study by TransCaribe management being positive. With conclusions that the use of the bicycle in Cartagena is not strictly recreational nor is its use affected by climatic conditions, the report provided a proposal for a pilot investment in bicycle infrastructure (Paragraph 99).</p> <p>The introduction of cycling infrastructure into a city without a “transport planning culture” is a cost that is worth considering that provides the opportunity to city residents to embrace cycling as a new mode of urban transport. This should be studied during the early stages of development of a sustainable transport project, and have strong political support.</p> <p>Future pilot projects on sustainable transport or green city development.</p>
<p>Context:</p>	<p><i>Timeframe of 5 years for the BRT Project.</i> Given the level of stakeholder consultations and agreements required amongst numerous municipal level stakeholders as well as donor agencies, there was a high risk of not completing the Project within a 5-year timeframe. At the time of the BRT</p>

<p>Lesson # 4:</p> <p>Application:</p>	<p>Project design in 2002-2003, there was likely not a large body of evidence of the long gestation periods required for implementing a BRT project. In retrospect, this risk was high considering the numerous agreements required between several municipal stakeholders, substantial risks of delay on public tenders as well as tenders from donor agencies, and high risk of delays during implementation (such as delays in supply of equipment, and completion of labor and other stakeholder agreements). These delays could result in Project activities not being implemented in a logical and sequential manner (such as training operators in one year without them being able to use these skills for several more years due to delays in the actual operationalization of the BRT) that would lead to a longer implementation period of the system (Paragraph 59).</p> <p>Future GEF projects should be designed within a realistic time frame to achieve intended outputs, outcomes, and impacts. For sustainable transport projects such as a BRT project, a less risky and more realistic approach to supporting such projects would be to have separate projects with only planning (which has less delays in delivering intended objectives) as opposed to including implementation (that includes engineering design and construction) which has higher risks of delay from municipal or government approvals, stakeholder disagreements and public procurement.</p> <p>Design of future projects for GEF support to avoid parts of the project cycle where delay risks are high (including phases where urban improvement projects and sustainable transport projects are required with multiple levels of stakeholder agreements with differing agendas).</p>
<p>Context:</p> <p>Lesson # 5:</p> <p>Application:</p>	<p>Considering the size of GEF support of US\$724,595, the design of the BRT Project was clearly scoped to provide incremental support to enhance BRT planning for both Dar es Salaam and Cartagena by integrating NMT infrastructure with the system (Para 58). The grant was utilized to influence BRT designs in Dar es Salaam and Cartagena through proper integration with NMT infrastructure, and to strengthen institutional and business arrangements to effectively implement the BRT projects. In 2008, these grant outputs contributed to the approval of World Bank financing of these BRT systems. This led to the development of two operational BRT systems that developed healthy ridership, further demonstrating the benefits of BRT as a means of improving urban mobility in cities in developing countries, and inherently generating urban transport-related GHG emission reductions (Paragraph 116).</p> <p>GEF funds can be effectively used to leverage financing of larger capital cost projects by providing soft support to strengthen designs, improve institutional arrangements, and reducing risks to complex administrative and contractual issues that can delay implementation of such projects. More importantly, GEF support can be used to complement and strategically influence projects with large capital costs towards meeting global environmental objectives.</p> <p>Future medium-sized GEF projects.</p>



### 4.3 Recommendations

155. Considering the age of the BRT Project in this evaluation, the recommendations provided in this Evaluation are mainly programmatic in nature and build upon the outcomes from this GEF Project grant and other ongoing efforts in the development of greener urban mobility globally.

#### 4.3.1 Recommendations for Cities in Developing Countries

Context:	The capacity of municipal personnel in Dar es Salaam to support implementation of BRT/NMT infrastructure is only partially in place, and that there is not yet full compliance to global best practices. As a result, continued oversight by BRT global professionals is required (Table 5 on Actual Direct Outcome 6 under “comments”).
Recommendation #1	<p>DART should retain periodic oversight management (possibly once annually) with a reputed BRT specialist to ensure the compliance to best practices for development and operation of BRT systems. Attention is required to ensure that all aspects of the system are implemented to maximize ridership of new and existing BRT systems and generation of transport-related GHG emission reductions. Attention to detailed aspects of the BRT system is required:</p> <ul style="list-style-type: none"> <li>• for ensuring humped zebra crossings are built at all pedestrian crossings;</li> <li>• to minimize trip times through synchronized signaling and efficient loading at platforms; and</li> <li>• to continue promoting the use of cycling as a mode of transport in Dar es Salaam despite the lack of an established cycling culture</li> </ul>
Responsibility:	Government of Tanzania, DCC and DART
Time-frame:	Design and operational phases for follow-on projects
Context:	Based on observations of the quality of the TransCaribe BRT system, some of the best international practices of BRT have been incorporated. However, with a number of key features of NMT infrastructure missing such as humped zebra pedestrian crossings and cycling paths feeding to BRT stations, there is an unquantified but adverse effect on ridership. As a result, full potential of the TransCaribe BRT system will not be reached due to the assumption that “capacity of municipal personnel to support implementation of BRT/NMT infrastructure to support implementation of BRT/NMT infrastructure” only partially holds, and where the driver of “compliance to global best practices” is only partially in place. There is also the unconfirmed presence of federal government personnel who formally quantify GHG emission reductions from BRT systems in Colombian cities which will increase the likelihood that GHG emission reductions for Cartagena’s BRT system will be formally monitored (Table 5 on Actual Direct Outcome 7 under “comments”).
Recommendation #2	TransCaribe should retain the services of a reputed BRT specialist to provide periodic oversight management (possibly once annually) with the objective of ensuring the compliance to best international practices for development and operation of BRT systems. Attention is required to ensure that all aspects of the system are implemented to maximize ridership of the existing BRT systems (and future BRT systems) and maximize the generation of transport-

<p>Responsibility:</p> <p>Time-frame:</p>	<p>related GHG emission reductions. In the event that quantification of urban transport-related GHG emission reductions has not been formalized, assistance should also be provided to TransCaribe in close collaboration with the Colombian Ministry of Environment’s to replicate the system employed by TransMilenio in Bogota. A system for quantification of GHG emission reduction could be tied to progressive additions to the TransCaribe system that would include the addition of missing key NMT infrastructural features (such as humped zebra pedestrian crossings, feeder cycling paths, shortened bus loading platforms wherever appropriate), and implementing improved bus operations (synchronized signaling, even spacing of BRT buses, and bus electrification). Furthermore, this GHG accounting system could also account for multiplier effects from TOD that is likely to enhance NMT and reduce trip lengths.</p> <p>Colombian Ministry of Environment, Municipality of Cartagena and TransCaribe.</p> <p>During operations of the TransCaribe BRT system and the design phase for any extensions of the current the BRT system.</p>
<p>Context:</p> <p>Recommendation #3</p> <p>Responsibility:</p> <p>Time-frame:</p>	<p>Notwithstanding the completion of a global <i>BRT Planning Guide</i> that would reduce reliance of cities in developing countries on expensive international experts, and provide them with an authoritative guide to best practices of BRT planning (Paragraph 19), GHG emissions from BRT systems globally will be reduced but not to its full potential on the assumption that “capacity of municipal personnel in several cities of developing countries is only partially in place to support implementation of BRT/NMT infrastructure”, and that the driver of “compliance to global best practices” is only partially in place. Capacity building of local transport professionals still requires donor or international support to ensure full compliance to best international practices for BRT systems development. (Table 5 on Actual Direct Outcome 8 under “comments”).</p> <p>All cities in developing countries developing BRT systems should recruit a reputable BRT specialist to provide design and implementation oversight <i>with the aim of maximizing their compliance to best international practices for developing BRT systems</i>. While the BRT Planning Guide provides guidance in the design of BRT systems, it does not serve as a replacement for experienced BRT practitioners. As such, this Evaluation strongly recommends the addition of an experienced BRT specialist to local BRT teams to provide oversight services during the design and implementation phase of a BRT system. The frequency of services of such a specialist does not need to be full-time, rather 4 to 6 visits per year or as required to provide the BRT specialist a fresh look at the progress of BRT systems during the design and implementation phases that will enable the specialist to provide useful recommendations to the local team to maximize urban transport-related GHG emission reductions from the BRT system.</p> <p>All cities in developing countries with intentions of developing BRT systems.</p> <p>Planning and design phases for proposed future BRT systems in cities in developing countries.</p>

### 4.3.2 UN Environment Recommendations

Context:	Dar es Salaam City Council (DCC) has not yet commenced long-term strategic planning to create a long term development vision for Dar es Salaam that includes the benefits of improved urban mobility from a growing BRT network in Dar es Salaam. Meeting the higher demand for BRT services in Dar es Salaam will require different skill sets to focus on Transit-Oriented Development (TOD) and identify innovative means of reducing the revenue-operational cost gap of public transport services (Table 6 on Actual Direct Outcome 6 under “comments”).
Recommendation #4	Provide assistance to DCC to create a long-term strategic vision for Dar es Salaam that includes Transit oriented development (TOD) with the 6 phases of the BRT network. The vision should include the inputs from the Ministry of Housing with their plans for public housing for vulnerable groups along BRT corridors, and enhanced economic retail zones around BRT stations. Long-term plans should also be made for minimizing DART operational costs that may include electrification of the bus fleet (either through trolley or electric (battery) buses), from power sources that may include renewables.
Responsibility:	UN Environment
Time-frame:	Design phase for subsequent DART phases
Context:	A future challenge for sustained BRT operations for the cities as well as other cities in developing countries is minimizing the subsidies required to bridge the operations-revenue cost gap of public transport services. While nearly all cities globally experience a revenue-operations cost gap for public transport services, BRT managers will find it increasingly difficult to sustain quality public transport services as a result of increasing costs. Without increases in fiscal resources for subsidies, compromises are often made in the quality of public transport services. For BRT systems, this may include a reduced number of buses and reduced maintenance on buses. This may eventually leads to a gradual loss in public confidence in BRT systems and public transport in general. There is a need to provide assistance to BRT managers in Dar es Salaam and Cartagena as well as cities in developing countries, on innovative means of generating revenue from public transport in an effort to minimize the operations revenue cost gap (Paragraph 129).
Recommendation #5	In consideration of the large number of projects that focus on developing “green cities”, future transportation or green city projects (at a global, regional or local level will need to be formulated to include assistance to various governments of developing countries (central or municipal level governments as deemed appropriate) to identify mechanisms for generating new revenue streams related to reducing the costs of municipal operations and green urban development (this should also include continued assistance to Dar es Salaam and Cartagena). Such a project could consist of a review of municipal expenditures as a holistic approach to green urban development. Reducing municipal expenditures may consist of developing programs for energy efficiency of public assets, renewable energy development, reducing water consumption, promotion of green construction and building materials, surface water management, green infrastructure (i.e. urban parks, forests and wetlands), and waste management, all of which have the potential for the

realization of cost savings to municipal operating budgets. These cost reductions can be utilized to augment, for example, existing BRT infrastructure and assets and its operational budget. New revenue streams can also include additional taxation on building developments adjacent to BRT corridors, similar to public transport funding in Hong Kong.

Responsibility: UN Environment

Time-frame: Design phase for a regional or global green urban development project.

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## 5 Annexures

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## Annex I. Terms of Reference for the Evaluation

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### i) Objective and Scope of the Evaluation

- I-1. In line with the UNEP Evaluation Policy<sup>58</sup> and the UNEP Programme Manual<sup>59</sup>, the Terminal Evaluation is undertaken at completion of the project to assess project performance (in terms of relevance, effectiveness and efficiency), and determine outcomes and impacts (actual and potential) stemming from the project, including their sustainability. The evaluation has two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote operational improvement, learning and knowledge sharing through results and lessons learned among UNEP, ITDP and other executing partners. Therefore, the evaluation will identify lessons of operational relevance for future project formulation and implementation. There is no follow-up project in the UNEP scope.
- I-2. In addition to the evaluation criteria outlined in section 4, below, the evaluation will address the strategic questions listed below. These are questions of interest to UNEP and to which the project is believed to have a substantive contribution:
- To what extent have governments in Tanzania and Columbia incorporated sustainable transport into the policies and strategies as a result of the project (e.g. in terms of service quality standard of on-going operations, and catalytic effect of the project on subsequent sustainable transport investments)?
  - To what extent have the established guideline(s) and other project outputs contributed to enhancement of BRT systems in the pilot cities and especially elsewhere?
  - What were the key factors affecting the project success or shortfalls? What are the transferrable key lesson concerning the BRT and NMT project implementation?

### ii) Overall Approach and Methods

- I-3. The Terminal Evaluation of the Project will be conducted by independent consultants under the overall responsibility and management of the UNEP Evaluation Office in consultation with the UNEP Task Manager and the Sub-programme Coordinators of the Climate Change.
- I-4. It will be an in-depth evaluation using a participatory approach whereby key stakeholders are kept informed and consulted throughout the evaluation process. Both quantitative and qualitative evaluation methods will be used to determine project achievements against the expected outputs, outcomes and impacts. It is highly recommended that the consultant(s) maintains close communication with the project team and promotes information exchange throughout the evaluation implementation phase in order to increase their (and other stakeholder) ownership of the evaluation findings.
- I-5. The findings of the evaluation will be based on the following:
- (i) **A desk review of:**
- Relevant background documentation including key publications regarding BRT and NMT development globally prior and after initiation of the project.
  - Project design documents (including minutes of the project design review meeting at approval); Annual Work Plans and Budgets or equivalent, project revisions (Project Document Supplement), the logical framework and its budget;

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<sup>58</sup> <http://www.unep.org/eou/StandardsPolicyandPractices/UNEPEvaluationPolicy/tabid/3050/language/en-US/Default.aspx>

<sup>59</sup> [http://www.unep.org/QAS/Documents/UNEP\\_Programme\\_Manual\\_May\\_2013.pdf](http://www.unep.org/QAS/Documents/UNEP_Programme_Manual_May_2013.pdf)

- Project reports such as six-monthly progress and financial reports, progress reports from collaborating partners, SC and working group meeting minutes, relevant correspondence etc.;
  - Project outputs such as the BRT Planning Guide (2007) and other derivative knowledge products such as the BRT Standard.<sup>60, 61</sup>
  - Similar BRT project evaluations (i.e. conducted by the UNEP Evaluation Office);
- (ii) **Interviews (individual or in group) with:**
- Project management team;
  - UNEP Fund Management Officer;
  - UNEP Task Manager
  - Project partners, including key stakeholders at ITDP, national executing partners, World Bank, USAid, GIZ, Hewlett Foundation, VIVA –Cities for people, and GEF
  - Relevant resource persons at Dar Rapid Transit Agency (DART), Dar City Council, Tanzania National Roads Authority (TANROADS), the Ministry of Works, Prime Minister’s Office for Regional Administration and Local Government (PMO-RALG), the Kinondoni, Illala, and Temeke Municipal Councils, and UDART (the BRT operator).
- (iii) Data collected by DART and UDART (as per availability):
- Daily and hourly boarding on trunk and feeder buses
  - Passenger throughput at critical locations such as Fire Station
  - Peak and off-peak speeds
  - Number of passengers using automated fare collection
  - Revenue collection
  - Fatalities from traffic crashes along the corridor before/after the project
  - Former modes used by DART passengers (to gauge mode shift as a result of the BRT)
- (iv) **Field visits** to Dar es Salaam (site observations and stakeholder interviews). Field visit to Cartagena is optional (it will be agreed separately whether the data collection from Cartagena is supported by a field mission conducted by National support person OR by the international evaluation consultant)

### iii) Key Evaluation principles

- I- 6. Evaluation findings and judgements should be based on **sound evidence and analysis**, clearly documented in the evaluation report. Information will be triangulated (i.e. verified from different sources) to the extent possible, and when verification was not possible, the single source will be mentioned. Analysis leading to evaluative judgements should always be clearly spelled out.
- I- 7. The evaluation will assess the project with respect to a minimum set of evaluation criteria grouped in nine categories: (A) Strategic Relevance; (B) Quality of Project Design; (C) Nature of External Context; (D) Effectiveness, which comprises assessments of the achievement of outputs, achievement of outcomes and likelihood of impact; (E) Financial Management; (F) Efficiency; (G) Monitoring and Reporting; (H) Sustainability; and (I) Factors Affecting Project Performance. The evaluation consultants can propose other evaluation criteria as deemed appropriate.

<sup>60</sup> <https://www.itdp.org/the-brt-planning-guide/>

<sup>61</sup> <https://www.itdp.org/library/standards-and-guides/the-bus-rapid-transit-standard/>

- I- 8. **Ratings.** All evaluation criteria will be rated on a six-point scale. Annex 2 provides guidance on how the different criteria should be rated and how ratings should be aggregated for the different evaluation criterion categories.
- I- 9. **Baselines and counterfactuals.** In attempting to attribute any outcomes and impacts to the project intervention, the evaluators should consider the difference between *what has happened with, and what would have happened without, the project*. This implies that there should be consideration of the baseline conditions, trends and counterfactuals in relation to the intended project outcomes and impacts. It also means that there should be plausible evidence to attribute such outcomes and impacts to the actions of the project. Sometimes, adequate information on baseline conditions, trends or counterfactuals is lacking. In such cases this should be clearly highlighted by the evaluators, along with any simplifying assumptions that were taken to enable the evaluator to make informed judgements about project performance.
- I- 10. **The “Why?” Question.** As this is a terminal evaluation, thus particular attention should be given to learning from the experience and application of the lesson on similar projects in the future. Therefore, the “Why?” question should be at the front of the consultants’ minds all through the evaluation exercise. This means that the consultants need to go beyond the assessment of “what” the project performance was, and make a serious effort to provide a deeper understanding of “why” the performance was as it was, i.e. of processes affecting attainment of project results (criteria under category F – see below). This should provide the basis for the lessons that can be drawn from the project. In fact, the usefulness of the evaluation will be determined to a large extent by the capacity of the consultants to explain “why things happened” as they happened and are likely to evolve in this or that direction, which goes well beyond the mere review of “where things stand” at the time of evaluation.
- I- 11. A key aim of the evaluation is to encourage reflection and learning by UNEP staff and key project stakeholders. The consultant should consider how reflection and learning can be promoted, both through the evaluation process and in the communication of evaluation findings and key lessons.
- I- 12. **Communicating evaluation results.** Once the consultant(s) has obtained evaluation findings, lessons and results, the Evaluation Office will share the findings and lessons with the key stakeholders. Evaluation results should be communicated to the key stakeholders in a brief and concise manner that encapsulates the evaluation exercise in its entirety. There may, however, be several intended audiences, each with different interests and preferences regarding the report. The Evaluation Manager will plan with the consultant(s) which audiences to target and the easiest and clearest way to communicate the key evaluation findings and lessons to them. This may include some or all of the following; a webinar, conference calls with relevant stakeholders, the preparation of an evaluation brief or interactive presentation.

#### iv) Evaluation criteria

##### A. Strategic relevance

- I- 13. The evaluation will assess, in line with the OECD/DAC definition of relevance, ‘*the extent to which the activity is suited to the priorities and policies of the target group, recipient and donor*’. The evaluation will include an assessment of the project’s relevance in relation to UNEP’s mandate and its alignment with UNEP’s policies and strategies at the time of project approval. Under strategic relevance an assessment of the complementarity of the project with other interventions addressing the needs of the same target groups will be made. This criterion comprises four elements:



- a. *Alignment to the UNEP strategies [Medium Term Strategy<sup>62</sup> (MTS) and Programme of Work (POW)].* The evaluation should assess the project's alignment with the UNEP strategic directions under which the project was approved and include reflections on the scale and scope of any contributions made to the planned. The project has been on-going since 2004, thus the evaluation should also assess to what extent the initiative remained relevant to new and revised strategic directions of UNEP over the years (including MTS and POW);
- b. *Alignment to UNEP/GEF/Donor Strategic Priorities.* Donor, including GEF, strategic priorities will vary across interventions. UNEP strategic priorities include the Bali Strategic Plan for Technology Support and Capacity Building<sup>63</sup> (BSP) and South-South Cooperation (S-SC). The BSP relates to the capacity of governments to: comply with international agreements and obligations at the national level; promote, facilitate and finance environmentally sound technologies and to strengthen frameworks for developing coherent international environmental policies. S-SC is regarded as the exchange of resources, technology, and knowledge between developing countries. GEF priorities are specified in published programming priorities and Climate Change focal area strategies;
- c. *Relevance to Regional, Sub-regional and National Environmental Priorities.* The evaluation will assess the extent to which the intervention is suited or responding to the stated environmental concerns and needs of the countries and/or regions where it is being implemented. The evaluation should look at the national development plans, poverty reduction strategies and Nationally Appropriate Mitigation Action (NAMA) plans of Tanzania and Columbia;
- d. *Complementarity with Existing Interventions.* An assessment will be made of how well the project, either at design stage or during the project mobilization, took account of ongoing and planned initiatives (of UNEP, or those being implemented by other agencies) that address similar needs of the same target groups. The evaluation will consider if the project team, in collaboration with Regional Offices and Sub-Programme Coordinators, made efforts to ensure their own intervention was complementary to other interventions, optimized any synergies and avoided duplication of effort. Examples may include UNDAFs, One UN programming or World Bank initiatives. Linkages with other interventions should be described and instances where UNEP's comparative advantage has been particularly well applied should be highlighted.

I- 14. *Factors affecting this criterion may include:*

- Stakeholders' participation and cooperation
- Responsiveness to human rights and gender equity
- Country ownership and driven-ness.

## **B. Quality of Project Design**

I- 15. The project was designed already in 2003, thus it is expected that the requirements for a project design were not as specific as they are today. Nevertheless the quality of project design is assessed using an agreed template during the evaluation inception phase, ratings are attributed to identified criteria and an overall Project Design Quality rating is established. This overall Project Design Quality rating is entered in the final evaluation ratings table as item B.

I- 16. *Factors affecting this criterion may include (at the design stage):*

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<sup>62</sup> UNEP's Medium Term Strategy (MTS) is a document that guides UNEP's programme planning over a four-year period. It identifies UNEP's thematic priorities, known as Sub-programmes (SP), and sets out the desired outcomes, known as Expected Accomplishments (EAs), of the Sub-programmes.

<sup>63</sup> <http://www.unep.org/GC/GC23/documents/GC23-6-add-1.pdf>

- Stakeholders participation and cooperation;
- Responsiveness to human rights and gender equity.

### **C. Nature of External Context**

I- 17. At evaluation inception stage a rating is established for the project's external operating context (considering the prevalence of unexpected conflict, natural disasters and political upheaval). This rating is entered in the final evaluation ratings table as item C. Where a project has been rated as facing either an Unfavourable or Highly Unfavourable external operating context, the overall rating for Effectiveness may be increased at the discretion of the Evaluation Consultant and Evaluation Manager together. A justification for such an increase must be given.

### **D. Effectiveness**

I- 18. The evaluation will assess the extent to which the project's objectives were effectively achieved or are expected to be achieved. In terms of assessing the project's effectiveness the evaluation needs to pay attention to the following limitations of the original project document while reconstructing the Theory of Change and assessing the project effectiveness:

- The ProDoc (2004) does not contain a logical framework that would clearly describe the expected result levels as per the current understanding at UNEP.
- The ProDoc is lacking key indicators and targets generally used to assess effectiveness of BRT projects (specifically in terms of long-term outcomes and impacts).
- The BRT systems in the pilot countries were implemented together with several partners and additional funding sources. The evaluation needs to pay special attention to attribution/contribution aspects of this specific UNEP/GEF project.

I- 19. The evaluation will reconstruct the **Theory of Change** (ToC) to depict the project logic<sup>64</sup>. The TOC depicts the causal pathways from project outputs (goods and services delivered by the project) through direct outcomes (changes resulting from the use made by key stakeholders of project outputs) towards impact (long term changes in environmental benefits and living conditions). The ToC will also depict any changes required between project outcomes and impact, called 'intermediate states'. The ToC further defines the external factors that influence change along the major pathways; i.e. factors that affect whether one result can lead to the next. These external factors are either drivers (when the project has a certain level of control) or assumptions (when the project has no control). The ToC will also clearly identify the main stakeholders involved in the change processes. TOC should clearly identify and address the role of key partners such as World Bank, GIZ and national municipalities when describing the pathways towards the higher level outcomes/impacts.

I- 20. The evaluation will reconstruct the ToC of the project based on a review of project documentation and stakeholder interviews during the inception phase of the evaluation. The evaluator will be expected to discuss the reconstructed TOC with the stakeholders during evaluation missions and/or interviews in order to ascertain the causal pathways identified and the validity of impact drivers and assumptions described in the TOC. The TOC will serve as the basis for assessing the effectiveness of the project.

I- 21. It is vital that during the construction of the TOC the evaluator also identifies **key indicators for different results levels** based on the ProDoc and generally accepted indicators for BRT projects.

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<sup>64</sup> See annex 3 for guidance and consult UNEP Evaluation Office for any addition guidance material concerning the TOC development

The evaluator also needs to establish that these indicator measures are based on the available data/data collected by the partners during the implementation of the project. To measure effectiveness, the evaluation will use as much as appropriate the **indicators proposed in the ProDoc/Progress Implementation Reports (PIRs) as well as generally accepted indicators to measure results of BRT projects depending on the availability** (e.g. the system's BRT Standard score; the system's total daily boardings; the change in corridor travel times for public transport passengers as a result of the project; and the fraction of passengers who switched from private motor vehicles).

- I- 22. This exercise will also enable the consultant to address some of the key evaluation questions and make adjustments to the TOC as appropriate during the evaluation process.

## D1. Achievement of Outputs

- I- 23. The evaluation will assess, for each component, the projects' success in producing the **programmed outputs** (products and services delivered by the project itself) and milestones as per the ProDoc and any modifications/revisions later on during project implementation, both in quantity and quality, as well as their usefulness and timeliness. This section discusses about the delivery of outputs and section C (Effectiveness) will further discuss about the results deriving from delivering these programmed deliverables.

- I- 24. The evaluation will briefly explain the reasons behind the success or shortcomings of the project in delivering its programmed outputs and meeting expected quality standards.

- I- 25. *Factors affecting this criterion may include:*

- Preparation and readiness;
- Quality of project management and supervision<sup>65</sup>

## D2. Achievement of Direct Outcomes

- I- 26. The achievement of direct outcomes is assessed as performance against the direct outcomes as defined in the reconstructed Theory of Change<sup>66</sup>. These are the first-level outcomes expected to be achieved as an immediate result of project outputs. The evaluation should report evidence of attribution between UNEP's intervention and the direct outcomes. In cases of normative work or where several actors are collaborating to achieve common outcomes, evidence of the nature and magnitude of UNEP's contribution should be included. For this project, the main issue is to sufficiently first define the different results levels in the TOC, including the direct outcomes that should be immediate results/changes that derive from completing the project outputs. This section will then assess to what extent the intended direct outcomes as defined in the TOC were achieved based on the available evidence (i.e. appropriate indicator measures and qualitative sources such as key stakeholder interviews).

- I- 27. *Factors affecting this criterion may include:*

- Quality of project management and supervision

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<sup>65</sup> In some cases 'project management and supervision' will refer to the supervision and guidance provided by UNEP to implementing partners and national governments while in others, specifically for GEF funded projects, it will refer to the project management performance of the executing agency and the technical backstopping provided by UNEP.

<sup>66</sup> UNEP staff are currently required to submit a Theory of Change with all submitted project designs. The level of 'reconstruction' needed during an evaluation will depend on the quality of this initial TOC, the time that has lapsed between project design and implementation (which may be related to securing and disbursing funds) and the level of any changes made to the project design. In the case of projects pre-dating 2013 the intervention logic is often represented in a logical framework and a TOC will need to be constructed in the inception stage of the evaluation.

- Stakeholders participation and cooperation
- Responsiveness to human rights and gender equity
- Communication and public awareness
- Catalytic role and replication

### **D3. Likelihood of Impact**

I- 28. Based on the articulation of longer term effects in the reconstructed TOC (i.e. from *direct outcomes, via intermediate states, to impact* – see Annex 4), the evaluation will assess the likelihood of the intended, positive impacts becoming a reality. The Evaluation Office's approach is outlined in Annex 4 and further guidance is available at UNEP Evaluation Office. Essentially the approach follows a 'likelihood tree' from direct outcomes to impacts, taking account of whether the *assumptions and drivers* identified in the reconstructed TOC held. Any unintended positive effects should also be identified and their causal linkages to the intended impact described.

I- 29. The evaluation will also consider the likelihood that the intervention may lead, or contribute to, unintended negative effects. Some of these potential negative effects may have been identified in the project design as risks or as part of the analysis of Environmental, Social and Economic Safeguards.

I- 30. Ultimately UNEP and all its partners aim to bring about benefits to the environment and human well-being. Few projects are likely to have impact statements that reflect such long-term or broad-based changes. However, the evaluation will assess the likelihood of the project to make a substantive contribution to the high level changes represented by UNEP's Expected Accomplishments, Millenium Development Goals or the Sustainable Development Goals and/or the high level results prioritised by the funding partner (Eg. GEF focal areas).

I- 31. Considering that the project was initiated in 2004, it is expected that the realized long-term results can be assessed to date. Likelihood of impact analysis should be designed in a way that will enable looking at the positive future impacts (within a timeframe of 5-10 years) deriving from the project achievements to date. The evaluation will also consider whether the intervention has led to any **unintended negative effects** (referring to environmental, social and economic safeguards), or the likelihood of negative effects in the future.

I- 32. The evaluation should, where possible, disaggregate outcomes and impacts for the key project stakeholders (i.e. World Bank, GIZ, local municipalities, BRT users). It should also assess the extent to which human rights and gender equality aspects were fulfilled in project results (assess to what extent i.e. new services or policies deriving from the project activities consider and progress HR and GE aspects). (See also para 62-63 in this TOR.)

I- 33. *Factors affecting this criterion may include:*

- Stakeholders participation and cooperation
- Responsiveness to human rights and gender equity
- Country ownership and driven-ness
- Communication and public awareness
- Catalytic role and replication

### **E. Financial Management**

I- 34. Financial management will be assessed under three broad themes: completeness of financial information, communication between financial and project management staff and compliance

with financial management standards and procedures. The evaluation will establish the actual spend across the life of the project of funds secured from all donors. This expenditure will be reported, where possible, at output level and will be compared with the approved budget. The evaluation will assess the level of communication between the project manager and the fund management officer as it relates to the effective delivery of the planned project and the needs of a responsive, adaptive management approach. The evaluation will verify the application of proper financial management standards and adherence to UNEP's financial management policies. Any financial management issues that have affected the timely delivery of the project or the quality of its performance will be highlighted.

I- 35. *Factors affecting this criterion may include:*

- Preparation and readiness;
- Quality of project management and supervision.

## **F. Efficiency**

I- 36. Under efficiency the evaluation will assess the cost-effectiveness and timeliness of project execution. Cost-effectiveness is the extent to which an intervention has achieved, or is expected to achieve, its results at a lower costs compared with alternatives. Timeliness refers to whether planned activities were delivered according to expected timeframes as well as whether events were sequenced efficiently. The evaluation will also assess to what extent any project extension could have been avoided through stronger project management and identify any negative impacts caused by project delays or extensions. The evaluation will describe any cost or time-saving measures put in place to maximise results within the secured budget and agreed project timeframe.

I- 37. It will also analyse how delays and several project extensions have affected project execution, costs and effectiveness. The evaluation should explore issues that contributed to project delays. Special attentions should be paid to issues that have been already identified by project partners such as the level of commitment of the successive government officials; the resettlement process; challenges with contracting for infrastructure construction; and uncertainty around the contracting model for BRT system operations. Lessons learned from this analysis could inform efforts to implement BRT corridors in the future.

I- 38. Wherever possible, costs and time over results ratios of the project will be compared with that of other similar interventions (e.g. GEF funded BRT projects).

I- 39. The evaluation will give special attention to efforts by the project teams to make use of/build upon pre-existing institutions, agreements and partnerships, data sources, synergies and complementarities with other initiatives, programmes and projects etc. to increase project efficiency. The evaluation will also consider the extent to which the management of the project minimised UNEP's environmental footprint.

I- 40. *Factors affecting this criterion may include:*

- Preparation and readiness
- Quality of project management and supervision
- Stakeholders participation and cooperation

## **G. Monitoring and Reporting**

- I- 41. The evaluation will assess monitoring and reporting across three sub-categories: 'project reporting'; 'monitoring design and budgeting' and 'monitoring implementation'.
- I- 42. **Monitoring Design and Budgeting.** Each project should be supported by a sound monitoring plan that is designed to track progress against SMART indicators towards the achievement of the projects outputs and direct outcomes. The evaluation will assess the quality of the design of the monitoring plan as well as the funds allocated for its implementation.
- I- 43. **Monitoring Implementation.** The evaluation will assess whether the monitoring system was operational and facilitated the timely tracking of results and progress towards projects objectives throughout the project implementation period. It will also consider how information generated by the monitoring system during project implementation was used to adapt and improve project execution, achievement of outcomes and ensuring sustainability. The evaluation should confirm that funds allocated for monitoring were used to support this activity.
- I- 44. **Project Reporting.** The project reports will be provided to the Evaluation Consultant(s) by the UNEP task manager and project team (ITDP). This will include regular progress reports submitted to GEF and other progress reporting. The evaluation will assess the extent to which both UNEP and donor reporting commitments have been fulfilled.
- I- 45. *Factors affecting this criterion may include:*
- Quality of project management and supervision
  - Responsiveness to human rights and gender equity

## **H. Sustainability**

- I- 46. Sustainability is understood as the *probability of direct outcomes being maintained and developed after the close of the intervention*. The evaluation will identify and assess the key conditions or factors that are likely to undermine or contribute to the persistence of achieved outcomes. Some factors of sustainability may be embedded in the project design and implementation approaches while others may be contextual circumstances or conditions that evolve over the life of the intervention. This section will also consider the project activities taken to ensure different aspects of sustainability.
- I- 47. **Socio-political Sustainability.** The evaluation will assess the extent to which social or political factors support the continuation and further development of project direct outcomes. It will consider the level of ownership, interest and commitment among government and other stakeholders to take the project achievements forwards. In particular the evaluation will consider whether individual capacity development efforts are likely to be sustained.
- I- 48. **Financial Sustainability.** Some direct outcomes, once achieved, do not require further financial inputs, e.g. a decision to formally revise a policy. However, in order to derive a benefit from this outcome further management action may still be needed e.g. to undertake actions to enforce the policy. Other direct outcomes may be dependent on a continuous flow of action that needs to be resourced for them to be maintained, e.g. continuation of a new resource management approach. The evaluation will assess the extent to which project outcomes are dependent on future funding for the benefits they bring to be sustained. Secured future funding is only relevant to financial sustainability where the direct outcomes of a project have been extended into a future project phase. The question still remains as to whether the future project outcomes will be financially sustainable.

I- 49. **Institutional Sustainability.** The evaluation will assess the extent to which the sustainability of project outcomes is dependent on issues relating to institutional frameworks and governance. It will consider whether institutional achievements such as governance structures and processes, policies, sub-regional agreements, legal and accountability frameworks etc. are robust enough to continue delivering the benefits associated with the project outcomes after project closure.

I- 50. Factors affecting this criterion may include:

- Stakeholders participation and cooperation
- Responsiveness to human rights and gender equity
- Communication and public awareness
- Country ownership and driven-ness
- Catalytic role and replication

## v) Factors and Processes Affecting Project Performance<sup>67</sup>

I- 51. **Preparation and readiness.** This criterion focuses on the inception or mobilisation stage of the project. The evaluation will assess whether appropriate measures were taken to either address weaknesses in the project design or respond to changes that took place between project approval, the securing of funds and project mobilisation. In particular the evaluation will consider the nature and quality of engagement with stakeholder groups by the project team, the confirmation of partner capacity and development of partnership agreements as well as initial staffing and financing arrangements. The UNEP project design requirements in 2003-2004 were not comparable to today's requirements. This needs to be taken into account while assessing this factor.

I- 52. **Quality of project management and supervision.** In some cases 'project management and supervision' will refer to the supervision and guidance provided by UNEP to implementing partners and national governments while in others, specifically for GEF funded projects, it will refer to the project management performance of the executing agency and the technical backstopping and supervision provided by UNEP. The evaluation will assess the effectiveness of project management with regard to: providing leadership towards achieving the planned outcomes; managing team structures; maintaining productive partner relationships (including Steering Groups etc.); communication and collaboration with UNEP colleagues; risk management; use of problem-solving; project adaptation and overall project execution.

I- 53. **Stakeholder participation, cooperation and partnerships.** Here the term 'stakeholder' should be considered in a broad sense, encompassing all project partners, duty bearers with a role in delivering project outputs and target users of project outputs and any other collaborating agents external to UNEP. The assessment will consider the quality and effectiveness of all forms of communication and consultation with stakeholders throughout the project life and the support given to maximise collaboration and coherence between various stakeholders, including sharing plans, pooling resources and exchanging learning and expertise.

I- 54. The Evaluation will assess the effectiveness of mechanisms for information sharing and cooperation with *other UNEP projects and programmes (including UNEP Regional offices for Africa and Latin America/Caribbean)*. It will also assess the mechanisms in terms of *external stakeholders and partners* (Including World Bank, GIZ, Hewlett Foundation and national partners). The term stakeholder should be considered in the broadest sense, encompassing both project partners; target users of project products (guidelines etc.) and end users of BRT systems. The

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<sup>67</sup> These factors are rated in the ratings table, but are discussed as cross-cutting themes as appropriate under the other evaluation criteria, above.

TOC and stakeholder analysis should assist the evaluators in identifying the key stakeholders and their respective roles, capabilities and motivations in each step of the causal pathways from activities to achievement of outputs, outcomes and intermediate states towards impact.

- I- 55. **Responsiveness to Human Rights and Gender Equity.** The evaluation will ascertain to what extent the project has applied the UN Common Understanding on the human rights based approach (HRBA) and the UN Declaration on the Rights of Indigenous People. Within this human rights context the evaluation will assess to what extent the intervention adheres to UNEP's Policy and Strategy for Gender Equality and the Environment. In particular the evaluation will consider to what extent project design, implementation and monitoring have taken into consideration possible gender inequalities in terms access to developed capacities and any specific vulnerable groups considering the project context(s). In this particular case it might be also relevant to assess the project outcomes and impact in relation to the stakeholders in the traditional paratransit industry in Dar es Salaam.
- I- 56. **Country Ownership and Driven-ness.** The evaluation will assess the quality and degree of engagement of government / public sector agencies in the project. The evaluation will consider the involvement not only of those directly involved in project execution and those participating in technical or leadership groups, but also those official representatives whose cooperation is needed for change to be embedded in their respective institutions and offices. This factor is concerned with the level of ownership generated by the project over outputs and outcomes and that is necessary for long term impact to be realised.
- I- 57. **Communication and public awareness.** The evaluation will assess the effectiveness of any public awareness activities that were undertaken during the course of implementation of the project and especially the endeavours to develop a systematic approach to disseminate the reports, presentations and the BRT guideline. This should be disaggregated for the main stakeholder groups identified in the inception report. The evaluation should assess to what extent the communication activities supported the overall progress towards the project goals.

#### v) Evaluation Deliverables and Review Procedures

- I- 58. The evaluation team will prepare:
- **Inception Report:** (see Annex 1 for links to all templates, tables and guidance notes) containing an assessment of project design quality, a draft reconstructed Theory of Change of the project, project stakeholder analysis, evaluation framework and a tentative evaluation schedule;
  - **Preliminary Findings Note:** typically in the form of a powerpoint presentation, the sharing of preliminary findings is intended to support the participation of the project team, act as a means to ensure all information sources have been accessed and provide an opportunity to verify emerging findings. In the case of highly strategic project/portfolio evaluations or evaluations with an Evaluation Reference Group, the preliminary findings may be presented as a word document for review and comment;
  - **Draft and Final Evaluation Report:** (see links in Annex 1) containing an executive summary that can act as a stand-alone document; detailed analysis of the evaluation findings organised by evaluation criteria and supported with evidence; lessons learned and recommendations and an annotated ratings table;
  - **Evaluation Bulletin:** a 2-page summary of key evaluation findings for wider dissemination through the EOU website.
- I- 59. Review of the draft evaluation report. The evaluation team will submit a draft report to the Evaluation Manager and revise the draft in response to their comments and suggestions. Once a draft of adequate quality has been peer-reviewed and accepted, the Evaluation Manager will



share the cleared draft report with the Project Manager, who will alert the Evaluation Manager in case the report contains any blatant factual errors. The Evaluation Manager will then forward revised draft report (corrected by the evaluation team where necessary) to other project stakeholders, for their review and comments. Stakeholders may provide feedback on any errors of fact and may highlight the significance of such errors in any conclusions as well as providing feedback on the proposed recommendations and lessons. Any comments or responses to draft reports will be sent to the Evaluation Manager for consolidation. The Evaluation Manager will provide all comments to the evaluation team for consideration in preparing the final report, along with guidance on areas of contradiction or issues requiring an institutional response.

- I- 60. Based on a careful review of the evidence collated by the evaluation consultants and the internal consistency of the report, the Evaluation Manager will provide an assessment of the ratings in the final evaluation report. Where there are differences of opinion between the evaluator and the Evaluation Manager on project ratings, both viewpoints will be clearly presented in the final report. The Evaluation Office ratings will be considered the final ratings for the project.
- I- 61. The Evaluation Manager will prepare a quality assessment of the first and final drafts of the main evaluation report, which acts as a tool for providing structured feedback to the evaluation consultants. The quality of the report will be assessed and rated against the criteria specified in template listed in Annex 1 and this assessment will be appended to the Final Evaluation Report.
- I- 62. At the end of the evaluation process, the Evaluation Office will prepare a Recommendations Implementation Plan in the format of a table, to be completed and updated at regular intervals by the Task Manager. The Evaluation Office will track compliance against this plan on a six monthly basis.

#### vi) The Consultants' Team

- I- 63. For this evaluation, the evaluation team will consist of one international evaluation consultant<sup>68</sup> who will work under the overall responsibility of the Evaluation Office represented by an Evaluation Manager Saila Toikka, in consultation with the UN Environment Task Manager Geordie Collville, Fund Management Officer Leena Darlington and the Sub-programme Coordinators of the relevant UN Environment Sub-programmes. The consultant(s) will liaise with the Evaluation Manager on any procedural and methodological matters related to the evaluation. It is, however, the consultants' individual responsibility to arrange for their visas and immunizations as well as to plan meetings with stakeholders, organize online surveys, obtain documentary evidence and any other logistical matters related to the assignment. The UN Environment Task Manager and project team will, where possible, provide logistical support (introductions, meetings etc.) allowing the consultants to conduct the evaluation as efficiently and independently as possible.
- I- 64. The **Evaluation consultant** will be hired over the period of 15 June 2017 to 15 December 2017 and should have: an advanced university degree in environmental sciences, international development or other relevant political or social sciences area; a minimum of 18 years of technical / evaluation experience, including of evaluating large, regional or global programmes and using a Theory of Change approach; a broad understanding of transportation projects developing country context along with excellent writing skills in English; team leadership experience and, where possible, knowledge of the UN system, specifically of the work of UN Environment. S/he is expected to travel Dar es Salaam for an evaluation mission.
- I- 65. The consultant will be responsible, in close consultation with the Evaluation Office of UN Environment, for overall management of the evaluation and timely delivery of its outputs,

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<sup>68</sup> It will be decided in the inception phase whether the Cartagena component will be covered by the international evaluation consultant or whether a national consultant will be involved to conduct data collection in Cartagena.

described above in Section 11 Evaluation Deliverables, above. The consultant will ensure that all evaluation criteria and questions are adequately covered.

### vii) Schedule of the evaluation

I- 66. Table I-1 below presents the tentative schedule for the evaluation.

**Table I-1: Tentative schedule for the evaluation**

Milestone	Time-frame (2017)
Contracting procedures	June 15
Inception phase and desk review (and preparatory interviews)	June 15 – August 15
Inception Report (first submission)	August 10
Inception report (final submission)	August 15
Evaluation interviews (Skype) and Mission preparations	August 15 – 30
Evaluation Missions – Dar es Salaam (and possibly Nairobi)	September 20
Evaluation Missions – Cartagena (subject to a separate agreement )	September 20
Telephone interviews, additional data collection and analysis	October 15
Preliminary findings and recommendations (presentation and discussion)	October 15
Zero draft report	October 20
Draft Report shared with UNEP Task Manager and project team	October 30
Draft Report shared with stakeholders	November 5
Final Report	November 15

**Table I-2 : List of Documents for guidelines in preparing UN Environment evaluations <sup>69</sup>**

Document	Name
1	Evaluation Process Guidelines for Consultants
2	Generic guidance Evaluation Consultants Team Roles ( <i>Team Leader and Supporting Consultant</i> )
3	Evaluation Ratings Table
4	Weighting of Ratings (excel)
5	Evaluation Criteria ( <i>summary of descriptions, as in the general terms of reference</i> )
6	Matrix Describing Ratings by Criteria
7	Structure and Contents of the Inception Report
8	Template for the Assessment of the Quality of Project Design
9	Guidance on Stakeholder Analysis
10	Use of Theory of Change in Project Evaluations
11	Assessment of the Likelihood of Impact Decision Tree (Excel)

<sup>69</sup> The UNEP Evaluation office is currently revising its templates and guidelines. Application of the tools and guidelines need to be discussed with the evaluation manager.

12	Possible Evaluation Questions
13	Structure and Contents of the Main Evaluation Report
14	Cover Page, Prelims and Style Sheet for Main Evaluation Report
15	Financial Tables
16	Template for the Assessment of the Quality of the Evaluation Report

## Annex II. Evaluation Program

Date	Persons Met	Function	Topic of Discussion	Means of Contact
26 June 2017	Mr. Chris Kost	Africa Program Director, ITDP	Introduction to ITDP involvement on BRT project, BRT Planning Guide	Skype
7 July 2017	Mr. Bernardo Baranda	Regional Director, Latin America, ITDP	Involvement of ITDP with Cartagena	Skype
25 July 2017	Mr. Carlosfelipe Pardo	Director, Despacio	ITDP in Cartagena and update on TransCaribe	Skype
3 August 2017	Ms. Cecelia Escalante	World Bank, Impact Evaluation of DART	Introduction to DART Impact Evaluation	Skype
8 August 2017	Mr. Peerke de Bakker	Former UNEP Task Manager for BRT Project	BRT activities between 2005 and 2008	Skype
20 September 2017	Ms. Faith Karuga	Finance Management Officer, UN Environment	Communications between BRT Project Management Unit and UN Environment on financial disbursements	Meeting in UN Environment Office in Nairobi
20 September 2017	Ms. Jane Akumu	Programme Officer, Air Quality and Mobility Unit, Economy Division, UN Environment	Urban transport context in Africa and fuel efficiency of DART buses	Meeting in UN Environment Office in Nairobi
20 September 2017	Mr. Geordie Colville	Senior Programme Manager for the Energy, Climate and Technology Branch, UN Environment	Urban transport context in Africa, history of BRT Project implementation, and UN Environment programme priorities in transport	Meeting in UN Environment Office in Nairobi
25 September 2017	Mr. Ami Srivastava Eng. Dr. Philemon K.Mzee Eng. Ronald Lwakatere	Bus Operations Expert, DART Agency Operations Manager, DART Agency Chief Executive, DART Agency	History of DART development and ongoing operational issues of DART	Meeting at DART offices, LAPF Tower, Makumbusho, Dar es Salaam
25 September 2017	Mr. Mohammed Kuganda	Chief Operations Officer, UDART	History of DART development since 2003	Meeting at Jangwani BRT bus depot, Dar es Salaam
26 September 2017	Ms. Clara Makenya Ms. Linda Jonsson	UN Environment Focal Point for Tanzania Project Support Specialist, UN Environment in Tanzania	Role of UN Environment and UNDP in Tanzania	Meeting at UN Environment Office in Dar es Salaam
27 September 2018	Ms. Cecelia Escalante	World Bank, Impact Evaluation of DART	Details of the DART Impact Evaluation	Meeting at World Bank offices in Dar es Salaam
27 September 2017	Mr. Yonas Mchomvu	Senior Transport Specialist, World Bank Group in Dar es Salaam	Role of World Bank in the development of DART	Meeting at World Bank offices in Dar es Salaam

Terminal Evaluation of the UN Environment Project "Reducing Greenhouse Gas Emissions with Bus Rapid Transit and Non-Motorized Transport"

<b>Date</b>	<b>Persons Met</b>	<b>Function</b>	<b>Topic of Discussion</b>	<b>Means of Contact</b>
27 September 2017	Eng. Robert Mwita  Eng. Barakaek Mmari  Eng. Rottson Kabalika  Eng. Frank Mbilinyi  Eng. Leonard Ngayungi  Ms. Josephine Mwankusye	Project Coordinator (IDA) and Senior Projects Engineer, TANROADS  Project Manager, TANROADS  Senior Highway Engineer  Contract Management Specialist  Senior Structural Engineer  Environmental and Social Development Specialist	Role of TANROADS in the development of roadways for BRT corridors	Meeting at TANROADS offices near Morocco BRT Station in Dar es Salaam
28 September 2017	Mr. Geordie Colville	Senior Programme Manager for the Energy, Climate and Technology Branch, UN Environment	Mission de-briefing meeting on Dar es Salaam BRT	Meeting in UN Environment Office in Nairobi
29 September 2017	Mr. Chris Kost	Africa Program Director, ITDP	Role of ITDP on BRT Project	Meeting at Nairobi Airport
11 October 2017	Dr. Daniel Toro Gonzalez  Mr. Vladimir Castro Mendoza  Ms. Maria Claudia Peñas	Dean and Full Professor, Faculty of Economics and Business (FEN), Technological University of Bolívar  Transambiental (an operator for TransCaribe)  Ciudatos NGO ( <a href="http://www.ciudatos.com/">http://www.ciudatos.com/</a> )	Operations of TransCaribe and financing for future phases, and ongoing surveys to measure the impact of the BRT system in Cartagena.	Meeting at Universidad Tecnológica de Bolívar Sala de Profesores Bloque A4 Parque Industrial y Tecnológico in Catragena
12 October 2017	Ms. María Catalina Guerrero Cárdenas and Ms. Amalia de los Angeles Toro Diago	Community outreach group at TransCaribe	Public outreach efforts of TransCaribe since 2005	Meeting at TransCaribe offices near El Pozon (Eastern Terminus of TransCaribe BRT)
17 October 2017	Mr. Carlosfelipe Pardo	Director, Despacio	Cartagena wrap-up discussion	Skype

### **Annex III. Bibliography**

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1. UNEP BRT Project Document of July 2004;
2. UNEP-GEF Project Implementation Reviews 2006 to 2015;
3. UNEP-ITDP Progress Reports on BRT Project from Apr-Dec 2005 to Jan-Jun 2008;
4. Logit Reports for Dar es Salaam BRT System and Detailed Design for Initial Corridor, Volumes 2 to 9, May 2006;
5. BRT Project Co-Financing Report, June 30, 2016;
6. BRT Planning Budgets for BRT Planning Guide, Cartagena BRT project, and Dar es Salaam BRT project;
7. UNEP Expenditure Statements from Apr-Sept 2005 to July-Sept 2008;
8. UN Fund Transfer Documents for BRT Project;
9. Independent Audit Reports for BRT Project from 2004-05 to Jan-Sept 2008;
10. UNEP Project Revision Documents for BRT Project (2 reports);
11. World Bank PID for Dar es Salaam Urban Transport Improvement Project (P150937) from 17 January 2017;
12. JICA, “Dar es Salaam Transport Policy and System Development Master Plan”, Final Report and Technical Report on Transport Planning and Development, June 2008;
13. World Bank, “Evaluating the Impacts of the Dar es Salaam BRT System, July 13, 2017, Presentation”, courtesy of Ms. Cecelia Escalante;
14. Universidad Tecnológica de Bolívar in Cartagena, “Presentation on the Demand for Public Transport in Colombia” by Dr. Daniel Gonzalez and Jia Yan, February 2016;
15. Presentations from the TransCaribe Community Outreach Group on “Para Antes Y Despues”, “Gestion Social del Sitm Lo que nos Hace Diferentes”, and “Balance Gestion Social Enero – Septiembre”;
16. Despacio, “Plan Estrategico para promover el uso de la bicicleta como transporte urbano en la ciudad de Cartagena – Producto 5: Analisis de datos y produccion de informacion”, 20 April 2017;
17. BRT Planning Guide, 2007, available on: <https://www.itdp.org/brt-planning-guide-english/>;
18. The BRT Planning Guide 2017, available on: <https://www.itdp.org/the-brt-planning-guide/>.

## Annex IV. TEEMP Calculation for GHG emission reduction estimates

Estimation of GHG emission reductions from the pilot BRT projects from Dar es Salaam (Component 1) and Cartagena (Component 2) are provided in this Annex, based on the "Transport Emissions Evaluation Models for Projects" (TEEMP) that serve as a standard method to evaluate GEF transport-related projects. Both estimates use the "short cut method" and are based on ridership data from each of the BRT systems, and the length of BRT corridor constructed.

**Figure IV-4: Basic Info and Ridership Data for Dar es Salaam**  
Short-cut method

### A. Basic Info

	2010	2019	2029
% of BRT route on corridor	0%	100%	100%
Cumulative length of BRTS Constructed (km)	0	20.9	63.8

### B. Ridership

Total Ridership ('000)/day
<i>Choose one option:</i>
I have the ridership figures/day ('000). I would like to input it directly

	2010	2019	2029
Total Ridership ('000)/day	0	178	250

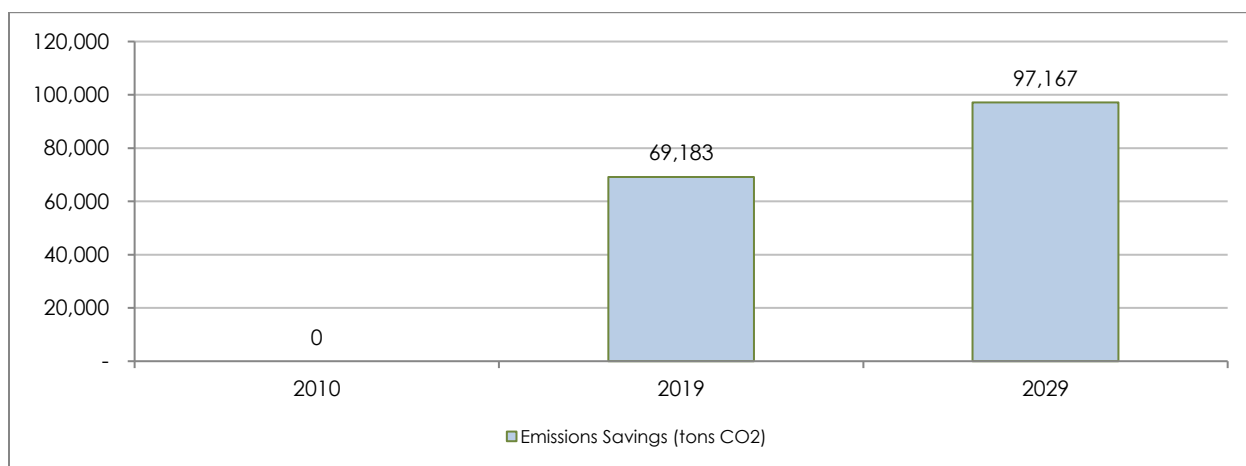
**Figure IV-2: Ridership Estimator for Dar es Salaam**

Ridership Estimator			
	2010	2019	2029
Passenger/vehicle	80	80	80
Trunk length (km)	0	20.9	63.8
Ridership Growth per decade (%)		20%	20%
Optimum Speed	20	20	20
Max Passenger Volume	148,600	178,320	213,984
Renovation Rate (Peak hour pax/max volume)	2.2	2.2	2.2
% Bus Km Operated on the BRT Corridor	0%	100%	100%
Demand daily/hourly multiplier	14	14	14
Km daily/hourly multiplier	18	18	18
Average Occupancy	#DIV/0!	118	39
<b>Ridership ('000/day)</b>	<b>4,576.88</b>	<b>5,492.26</b>	<b>6,590.71</b>
<b>Discounted Ridership ('000/day)</b>	<b>3,661.50</b>	<b>4,393.80</b>	<b>5,272.57</b>

**Figure IV-3: Summary and Results for Dar es Salaam**

**Summary and Results**

	2010	2019	2029
Ridership ('000/day)	0	178	250
ton CO <sub>2</sub> / passenger	0.39	0.39	0.39
<b>Emissions Savings (tons CO<sub>2</sub>)</b>	-	<b>69,182.67</b>	<b>97,166.67</b>



**Figure IV-4: Basic Info and Ridership Data for Cartagena**

**Short-cut method**

**A. Basic Info**

	2010	2019	2029
% of BRT route on corridor	0%	100%	100%
Cumulative length of BRTS Constructed (km)	0	10.5	10.5

**B. Ridership**

Total Ridership ('000)/day

Choose one option:

I have the ridership figures/day ('000). I would like to input it directly

	2010	2019	2029
Total Ridership ('000)/day	0	90	108

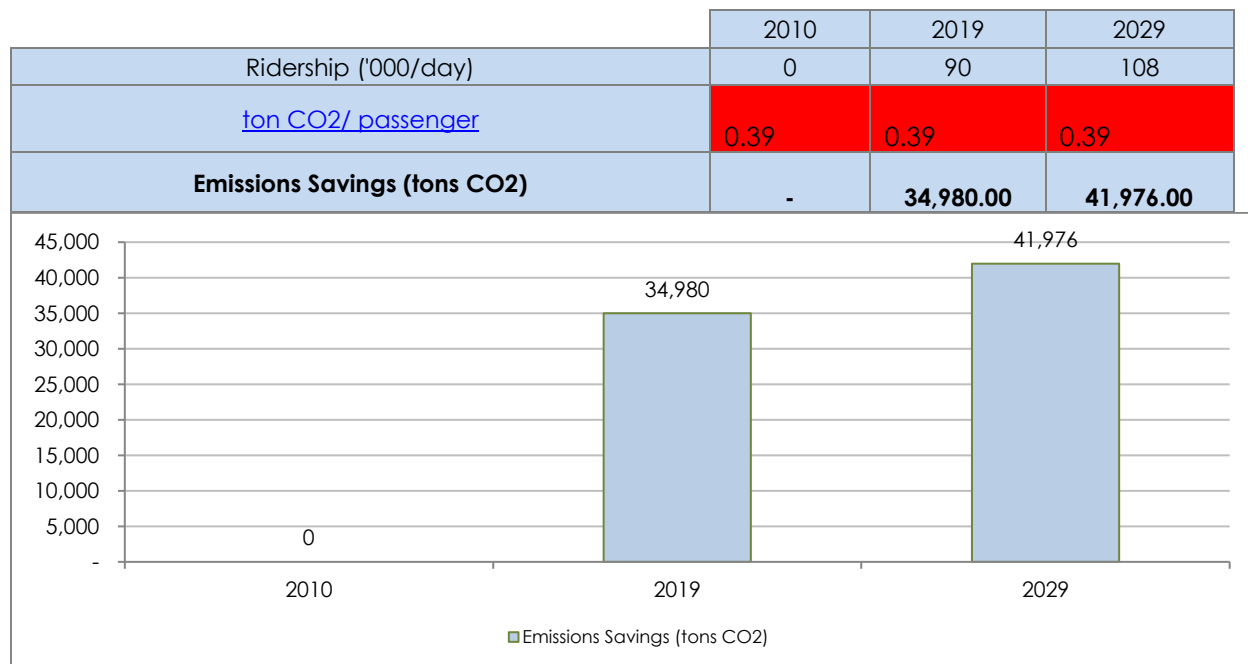


**Figure IV-5: Ridership Estimator for Cartagena**

Ridership Estimator			
	2010	2019	2029
Passenger/vehicle	80	80	80
Trunk length (km)	0	10.5	10.5
Ridership Growth per decade (%)		20%	20%
Optimum Speed	20	20	20
Max Passenger Volume	75,000	90,000	108,000
Renovation Rate (Peak hour pax/max volume)	2.2	2.2	2.2
% Bus Km Operated on the BRT Corridor	0%	100%	100%
Demand daily/hourly multiplier	14	14	14
Km daily/hourly multiplier	18	18	18
Average Occupancy	#DIV/0!	235	235
Ridership ('000/day)	2,310.00	2,772.00	3,326.40
Discounted Ridership ('000/day)	1,848.00	2,217.60	2,661.12

**Figure IV-6: Summary and Results for Cartagena**

### Summary and Results



## Annex V. Project Costs and Financial Management

**Table V-1: BRT Project Costs GEF funds**

Component	Budget (from Project Document)	2005 <sup>70</sup>	2006	2007	2008	2009-12	2013	2014-17 <sup>71</sup>	Actual Cost	Remainder for Project	Expenditure Ratio (actual/planned)
BRT Plan in Dar es Salaam	<b>489,445</b>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a
BRT Plan in Cartagena	<b>189,850</b>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a
BRT Planning Guide	<b>45,300</b>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a
Project Management Unit <sup>72</sup>	<b>0</b>	0	0	0	0	0	0	0	<b>0</b>		n/a
Monitoring and Evaluation	<b>0</b>	0	0	0	0	0	0	0 <sup>73</sup>	<b>0</b>		n/a
<b>Total (Actual)<sup>74</sup></b>	<b>724,595</b>	<b>328,740</b>	<b>200,180</b>	<b>126,456</b>	<b>56,646</b>	<b>0</b>	<b>0</b>	<b>12,573</b>	<b>724,595</b>	<b>0</b>	<b>1</b>
Total (Cumulative Actual)		328,740	528,920	653,326	712,022	712,022	712,022	724,595			

<sup>70</sup> From January to December 2005

<sup>71</sup> Up to December 31, 2017 to include the BRT Project Terminal Evaluation

<sup>72</sup> Costs for project management and M&E were not separated and were subsumed into the component costs.

<sup>73</sup> Resources for funding of the 2017 Terminal Evaluation was "co-financing" from UN Environment.

<sup>74</sup> From audit reports of ITDP and UNEP expenditure reports made available to the evaluation.

**Table V-2: BRT Co-Financing**

Co-financing (type/source)	UNEP own financing		Government		Partner Agency		Private Sector		Total	
	(million USD)		(million USD)		(million USD)		(million USD)		(million USD)	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Grants		30,000 <sup>75</sup>	1,434,106 <sup>76</sup>	618,819 <sup>77</sup>	1,050,900 <sup>78</sup>	1,513,675 <sup>79</sup>	514,058 <sup>80</sup>	787,500 <sup>81</sup>	2,999,064	2,949,994
Loans										
Credits										
Equity Investments										
In-kind support <sup>82</sup>										
Other										
<b>Totals</b>		<b>30,000</b>	<b>1,434,106</b>	<b>618,819</b>	<b>1,050,900</b>	<b>1,513,675</b>	<b>514,058</b>	<b>787,500</b>	<b>2,999,064</b>	<b>2,949,994</b>

<sup>75</sup> For Terminal Evaluation of BRT Project. This does not include PDF-A funding from UN Environment.

<sup>76</sup> Includes US\$696,876 from DCC, and US\$542,230 from City of Cartagena

<sup>77</sup> Only includes contribution from DCC. No co-financing reported to evaluation from City of Cartagena although there is evidence to suggest that the US\$542,230 budgeted as co-financing were made as grant contributions.

<sup>78</sup> Includes US\$1.0 million and US\$98,000 from World Bank and USAID (through ITDP) respectively for Dar es Salaam, and US\$138,500 and US\$9,400 from GIZ for Cartagena and BRT Planning Guide respectively.

<sup>79</sup> Includes US\$1,276,375 and US\$98,800 from World Bank and USAID (through ITDP) respectively for Dar es Salaam, and US\$138,500 from GIZ for Cartagena.

<sup>80</sup> Includes US\$105,000 from I-ce for Dar es Salaam, US\$195,000 from CIM for Cartagena, and US\$214,058 from Hewlett Foundation for BRT Planning Guide.

<sup>81</sup> Includes US\$105,000 from I-ce for Dar es Salaam, US\$78,000 from CIM for Cartagena, and US\$214,500 from Hewlett Foundation for BRT Planning Guide. Co-financing for unspecified purposes for BRT Project was also received from the Rockefeller Foundation (US\$300,000), Climate Works (US\$60,000) and Ford Foundation (US\$30,000).

<sup>82</sup> In-kind support was provided on this grant but not monitored. Hence, no co-financing amounts provided for this item.

**Table V-3: Aggregate rating of BRT Financial Management**

Financial management components		Rating	Evidence/ Comments
Attention paid to compliance with procurement rules and regulations		S	BRT Project audit reports from 2005 to 2008
Contact/communication between the PM & FMO		S	UNEP expenditure reports and fund transfer documents
PM & FMO knowledge of the project financials		S	UNEP expenditure reports and fund transfer documents, ITDP correspondence to UNEP on requests for revisions
FMO responsiveness to financial requests		S	UNEP expenditure reports and fund transfer documents, ITDP correspondence to UNEP on requests for revisions
PM & FMO responsiveness to addressing and resolving financial issues		S	UNEP expenditure reports and fund transfer documents, ITDP correspondence to UNEP on requests for revisions
Were the following documents provided to the evaluator:			
	A.	An up to date co-financing table	N
	B.	A summary report on the projects financial management and expenditures during the life of the project - to date	Y
	C.	A summary of financial revisions made to the project and their purpose	Y
	D.	Copies of any completed audits	Y
Availability of project financial reports and audits		S	For 2005 to 2008
Timeliness of project financial reports and audits		S	Dates of submission of audit reports from 2005 to 2008
Quality of project financial reports and audits		MS	Financial reports were not setup to monitor expenditures of components or activities within components nor were all expenditures listed by component (this also hasn't been a requirement at the time of the project development/ implementation). This included some line expenditures which covered all

			components such as professional time for ITDP staff and other administrative costs.
	FMO knowledge of partner financial requirements and procedures	S	UNEP expenditure reports and fund transfer documents, ITDP correspondence to UNEP on requests for revisions
	<b>Overall rating</b>	<b>S</b>	

## Annex VI. Consultant's Resume

Name:	ROLAND WONG	
Position:	Chief Executive Officer of Clean Energy Alternatives Inc. International Energy and Environment Expert	
Nationality:	Canadian	
Education:	M.Eng., Civil Engineering (Water Resources and Environment), University of British Columbia, 1981 B.Eng., Civil Engineering, McGill University, Montreal, 1977	
Professional Affiliations:	Registered Professional Engineer in British Columbia	
Areas of Expertise:	Renewable energy development with a focus on waste to energy, hydropower and solar energy Energy efficiency in transport Evaluations of climate change mitigation projects	
Countries of work experience:	Canada, Bangladesh, India, Pakistan, the Maldives, Cambodia, China, Malaysia, Thailand, Viet Nam, the Philippines, Indonesia, Fiji, Solomon Islands, Tuvalu, Tonga, Samoa, Georgia, Belarus, Bosnia and Herzegovina, Serbia, Slovakia, Romania, Russian Federation, Montenegro, Turkey, Kyrgyz Republic, Kazakhstan, Tajikistan, Egypt, Ethiopia, South Africa, Costa Rica, Dominican Republic, Haiti, St. Vincent and the Grenadines, Dominica and Peru.	
Employment: date	Clean Energy Alternatives Inc President, Vancouver, Canada	2005 to
2005	Manager, Business Development, Vancouver, Canada <i>Klohn Crippen Consultants Limited</i>	2002-
2002	Environmental Management Specialist, Dhaka, Bangladesh and Halifax, Nova Scotia, Canada <i>KPMG Consulting</i>	1999-
	Manager, Watershed Division, Richmond, B.C., Canada <i>Klohn Crippen Consultants Limited</i>	1993-1999
	Water Resources Technical Advisor, Dhaka, Bangladesh <i>Northwest Hydraulics Consultants</i>	1988-1993
	Area Engineer/President, Williams Lake, B.C., Canada <i>Ducks Unlimited/Cariboo Engineering Limited</i>	1984-1988
1984	Hydropower Intermediate and Area Engineer, North Vancouver, B.C. and Nipawin, Saskatchewan, Canada	1981-

*Klohn Crippen Consultants Limited*

Junior Hydraulics Engineer, Montreal, Quebec, Canada  
*Montreal Engineering Company Limited*

1978-1980

Roland has over 25 years' experience with a recent focus on the development and management of projects in sustainable transport, green city development, renewable energy and energy efficiency. These projects encompass his experience in environmental management, institutional capacity building, policy and economic analysis, planning, management, monitoring and evaluation for projects in more than 35 countries. His demonstrated abilities and experience include adoption and market transformation of sustainable low carbon technologies; formulation and preparation of low carbon and climate change investment projects; partnership building as a means to achieving adoption of clean technologies and energy efficiency practice; development and mentoring of energy, environmental and water resource professionals; networking, coordinating and negotiating projects in low carbon and climate change in several countries.

Key assignments that he is undertaken in climate change mitigation includes:

- Serving as a Senior Director since 2008 for a private sector company based in Vancouver, Canada developing investments in biomass waste-to-energy and solar power development using patented technologies. This includes the use of a unique gasification / thermo-oxidizer unit to produce heat sufficient for 5.7 MW of power generation. This has involved preparation of "white papers" for the firm, studies on the comparative advantages of the WTE technology to competitors and dissemination of technical and financial information to prospective investors, financiers, government policymakers and international donor institutions;
- Lead consultant in the formulation, preparation and evaluation (midterm and terminal) of several GEF projects since 2008 in low carbon/renewable energy development, energy efficiency, sustainable transport and green cities for several countries mainly in Asia, Eastern Europe and the Caribbean. Also involved with providing technical assistance in the management of these projects, sourcing of technical experts, strategic planning and strengthened monitoring and evaluation activities;
- Principal designer and international team leader for UNDP Bangladesh and UNDP-GEF (2002-2010) for a project to reduce GHGs from the brick making industry in Bangladesh. Completed concept formulation and PDF B (project preparation) phase that resulted in GEF commitment for full project funding in August 2006. GHG emission reductions based on market transformation and adoption to cleaner coal-fired kiln technology from China, increased awareness of the economic, environmental and social benefits on the use of a cleaner technology, increasing industry capacity to attract financial support for clean technologies, dissemination of a cleaner burning kiln throughout the industry. Facilitated discussions with stakeholders in the brick industry in Bangladesh, and provided a logical framework analysis in collaboration with a high calibre Bangladeshi team consisting of engineers, economists, financial and ex-government officers, and facilitated South-South cooperation on the project to access less energy intensive Chinese brick making technology. Provided assistance and negotiations to develop carbon finance that served as a means to reduce debt servicing costs for entrepreneurs;
- Served as environmental management specialist (1999-2002) for a CIDA-funded demonstration project in Bangladesh to introduce natural gas as an alternate fuel to mitigate urban air pollution for the Government of Bangladesh's Department of Environment. Activities were geared towards providing better stakeholder outreach in the planning and implementation of environmental management projects, to demonstrate credible efforts required to effect changes in environmental quality, to allow DoE an opportunity to review their policies and standards against project results, and to improve enforcement capacities. The project started with the conversion demonstration of the highly polluting two-stroke auto-rickshaws to CNG, a domestically available fuel. A monitoring program comparing CNG and gasoline-fueled auto-rickshaws revealed operational costs and

emissions of CNG converted auto-rickshaws were reduced by over 75%. The project was widely viewed by all to be a major success since it catalyzed the alternate fuel debate and industry development and transformed the alternate fuels market in Bangladesh where over a 24-month period, the number of alternate fuel vehicles rose from 1,000 to over 20,000, and the sale of compressed natural gas (CNG) increased 10-fold.



## Annex VII. Quality assessment of the Evaluation Report

### Quality Assessment of the Evaluation Report

Evaluation Title:

**Terminal Evaluation of the Project: Terminal Evaluation of the UN Environment Project “Reducing Greenhouse Gas Emissions with Bus Rapid Transit and Non-Motorized Transport” (BRT Project)**

All UN Environment evaluations are subject to a quality assessment by the Evaluation Office. This is an assessment of the quality of the evaluation product (i.e. evaluation report) and is dependent on more than just the consultant’s efforts and skills. Nevertheless, the quality assessment is used as a tool for providing structured feedback to the evaluation consultants, especially at draft report stage. This guidance is provided to support consistency in assessment across different Evaluation Managers and to make the assessment process as transparent as possible.

	UN Environment Evaluation Office Comments	Final Report Rating
<b>Substantive Report Quality Criteria</b>		
<p><b>Quality of the Executive Summary:</b></p> <p>The Summary should be able to stand alone as an accurate summary of the main evaluation product. It should include a concise overview of the evaluation object; clear summary of the evaluation objectives and scope; overall evaluation rating of the project and key features of performance (strengths and weaknesses) against exceptional criteria (plus reference to where the evaluation ratings table can be found within the report); summary of the main findings of the exercise, including a synthesis of main conclusions (which include a summary response to key strategic evaluation questions), lessons learned and recommendations.</p>	<p>Draft report:</p> <p>N/A</p> <p>Final report:</p> <p>All required aspects discussed in a relatively concise manner.</p>	5
<p><b>I. Introduction</b></p> <p>A brief introduction should be given identifying, where possible and relevant, the following: institutional context of the project (sub-programme, Division, regions/countries where implemented) and coverage of the evaluation; date of PRC approval and project document signature); results frameworks to which it contributes (e.g. Expected Accomplishment in POW); project duration and start/end dates; number of project phases (where appropriate); implementing partners; total secured budget and whether the project has been</p>	<p>Draft report:</p> <p>Final report:</p>	6

<p>evaluated in the past (e.g. mid-term, part of a synthesis evaluation, evaluated by another agency etc.)</p> <p>Consider the extent to which the introduction includes a concise statement of the purpose of the evaluation and the key intended audience for the findings?</p>		
<p><b>II. Evaluation Methods</b></p> <p>This section should include a description of how the <i>TOC at Evaluation</i><sup>83</sup> was designed (who was involved etc.) and applied to the context of the project?</p> <p>A data collection section should include: a description of evaluation methods and information sources used, including the number and type of respondents; justification for methods used (e.g. qualitative/quantitative; electronic/face-to-face); any selection criteria used to identify respondents, case studies or sites/countries visited; strategies used to increase stakeholder engagement and consultation; details of how data were verified (e.g. triangulation, review by stakeholders etc.).</p> <p>The methods used to analyse data (e.g. scoring; coding; thematic analysis etc.) should be described.</p> <p>It should also address evaluation limitations such as: low or imbalanced response rates across different groups; extent to which findings can be either generalised to wider evaluation questions or constraints on aggregation/disaggregation; any potential or apparent biases; language barriers and ways they were overcome.</p> <p>Ethics and human rights issues should be highlighted including: how anonymity and confidentiality were protected and strategies used to include the views of marginalised or potentially disadvantaged groups and/or divergent views.</p>	<p>Draft report:</p> <p>Some specification required on the criteria section and ethics.</p> <p>Final report:</p> <p>Ethics covered</p>	<p>5</p>
<p><b>III. The Project</b></p> <p>This section should include:</p> <ul style="list-style-type: none"> <li>• <i>Context</i>: Overview of the main issue that the project is trying to address, its root causes and consequences on the environment and human well-being (i.e. synopsis of the problem and situational analyses).</li> <li>• <i>Objectives and components</i>: Summary of the project’s results hierarchy as stated in the ProDoc (or as officially revised)</li> <li>• <i>Stakeholders</i>: Description of groups of targeted stakeholders organised according to relevant common characteristics</li> <li>• <i>Project implementation structure and partners</i>: A description of the implementation structure with diagram and a list of key project partners</li> </ul>	<p>Draft report:</p> <p>Final report:</p>	<p>6</p>

<sup>83</sup> During the Inception Phase of the evaluation process a *TOC at Design* is created based on the information contained in the approved project documents (these may include either logical framework or a TOC or narrative descriptions). During the evaluation process this TOC is revised based on changes made during project intervention and becomes the *TOC at Evaluation*.

<ul style="list-style-type: none"> <li>• <i>Changes in design during implementation:</i> Any key events that affected the project's scope or parameters should be described in brief in chronological order</li> <li>• <i>Project financing:</i> Completed tables of: (a) budget at design and expenditure by components (b) planned and actual sources of funding/co-financing</li> </ul>		
<p><b>IV. Theory of Change</b></p> <p>A summary of the project's results hierarchy should be presented for: a) the results as stated in the approved/ revised Prodoc logframe/TOC and b) as formulated in the TOC at Evaluation. <i>The two results hierarchies should be presented as a two column table to show clearly that, although wording and placement may have changed, the results 'goal posts' have not been 'moved'.</i> The TOC at Evaluation should be presented clearly in both diagrammatic and narrative forms. Clear articulation of each major causal pathway is expected, (starting from outputs to long term impact), including explanations of all drivers and assumptions as well as the expected roles of key actors.</p>	<p>Draft report:</p> <p>Well described section (the project didn't have a logframe, construction done based on the project document information)</p> <p>Final report:</p>	6
<p><b>V. Key Findings</b></p> <p><b>A. Strategic relevance:</b></p> <p>This section should include an assessment of the project's relevance in relation to UN Environment's mandate and its alignment with UN Environment's policies and strategies at the time of project approval. An assessment of the complementarity of the project with other interventions addressing the needs of the same target groups should be included. Consider the extent to which all four elements have been addressed:</p> <ol style="list-style-type: none"> <li>1. Alignment to the UN Environment Medium Term Strategy (MTS) and Programme of Work (POW)</li> <li>2. Alignment to UN Environment/GEF/Donor Strategic Priorities</li> <li>3. Relevance to Regional, Sub-regional and National Environmental Priorities</li> <li>4. Complementarity with Existing Interventions</li> </ol>	<p>Draft report:</p> <p>Final report:</p>	6
<p><b>B. Quality of Project Design</b></p> <p>To what extent are the strength and weaknesses of the project design effectively <u>summarized</u>?</p>	<p>Draft report:</p> <p>Final report:</p>	6

<p><b>C. Nature of the External Context</b></p> <p>For projects where this is appropriate, key external features of the project’s implementing context that may have been reasonably expected to limit the project’s performance (e.g. conflict, natural disaster, political upheaval) should be described.</p>	<p>Draft report:</p> <p>Some general description, that doesn’t belong here has been included and needs to be moved to other parts of the report</p> <p>Final report:</p> <p>Comments addressed</p>	<p>6</p>
<p><b>D. Effectiveness</b></p> <p><b>(i) Outputs and Direct Outcomes:</b> How well does the report present a well-reasoned, complete and evidence-based assessment of the achievement of a) outputs, and b) direct outcomes? How convincing is the discussion of attribution and contribution, as well as the limitations to attributing effects to the intervention.</p>	<p>Draft report:</p> <p>The direct outcome level assessment needs to be revised to match with the result levels described in the TOC</p> <p>Final report:</p> <p>All comments addressed</p>	<p>6</p>
<p><b>(ii) Likelihood of Impact:</b> How well does the report present an integrated analysis, guided by the causal pathways represented by the TOC, of all evidence relating to likelihood of impact?</p> <p>How well are change processes explained and the roles of key actors, as well as drivers and assumptions, explicitly discussed?</p>	<p>Draft report:</p> <p>Further alignment with the TOC results level is needed</p> <p>Final report:</p> <p>EO feedback addressed sufficiently</p>	<p>5</p>
<p><b>E. Financial Management</b></p> <p>This section should contain an integrated analysis of all dimensions evaluated under financial management. And include a completed ‘financial management’ table.</p>	<p>Draft report:</p> <p>Final report:</p>	<p>6</p>



<p>well, does the evaluation report cover the following cross-cutting themes:</p> <ul style="list-style-type: none"> <li>• Preparation and readiness</li> <li>• Quality of project management and supervision<sup>84</sup></li> <li>• Stakeholder participation and co-operation</li> <li>• Responsiveness to human rights and gender equity</li> <li>• Country ownership and driven-ness</li> <li>• Communication and public awareness</li> </ul>	<p>does not make the report repetitive</p> <p>Final report:</p>	
<p><b>VI. Conclusions and Recommendations</b></p> <p><b>i. Quality of the conclusions:</b> The key strategic questions should be clearly and succinctly addressed within the conclusions section? It is expected that the conclusions will highlight the main strengths and weaknesses of the project, and connect them in a compelling story line. Conclusions, as well as lessons and recommendations, should be consistent with the evidence presented in the main body of the report.</p>	<p>Draft report:</p> <p>Some sharpening required after revision of the effectiveness section</p> <p>Final report:</p>	6
<p><b>ii) Quality and utility of the lessons:</b> Both positive and negative lessons are expected and duplication with recommendations should be avoided. Based on explicit evaluation findings lessons should be rooted in real project experiences or derived from problems encountered and mistakes made that should be avoided in the future. Lessons must have the potential for wider application and use and should briefly describe the context from which they are derived and those contexts in which they may be useful.</p>	<p>Draft report:</p> <p>Final report:</p>	6
<p><b>iii) Quality and utility of the recommendations:</b></p> <p>To what extent are the recommendations proposals for specific actions to be taken by identified people/position-holders to resolve concrete problems affecting the project or the sustainability of its results. They should be feasible to implement within the timeframe and resources available (including local capacities) and specific in terms of who would do what and when. Recommendations should represent a measurable performance target in order that the Evaluation Office can monitor and assess compliance with the recommendations.</p>	<p>Draft report:</p> <p>No follow up project, thus slightly challenging to formulate recommendations</p> <p>Final report:</p>	5
<p><b>VII. Report Structure and Presentation Quality</b></p>		
<p><b>i) Structure and completeness of the report:</b> To what extent does the report follow the Evaluation Office guidelines? Are all requested Annexes included and complete?</p>	<p>Draft report:</p>	6

<sup>84</sup> In some cases ‘project management and supervision’ will refer to the supervision and guidance provided by UN Environment to implementing partners and national governments while in others, specifically for GEF funded projects, it will refer to the project management performance of the executing agency and the technical backstopping provided by UN Environment.

	Final report:	
ii) <b>Quality of writing and formatting:</b> Consider whether the report is well written (clear English language and grammar) with language that is adequate in quality and tone for an official document? Do visual aids, such as maps and graphs convey key information? Does the report follow Evaluation Office formatting guidelines?	Draft report:  Final report:	6

A number rating 1-6 is used for each criterion: Highly Satisfactory = 6, Satisfactory = 5, Moderately Satisfactory = 4, Moderately Unsatisfactory = 3, Unsatisfactory = 2, Highly Unsatisfactory = 1. The overall quality of the evaluation report is calculated by taking the mean score of all rated quality criteria.

At the end of the evaluation compliance of the evaluation process against the agreed standard procedures is assessed, based on the table below. *All questions with negative compliance must be explained further in the table below.*

Evaluation Process Quality Criteria	Compliance	
	Yes	No
<b>Independence:</b>		
1. Were the Terms of Reference drafted and finalised by the Evaluation Office?	X	
2. Were possible conflicts of interest of proposed Evaluation Consultant(s) appraised and addressed in the final selection?	X	
3. Was the final selection of the Evaluation Consultant(s) made by the Evaluation Office?	X	
4. Was the evaluator contracted directly by the Evaluation Office?	X	
5. Was the Evaluation Consultant given direct access to identified external stakeholders in order to adequately present and discuss the findings, as appropriate?	X	
6. Did the Evaluation Consultant raise any concerns about being unable to work freely and without interference or undue pressure from project staff or the Evaluation Office?		X
7. If Yes to Q6: Were these concerns resolved to the mutual satisfaction of both the Evaluation Consultant and the Evaluation Manager?		
<b>Financial Management:</b>		
8. Was the evaluation budget approved at project design available for the evaluation?	X	
9. Was the final evaluation budget agreed and approved by the Evaluation Office?	X	
10. Were the agreed evaluation funds readily available to support the payment of the evaluation contract throughout the payment process?	X	
<b>Timeliness:</b>		
11. If a Terminal Evaluation: Was the evaluation initiated within the period of six months before or after project operational completion? Or, if a Mid Term Evaluation: Was the evaluation initiated within a six month period prior to the project's mid-point?		X

12. Were all deadlines set in the Terms of Reference respected, as far as unforeseen circumstances allowed?	X	
13. Was the inception report delivered and reviewed/approved prior to commencing any travel?	X	
<b>Project's engagement and support:</b>		
14. Did the project team, Sub-Programme Coordinator and identified project stakeholders provide comments on the evaluation Terms of Reference?	X	
15. Did the project make available all required/requested documents?	X	
16. Did the project make all financial information (and audit reports if applicable) available in a timely manner and to an acceptable level of completeness?	X	
17. Was adequate support provided by the project to the evaluator(s) in planning and conducting evaluation missions?	X	
18. Was close communication between the Evaluation Consultant, Evaluation Office and project team maintained throughout the evaluation?	X	
19. Were evaluation findings, lessons and recommendations adequately discussed with the project team for ownership to be established?		X
20. Did the project team, Sub-Programme Coordinator and any identified project stakeholders provide comments on the draft evaluation report?	X	
<b>Quality assurance:</b>		
21. Were the evaluation Terms of Reference, including the key evaluation questions, peer-reviewed?	X	
22. Was the TOC in the inception report peer-reviewed?	X	
23. Was the quality of the draft/cleared report checked by the Evaluation Manager and Peer Reviewer prior to dissemination to stakeholders for comments?		X
24. Did the Evaluation Office complete an assessment of the quality of both the draft and final reports?	X	
<b>Transparency:</b>		
25. Was the draft evaluation report sent directly by the Evaluation Consultant to the Evaluation Office?	X	
26. Did the Evaluation Manager disseminate (or authorize dissemination) of the cleared draft report to the project team, Sub-Programme Coordinator and other key internal personnel (including the Reference Group where appropriate) to solicit formal comments?	X	
27. Did the Evaluation Manager disseminate (or authorize dissemination) appropriate drafts of the report to identified external stakeholders, including key partners and funders, to solicit formal comments?	X	
28. Were all stakeholder comments to the draft evaluation report sent directly to the Evaluation Office	X	
29. Did the Evaluation Consultant(s) prepare a response to all comments?	X	
30. Did the Evaluation Office share all comments and Evaluation Consultant responses with all those who were invited to comment?		X

**Provide comments / explanations / mitigating circumstances below for any non-compliant process issues.**

<b><u>Process Criterion Number</u></b>	<b><u>Evaluation Office Comments</u></b>
11	The closure of the project was delayed until 2016, the evaluation office had challenges in finding a suitable consultant to conduct the work. The evaluation process commenced in



Terminal Evaluation of the UN Environment Project "Reducing Greenhouse Gas Emissions with Bus Rapid Transit and Non-Motorized Transport"

	June 2017, approx. 10 months after it was decided that a terminal evaluation should take place.
19	It was agreed not to have a preliminary findings session (however, Das es Salaam mission findings were discussed with the UN Environment Task Manager, and the draft report was shared with the project team for comments)
23	The draft report was cleared by the evaluation manager prior distribution, peer review was conducted in parallel with stakeholder reviews.
30	The responses to stakeholder comments were shared with the respective commenter/stakeholder, not with all.