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Terminal Evaluation of the UNEP/GEF Project

"Promoting Environmentally Sustainable Transport in Latin America (PSTLA)"

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The evaluation of projects seeks to objectively and concretely define a critical view so that feedback can be properly received. This evaluation is no exception, and as such, the lessons, conclusions, and recommendations in this document are the result of an independent expert analysis of documents and opinions expressed by the individuals who were interviewed. Therefore, and rightly so, such findings are the sole responsibility of the consulting team.

Acknowledgements

The development of sustainable transport projects in Latin America is a relatively new topic. Despite this, there are experienced and dedicated professionals in Latin American countries who demonstrate that there is hope for improvement in the near future.

In both Chile and Guatemala, government officials, the consultants responsible for the studies, and those referred to as "users" in the report have shown both awareness and interest in the implementation of the projects and their proposed objectives. I wish to thank all those who made the execution and completion of the evaluation commissioned by the UNEP Office of Evaluation possible.

I extend my thanks to you all.

TABLE OF CONTENTS

Glossary

GMA	Guatemala City Metropolitan Area
ATTT	Transit and Ground Transportation Authority (*Autoridad de Tránsito y Transporte Terrestre*, Panama)
BIOVIAS	Comprehensive Transport System in Concepción (Chile)
BRT	Bus Rapid Transit
PSC	Project Steering Committee
UNFCCC	United Nations Framework Convention on Climate Change
CO_2	Carbon Dioxide
DMU	Department of Urban Mobility (*Dirección de Movilidad Urbana*, Guatemala City)
PD	Project Document
EMETRA	Metropolitan Transportation and Transit Regulatory Entity (*Entidad Metropolitana Reguladora de Transporte y Tránsito*, Guatemala)
ODS	Origin-Destination Survey
GEF	Global Environmental Facility
GHG	Greenhouse Gases
PM	Project Manager
TM	Task Manager
CDM	Clean Development Mechanism
MINVU	Ministry of Housing and Urban Planning (*Ministerio de Vivienda y Urbanismo*, Chile)
LFA	Logical Framework Analysis
MOP	Ministry of Public Works (*Ministerio de Obras Públicas*)
MTT	Ministry of Housing and Urban Planning (*Ministerio de Vivienda y Urbanismo*, Chile)
MuniGuate	Municipality of Guatemala
NESTLAC	Network for Environmentally Sustainable Transport in Latin America and the Caribbean
EO	UNEP Evaluation Office
NGO	Non-Governmental Organization
ROLAC	Regional Office for Latin America and the Caribbean (UNEP)
STAP	Scientific and Technical Advisory Panel
UNEP	United Nations Environment Programme
BRP	Bus Regulation and Planning
MSP	Medium-Sized Project
PSTLA	Promoting Sustainable Transport in Latin America
PIR	Project Implementation Review
SECTRA	Secretariat of Transportation Planning (*Secretaría de Planificación de Transporte*, Chile)
SECTRA Sur	Secretariat of Transportation Planning for the Southern Region (*Secretaría de Planificación de Transporte de la Zona Sur*, Chile)
SEREMITT	Ministerial Regional Secretariat of Transportation and Telecommunications (*Secretaría Regional Ministerial de Transportes y Telecomunicaciones*, Chile)

TOR	Terms of Reference
NMT	Non-Motorized Transportation
TRANSMETRO	Guatemala City BRT System
URC	UNEP Risoe Centre
ITDP	Institute for Transportation and Development Policy (New York)
EMBARQ	Centre for Sustainable Transport of the World Resources Institute (Washington, D.C.)
GTQ	Quetzal (Guatemalan currency)

1 Executive Summary

The objective of the project "Promoting Environmentally Sustainable Transport in Latin America" (PSTLA) was to raise awareness about the benefits of implementing sustainable transport projects among politicians, decision makers and others involved in transportation in Latin America. The environmental impact aimed at by the project was the reduction of Greenhouse Gas (GHG) emissions.

The project sought to achieve this objective through implementation of three demonstration projects corresponding to specific aspects of sustainability: Bus Rapid Transit (BRT), Bus Regulation and Planning (BRP), and Non-Motorized Transportation (NMT). In order to facilitate dissemination, planning, and implementation guidelines were also developed for these types of projects.

The demonstration projects were implemented in Guatemala City, Guatemala and the City of Concepción, Chile. The BRT project was implemented in Guatemala City and the BRP and NMT projects in Concepción. In these cities, the PSTLA project financed studies for the implementation of the projects.

The project involved two priority strategies from the Climate Change Focal Area of the GEF: i) modal shifts to more efficient and less polluting forms of public transport, and ii) use of non-motorized transport.

The project was implemented by the United Nations Environment Programme (UNEP) through the Risoe Centre (URC). Activities were coordinated by a Project Manager (PM) from the URC, stationed in Denmark, and a Task Manager(TM), stationed in Nairobi.

1.1 Final Evaluation

The project had a duration of 44 months beginning in April 2006. The final evaluation was conducted from June to August 2011, one and a half years after the completion of the project. Evaluation was conducted for the performance of the project and its results and impacts.

The main purpose of the evaluation was to provide evidence on the results obtained by the project and to promote the knowledge gained during implementation. Lessons and recommendations prepared during the project are shown in this evaluation to improve the design and implementation of future projects.

The evaluation was conducted based on the review of documents relevant to the project, interviews conducted with staff involved in design and implementation, and field visits to the countries where the demonstration projects were implemented. The documents reviewed cover the period from March 2003 to August 2011. The period includes the project design and selection of the cities through completion of the evaluation period.

Project performance was evaluated considering the indicators presented in the Logical Framework Analysis (LFA) of the Project Document (PD):

- Replication of the demonstration projects in at least three other cities in the region.
- Reduction of 95,000 tons of CO_2per year in Guatemala City as a result of the BRT project.
- Reduction of 5,000 tons of CO_2per year in Concepción as a result of the increase in use of NMT.
- A public transit bus system integrated with the rest of the transport system in Concepción.

- Extensive use of the planning and implementation guidelines.

For projects stages in which these indicators were not applicable other performance criteria were included during evaluation. This allowed for inclusion of the indirect impacts achieved with the projects not expressed in terms of reduced GHG.

1.2 Project Performance

The performance of the project can be analysed in two stages. The stage corresponding to the conducting of studies and activities, was completed satisfactorily. However, the stage corresponding to the tangible implementation of the projects, an expected outcome of the project, could only be completed in part. As such, the results of the project are seen more on paper than in practice.

Most of the activities and studies planned for the components were completed within the estimated project timeline. In the case of Guatemala City, delivery of the external audit is still pending.

Component	Planned Activities/Studies	Executed Activities/Studies
Comp. I: Joint Activities	3 workshops and 3 guidelines	3 workshops and 3 guidelines
Comp. II: BRT	14	13
Comp. III: NMT	5	5
Comp. IV: BRP	8	8

The planning and implementation guidelines and the training and dissemination workshops were completed satisfactorily. The guidelines were presented in a manual and have been widely disseminated through international bodies such as the ITDP, EMBARQ and the URC. The guidelines have been translated to English. The workshops were useful in terms of dissemination. The dissemination of knowledge is difficult to quantify. Implementation of similar projects in the region would be difficult to attribute to the PSTLA project.

The studies financed by PSTLA for the demonstration cities were to serve as the basis for the project implementation stage. The NMT component was implemented in full, while the indicators established in the LFA were not measured for any of the components. Regarding the studies conducted for BRT, these studies were used in part. In the case of the studies developed for the BRP, these studies are being used to prepare the new guidelines for the concession of buses.

In Concepción, the NMT project achieved a 30% increase in the sale of bicycles, and related recreational activities increased by 25%. This attracted the attention of the National Government, and was fundamental for the submittal of a bill that seeks to promote the use of bicycles as a means of transport in cities across the country. The current Government has proposed implementation of the Bike Lanes and Paths Master Plan in the main cities of Chile, which it expects will double the number of cyclists by 2014.

In Guatemala City, the planned BRT line of the “Eje Occidente” Transmetro System was not implemented[1]. In its place, another line of the network was constructed, the "Central Corridor." This line made partial use of the transit, environmental impact, and social communications studies developed for the "Eje Occidente" line. The environmental impact studies were used to formulate the GHG emissions baseline for the Central Corridor for submittal as a CDM (Clean Development Mechanism) project. The transit studies, in addition to helping to gauge expected demand for the new line, were used to establish the *Calzada Roosevelt* as a thoroughfare with reversible lanes. The social communication campaign was used to promote the entire Transmetro system, and currently 77% of people state that they would like the Transmetro system to operate near their residential sector. The Central Corridor line currently has 16 stations over 10.7 km and is used daily by 45,000 passengers.

Regarding the BRP project to be implemented in Concepción, it has been found that the studies developed are being used to prepare the new guidelines for the concession of buses. The tender process has not yet begun, and no improvements were found in mobility as a result of this project. Despite this, the studies were conducted in such way that they could be used as a reference in other Chilean cities.

1.3 Sustainability

The evaluation identified sustainability aspects that must be met before considering long-term benefits. The main criteria are as follows:

BRT: Transmetro system fares are being subsidized by the Municipal and National Governments. Current fares do not cover operational costs. This system is unattractive for private investment in the operational area.

NMT: The campaign promoting the use of bicycles as a means of transport was limited to the duration of the project. The evaluation determined that this period was insufficient to disseminate the benefits of NMT and create significant changes in the behaviour of the target population.

BRP: Current bus operators are unaware of the integration schemes supported by the National Government. Their involvement in the process of developing new guidelines is fundamental in achieving the shift from a non-integrated system to an integrated system.

1.4 Project Rating

Project performance was rated using the evaluation criteria defined by UNEP. Evaluation of the main criteria is shown below.

Criteria	Evaluation Summary	Rating
A. Attainment of project objectives and results	The products were completed on time and according to plan. The expected results were achieved in part. Just one of the three demonstration projects was implemented fully.	MU

[1] This decision was beyond the control of the PSTLA project. Indeed, the project had no enforcement capacity to reordered Guatemala City’s priorities.

B. Sustainability of project outcomes	Despite the existence of certain barriers, the observed benefits of the projects include rather significant results toward maintaining a positive return. The sustainability risks identified must continue to be observed.	ML
C. Catalytic Role	Several positive changes in political, institutional and behavioural areas were observed during the evaluation. However, no full replications of the projects were observed that could be attributed to PSTLA.	MS
D. Stakeholders involvement	Most stakeholders have been involved. However, there are sectors that must still be integrated, such as NGOs.	MS
E. Country ownership / driven-ness	The level of commitment demonstrated by Guatemala City and Concepción was adequate. This was not the case in Panama City.	MS
F. Achievement of outputs and activities	Just one of the expected products has not been completed. The external audit commissioned by the Municipality of Guatemala has yet to be finalized.	MS
G. Preparation and Readiness	The preparation process took a significant amount of time. Activities began late due to administrative processes that could have been foreseen.	MU
H. Implementation Approach	Flexibility was shown in adapting to the removal of Panama from the project. However, this measure could have been taken prior. As a result, a component was conducted with excessive haste.	MS
I. Financial Planning and management	The projected budget was adequate for the required investment. Administration and monitoring of financial statements was disorganized.	MS
J. Monitoring and Evaluation	Project monitoring was removed from the project and uniform control of project progress was not maintained. The establishment of the baseline was not given sufficient priority.	MU
K. UNEP Supervision and Backstopping	More active participation would have been extremely helpful in this project. This would have encouraged the use of the agency's more concrete experience in environmental issues.	MU

1.5 Lessons learned

Counterpart commitment

1) The commitment shown by participants during the design stage of a project is not always indicative of their adherence to the project up to completion, especially if there are governmental or administrative changes between project identification and project launch. UNEP and its executing partners should therefore make sure that commitments by local counterparts are supported by contracts that clearly establish the scope and deadlines for implementation and include penalty clauses in case of contract breach. It might also be useful to incorporate a technical partner in the project that provides

permanent support and monitoring for the development of studies and implementation of pilot projects.

Realistic timeframe

2) In certain Latin-American countries, administrative procedures tend to be long and complex. Since this was not considered in advance, delays were caused and there was little efficiency in upholding the timelines of the products. It is important to review the administrative conditions of the regions and countries in advance to provide enough time for project objectives to be accomplished.

3) The time allocated for the projects was spent largely on studies, leaving little time for implementation. This limited replication of project experiences, which was one of the main objectives of the project.

4) The time scheduled between project completion and final evaluation was too short and did not allow for implementation and maturation needed to conduct a proper comparison with the "pre-project situation". This inhibited evaluation of tangible results of the project.

Monitoring and evaluation

5) The project was initiated without a baseline, which hindered monitoring based on progress indicators. In addition, the M&E plan did not include adequate indicators or any pre-established methodology for the measurement of indicators that would allow the project's progress to be monitored. A single indicator, such as "reduced carbon emissions", is not sufficient for monitoring and evaluation, especially if the operational stage is not reached. The lack of specific, objective, and quantifiable indicators resulted in subjectivity during reporting, monitoring and evaluation. A quantitative evaluation cannot be conducted if the necessary tools are not provided, as well as the measurement method.

6) It is important that a baseline is established at the very beginning of the project. Clear, objective, and quantifiable indicators need to be selected for the different stages of the project and periodic measurements need to be done from the beginning. The local partner agencies' contracts should define by whom and how often reports will be submitted.

7) This evaluation might have been conducted too early to verify visible and tangible results on the ground. Even though the project was officially completed, the *use* of project outputs was not (e.g. the infrastructural works, spill-over effects to more recent, similar projects…). Before initiating an evaluation, it is important to conduct a review of the status of a project in order to develop a general overview of the status of progress towards outcomes. Projects should be allowed to mature after implementation before they are evaluated. An arbitrary deadline for initiating an evaluation is not always appropriate.

2 Evaluation Background

2.1 Context

8) Since the time transportation was invented, the world has suffered from traffic congestion. Over the years, different efforts have been made to reduce this congestion. These efforts have included the building of highways, metro systems, and public transit systems, and some cities have even been planned specifically with mobility in mind. Despite the fact that in many cases these actions have been effective, a second and more important problem has emerged: damage to the environment. For these reasons, actions must continue to be taken to improve the quality of life of the citizenry.

9) Since 2008, for the first time in history, more than half of the population lives in urban areas[2]. This process of urbanization has resulted in an increase in transportation demands. Problems with road congestion and pollution, before seen only in mega-cities, have begun to appear in medium-sized cities.

10) Currently, these urban areas consume 75% of the available energy[3] and generate 75% of carbon emissions[4]. With 50% of the population living in countries with emerging economies, these trends have resulted in the need to implement systems of planned growth in countries where this has not been a common practice. The development of sustainable transportation programs has had positive results in terms of reducing pollution in some Latin American cities, such as Bogota, Mexico City and Santiago, Chile.

11) Among such programs, initiatives for mass transit systems using rapid transit buses "BRT"[5] and the use of alternate means of transportation such as bikes both stand out.

12) The implementation of similar programs in Latin America and the Caribbean that offer benefits and advantages over other alternatives is the objective of the "Promoting Sustainable Transport in Latin America" project (PSTLA). Recently, Chile and Guatemala have encouraged implementation of sustainable transportation in some of their cities.

13) Transportation projects have been led by the Federal Government through the Ministry of Transport and Telecommunications (MTT) in Chile, and by the local city government through the Department of Urban Mobility (DMU) in Guatemala. Other entities have participated in the planning of these projects, such as the Ministry of Housing and Urban Planning (MINVU) and the Ministry of Public Works (MOP) in Chile, and the Metropolitan Transportation and Transit Regulatory Entity (EMETRA) in Guatemala.

14) In Chile, two decades of sustained economic growth, industrial expansion, and an increase in the number of vehicles have led to high levels of air pollution in its main urban areas. In just 5 years, from 2005 to 2010, the number of vehicles increased by 35%[6].

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[2]UNFPA State of the World Population 2007:
http://www.unfpa.org/swp/2007/english/introduction.html
[3]Cities and Climate Change Initiative Launch and Conference Report. UN Habitat (March 2009), p. 8.
[4]Clinton Foundation Annual Report 2009. Clinton Foundation (2010), p. 33.

[5]Bus Rapid Transit (BRT).
[6]INE Chile:

15) In 2004, the first fully electronic urban toll highway system was implemented in Santiago by the National Government of Chile. This attempt at decreasing inefficiencies in the transportation system continued in 2007 with implementation of the Transantiago System, a transportation integration system centred on BRT. Despite the difficulties these systems face in the beginning, they serve as an example for other cities, and today new integration systems are being implemented.

16) Regarding alternate means of transport, in Santiago, efforts have also been made to promote the use of bicycles, and cycling infrastructure has been developed, primarily in the Providencia commune. Since some time ago, certain city avenues were dedicated exclusively for pedestrian and bicycle traffic on Sundays (*CicloRecreoVía*). Some of the new metro stations have bicycle parking to encourage users to use both means of transport.

17) The number of vehicles in Guatemala has doubled in the past 7 years[7] and pollution levels in the main urban area, Guatemala City, have begun to exceed standards allowed by international regulations[8]. The concentration of 10% of the population of the country, the huge numbers of used cars imported from the United States, and the commercial activity of the past 15 years have led to a growth in number of vehicles of 3% annually. In 2004, this growth had managed to concentrate 62% of all vehicles in the country in the Guatemala City Metropolitan Area (GMA).

18) In February 2007, the first Transmetro line, a BRT system, successfully began operations in Guatemala City with a daily demand of 120,000 passengers/day. The many benefits of this new system and its acceptance on the part of the citizenry have encouraged the desire to extend the system to other areas of the capital not served by the current system. Currently, recovery of public spaces is underway through the closure of certain streets in the center of the city to vehicle traffic, such as Sixth Avenue, which also promotes the use of alternate transportation systems.

19) The purpose of the project evaluated here was to extend the implementation of sustainable transport systems and to disseminate the benefits of these systems.

2.2 The Project

Project rationale

20) Latin America, the most urbanized region in the developing world[9], has seen trending economic growth during recent years in terms of income levels. This has resulted in changes in patterns of mobility and lifestyle. Recent population growth has been concentrated in medium-sized cities. The current trend corresponds to the emergence of several intermediate cities with less than one million inhabitants[10], as opposed to more mega-cities such as Mexico City, Sao Paulo, Bogota and Santiago.

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http://www.ine.cl/canales/menu/publicaciones/calendario_de_publicaciones/pdf/110511/vehi_10100511.pdf

[7] INE Guatemala:http://www.ine.gob.gt/np/transportesyservicios/index.htm

[8] Presentation of the Inaugural Workshop. Transmetro: The Mass Transit System of Guatemala (2006).

[9] GEO 3. P.257 http://www.unep.org/geo/geo3/english/pdfs/chapter2-8_urban.pdf

[10] Megacities and Sustainability, (Jordán, Rehner y Samaniego, 2007) http://www.giz-cepal.cl/files/megacities_and_sustainability.pdf

21) These trends have generated a significant increase in transportation demands, one of the sectors with the highest level of growth in global energy consumption[11]. The public transport systems of the region have historically been characterized by low levels of service and safety and an inability to meet the transportation needs of a growing middle class.

22) As a result, in Latin America and in developing countries in general, there are high levels of growth in vehicular traffic and a growing number of automobiles as compared to other methods of travel. In keeping with these trends, the number of vehicles is expected to quadruple in coming decades[12].

23) The implementation of transportation planning measures and sustainable transport systems that counteract this situation has been limited, primarily due to: (i) unawareness of the benefits of implementation of sustainable transport systems on the part of decision makers, (ii) lack of resources, and (iii) lack of technical capacity to develop such projects.

24) Overcoming these obstacles was the purpose of the PSTLA project. This project has sought to disseminate and promote, via tangible examples and successful experiences, the benefits associated with these systems. Three cities were originally selected to implement sustainable transport projects: Concepción (Chile), Guatemala City (Guatemala) and Panama City (Panama). Ultimately, Panama City did not participate in the project, as explained later (paragraph 35)183).

25) These cities offer clear examples of the problems described above. As of the start of the project, Guatemala City and Panama City were among the 3 cities with the worst air pollution in Central America, while Concepción, the third largest city in Chile, was facing serious problems with pollution due to growth in automobile traffic.

26) In Guatemala City, the number of vehicles tripled from 1989 to 2004, perhaps understandably so, given that 66.8% of the population in 2006 reported having been robbed at least once on a bus[13]. At the same time in Panama City, the age of the public transport buses was 18 years, and they were concentrated on the main avenues of the city, causing severe traffic problems[14]. Meanwhile, in Concepción, according to the last 2 origin-destination surveys (1989, 1999), the use of buses and walking had decreased by 7% and 4.9%, respectively, while the use of automobiles increased by 1.8%. The use of bicycles in 10 years had increased by 0.4%, from 0.6% to 1%.

Project Objectives

27) The objectives of the project were divided into two categories: general objectives and specific objectives. As a general objective, the project sought to raise awareness and show the benefits of the implementation of sustainable transport projects among politicians, decision makers and those involved in transportation in Latin America. Three specific elements of sustainable transport were included: implementation of a Bus Rapid Transit

[11] UNEP Towards a Green Economy. Transport Chapter (2011) http://www.unep.org/greeneconomy/Portals/88/documents/ger/GER_10_Transport.pdf
[12] Ibid.
[13] Transmetro Presentation: The Mass Transit System of Guatemala (2006).
[14] UNEP/GEF Subproject document (2003)

system (BRT), promotion of Non-Motorized Transport (NMT)[15], and Bus Regulation and Planning (BRP)[16].

28) The specific or immediate objectives focused on achieving improvements in mobility, increasing the use of non-motorized transport as a means of transportation, and reducing emissions of Greenhouse Gases (GHG)[17] generated by transportation in the selected cities.

29) Three model projects in cities in Latin America were implemented in order to disseminate the benefits obtained, thus meeting the overall objective. These experiences were disseminated via the production of planning guidelines.

Components

30) The activities proposed were divided into four categories: one for the activities to be developed jointly by the selected cities and three corresponding to the activities planned for each of the selected cities[18].

- **Component I. Joint Activities.** These activities consisted of conducting training and dissemination workshops aimed at Latin American decision makers and using a website from the NESTLAC network (www.nestlac.org) allowing for the exchange of information regarding the studies conducted during the project. Three planning and implementation guidelines for the programs included in this project were also to be produced and shared on the webpage.
- **Component II. Guatemala City BRT.** This component included the conducting of studies to assist in the implementation of a new line of the Transmetro System in Guatemala City. This corresponds to the promotion of the BRT system, the benefits of which eliminates the dispute between drivers and passengers[19] and improves operation of the fleet of buses.
- **Component III. Concepción, Chile NMT.** In this component, a promotional campaign was developed to promote the use of bicycles as a valid means of transportation in the City of Concepción. Several studies needed to be conducted in order to achieve an effective campaign that could change the perception of the people on this means of transport and bring about a modal shift to non-motorized transport.
- **Component IV. Concepción, Chile BRP**[20]. This component consisted of developing studies aimed at implementing an integrated fare collection system, fleet management and geo-spatial information for use by authorities, operators and passengers in the City of Concepción. This component includes the aspects of a Bus Regulation and Planning system (BRP).

[15] Non-Motorized Transport
[16] Bus Regulation and Planning.
[17] Greenhouse Gases (GHG)
[18] Pursuant to the Terms of Reference for Final Evaluation (TdRE, in Spanish), the project was designed without formal separation of components. Instead, activities were classified in categories.
[19] This phenomenon is known as the "war of the penny" ("*guerra del centavo*").
[20] This component was originally planned for execution in Panama City. See section 34)

Intervention areas and target groups

31) Taking into consideration the areas identified as priority in Operational Program Number 11 (2001) of the Global Environment Facility (GEF)[21], two of the areas suggested under Point 11.10 were met:

   a. **Modal shift to more efficient and less polluting forms** of public transport through transit administration systems and the adoption of cleaner technologies. Activities conducted under the BRT and BRP components of the project are clear examples of this type of intervention.

   b. **Use of non-motorized transport.** This area was explored through the campaign promoting the use of bicycles in the City of Concepción.

32) Two of the areas deemed in need of special attention by the Scientific and Technical Advisory Panel (STAP)[22] of the GEF were covered[23]: Rapid Public Transit systems and Non-Motorized Transport (NMT).

Milestones in design

33) A project timeline was developed in order to monitor progress more clearly. The timeline is included in Annex5.6.

Implementation arrangements and main partners

34) The project was implemented by the Nairobi Office of UNEP/GEF through the UNEP Risoe Centre (URC), headquartered in Denmark. Both agencies were responsible for selecting the cities and served as members of the Project Steering Committee (PSC)[24]. The purpose of the participation of the URC was to provide advisory and technical support to local executive agencies. In Guatemala City, the local executive agency was the Municipality of Guatemala (MuniGuate), through the Department of Urban Mobility(DMU). In Concepción, the Undersecretariat of Transportation (SUBTRANS) of the National Government of Chile and the Inter-ministerial Secretariat of Transportation Planning for the Southern Region (SECTRA Sur) performed the same role. In Panama City, the local agency expected to perform this task was the Transit and Ground Transportation Authority (ATTT).

Project Implementation and completion

35) The project was originally scheduled for implementation in 36 months, from May 2006 to April 2009. The delay and ultimate removal of Panama City from the project, as explained later, required that the project be extended to December 2009[25].

36) The activities initially planned for Panama City (assistance for bus regulation) had to be modified after the local executive agency (ATTT) failed to initiate the planned actions. After numerous official visits by the Project Manager (PM)[26] from the URC and requests made to the counterpart to initiate the actions established in the timeline, the URC and UNEP/GEF agreed to pull the resources allocated for Panama City. Pursuant to a request

[21] Global Environment Facility (GEF)
[22] Scientific and Technical Advisory Panel (STAP)
[23] Nairobi Meeting (2002)
[24] Project Steering Committee (PSC)
[25] This extension was requested by the URC in February 2009.
[26] Project Manager

made by the PM, the UNEP Regional Office for Latin America and the Caribbean (ROLAC) was involved to assist in this process. These efforts were not successful.

37) The cities of Guayaquil, Ecuador and Concepción in Chile were considered as potential candidates for the development of this component. However, due to time restrictions, Guayaquil decided not to participate. Concepción then adopted this component to develop an integrated electronic fare collection system, fleet operation, and information exchange as part of regulations for its transport system.

38) The activities originally planned for the BRP component were modified in the Project Document (PD) so as to adapt them to the context of the studies proposed for the City of Concepción by SUBTRANS and SECTRA Sur.

39) The other two sample projects, however, were implemented according to the project timelines, albeit with certain delays resulting from administrative and bureaucratic processes that had not been considered in the initial project design (section 3.1.4 and 3.3.1).

40) In February 27, 2010, two months after the official completion of the project, an earthquake struck measuring 8.8 on the Richter scale with epicentre in the ocean off the Chilean coast, just 150 km from the City of Concepción. Significant damage to ground and communication infrastructure, as well as loss of human life, was reported in the city. While this event occurred in the months following completion, the expected medium- and long-term plans were affected by the disaster. A change in investment and project priorities has taken place over the past year and a half.

Financing

41) The total project budget was US$ 2,409,350. The main source of financing was from the GEF, through UNEP, with a contribution of US$ 985,750 in cash. Co-financing provided by the URC totalled US$ 103,000. Contributions from local agencies[27] initially totalled US$ 1,320,600. The initial distribution of financing is shown in Table 2.1, according to the PD (2006).

Table 2.1, Project Financing (Planned Budget)

Financing (Source)	GEF Financing (USD)	Local Governments (USD)	URC (USD)	Total (USD)	%
	Planned	Planned	Planned	Planned	
Comp. I: Initial Meeting and Workshops	80,000		15,000	95,000	4%
Comp. II: Guatemala City - BRT	250,000	380,000	25,000	655,000	27%
Comp. III: Concepción - NMT	240,000	151,000	25,000	416,000	17%
Comp. IV: ~~Panama City~~ Concepción - BRP	200,000	789,600	25,000	1,014,600	42%
Administrative Expenses	190,750			190,750	8%
PDF-A	25,000		13,000	38,000	2%
Total	**985,750**	**1,320,600**	**103,000**	**2,409,350**	**100%**

Source: Project Document.

[27] Source: PD

2.3 Evaluation Objectives, Scope and Methodology

42) The final project evaluation was commissioned by the UNEP Evaluation Office (EO) to Angélica Castro of Colombia, expert transportation consultant. This evaluation has been conducted over a period of six weeks, beginning on May 19, 2011, based on the review of relevant documents, visits, and interviews conducted in Santiago and Concepción, Chile and Guatemala City, Guatemala.

43) The evaluation covers the project implementation stage beginning in April 2006 and ending in December 2009. The documents created during the preparation phase, prior to 2006, and those created after project completion in 2009, were included as supplementary information. The list of reviewed documents is included in Annex 5.5.

Purpose of the Evaluation

44) The evaluation has two primary purposes: (i) to provide evidence as to the results obtained in order to uphold accountability requirements, and (ii) to promote awareness, provide feedback, and share the knowledge and lessons gained during implementation among UNEP, the GEF, the URC, and their partners.

45) These activities will help in the design and implementation of future projects. The Terms of Reference (ToR) for Final Evaluation are included in Annex 5.1.

Evaluation Criteria and Key Questions

46) The criteria established for this evaluation are as follows:

a. Attainment of project objectives and results in terms of relevance, effectiveness, efficiency, and impact.

b. Sustainability of project outcomes.

c. Catalytic role.

d. Stakeholder's involvement.

e. Country ownership / driven-ness.

f. Achievement of outputs and activities.

g. Preparation and readiness.

h. Implementation approach.

i. Financial planning and management.

j. Monitoring and evaluation.

k. UNEP supervision and backstopping.

47) The evaluation, based on the above criteria, allows us to identify and extract lessons from the implemented components. A series of key questions was used as a framework for each of these components:

- **Component I.** Were project lessons and guidelines for sustainable transport project implementation effectively disseminated across the Latin America and the Caribbean Region? Is there evidence of other cities in the pilot countries or in the wider LAC region learning from the demonstration cities and adopting lessons learned and good practices from the project demonstrations?

- **Component II.** How and to what extent did the project support the development of an effective, efficient and viable second BRT Transmetro corridor in Guatemala City? To what

extend were economic, social, and environmental factors considered in the planning process? How was the development of the BRT system used to strengthen transportation demand management (TDM) policies, to build a different image of Public Transport, and to improve non-motorized and pedestrian traffic? In what ways does the project help to decrease traffic problems, travel times, and carbon emissions in Guatemala City?

- **Component III.** In what ways did the project promote a change in behaviour among residents of Concepción, leading to a shift from motorized to non-motorized transport? To what extent was the project approach successful in increasing public and political awareness and acceptance of the use of bicycles as a valid means of transport? Has the project led to new policies promoting the use of bicycles over the long term? Is there evidence of attempts to create new bicycle lanes in the city? In what ways has the project managed to decrease traffic problems, travel times and carbon emissions in Concepción?
- **Component IV.** Did the project effectively help to create an integrated electronic fare collection system, fleet management, and informational systems for operators, passengers and SUBTRANS authorities? To what extent did the project contribute to more effective and efficient operation of the bus system in Concepción?

Evaluation timeframe

48) Documents relevant to the project were reviewed for the evaluation, covering the period from March 2003 to August 2011.

49) The project host countries were visited. The first visit took place from June 25 to July 4 in the cities of Concepción and Santiago, Chile, while the second visit took place from July 25 to July 29 in Guatemala City. During both visits, interviews were conducted with government officials, private consultants participating in the project, non-governmental organizations, and users. The list of interviews is included in Annex 5.2.

50) During the visit to Chile, the bicycles lanes built in Concepción were travelled and the bus system currently in operation was used. In Santiago, the Providencia, Ñuñoa, and Las Condes bicycles lanes were visited, as well as the "Las Condes-La Reina" *CicloRecreoVía* recreational route[28].

51) During the visit to Guatemala, the two existing lines of the Transmetro System were visited (Line 1, "Aguilar-Batres" and Line 2, "Central Corridor"), as well as the avenues where the system is being expanded. The Calzada Roosevelt, the main objective of the studies financed for this project, was also visited.

Data collection and analysis instruments used

52) The information considered during the evaluation falls into two categories: written and oral. Primary information was considered from documents generated specifically for the project. Other documents related to the project were considered as secondary information and were used solely for comparison and reference purposes. The full list of reviewed documents is included in Annex 5.5.

53) Oral information was primarily obtained during interviews conducted during visits and telephone conferences held with the staff involved in the projects. These interviews furthered the team's understanding of each of the components, allowing them to

[28] http://www.ciclorecreovia.cl

understand the institutional organization of the cities and countries involved. The interviews helped to identify decisions and actions that generally are not included in formal reports.

54) Analysis of data and information was conducted primarily through comparison of information reported in the diagnosis of the cities and the information generated during the monitoring process, when available.

Limitations to the evaluation

55) Four aspects were considered as limitations to the evaluation: i) insufficient time between completion of the studies and the evaluation, ii) failure to establish baselines with respective indicators, iii) lack of complete, referenced information, and iv) the 2010 earthquake in Concepción.

56) The time from completion of the studies to the start of the evaluation was one and a half years. This length of time is not sufficient for the implementation of projects of this nature. Time is needed for the development of the project and monitoring of new information and indicators needed for comparison with "pre-project" conditions.

57) While it is true that diagnostics were identified for three components, numerical indicators were not established for any of the projects, which would have allowed the team to conduct a comparative evaluation.

58) The information provided lacked reference documentation indicating the delivered studies, in some cases did not correspond to final information, and was never centralized in any of the responsible offices.

59) The earthquake that occurred in Concepción just months after project completion forced the team to reschedule the taking of travel measurements (capacity and origin-destination surveys [ODS]). This event may have generated changes in behaviour unrelated to the program, which would be difficult to measure. It is possible that the results reported subsequent to this event suffer effects unrelated to the promotional campaign.

3 Project Performance and Impact

60) This chapter focuses on the evaluation of the relevance of the project objectives and the efficiency and effectiveness with which the objectives were met or are expected to be met. The performance of the project has been evaluated in consideration of the evaluation criteria defined by UNEP and established in the TOR. The main criteria are: i) efficiency; ii) effectiveness; iii) relevance; iv) impact; and v) sustainability. All criteria have been rated on a 6-point scale, ranging from highly unsatisfactory (HU) to highly satisfactory (HS) (see Table 4.1). The impact of the project is discussed in detail, as this is the final evaluation of the project.

3.1 Attainment of objectives and planned results

61) The PSTLA project corresponds to a very limited timeline. The products in all components were completed on time and according to quality standards. However, the planned objectives and results associated with implementation and replication were met only in part.

62) As an overall assessment, the project is considered to be moderately unsatisfactory. The aspects of effectiveness, relevance, and efficiency are evaluated separately.

Achievement of outputs and activities

63) The project products and activities were established in the contracts and agreements entered into by the URC and the local executive agencies. Evaluation of such products and activities in both quantitative and qualitative terms is shown below.

64) **Component I** corresponds to the joint activities of the project.

- The **project administration** was responsible for supervising and monitoring the conducting of the activities of the cities involved in the project (paragraph 216). This task was especially important in the case of Panama City and during the project launch via the signing of the contracts with local agencies (paragraph96). Performance during these activities demonstrated flexibility (paragraph 189) in reassigning components and adapting contracts and agreements. Following these activities, there was a decline in project follow-up, while supervision was conducted remotely. This is reflected in the lack of quantifiable indicators that would enable identification of trends regarding the progress of the projects.

- The **relevant information was published on the website** according to the project timeline. The material generated from the diagnostic stage through the closing workshop is available on the webpage (www.nestlac.org). The webpage offers relevant information, although not all final reports on the components are included. This information is also relevant because it offers support and recommendations for other countries and cities in the region.

- **Dissemination workshops** and training on implementation of sustainable transportation systems were conducted in the middle and at the end of the project. These were held in Chile and Guatemala, with the participation of professionals from other countries from the region. Participants came from Chile, Peru, Bolivia, Ecuador, Colombia, Venezuela, Brazil, Guatemala, Costa Rica, Mexico and Honduras. See Annex 5.7.

- According to the UNEP TM, workshops and manuals produced by the project were of great assistance in the development of new BRT/NMT project not only in capital cities (e.g. Buenos Aires) but also in secondary cities (e.g. San Pedro Sula, Honduras).The training workshop held in the middle of the project was the most intensive, including a seminar on planning and implementation of BRT systems. It was conducted together with German Technical Cooperation (GTZ) and Volvo. The closing workshop served as a platform to share experiences from the demonstration cities and successful practices implemented in San Pedro Sula (road management) and Guayaquil (BRT system). The City of Buenos Aires also presented a Sustainable Mobility program to be developed.

- The sustainable transport project **planning and implementation guidelines**, aimed specifically at BRT, BRP and NMT, offer a tool that can be used after decisions are made, clearly indicating the steps to be followed. This instructional tool is useful in offering internationally successful experiences and is characterized as being of the utmost quality. Requests for translation of the guidelines to other languages, as well as distribution thereof, also suggest indicators of success (paragraph83).

65) **Component II**, regarding implementation of a new line of the BRT System in Guatemala City (Transmetro) incorporating aspects that encourage sustainability, has been complete in part.

- All the planned studies relating to the construction of the second line of the BRT system (Eje Occidente) were completed. The quality of the studies was adequate, despite the fact that

monitoring measurements for baseline identification were insufficient according to the private consultant[29].

- As of the evaluation date, construction of the BRT line has not yet begun (section 3.3). In its place, a 10.7 km second line was constructed, indicating continued growth in the development of the Transmetro System. This line follows the central thoroughfare of the Municipality of Guatemala, crossing the city from north to south (Eje Central) and passing through the city center.
- The studies conducted originally for Eje Roosevelt allowed planning officials to gauge the demand for travel in the western part of the city, thus enabling them to prioritize development of subsequent lines. These studies offered advantages in quantifying the impact of the implementation of a BRT system, unlike the case of the first line, where feasibility studies were not conducted.
- These studies included initial measurements of air pollution, which were later completed for the inclusion of the Eje Central in the carbon credit market (paragraph155).
- Transit studies were used for the planning of two overpasses along Calzada Roosevelt at 36th and 39th Avenues, as well as for the implementation of reversible lanes[30].

66) **Component III**, corresponding to the conducting of a campaign promoting the use of bicycles, was completed satisfactorily.

- The studies, as well as the implementation of the campaign, were completed within the scheduled timeline. According to different news stories, the success of the campaign was evident during the time it was conducted. Sales of bicycles increased by 30%[31], and a new range of bikes designed for urban and female use began to appear in the market, which before did not exist locally.
- The campaign encouraged the donation of bicycles to certain universities. The interest of the university community has grown. Requests for permits to conduct activities relating to cycling have increased by 25%[32] since. Undoubtedly, the effect of the 2010 earthquake countered many of the efforts made prior to such event.

67) **Component IV**, corresponding to the design for implementation of an integrated electronic fare collection system, fleet management, and information system for operators, authorities, and passengers was completed in part.

- The system has not been implemented in Concepción and transportation operators from the city are unaware of the results of the study. To date, the tender process has yet to begin, although the preparatory stage is underway[33].
- The studies included were completed within the scheduled timeline and with the initially-define scopes. It is important to point out that the analysed reports are general and do not

[29]Air Monitoring Report, Dinámica BioAmbiental. Page 23
[30]West TM Justification (MuniGuate, 2011).
[31]Result of the Campaign Promoting the Use of Bicycles, Ciclobio.
SECTRA Sur (2010).
[32]Requests to the Ministerial Regional Secretariat of Transportation and Telecommunications (SEREMITT).
[33] The PSTLA project had no means to enforce the completion of the process.

apply directly to the circumstances and needs of public transit in the city of Concepción. The results are applicable more as a guide or manual than as direct support for implementation.

68) In summation, although all products and activities planned for the project were completed, not all were in keeping with scheduled deadlines and established objectives, and not all met requirements regarding usefulness. As a result, this criterion has been assessed as moderately satisfactory.

Relevance

69) The project objective is highly relevant. The cities selected for implementation of demonstration projects have witnessed accelerated growth in motorized transport, and the implementation of sustainable transport projects has proven successful in reversing this trend in cities with more experience using these tools[34]. Some instruments, such as BRT systems and BRP, have shown faster results than NMT programs. This is due to the fact that the creating of a cultural shift regarding how cycling is viewed requires an extensive and on-going process in order for adoption of cycling as a means of transport to produce significant benefits.

70) BRT projects have shown that they can considerably reduce emissions by replacing older vehicles, through an operational design that keeps only the required vehicles on the road, and as a result of modal shifts. This type of project has improved average speed on throughways where such programs are implemented. In Bogotá, the average speed for public transit along the main avenue of the city (Avenida Caracas) increased from 14 km/h to 26 km/h with the TransMilenio system. In Mexico City, speed increased from 12 km/h to 19 km/h along Avenida Insurgentes with the MetroBus system.

71) These systems have also shown advantages in terms of reducing collision incidents along the avenues where they are implemented. Along Avenida Caracas in Bogotá, the average number of annual collisions decreased from 70 to 5 since introduction of the TransMilenio system, while Avenida Insurgentes in Mexico City saw a decrease from 822 to 128[35].

72) The infrastructure investment required for NMT projects is minimal. However, a constant flow of resources is needed to conduct campaigns encouraging the use of bicycles. The effective reduction in greenhouse gases is very low as compared to the use of BRT systems over the medium term. The results expected for the NMT campaign financed for the City of Concepción were ambitious and difficult to attain over such a short period of time. However, processes aimed at optimizing and regulating buses (BRP) reduce emissions of pollutants due to the decreased use of energy resources and the decrease in traffic resulting from the removal of surplus buses at non-peak times.

Relevance towards achievement of GEF-specific objectives

73) The design of project components was in keeping with the priority areas of the GEF (paragraph 31). The strategies used included the financing for demonstration project implementation studies and the conducting of training workshops.

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[34] http://www.vtpi.org/tdm/tdm120.htm
http://www.mdot.maryland.gov/Planning/Bus_Rapid_Transit/BRT_Benefits.html
http://www2.gtz.de/dokumente/bib/05-0517.pdf

[35] http://www.ctsmexico.org/node/446

74) The strategy of financing studies to facilitate implementation of sustainable transport projects was not sufficient in overcoming barriers present in the socio-political context of the selected cities (section 3.2.1 and 3.2.3).

75) Relevance in terms of reducing pollution and climate change has great potential. Currently, Guatemala City is registering the Transmetro system as a clean development mechanism (CDM) with the United Nations Framework Convention on Climate Change[36] (paragraph155).

Relevance in Collateral Issues

76) Other highly important aspects have been identified during execution of the project. The collateral aspects that were observed during visits are listed below.

77) The BRT project in Guatemala City has been relevant in terms of reducing crime and violence and integrating women in the workforce. Rates of robbery and even murders recorded around the city's "traditional" transportation routes of the city are higher than those around the Transmetro system. Elimination of the use of cash on the part of drivers has decreased murders and robberies aimed at such individuals. Surveillance cameras and a significant police presence along the corridor have also improved the perceived safety of the areas neighbouring the Transmetro system.

78) An increase in safety and a more equitable operational structure have increased the role of women in the transportation sector. The hiring of 22 women as bus drivers in the Transmetro system, a job traditionally held by men, shows the relevance that these systems can have in areas unrelated to climate change.

79) The Non-Motorized Transport promotional campaign in Concepción was relevant in terms of increasing the supply of bicycles for women in the city. The involvement of the university community and younger generations in these programs has led to the creation of clubs and civil organizations in support of this means of transport. This allows a community of citizens to have a voice where they once had none.

80) The design of the integrated fare collection system and fleet control and regulation for the City of Concepción has been relevant in generating discussion and debate on the bidding, regulation and subsidy systems. The unfortunate experience with implementation of the Transantiago system has allowed people to rethink and reformulate their desired methods, so that the public sector is not restricted to the exclusive use of private services.

81) *In summation, the relevance of the instruments used for reducing emissions has been satisfactory. The implementation of these instruments has great potential for regional development. As such, it is expected that the related objectives will be met*.

Effectiveness

82) With regard to the immediate results expected (reduction in transportation GHG emissions, increase in mobility, and increased use of non-motorized transport) the project has had **limited results.**

83) Regarding the first component, the dissemination of lessons and experiences gained through implementation of sustainable transport systems **was completed successfully.** Dissemination of project components was conducted in project workshops and through

[36] United Nations Framework Convention on Climate Change (UNFCCC)

the creation of implementation guidelines. The guidelines were distributed through transportation consultants participating in different international events, as well as through non-governmental entities working on the issue of sustainable transportation, such as the ITDP and EMBARQ[37]. These guidelines were distributed in Asia and Africa[38]. The UNEP/DTIE requested for 300 copies of each guideline to be distributed worldwide. According to the UNEP TM, very positive feedback was received.

84) In terms of replications, there is no evidence that similar projects being developed in the region are a direct result of these activities (section 3.2.5). However, similar projects have been implemented (e.g. “Mexibus” in the State of Mexico and “Macrobus” in Guadalajara, Mexico) and others are planned for construction in the near future. Unfortunately, it is difficult to show that these projects were directly inspired or influenced by the PSTLA project.

85) In the second component, the Eje Occidente corridor never reached the construction phase. Transit along the Calzada Roosevelt (Eje Occidente) continues to use traditional means through individual vehicle ownership (referred to in Spanish as the “hombre-camión" system). Some of the studies conducted for the Eje Occidente were used for implementation of the route built along the Eje Central (see paragraph 58).

86) Its effectiveness can be measured only partially regarding the achievements made with the Eje Central. This route managed to increase the quality of service in several aspects, including improvements made as compared to the first corridor, and the urban recovery achieved along the Eje Central. There are currently 16 stations serving 45,000 passengers/day[39].

87) Travel time for users of the Transmetro Eje Central has decreased by two thirds. With the old bus system, travel time was 90 minutes, while now it is just 30 minutes. It is estimated that emissions have decreased by 8,587 tons of CO_2 in 2010, representing a reduction of 60% of emissions along the Central Corridor[40].

88) As a result of increased security with this system over the traditional system, the Department of Urban Mobility has reported that a significant number of passengers use Transmetro to continue their journey, despite the fact that the initial route passes through the selected destination.

89) With the third component, the increase in the use of non-motorized transport as a result of a modal shift from private transport and the related benefits **are uncertain.** New measurements regarding the flows observed in the bike lane network are needed to quantify the impact of the financed promotional campaign.

90) This objective, beginning with the design, overestimated the results that such a short campaign could offer in terms of a modal shift. Successful non-motorized transport programs in cities such as Bogotá have required significant amounts of time to develop fully, where promotional campaigns were maintained permanently. The efforts made

[37]Correspondence with Carlos Felipe Pardo. The distribution list of the guidelines included the ITDP offices in Bogotá, ITDP Mexico, CTS Mexico and Ciudad Viva Santiago. In addition, the guidelines were distributed at sustainable transportation events in Latin America.
[38]Terminal Report, section 2.4
[39]http://transmetro.muniguate.com/
[40]Municipality of Guatemala, Central Corridor Reductions (2011).Based on AM0031 methodology.

during the campaign achieved short-term impacts with a 30% increase in the sale of bikes and a 25% increase in bike-related activities[41].

91) For the fourth component, a bus regulation and planning program (BRP) leading to effective operation of the bus system in Concepción **has yet to be implemented.** The new guidelines for the concession of buses are still under review. As such, no improvements have been observed in the fare collection system.

92) *Taking into consideration that the BRP project was not implemented and that its results are not yet applicable to public transit in Concepción, the effectiveness criterion was evaluated as moderately unsatisfactory*.

Efficiency

93) Considering the speed with which urban growth has occurred in recent years and the timeline established for project implementation, the main element to be considered in terms of efficiency is time. Close to half of the project timeline was dedicated towards administrative processes and contractual agreements.

Selection of demonstration Cities

94) Selection of the demonstration cities is probably the most important part of the project design. The context of the city is essential for the execution of the project, since the priority given to the project is fundamental in maintaining the interest of a city in seeking solutions. The selection and resource allocation process must avoid delays in these processes. In this case, the time spent from the selection of the cities (2003) to the allocation of resources (2006) was 3 years. During this period, Panama City completely lost interest in participating in this project, Guatemala City began construction of its first BRT system route without feasibility studies, and Concepción constructed a network of bike paths in disjointed areas.

95) It is recommended that decisions on project approval and resource allocation be made more quickly, using faster processes.

Agreements and Contracts

96) Administrative procedures tend to be long and complex in Latin America. The initial collaboration procedure between UNEP and local agencies was no exception. This procedure took four months in Guatemala[42] and one year in Chile[43].

97) The tender processes for the studies conducted lasted nearly one and a half years in Guatemala and some nine months in Chile. As a result, 50% of the time originally planned for project implementation was spent on administrative procedures.

98) Significant efforts were made to hasten the speed of the projects. Three follow-up missions were completed by the PM. These missions sought to hasten administrative processes, especially for the case of Panama City where even with the support from ROLAC and an official letter from UNEP, the efforts made by the TM and PM were fruitless. The city was thus removed from the project. In its place, the City of Guayaquil, Ecuador, offered a credible alternative, as the recently initiated BRT scheme there could most

[41]SECTRA Sur.Results of the CICLOBIO Promotional Campaign (2010).
[42]UNEP & Municipality of Guatemala Contract.
[43]UNEP & MTT Contract.

certainly use additional support. After several months of waiting and again losing valuable project time, the project did not materialize, possibly due to political reasons[44]. As a result of the efforts made by the UNEP team and as an emergency solution, Concepción adopted the second component (BRP) of the project, and an extension was given[45] while maintaining the initial budget. As a result of all these delays, the component was only completed just before project completion. Consequently, any impact this component may or may not have is difficult to assess after such a short period.

99) Considering the efforts needed to find a replacement for Panama City while seeking to uphold the project objectives, the evaluation considers these efforts to be a sign of "adaptive management."

Studies

100) Private consultants conducted the better part of the studies, and the delivery of final reports was on time in most cases. As of project completion (December 2009), only the environmental evaluation study and the external financial audit were not yet complete, both for the BRT component in Guatemala. The environmental evaluation was delivered 6 months later, while the financial audit is still not complete.

101) The implementation and planning guidelines for the 3 components, all under the responsibility of the Risoe Centre, were presented on time.

Cost Efficiency

102) As part of an initial GEF budget of US$ 960,750[46], US$ 733,377 was used through 2010, and US$ 131,795 was allotted for 2011. There is a difference of US$ 95,578, for which there is no explanation in the financial reports (see Table 5.1).

103) The budget initially prepared for Panama City was transferred in full to the City of Concepción for the BRP component. As such, this amount cannot be considered as a cost saving. Some positive differences were obtained by the Municipality of Guatemala regarding the preparing of the origin-destination, topography, and environmental impact studies[47]. Such differences were distributed against the amounts originally budgeted by the Municipality for the preparation of other studies, such as traffic counting (Table 5.3).

Efficiency in Terms of Cost-Effectiveness

104) Using the last account statement provided as a reference (Table 5.1of Annex 5.3) and the payments made for use during the 4 components of the project with GEF funds, it was found that said funds were distributed as follows:

3.1 Budget Disbursement by Component

Component	Reported Disbursement (US$)	Percentage of Total
Comp. I: Initial Meeting and Workshops	12,762	1.7%
Comp. II: Guatemala City - BRT	147,324	20.1%
Comp. III: Concepción - NMT	230,619	31.4%

[44] The UNEP TM suspects that this had to do with the fact that the Mayor of Guayaquil and the President of Ecuador belonged to different political parties.
[45] URC, Request for budget-neutral project extension, (2009)
[46] Not including the PDF-A phase of the project (US$ 25,000).
[47] Guatemala Correspondence – Received: 16/06/2009.

Comp. IV: ~~Panama City~~ Concepción - BRP	173,784	23.7%
Administrative Expenses	168,888	23.0%
Total	**733,377**	**100.0%**

Source: Summary of cash advances Rev. 3 on 17/11/2010

105) The scope of the project in terms of effectiveness has been limited, as indicated in the corresponding section. With regard to the investment made, the results expected for the BRT and BRP components were not met, while the NMT component lacks ex post measurements, making it impossible to quantify its performance.

106) Taking this into account, the fact that 43.8% (23.7% corresponding to BRP and 20.1% to BRT) of funds was used in studies with less than satisfactory effectiveness fails to meet expectations. As such, better project monitoring and linking milestones to disbursement of funds could improve the use of resources.

107) *Considering that close to half the time scheduled for the project was used to perform administrative procedures, and that 43.8% of the resources wasused in two projects that have not been implemented, the evaluation corresponding to efficiency is moderately unsatisfactory.*

Review of Outcomes to Impacts (ROtI)

108) According to the review of the project conducted using the ROtI method and the diagram presented in Table 3.2, it is possible that the project could achieve the expected impact over the long term. An evaluation of the intermediate stages identified shows that the impact generators[48] (IG) are not difficult to obtain. The greatest risks lie in the assumptions used and are characterized by the role of local governments in said assumptions.

109) The main risk for impact achievement in component 1 lies in the interest of other governments from the region in implementing sustainable transport projects. The dissemination and training workshops are useful in promoting the advantages. However, the political decision to implement them requires an institutional framework prepared for the changes that these projects require.

110) In Guatemala City, the most difficult assumptions have already been overcome (existence of an adequate regulatory framework and modal shift). The legal adjustments required for the operation of the Transmetro system have been made gradually. Private participation was achieved through a new public-private investment scheme, and a prepaid system was allowed (paragraph136)170)171).

111) The acceptance of the system on the part of the people has been adequate and the network is currently being expanded. The main sustainability risk is in the financial aspect (paragraph 134). The economic resources for expansion of the network are limited and the profitability of current routes is restricted by a fare that is unattractive to investors.

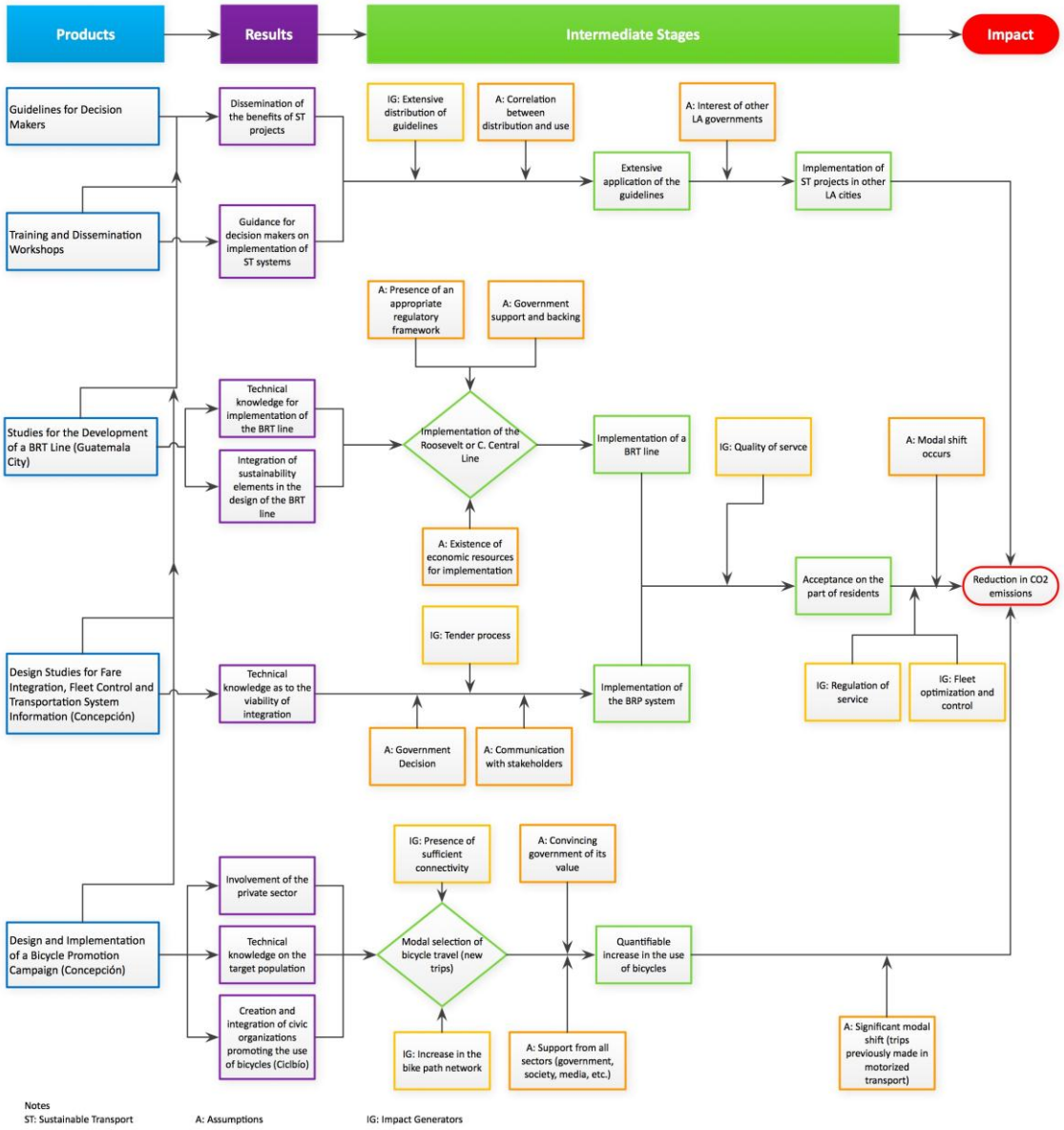
[48] Note from the editor: What is called an “impact generator” in this report is most often called an “impact driver” in other UNEP evaluation reports. The term “generator” slipped into the report during its translation from Spanish to English.

112) The impact generators identified, quality of service, and fleet optimization and control, have all been considered. This has enabled us to forecast the reduction in carbon emissions coming from public transport (paragraph155).

113) In Concepción, regarding the BRP component, the government's decision to implement regulation was interrupted by the change in National Government (paragraph119). The tender process is currently being prepared. As such, an impact on reductions is unlikely to occur over the short term.

114) With the NMT component, the main barrier to generating the desired impact was identified as achieving the modal shift for a significant number of users. The overcoming of this factor was an ambitious assumption for such a short campaign.

Table 3.2 Change Theory Diagram



3.2 Sustainability and catalytic role

116) The sustainability of the project was defined in the TORs as the probability of continued long-term project-derived results and impacts after the external project funding and assistance ends. This has been evaluated considering socio-political, financial, institutional, and environmental aspects.

Socio-Political sustainability

117) In the socio-political aspect of the demonstration cities, the following factors were identified:

a. Changes in government

b. Commitment and support for the implementation of components

c. Appropriation and social identification.

Changes in Government

118) During the development of the studies for both cities, neither city underwent a change in government that could affect the sustainability of the project.

119) Once the assistance and financing stage was complete, Chile underwent a change in economic ideology at the national level (2010)[49]. As a result, and as part of the natural process of questioning, reassessing priorities, and establishing new strategies, the NMT and BRP projects adopted in Concepción have remained inactive. For the evaluation, this represents a risk factor for achieving continuity in both projects.

120) The change in administrative staff resulted in the discarding of the experiences and lessons gained during the processes, above all in the components corresponding to Concepción. This is one of the least visible risks to sustainability, but most essential to prevent complications in project procedures.

121) Similarly, campaigning is underway in Guatemala to replace both the municipal government and the office of the President. The difficulties identified for the case of Chile may also be encountered in Guatemala City. However, during the campaigning stage, the generality of the candidates favours the continuation of the Transmetro system.

Commitment and Support for Implementation

122) With regard to the NMT component, there were great expectations regarding the government's commitment during the project implementation phase. Bill No. 517-357, which sought to establish the duty of the state to facilitate the creation of the conditions necessary for the promotion and use of bicycles as a means of transport, was submitted by former President Michelle Bachelet Jeria. This bill has not been approved. Despite that, 77 km of new bike paths were announced in 2009, and to date 13 km have been built[50].

123) Current President Sebastián Piñera has proposed implementation of the Bike Lanes and Paths Master Plan in the main cities of Chile. This plan seeks to double the number of users of this means of transport by 2014[51].

124) Regarding the BRP component, there are incentives to hasten the regulation process, considering that the National Government of Chile has had to subsidize transport in regions outside Santiago based on unclear indicators. Despite this, Public Transit concessions have been renewed for periods of 12 and 18 months since 2005, and there are contractual restrictions as to technological suppliers, meaning that fare collection integration is far from being achieved. The continuation of these temporary renewals for concessions generates uncertainty among operators, encouraging them to put off replacing aging fleets. With the change in government, it is likely that an adjustment in processes will take time, although a public call for bids is imminent.

125) In Guatemala City, the construction of the second line of the Transmetro system, as well as the approval of laws allowing introduction of a prepaid system[52] and regulation of

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[49]The Coalition for Change assumed the Presidency of the Republic of Chile beginning in March 2010. Its economic ideology is openly acknowledged as right wing, representing the opposite end of the ideological spectrum as compared to the Concert of Parties for Democracy, the prior governing coalition.It is not the intent of this document to indicate or define ideological trends or to take positions on such issues. Rather, this document seeks to present the political context of the country.

[50]PIR 2009.

[51]http://sniblog.mideplan.gob.cl/documentos/IC_3%20Ciclovias.pdf

public transit[53] are positive factors that have been identified regarding the commitment to expanding the system network. The lack of coordination between municipal governments in the Guatemala City Metropolitan Area for the development of this system along thoroughfares in the municipalities of Mixco and Guatemala constitutes a risk factor that is hindering the construction of the Eje Occidente corridor.

Appropriation and Social Identification

126) Despite efforts to develop and implement projects executed by the Government and multilateral entities, one of the main sustainability factors for these projects is the appropriation of such actions on the part of the citizenry.

127) The campaign promoting the use of bicycles in Concepción managed to penetrate the population, resulting in well-attended and successful activities during implementation. Civil society participated as well, and the university community was interested in developing related programs.

128) The lack of bicycle parking infrastructure in public spaces and scarce resources for maintaining an autonomous organization of citizens in charge of promoting this means of transport resulted in a decrease in such activities.

129) In Guatemala City, a public opinion survey[54] indicated that 77% of the population would like the Transmetro system to operate closer to their home, while 47% of respondents mentioned that they would be willing to pay a higher fare. User interest in expanding the network is a positive factor for sustainability. This factor is strengthened by the positive perception of the public regarding safety and shorter commutes.

130) Another of the more positive aspects of the Transmetro project has been the inclusion of services for vulnerable groups, such as the disabled and senior citizens. The construction of the second Transmetro line was conducted with support from organizations representing these groups, assisting the infrastructure and operational design team with their vision and experience.

131) *As a result, this evaluation believes the project is moderately sustainable in socio-political terms, given that both social identification and government commitment are evident.*

Financial resources

132) Sustainability factors are initially shown per component, then concluding with overall assessments.

133) The projects aimed at promoting BRP and BRT systems in the sample cities were not fully implemented, as has already been mentioned. The sustainability factors corresponding to these systems were evaluated according to their status within the project.

134) According to the study completed for implementation of the integrated fare collection system in Concepción, one of the main factors to be considered is the lack of any prior charging network established in the city. This structure is essential for the introduction of

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[52]Agreement No. 103-2009
[53]COM Agreement 42-2009
[54]Municipality of Guatemala. Public Opinion Survey (2008).

prepaid cards and the elimination of cash handling on the part of operators. As a result, financial sustainability is weak, given that, as has been suggested by the consultants, the size of the investment for the provision of this structure is so large, that self-financing could be difficult under the current conditions. An investment of the size required for the provision of the network would imply a significant increase in either fares or Government subsidies.

135) In the case of the Transmetro system, the fare in place is far from being financially self-sustainable. The fare of GTQ 1, approximately US$ 0.12, is not even enough to cover the operational costs of the buses themselves[55]. The rest of the costs have been subsidized by the National and Municipal Governments. Close to QTZ$ 100 million had to be allocated to this program in 2009, corresponding only to the first line of the Transmetro system.

136) New systems of public/private investment have been sought to expand the network and build new stations and terminals. This would allow the government to allocate funds toward continued expansion of the network. Despite this, low fares represent, without a doubt, the greatest risk for the Transmetro system.

137) Regarding the NMT project in Concepción, the financial sustainability aspect is difficult to measure when the priorities for the city have been reordered. Continuous investments in NMT infrastructure as well as promotional campaigns are necessary to encourage the use of bicycles as a means of transport. Even though civil society movements have been very active in promoting bicycle use in the city, these movements also require financial resources to promote their activities.

138) Some manner of incentive could be implemented to finance these activities in a sustainable manner. Without such incentives, the continuity of the project is at risk.

139) *In overall terms, the financial sustainability of the projects, as of now, still requires government support. This assistance does not seem to be at risk, given recent expansions to the Transmetro system and the construction of more kilometres of bike lanes. As such, the assessment of financial sustainability is considered to be moderately likely*.

Institutional framework

140) The institutional sustainability factors identified relate primarily to the design of the political structure of the countries. These factors are characteristics that the countries themselves have decided to adopt and they do not affect only the project under review. The evaluation has deemed it important to mention how the project could be affected.

141) Both Guatemala and Chile are characterized as centralized states. In both countries the capital city absorbs a large part of government action. As such, most political decisions are disconnected from the regional context. This is reflected in an administrative structure that is often distant, even physically, from the area affected by a particular decision, hindering decision makers from developing sensitivity to the times and impacts of implemented policies. This was noted in part with the BRP and NMT components conducted in Concepción.

142) It was found that the study developed for the BRP component was conducted far from the realities inherent to the public transport system of Concepción. As has been indicated, transportation operators interviewed during the visit were totally unaware of the study.

[55]The fare of QTZ$ 1 for bus service has been the same for the past 15 years.

From the perspective of this evaluation, this constitutes a risk factor in terms of institutional sustainability. As has been pointed out in the other experiences, the involvement of the main actors during a transformation process is fundamental for ownership and sustainability[56].

143) On the other hand, in Guatemala City, given its status as the country's capital city, the effects of centralized authority mean that city decisions are made somewhat more independently, albeit with close national scrutiny. Relations between the Municipal Government and the National Government directly affect the performance of the projects.

144) In cases in which the implementation of the project is supported by resources from both governments, relations between them are fundamental for the continuity of such projects. Such was the case for the construction of the Transportation Transfer Station (Centra Sur). In this stage, the National Government and the Local Governments of Villa Nueva and Guatemala provided resources collectively through a public-private partnership with a foreign company[57].

145) This type of coordination is needed for the construction of the Eje Roosevelet Transmetro line, especially since this corridor is shared by the Municipalities of Mixco and Guatemala. As of now, such coordination has yet to be achieved. However, a history of successful collaboration in the past is reason to believe a solution can be achieved over the medium term.

146) *In summation, the 3 demonstration projects include conditions to be overcome in terms of institutional coordination. As such, the sustainability of the project in institutional terms is considered to be moderately likely*.

Environmental Sustainability

147) Factors relating to environmental sustainability were divided into 2 categories:

a. Existing environmental factors that can influence the project, and

b. Environmental factors created as a result of the project that may influence both the environment as well as the project itself.

Existing Environmental Factors

148) Unfortunately, environmental factors that could affect implementation of the project have already been experienced in one of the demonstration cities. The location of Concepción in a seismic zone with catastrophic precedents is a factor that needs no further explanation, given the events of the recent past.

149) The earthquake occurring in February 2010 partially destroyed the transportation network in Concepción, including the infrastructure designed for bike paths. At some points up to 70% of this infrastructure was destroyed[58]. The bike path over the Bio-Bio River, a crucial link between residential areas and downtown, was devastated making commuting by bike between the two parts of the city virtually impossible. This event has

[56] http://www.itdp.org/documents/Bus%20Rapid%20Transit%20Guide%20-%20complete%20guide.pdf

[57] http://www.bnamericas.com/news/infraestructura/Gobierno_anuncia_proyecto_de_extension_de_US*900mn_de_Transmetro

[58] Result of the Campaign Promoting the Use of Bicycles, Ciclobio. SECTRA SUR (2010).

resulted in a change in government priorities regarding the establishing of plans and programs.

150) The geographic location of Guatemala City is also a high-risk area, given that it is surrounded by four volcanoes. Pacaya, the most active of the four erupted in May 2010, albeit without severe consequences for the city.

151) Constant emissions from Pacaya also contribute to the emission of polluting agents such as PM10. Environmental factors in both cities could seriously hamper the sustainability of the project, although only in the case of major events. These factors would not affect sustainability under "normal" conditions. In the case of Guatemala, the expansion of the Transmetro network would help to decrease PM10 emissions.

Generated Environmental Factors

152) The potential benefits of the projects with regard to decreasing polluting emissions are significant. Over the short term, these benefits will be seen only partially. Greater reductions in emissions are expected over the medium term, as the effects of the modal shift gain significance.

153) Realistically, the BRP and BRT components represent the greatest potential for environmental benefits. Optimizing public transportation fleets has resulted in different types of savings: decreases in kilometres travelled, decreases in fuel consumption, decreases in polluting emissions, decreases in travel times, and increases in speed for private vehicles by removing obstructions to public transportation.

154) The Transmetro system has already begun to witness some of these benefits through decreases in travel time of more than 100% (paragraph87), which result in a decrease in energy consumption, thus lower emissions. Estimates for decreases in pollutants range from 12 to 46%[59].

155) Using AM0031 methodology, the second Transmetro corridor, Eje Central, is undergoing registry as a clean development mechanism (CDM) with the UNFCCC, and will soon participate in the carbon exchange program. It is expected that subsequent lines of the Transmetro system will also be incorporated into these types of projects, given the benefits they offer.

156) The obtaining of these benefits is a factor that positively affects the sustainability of the project. There are at least two activities that must be completed first: constant renewal of the public transportation fleet, and the commitment to ensure exclusivity of routes, preventing the incursion of competition within the market.

157) Regarding the NMT component, there are no ex post measurements that would allow us to quantify its effect on emissions. That being said, the efforts made would be difficult to quantify in such a short amount of time. When the studies are conducted, they must consider the fact that results may not indicate a modal shift, but a modal selection on the part of younger users.

158) *Despite the geographic conditions of both cities, the systems used to decrease polluting emissions created by the transportation sector have demonstrated potential, despite the*

[59] Municipality of Guatemala, Transmetro One Year Later (2009).

short length of the project. This evaluation believes environmental sustainability to be likely.

Catalytic Role and Replication

Behavioural changes

159) The campaign promoting the use of bicycles attracted the attention of the National Government, which came to support a bill seeking to promote and facilitate the introduction of this means of transport in other Chilean cities. This attempt to adopt similar strategies on a national scale is considered an important catalytic role, despite the fact the bill has yet to be approved (paragraph123). A new campaign could leverage past experience as a fundamental part of development plans.

160) Assistance for the expansion of the Transmetro network has attracted the interest of local governments in extending the coverage of the system and participating in the sale of carbon credits based on baseline studies. This has resulted in plans for construction of subsequent lines with the support of feasibility studies, unlike the first line of the Transmetro system.

161) Regarding the BRP component, as it was not implemented, it is not believed to have played any role in promoting the adoption of successful systems to date. The study was developed in such way that it can be used as a reference in other cities and other Latin American countries.

Incentives

162) The donation of bicycles to the university community in Concepción, as a result of the regional government's interest in promoting bicycle use, encourages universities to create bicycle-parking areas at their facilities. Requests for more donations for their students indicate that service to this community could result in greater promotional opportunities.

163) The positive perception residents have of the Transmetro System has encouraged politicians to propose the system's expansion. The existence of financial sustainability risks has discouraged the interest of the private sector in participating with further capital contributions (paragraph135).

164) Regarding the BRP component, different regions of Chile, including Concepción, have received resources from the Transantiago Compensation Fund during recent years, by way of Law 20,378 (Transantiago Law), for allocation to investment in Public Transport and roads. These resources are part of measures taken to offset the subsidies given for transportation in the Santiago Region. These resources come from two funds, one permanent fund, and another temporary fund to exist through 2016. The law encourages the modernization of equipment and technology, especially through the temporary fund, although no clear terms have been established regarding improvements in services[60].

165) In Concepción, no new long-term bus regulation system has been established in recent years. Current conditions have been renewed since 2001 through resolutions and 12- and 18-month extensions. As a result, current transportation operators feel uncertain about the stability of existing regulation.

[60] http://www.leychile.cl/Navegar?idNorma=1005871

Institutional changes

166) The introduction of bike lanes on the streets of Concepción and other cities in Chile has contributed to a debate on the jurisdictional complexity of the maintenance of sidewalks, roads and signage[61]. This has led to questions as to who is responsible for providing and maintaining the bike paths in these cities. It is urgent that these responsibilities be defined in all the cities in Chile that have encountered these problems.

167) The section on Transantiago (paragraph 80) offers an outstanding analysis that could contribute to institutional changes not only in the area of transport.

168) In Guatemala City, the inclusion of public space recovery has been fundamental in promoting the image of Transmetro and the city as a whole. This has allowed the development of the system to be seen as a means of achieving things beyond just transportation, leading to a strategy of mobility policy in the city.

Policy changes

169) Despite the fact that the bicycle promotion law has not been approved (paragraph 152), the new urban master plans have included bike paths, indicating a shift in policy in favour of promoting non-motorized transport (paragraph 122). In practice, implementation has been slow, and it is likely that stronger and prolonged monitoring will be needed.

170) In Guatemala, thanks to the progress made by the Transmetro system, a Council of Ministers Governmental Resolution (No. 103-2009) granted financing for the introduction of a prepaid system on urban transportation units (paragraph125).

171) In 2009, COM Agreement 42-2009 regulated the operation and provision of services of the Guatemala City Metropolitan Area integrated collective public transportation system.

Catalytic financing

172) Regarding the BRP and NMT components corresponding to the city of Concepción, future sources of financing were not identified. The process of regulating buses in Concepción remains incomplete. The most recent round of concessions will expire next October, and the date for a new tender is not yet scheduled. This will lead to a new extension for the provision of services under the same conditions.

173) The second line of the Transmetro system was financed largely with funds from the Inter-American Development Bank (IDB). The municipality is in the process of acquiring resources through the sale of carbon credits. As such, it is likely that some funds will be obtained through CDM projects (paragraph154).

174) In terms of local financing, considering the financial sustainability problems, it is expected that subsidies will continue to be provided by the National and Municipal Governments. With the election cycle nearing an end, new governments may adopt different positions on this issue.

Champions

175) During the project, certain participants were fundamental to the accomplishments achieved. These participants are identified below.

[61]Currently, different elements and components or a single road or street often correspond to different administrative entities.

176) The efforts made in the bicycle promotion campaign in Concepción were decisive for the success achieved during the campaign. The holding of large-scale activities and workshops made residents reflect on the issue, coming to see the bicycle as an important element of mobility in the city. The advisory and experience of SECTRA Sur and SOLUTIVA[62] were extremely helpful.

177) The Urban Mobility team of the Municipality of Guatemala has done outstanding work for the Transmetro System. Perceptions of safety among residents and the public image generated for the system have encouraged people to request the system's expansion. The forthcoming inclusion of the second line of the system in the CDM project system will be fundamental in terms of sustainability.

178) The efforts made by the PM from the URC at the start of the project to achieve project launch and redirect funds after the removal of Panama City contributed to the fact that nearly all planned products were completed on time.

Replication

179) The BRT system has had great success in the region, and similar programs are currently underway in Asunción, Paraguay; Buenos Aires, Argentina; Lima, Peru; and several cities in Mexico and Colombia. The development of these systems cannot be attributed entirely to the promotional efforts of the project under review.

180) The experience of Concepción in the area of non-motorized transport, together with that of other Chilean cities, offers a source of information for the expansion of this type of project across the country. The amounts requested for the execution of these projects in the regions of O'Higgins, Maule, Greater Santiago, and Biobío have totalled some US$ 55,000 between 2010 and 2011[63].

181) *In summation, several political, institutional and behavioural shifts have been observed as a result of this project. As a result, the criterion for catalytic role has been rated as moderately satisfactory*.

3.3 Processes affecting attainment of project results

Preparation and Readiness

182) This evaluation has determined that while the objectives, purposes, and instruments were clear, the time scheduled for execution of studies, implementation (36 months) and evaluation of results was not sufficient (paragraph56). Implementation of projects of this magnitude can take at least 3 to 4 years, and the results are often not accurately observed immediately after their completion.

183) In addition, the delay in allocating funds from the GEF(paragraph 87) and the lack of prior identification of the legal framework for the agreement between the URC and local agencies were factors that affected results in terms of efficiency.

184) The circumstances of the countries changed from the period of identification and that of implementation. Certain modifications had to be made to the PD: (i) by 2006, Panama City had already conducted 8 of the 12 studies originally included in the project and was

[62] SOLUTIVA was the local consultant hired to conduct the promotional campaign.
[63] http://sniblog.mideplan.gob.cl/documentos/IC_3%20Ciclovias.pdf

no longer interested in participating in the program; (ii) the city of Concepción had completed its first phase of 24 km of bike paths in a disjointed fashion.

185) Close to half the time scheduled for the project was spent on administrative processes, such as the signing of contracts (paragraph 89 and section 3.3.4).

186) *As such, the criterion for preparation and readiness has been assessed as moderately unsatisfactory*.

Implementation approach and adaptive management

187) The PSTLA project has been implemented by UNEP (Nairobi) through the URC agency from its offices in Denmark. This agency was responsible for supervision, monitoring, and reports. Its role as coordinator was one of the most significant challenges, given the passive attitudes demonstrated by local agencies at times with regard to hastening administrative processes.

188) The conducting of activities and studies was established from the beginning of the project as the sole responsibility of the local agencies. Generally, tenders were conducted to commission such activities to private companies. Others were conducted by the local agencies themselves. In the case of Transmetro, the experience acquired by staff during implementation of the first line of the system was leveraged.

189) The URC showed flexibility in modifying the project after the removal of Panama City (paragraph 28) and when the time scheduled for the project had to be extended. Both decisions were discussed with the TM and the PSC. Said decisions were not included in the PD (paragraph218).

190) *As a result, the implementation approach is considered to be moderately satisfactory*.

Stakeholder participation and public awareness

191) Project stakeholders were identified during the preparation phase of the project. The varied stakeholders identified participated in a consultative process, so that they were all aware of the project[64].

192) Residents were involved in the projects through a public consultation in Guatemala City and through the launch of the *Biovías* and *Biobici* programs in Concepción (2003). Following that, the media has played a fundamental role in disseminating information on the project.

193) The participation of the media helped to spread awareness of the bicycle promotion campaign in Concepción and of the benefits of the BRT system in Guatemala. This media exposure has included other voices and opinions with positions opposed to the adopting of the Transmetro system subsidy. The projects were well received by civil society. Local authorities have received requests to expand the Transmetro system, to increase the bike path network, and to organize new cycling-related events.

194) During the election campaign that took place during the evaluation period in Guatemala (June-August 2011), the issue of the Transmetro system was a constant among all municipal candidates.

[64]The list of stakeholders identified can be found in the document titled *MSP-Proposal for GEF Funding*.

195) In the BRT and BRP components, negotiations with transportation operators are fundamental. In Guatemala, such operators were included in the system as private corporations. In Concepción, the Concepción Transportation Metropolitan Council was created in 2009 in order to discuss topics relating to the tender in progress. Academics, transportation companies, labour unions and SECTRA SUR all participated.

196) *As a result, the criterion for involvement of stakeholders has been rated as moderately satisfactory*.

Country ownership and driven-ness

197) Considering the history of investments made by the Municipality of Guatemala in the construction of the first Transmetro line (85% of property taxes collected) and its respective popular success, it was believed that there was a guaranteed commitment to the building of the second Eje Occidente corridor, the most important line in terms of demand in the Guatemala City Metropolitan Area. However, the obstacles presented due to the lack of coordination between the municipalities of Mixco and Guatemala resulted in construction being indefinitely postponed (paragraph125).

198) When this decision was made, the Municipality did not request that the URC redistribute the resources allocated through the PSTLA project so that they could be used more efficiently. As a result, the performance of the Municipality of Guatemala in terms of responsibility has been ambivalent, since although there is a noted commitment to the expansion of the Transmetro network, the construction of the Eje Roosevelt line is still pending.

199) Until a few years ago, the commitment of the National Government of Chile to programs encouraging the use of bicycles had been clear, not only in Concepción, but in other cities where cycling is being intensely promoted. An initial investment from the government was used to create the first 24 km of bike lanes in Concepción over 3 years, and the government collaborated on the promotional campaign financed by the GEF, primarily through SECTRA Sur (paragraph184).

200) The *Ciclobío* organization, a club of residents interested in promoting cycling-related activities, was given assistance as part of the process of involving the community. The earthquake occurring off the coast of Concepción required that the government's priorities be reconsidered. Continuation of the program in Concepción has been postponed, although this could hardly be seen as a lack of commitment.

201) *As a result, the commitment of the countries to the project has been assessed as moderately satisfactory*.

Financial planning and management

202) Given the amount of resources provided by the GEF (US$ 960,750)[65], this project is considered to be a Medium-Sized Project (MSP). Resources were distributed through UNEP (Nairobi) and administered by the local executive agencies themselves. This prevented resources from being administered by the UNDP offices, which would absorb 2% of resources.

[65]Figure does not include PDF-A (US$ 25,000)

203) The last report delivered for the evaluation is shown in Table 5.1 of Annex5.3. It corresponds to the project account statement current as of November 17, 2010 reporting the instalments per component financed by the GEF. As was shown in Table 3.1, 23.7% of the project funds was used to finance BRP project studies in Concepción, 31.4% for the bicycle promotion campaign also in Concepción, and 20.1% for studies assisting in implementation of the Roosevelt corridor of the Transmetro system in Guatemala City.

204) GEF funds were disbursed at 78% (see Table 3.3). Resources provided by local agencies were analysed based on the most recent information available, even though they may not correspond to the final financial reports (Table 5.2 Financing by BRP Component Activity., and Table 5.3 Financing by BRT Component Activity). Final financial reports were requested from both the URC and the local agencies. They could not be obtained during the evaluation period. It is extremely important that this information be updated during later analysis.

205) The final financial report for the BRP component indicates that US$ 618,341 of the resourced planned by the MTT were successfully mobilized (Table 3.4. Co-Financing Mobilized). These resources were allocated to developing the terms for tender and the conducting of technical studies. A detailed description is available in Annex 5.3.

206) There is no reason to compare this figure with that initially planned, given that the original planning for this component was developed for Panama City, and the PD was not adjusted based on these changes.

207) In Guatemala City, 23% of the resources originally planned by the local agency were mobilized (Table 5.3 Financing by BRT Component Activity). The presence of Inter-American Development Bank (IDB) funds were identified in this component, albeit not directly. These resources were provided for the implementation of the Central Corridor Transmetro line. As such, certain activities common to both lines, such as the Land Use Plan, the Awareness Process, and the Traffic Impact were partially financed using these resources.

Table 3.3 Planned and Actual Budget. GEF and URC Funds.

Financing (Source)	GEF Financing (USD)		URC (USD)		Total (USD)		Actual / Planned
	Planned	Actual	Planned	Actual	Planned	Actual	
Comp. I: Initial Meeting and Workshops	80,000	12,762	15,000	15,000	95,000	27,762	29%
Comp. II: Guatemala City - BRT	250,000	147,324	25,000	25,000	275,000	172,324	63%
Comp. III: Concepción - NMT	240,000	230,619	25,000	25,000	265,000	255,619	96%
Comp. IV: Concepción - BRP	200,000	173,784	25,000	25,000	225,000	198,784	88%
Administrative Expenses	190,750	168,888			190,750	168,888	89%
Total	**960,750**	**733,377**	**90,000**	**90,000**	**1,050,750**	**823,377**	**78%**

Source: Data on planned resources were taken from the PD. Information on actual resources was taken from *Summary of Cash Advances Rev. 3 on 17/11/2010.*

Table 3.4. Co-Financing Mobilized

Financing (Source)	Local Governments (USD)	
	Planned	Actual

Comp. II: Guatemala City - BRT	380,000	87,410
Comp. III: Concepción - NMT	151,000	
Comp. IV: ~~Panama City~~ Concepción - BRP	789,600	618,341
Total	**1,320,600**	**705,751**

Source: Data on planned resources were taken from the PD. Data corresponding to actual resources were taken from "Co-financing Urban Public Transport Concepcion" (MTT) and from "Narrative Report" (Municipality of Guatemala).

208) Design of the project's financial configuration did not include the integration of resources by local agencies and the GEF for tangible implementation of the project. The construction phases of the project were not included as part of the project. As such, the studies were conducted independently. As a result, from the beginning there were no terms or guarantees that ensured completion of these studies.

209) This resulted in the projects for BRT and BRP components being completed more on paper than in practice.

210) *In summary, while the planned budget was adequate in terms of the amounts needed to conduct the studies, administration and monitoring of such amounts was disorganized. The overall assessment for financial planning is moderately satisfactory*.

UNEP Supervision and backstopping

211) During the execution of the project there were two consecutive UNEP Task Managers involved. In the first period the TM left some responsibilities to the URC with a backup of the Regional Office for Latin America (ROLAC) in order to shorten distances. During the second management period, however, the new TM decided to be personally involved in the Steering Committees and exchange information with the PM more frequently. Project supervision was a joint responsibility of the PM (URC, Denmark) and the TM (UNEP, Nairobi). This task was conducted through monitoring visits and multiple reports on the status of the planned activities and products. The list of reports provided for this evaluation is found within the list of documents in Annex 5.5.

212) At the start of the project, three monitoring missions had to be carried out by the PM in order for activities to begin and the contracts and agreements between the URC and the local agencies to be signed. Likewise, other visits to the demonstration cities were carried out in order to hold the workshops planned as part of the project.

213) The main supervisory and monitoring tool was the Project Implementation Review reports[66], which were prepared annually from 2007 to 2009. Some of the data reported was very optimistic regarding the achievements made by the respective projects during the corresponding period. Although inaccuracies were minor, project monitoring was confusing and difficult to compare during the evaluation. The indicators used in these documents were not uniform and they adhered more to time elements than methodologies. This evaluation recommends that these documents be supplemented with attachments and that they always are presented together. This would prevent the need to repeat work in later stages.

[66] Project Implementation Review (PIR)

214) Several financial statements were requested from local agencies by the URC to supervise the administration of resources throughout the development of the project. They were compiled by the PM.

215) *Overall, a more active participation of UNEP would have been extremely helpful in this project. This would have encouraged the use of the agency's more concrete experience in environmental issues. The rating for UNEP supervision and backstopping is moderately unsatisfactory.*

Monitoring and Evaluation

216) M&E Design. The project was initiated without a baseline. An established baseline would have been part of the products of the project. The lack of such baseline hindered monitoring based on indicators. The rest of the monitoring was designed to be conducted through missions and numerous reports, according to the PD.

217) The monitoring and evaluation plan did not include any pre-established methodology or frequency for the measurement of indicators that would allow the project's progress to be monitored, although targets for reductions in pollution were established for each component.

218) Despite the modifications to the BRP component (section 3.3.2), the logical framework was not updated. As such, the indicators to be used during evaluation were not established.

219) Despite the participation in the initial project workshop of ITDP Colombia, no NGO was included in the design of the project. The introduction of this type of organizations would have been useful in the area of field supervision, as suggested by the PM from the URC.

220) The inclusion of SMART indicators and the monitoring of such indicators were not given sufficient priority during implementation of the project. The environmental study for the Eje Occidente Transmetro corridor was conducted 6 months after the PSTLA project was complete. It is important that all studies leading to the establishing of a baseline are made a priority.

221) *In summation, the M&E design has been assessed as moderately unsatisfactory*.

222) M&E Implementation. The lack of accurate pre-established indicators in the design of the M&E plan was offset by other types of less specific indicators: the publication of laws, publications in the media, and reports from local agencies on the status of the project. Such indicators were reported primarily using the Project Implementation Review (PIR) documents. This should be seen as a valuable contribution on the part of the PM given the difficulty in obtaining information on the progress of the project.

223) The main monitoring tool for the project was the PIR. These documents allowed for monitoring of the project, although certain inaccuracies were detected. Some project milestones were reported prior to being completed. As a result, certain confusions had to be clarified during the evaluation.

224) Due to the removal of Panama City from the BRP component and the quick adaptation of this component to the city of Concepción, this program was not monitored on site during implementation. Review was carried out remotely.

225) Project activities were supervised by the URC through 3 missions during the first year and in the middle of the project and through constant communication with counterparts via telephone and e-mail. During the last year of the project, no missions were carried out,

except for the visits conducted for the midterm and closing workshops. This type of supervision resulted in a lack of information for certain periods from the counterparts, as well as a lack of awareness on the part of the URC as to what had been completed on the ground. Considering that the budget for these activities was limited, it is recommended that funds be made available for extraordinary expenses for use in such cases, as it is preferable that information be obtained directly as opposed to through intermediaries.

226) *As a result, this evaluation has assessed the implementation of the M&E system as moderately unsatisfactory*.

3.4 Complementarities with the UNEP strategies and programmes

Linkage to UNEP's expected accomplishment and POW 2010-2011

227) The project was designed and implemented prior to the objectives established in the document titled UNEP Medium-Term Strategy 2010-2013[67]. Despite this, the objectives of the PSTLA project share certain similarities. Some such similarities are presented below.

228) The PSTLA project corresponds to the Climate Change thematic priority. As such, its objective of implementing sustainable transport projects in three Latin American cities in order to generate awareness and knowledge among decision makers on the benefits of such projects coincides with the objective of the priority area of "strengthening the ability of countries to integrate climate change responses into national development processes[68]."

229) Likewise, assistance for the implementation of BRT, BRP and NMT systems corresponds to the 5 points established as the UNEP Expected Accomplishments[69]through (i) more efficient use of public transport, (ii) replacement of fleet units with obsolete technology, (iii) modal shift toward non-motorized transport, (iv) urban planning, (v) improved land use, and (v) the introduction of clean and efficient technologies.

Alignment with the Bali Strategic Plan (BSP)[70]

230) The financing for studies assisting in the implementation of three sustainable transport projects in Latin America, as well as the organization of training workshops for planning and implementation of such projects, are all strategies aligned with the objectives of the BSP regarding assistance for developing countries and transitional economies to increase their technical capacities in support of the environment.

231) The creation of a platform that helps to organize a network promoting sustainable transport in the region and the creation of practical guidelines for the implementation of sustainable projects have also helped to identify and disseminate best practices and to strengthen cooperation among those involved in the transportation field.

Issues of Gender, Accessibility, and Vulnerable Populations

232) Initially, no activities were identified that contributed to reducing gender inequalities. However, two aspects turned out to be relevant during implementation of the projects.

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[67] http://www.unep.org/PDF/FinalMTSGCSS-X-8.pdf
[68] Medium Term Strategy UNEP 2010-2013
[69] UNEP Expected Accomplishments
[70] http://www.unep.org/GC/GC23/documents/GC23-6-add-1.pdf

a. The adoption of the Transmetro System allowed for the inclusion of women in the operation of buses, a profession traditionally reserved exclusively for men. The elimination of cash fare collection on board increased the system's safety, thus clearing one of the main obstacles to women participating in this profession. As of a few months ago, 22 women were performing this job.

b. The campaign promoting the use of bicycles helped identify a lack of supply of bicycles for women in the local market. This trend was gradually reversed, at least during the implementation of the campaign.

233) In terms of accessibility, the evaluation has determined that this aspect was not considered during the design of the project. It is fundamental that this aspect be considered for issues of mobility, beginning with the design stages, in order for projects to achieve greater relevance. The Transmetro system included, in addition to access ramps for the disabled, a protocol for assisting the disabled and the elderly in boarding and alighting.

234) The Transmetro system has created a strong perception of safety across the length of the routes. This has enabled vulnerable populations to feel more comfortable using the system. In this regard, the lack of protection reported by women in Concepción, relating to the lighting along the streets where bike paths are in place, is something that must be considered in future stages of the project.

South-South Cooperation

235) The experiences of Bogotá (BRT), Quito (Trolleybus), and Buenos Aires (Bike Paths) were shared at the training workshops organized by the PSTLA project. These workshops encouraged the exchange of knowledge between participants. The experience of ITDP (Colombia) in implementation guidelines for BRT systems was also leveraged.

4 Recommendations and Conclusions

4.1 Conclusions

Positive Accomplishments

236) The campaign conducted to promote the use of bicycles is considered the main accomplishment of the project. In a short period of time the target population was effectively identified, recognizing the need to focus efforts on younger generations that have yet to make their modal selection. The campaign managed to change the perception of cycling and inspire the interest of retailers to serve the female market. The campaign also earned the attention of the national government, which presented a bill for Congress to promote cycling in Chile.

237) In terms of reductions in greenhouse gases, the project with the greatest impact is the BRT system. Although the Eje Occidente corridor, for which resources were provided, has yet to be constructed, the system's expansion has had a positive effect in this regard. Based on the environmental studies conducted for the project, and after having established the baseline for the second corridor, Eje Central, Guatemala City is expected to receive resources from the sale of carbon credits.

238) Communication and training completed through the workshops and the planning and implementation guidelines for sustainable transport projects were all relevant strategies. The guidelines have been shared with transportation decision makers. The guidelines

describe the steps to be followed for the planning and implementation of these types of projects.

Less Successful Experiences

239) The BRP component was the least successful experience. The effects could not be determined given that the studies were very far from the reality of the transportation operators in the city and because the project has not been implemented.

240) The resources allocated to the studies for the BRT Eje Occidente line were not used efficiently. To date, the construction of the line has not begun, and as such, after two years, the studies are no longer current.

241) Monitoring was not conducted under the conditions needed in order for the results of the implementation of the components to be understood. The separation between project supervision and the realization of studies and decision-making made it impossible to adjust the BRT studies to the Eje Central line. Similarly, the BRP's lack of relevance given the realities of public transport in Concepción was not identified in time.

Table 4.1 Assessment of the Evaluation Criteria

Criteria	Evaluation Summary	Rating
A. Attainment of project objectives and results	The products were completed on time and according to plan. However, the expected results were achieved only in part.	MU
1. Effectiveness	Despite the short amount of time scheduled, the project has managed to deliver a number of concrete outputs. Achievement of outcomes and progress towards impact are limited.	MU
2. Relevance	The application of these systems has significant potential in the region.	S
3. Efficiency	Almost half the time available was used for administrative processes. Two of the four components were not implemented in full.	MU
B. Sustainability of project outcomes	Despite the persistence of certain barriers, favourable conditions are in place for maintaining the observed benefits of the project.	ML
1. Financial Sustainability	Certain limitations are still present. However, the trend of the projects indicates that these limitations will be overcome.	ML
2. Socio-Political Sustainability	There is social identification and a discernible commitment on the part of government.	ML
3. Institutional Sustainability	There are coordination aspects to be overcome; however, the process has followed a path that seems to head in the right direction.	ML

Criteria	Evaluation Summary	Rating
4. Environmental Sustainability	Despite the geographic conditions of the cities, the potential contributions of the proposed systems are considerable.	L
C. Catalytic Role	Several positive changes in political, institutional and behavioural areas were observed during the evaluation. However, no full replications of the projects were observed that could be attributed to PSTLA.	MS
D. Stakeholders involvement	Most stakeholders have been involved; however, there are sectors that must still be integrated, such as NGOs.	MS
E. Country ownership / driven-ness	The level of commitment demonstrated by Guatemala and Concepción was adequate. This was not the case in Panama City.	MS
F. Achievement of outputs and activities	Products and activities werecompleted, or are well under way. Not all were finished within the scheduled timeline.	MS
G. Preparation and Readiness	The preparation process took too much time, and after the project launch, activities began with delays due to administrative processes that could have been foreseen.	MU
H. Implementation Approach	Flexibility was shown in adapting to the removal of Panama from the project. However, this measure could have been taken prior. As a result, a component was conducted with excessive speed.	MS
I. Financial Planning and management	The projected budget was adequate for the required investment. However, administration and monitoring of financial statements was disorganized.	MS
J. Monitoring and Evaluation	Project monitoring was removed from the project and uniform control of project progress was not maintained.	MU
1. M&E Design	Given that there was no baseline, it should have been a priority to establish one. As a result, monitoring of indicators was subjective and difficult to quantify.	MU
2. M&E Implementation Plan	The distance between the office of the agency and the destination of the resources was significant. Monitoring conducted closer to the project would have led to more practical results.	MU

Criteria	Evaluation Summary	Rating
3. Budget and Financing of M&E Activities	The inclusion of an NGO would have allowed for closer monitoring of the projects. To this end, more appropriate budget preparations would have been necessary.	MS
K. UNEP Supervision and backstopping		MU
UNEP	More active participation would have been extremely helpful in this project. This would have encouraged the use of the agency's more concrete experience in environmental issues.	MU

Scale		Sustainability Scale	
Highly Satisfactory	HS	Highly Likely	HL
Satisfactory	S	Likely	L
Moderately Satisfactory	MS	Moderately Likely	ML
Moderately Unsatisfactory	MU	Moderately Unlikely	MU
Unsatisfactory	U	Unlikely	U
Highly Unsatisfactory	HU	Highly Unlikely	HU

4.2 Lessons learned

Counterpart commitment

242) The commitment shown by participants during the design stage of a project is not always indicative of their adherence to the project up to completion, especially if there are governmental or administrative changes between project identification and project launch (paragraph 36). UNEP and its executing partners should therefore make sure that commitments by local counterparts are supported by contracts that clearly establish the scope and deadlines for implementation and include penalty clauses in case of contract breach (paragraph 36). It might also be useful to incorporate a technical partner in the project that provides permanent support and monitoring for the development of studies and implementation of pilot projects (paragraph 219).

Realistic timeframe

243) In certain Latin-American countries, administrative procedures tend to be long and complex (paragraph 89, 176). Since this was not considered in advance, delays were caused and there was little efficiency in upholding the timelines of the products. It is important to review the administrative conditions of the regions and countries in advance to provide enough time for project objectives to be accomplished.

244) The time allocated for the projects was spent largely on studies, leaving little time for implementation (section 3.1.4). This limited replication of project experiences, which was one of the main objectives of the project.

245) The time scheduled between project completion and final evaluation was too short and did not allow for implementation and maturation needed to conduct a proper comparison with the "pre-project situation" (paragraph 182). This inhibited evaluation of tangible results of the project (paragraph 56).

Monitoring and evaluation

246) The project was initiated without a baseline, which hindered monitoring based on progress indicators. In addition, the M&E plan did not include adequate indicators or any pre-established methodology for the measurement of indicators that would allow the project's progress to be monitored. A single indicator, such as "reduced carbon emissions", is not sufficient for monitoring and evaluation, especially if the operational stage is not reached. The lack of specific, objective, and quantifiable indicators resulted in subjectivity during reporting, monitoring and evaluation (paragraph 216). A quantitative evaluation cannot be conducted if the necessary tools are not provided, as well as the measurement methodology (paragraph 208, 214).

247) It is important that a baseline is established at the very beginning of the project. Clear, objective, and quantifiable indicators need to be selected for the different stages of the project (paragraph 216) and periodic measurements need to be done from the beginning (paragraph 217). The local partner agencies' contracts should define by whom and how often reports will be submitted.

248) This evaluation might have been conducted too early to verify visible and tangible results on the ground. Even though the project was officially completed, the *use* of project outputs was not (e.g. the infrastructural works, spill-over effects to more recent, similar projects…). Before initiating an evaluation, it is important to conduct a review of the status of a project in order to develop a general overview of the status of progress towards outcomes. Projects should be allowed to mature after implementation before they are evaluated. An arbitrary deadline for initiating an evaluation (e.g. latest 6 months after official completion) is not always appropriate.

5 Annexes

5.1 Terms of Reference for Final Evaluation

TERMS OF REFERENCE

Terminal Evaluation of the UNEP/GEF project "Promoting Environmentally Sustainable Transport in Latina America"

PROJECT BACKGROUND AND OVERVIEW

Project General Information

Table 1. Project summary

GEF project ID:	2178	IMIS number:	GFL-2328-2712-4921
Focal Area(s):	Climate Change	GEF OP #:	11
GEF Strategic Priority/Objective:	CC6	GEF approval date:	8 March 2006
UNEP approval date:	March 2006	First Disbursement:	5 May 2006
Actual start date:	May 2006	Planned duration:	36 months
Intended completion date:	April 2009	Actual or Expected completion date:	31 December 31 2009
Project Type:	MSP	GEF Allocation:	$960,750
PDF GEF cost:	$25,000	PDF co-financing*:	$13,000
Expected MSP/FSP Co-financing:	1,410,600	Total Cost:	$2,409,350
Mid-term review/eval. (planned date):	March-April 2008	Terminal Evaluation (actual date):	February-June 2011
Mid-term review/eval. (actual date):	6-7 May, 2008	No. of revisions:	1
Date of last Steering Committee meeting:	7 May, 2008	Date of last Revision:	31 August 2007
Disbursement as of 31 December 2009:	$825,351	Date of financial closure:	30 June 2010
Date of Completion:	31 December 2009	Actual expenditures reported as of 31 December 2009:	249,094
Total co-financing realized as of 31 December 2009:	US$531,000	Actual expenditures entered in IMIS as of 31 December 2009:	$445,348
Leveraged financing:	US$ 25,000,000		

Project rationale

Increasing urbanisation, economic activity and income levels in Latin America are leading to increased demand for transportation. As a result of inefficient and unreliable public transport systems, the increasing pressure on transportation is promoting the switch away from public transportation to private motorised transportation. The 3 initially selected cities for demonstration (Guatemala City, Panama City and Concepción) are examples of cities where inefficient and poorly managed public transport systems are giving rise to increased private motorised transportation. The consequences have been increases in congestion, the number of traffic accidents, and both local and greenhouse gas (GHG) emissions, which have severe impacts on the economy, public health and on the environment. According to a study conducted by Swisscontact, Guatemala City and Panama City were among the 3 most air polluted capitals in Central America, with the transport sector being the largest contributor of air pollution. Similarly, Concepción, the second largest city of Chile, is facing serious problems of air pollution as result of increased private motorised transportation.

To come to grip with these problems, more economic, social and environmentally sustainable transport systems need to be designed and implemented. Nevertheless, the limited awareness of the benefits of sustainable public transportation, the lack of resources and the lack of technical capacity in many developing countries, often do not allow the corresponding authorities to take all these sustainability dimensions into consideration.

This medium-sized project (MSP) “Promoting Sustainable Transport in Latin America” is an output of the already established NESTLAC. NESTLAC was created in the PDF-A phase and its main objective is to promote and facilitate the implementation of environmentally sustainable transport options in Latin America and the Caribbean (LAC) by: (1) disseminating information on the benefits of sustainable transportation and on successful experiences; (2) assisting in the development of sustainable transport project proposals and; (3) assisting in project implementation.

The project aimed to facilitate the implementation of 3 demonstration transport projects in the cities mentioned above, in a way that all the economic, social and environmental dimensions are adequately incorporated. It aimed also, through the Network on Environmentally Sustainable Transport for Latin America and the Caribbean (NESTLAC), to ensure widespread dissemination of the benefits of the new systems within the countries and region through outreach and dissemination activities. NESTLAC therefore was expected to play a key role in the process of dissemination and awareness creation, but also in assisting in the actual implementation of the demonstration projects. The 3 initially selected cities face similar transport problems, and would, during the course of project implementation, undertake similar activities to address their problems. In accordance with NESTLAC’s objectives, this would give the possibility to exchange information and experience, and to benefit from synergies. The project would also interact with other projects. For instance, it would make use of, and build on, the BRT planning guide being developed in another UNEP MSP (Dar-es-Salaam and Cartegena). The project would further be linked, learn from and exchange information with the project TRANSANTIAGO.

Project objectives and components

The project’s overall objective was “to create the needed awareness and understanding of the benefits of sustainable transport project implementation among politicians, decision makers and stakeholders of the Latin American (LA) region, which may lead to the actual

implementation of sustainable transport projects in the various countries of the region". This would be achieved by facilitating and widely disseminating the implementation of 3 demonstration projects in the cities mentioned above, projects which in turn address 3 specific aspects of transport sustainability, namely, Bus Rapid Transit (BRT), Bus Regulation and Planning (BRP) and Non-motorised Transport (NMT). To further facilitate the overall objective of this project, a set of guidelines for the planning and implementation of transport projects addressing the 3 sustainability aspects mentioned above, would be prepared by the UNEP Risø Centre (URC).

The project's immediate objective was "to improve mobility, increase non-motorized transportation and reduce transport GHG emissions in Guatemala City, Panama City and Concepción, Chile". The project also had an expected overall outcome which was "extensive use of produced guidelines for the implementation of sustainable transport projects addressing aspects such as BRT, BRP and NMT". Therefore, the project included activities to ensure dissemination of the 3 cities' activities across the broad Latin American region. These would include posting on NESTLAC's website, the mid-project and end-of-project regional workshop outputs, and the preparation of guidelines for the implementation of sustainable projects of this type that could be used by other regional cities.

The project had no formal "components" but its activities were subdivided in four categories: one for common project activities and one for each demonstration city. As the support to Panama City was cancelled (see paragraph…) this "component" was replaced by regulation and planning support to the bus system of the city of Concepción (Chile). Project "components" and their expected outcomes are presented in table 2.

Table 2. Project "components", outcomes and key outputs

Components	Outcomes	Key Outputs
Component I Common Project Activities	Project lessons and guidelines for sustainable transport project implementation effectively disseminated across the LAC Region	Project Management Information posting on NESTLAC website Progress Dissemination Workshops & Reports posted on NESTLAC website Guidelines for sustainable transport projects implementation
Component II Bus Rapid Transit – Second Corridor in Guatemala City	Implementation of the second BRT TRANSMETRO corridor in Guatemala City in a manner that incorporates all the sustainability aspects.	Origin-destination survey Traffic counts Market demand / willingness to pay analysis Land use plan Public consultation BRT formulation and design for implementation Operational cost assessment Sensitisation process Operational framework Design of the legal regulatory framework

		Construction phase of the BRT corridor
Component III Non-motorized transport in Concepción	Behavioural changes in Concepción's inhabitants leading to a shift from private motorized to non-motorized transportation and to corresponding benefits.	Current situation assessment. Strategy elaboration to effectively encourage the use of bicycles Pilot plan execution Safety proposal and elaboration of an informative brochure Engineering study to construct the first 14 km of bicycle lanes Engineering study for another 10 km of bicycle lanes Construction of 24 km of bicycle lane. Monitoring and Evaluation
Component IV Regulation and Planning of the Bus System in ~~Panama City~~ Concepción	Implementation of a BRP program in Concepción leading to a more effective functioning of the SUBTRANS bus system of Concepción.	Design of an integrated electronic fare collection, fleet management and information system for operators, authority and passengers

Executing Arrangements

The GEF Implementing Agency for this project was UNEP and the overall Executing Agency was the UNEP Risø Centre (URC) at Denmark's Technical University (DTU). The local collaborating/executing agency in Chile was the Sub Secretariat of Transport of the Government of Chile (SUBTRANS) based in Santiago, and the Secretariat for Transport Planning of the Government of Chile for the South area of Chile (SECTRA) based in Concepción. The local executing agency in Guatemala was the Municipality of Guatemala City. The local executing agency in Panama City was expected to be the Transit and Road Transport Authority (ATTT).

Project Cost and Financing

Table 3 presents a summary of expected financing sources for the project as presented in the Project Document. The GEF provides the lion's share of financing to the project (US$985,750) disbursed to the project through UNEP. This puts the project in the Medium-size Project (MSP) category. The project was expected to mobilize another US$1.42 million in co-financing, mostly from Governments but also some in-kind contributions from the UNEP Risoe Center (about US$103,000).

Table 3. Estimated project costs per component and financing source

Component	GEF	Co-financing Governments	URC	Total	%
Comp I: Project Management & Outreach	270,750		28000	298,750	12.4
Comp II: Guatemala City - Bus Rapid Transit	250,000	380,000	25,000	655,000	27.2
Comp III: Concepción - Non-motorized	240,000	151,000	25,000	416,000	17.3

Transport					
Comp IV: ~~Panama City~~ Concepción - Bus Regulation & Planning	200,000	789,600	25,000	1,014,600	42.1
PDF A	25,000			25,000	1.0
Total Project Financing	985,750	1,320,600	103,000	2,409,350	100.0

Source: UNEP Approved Project Document – April 2006

Implementation Issues

Due to the delay and, ultimately, lack of response from the Transit and Road Transport Authority (ATTT) of Panama City, the intended demonstration in Panama City was abandoned. This was decided after several follow-up missions conducted by Jorge Rogat (Project Manager at URC/Risoe) with the objective of getting Panama City on track. The decision to cancel the support to Panama City was taken jointly by UNEP-GEF and URC/Risoe. At that point, Concepción was in need of assistance to implement a BRP program for the public transport of the city, where improvements in the fare collecting system for the buses of Concepción was needed. It was decided between the IA and EA that the funding allocated to Panama City could be instead used for Concepción, which would remain in line with NESTLAC objectives.

On February 27, 2010, an 8.8 magnitude earthquake struck the city of Concepción, killing more than 500 people and injuring thousands nationwide. Following the earthquake, geologists relying on GPS data concluded that the city had been displaced roughly 3 meters to the west as a result of the event. Fortunately, the city avoided the tsunami that followed the earthquake. The earthquake has left deep scars in the infrastructure of the city.

TERMS OF REFERENCE FOR THE EVALUATION

Objective and Scope of the Evaluation

In line with the UNEP Evaluation Policy, the UNEP Evaluation Manual and the Guidelines for GEF Agencies in Conducting Terminal Evaluations, the terminal evaluation of the Project "Promoting Environmentally Sustainable Transport in Latina America" is undertaken one year after 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 learning, feedback, and knowledge sharing through results and lessons learned among UNEP, the GEF and their partners. Therefore, the evaluation will identify lessons of operational relevance for future project formulation and implementation. It will focus on the following sets of key questions, based on the project's intended outcomes, which may be expanded by the consultants as deemed appropriate:

How and to what extent did the project support the development of an effective, efficient and viable second BRT TRANSMETRO corridor in Guatemala City? In how far have economic, social and environmental dimensions been taken into consideration in the planning process? How was the BRT used to strengthen Transportation Demand Management, build image of public transport and improve pedestrian and Non-motorized Transport? Ultimately, how does project support link up to decreasing congestion, time spent on travelling and CO_2 emissions in Guatemala City?

How did the project promote behavioural changes in Concepción's inhabitants leading to a shift from private motorized to non-motorized transportation? To what extent was the project approach successful in increasing public and political awareness and acceptance of the bicycle as a valid mode of transportation? Has the project led to any new policies to facilitate and promote the use of the bicycle in the longer term? Is there evidence of further development of cycling paths in the city? Ultimately, how does project support link up to decreasing congestion, time spent on travelling and CO_2 emissions in Concepción?

Did the project effectively support the creation of an integrated electronic fare collection, fleet management and information system for operators, authority and passengers the SUBTRANS bus system of Concepción? To what extent did the project contribute to a more effectively and efficiently functioning bus system in Concepción?

Were project lessons and guidelines for sustainable transport project implementation effectively disseminated across the LAC Region? Is there any evidence of other cities in the pilot countries or in the wider LAC Region learning from the demonstration cities and adopting lessons learned and good practices from the project demonstrations?

Overall Approach and Methods

The terminal evaluation of the Project "Promoting Environmentally Sustainable Transport in Latina America" will be conducted by independent consultants under the overall responsibility and management of the UNEP Evaluation Office (Nairobi), in consultation with the UNEP GEF Coordination Office (Nairobi), the UNEP Task Manager at UNEP/DTIE and the UNEP URC/Risoe Center (Denmark).

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.

The findings of the evaluation will be based on the following:

A desk review of project documents and others including, but not limited to:

Relevant background documentation, inter alia UNEP and GEF policies, strategies and programmes pertaining to sustainable transport;

Project design documents; Annual Work Plans and Budgets or equivalent, revisions to the logical framework and project financing;

Project reports such as progress and financial reports from the executing partners to the Project Management Unit (PMU) and from the PMU to UNEP; Steering Group meeting minutes; annual Project Implementation Reviews and relevant correspondence;

Documentation related to project outputs;

Review of media articles over the last 3-4 years concerning the transport systems in the project cities.

Interviews with:

Project management and execution support at UNEP URC/Risoe Center (Denmark);

UNEP Task Manager and Fund Management Officer (Nairobi);

The project management units, project teams and technical support including the staff at SUBTRANS (Santiago - Chile), SECTRA (Concepción – Chile) and the Municipality of Guatemala City. Specifically, persons to be interviewed should include:

SUBTRANS: Head of the Studies and Development Unit

SECTRA: Head of South Area

Municipality of Guatemala City: Mayor of Guatemala City

Mid-level personnel at SUBTRANS and SECTRA.

Mid-level personnel responsible for infrastructure and operations of the BRT system of Guatemala City, TRANSMETRO.

Relevant staff of GEF Secretariat;

Representatives of other multilateral agencies and other relevant organisations.

Country visits. The evaluation team will visit both Chile

(Santiago and Concepción) and Guatemala (Guatemala City) to observe the transport systems and meet with key stakeholders, including users.

Key Evaluation principles

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.

The evaluation will assess the project with respect to a minimum set of evaluation criteria grouped in four categories: (1) Attainment of objectives and planned results, which comprises the assessment of outputs achieved, relevance, effectiveness and efficiency and the review of outcomes towards impacts; (2) Sustainability and catalytic role, which focuses on financial, socio-political, institutional and ecological factors conditioning sustainability of project outcomes, and also assesses efforts and achievements in terms of replication and up-scaling of project lessons and good practices; (3) Processes affecting attainment of project results, which covers project preparation and readiness, implementation approach and management, stakeholder participation and public awareness, country ownership/driven-ness, project finance, UNEP and UNDP supervision and backstopping, and project monitoring and evaluation systems; and (4) Complementarity with the UNEP, UNDP and UNIDO strategies and programmes. The lead consultant can propose other evaluation criteria as deemed appropriate.

Ratings. All evaluation criteria will be rated on a six-point scale. However, complementarity of the project with the UNEP, UNDP and UNIDO strategies and programmes is not rated. Annex 2 provides detailed guidance on how the different criteria should be rated and how ratings should be aggregated for the different evaluation criterion categories.

In attempting to attribute any outcomes and impacts to the project, 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 and trends in relation to the intended project outcomes and impacts. This 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 and trends 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.

As this is a terminal evaluation, particular attention should be given to learning from the experience. Therefore, the “why?” question should be at front of the consultants’ minds all through the evaluation exercise. This means that the consultants needs 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 3). 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 assessment of “where things stand” today.

Evaluation criteria

Attainment of Objectives and Planned Results

The evaluation should assess the relevance of the project’s objectives and the extent to which these were effectively and efficiently achieved or are expected to be achieved.

Achievement of Outputs and Activities: Assess, for each component, the project’s success in producing the programmed outputs as presented in Table 2 above, both in quantity and quality, as well as their usefulness and timeliness. Briefly explain the degree of success of the

project in achieving its different outputs, cross-referencing as needed to more detailed explanations provided under Section 3 (which covers the processes affecting attainment of project objectives).

Relevance: Assess, in retrospect, whether the project's objectives and implementation strategies were consistent with the UNEP mandate and policies at the time of design and implementation; and the GEF Climate Change focal area, strategic priorities and the relevant operational program(s).

Effectiveness: Appreciate to what extent the project has achieved its immediate objective "to improve mobility, increase non-motorized transportation and reduce transport GHG emissions in Guatemala City, Panama City and Concepción, Chile" and its component outcomes as presented in Table 2 above. To measure achievement, use as much as appropriate the indicators for achievement in the Logical Framework Matrix (Logframe) of the project of the latest RIP (FY 2009), adding other relevant indicators as appropriate. Briefly explain what factors affected the project's success in achieving its objectives, cross-referencing as needed to more detailed explanations provided under Section 3. There are some questions of specific interest which the evaluation should certainly consider:

Guatemala City: Effectiveness of measures to increase passenger flow/bus flow, such as resizing of busses and stations along planned corridors, bus priority at intersections (or tunnels or fly-overs), fleet management with a control center and/or other solutions to avoid bus bunching & improve bus spacing, inclusion of clauses of merit with penalties and incentives in bus service contracts with private companies etc.

Integrated electronic fare collection in Concepción: Effectiveness of the system in speeding up passenger flows, reduce revenue leakage and provide data on origin-destination of bus passengers for better planning of bus operation. To what extent does the new electronic ticketing system integrate with the rest of the public transport system and with the accounting system, as to provide Concepción with real time information on revenue and passenger-transfer data? Are the necessary conditions in place for the integrated electronic fare collection system to function properly?

Non-motorized transport in Concepcion: how effective were the publicity campaigns, safety measures and newly constructed cycling routes in promoting a shift from private motorized to non-motorized transportation in the city?

Outreach: How effectively were project lessons and guidelines for sustainable transport project implementation disseminated across the LAC Region? Reference should be made to the section on catalytic role and replication as appropriate (D.2).

Efficiency: Assess the cost-effectiveness and timeliness of project execution. Describe any cost- or time-saving measures put in place in attempting to bring the project to a successful conclusion within its programmed budget and (extended) time. Wherever possible, compare the cost and time over results ratios of the project with that of other similar projects. 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.

Review of Outcomes to Impacts (ROtI): Reconstruct the logical pathways from project outputs over achieved objectives towards impacts, taking into account performance and impact drivers, assumptions and the roles and capacities of key actors and stakeholders, using the methodology presented in the GEF Evaluation Office's ROtI Practitioner's Handbook (summarized in Annex 6 of the TORs). Assess to what extent the project has to date

contributed, and is likely in the future to further contribute to changes in stakeholder behaviour as regards: i) Awareness and understanding of the benefits of sustainable transport project implementation among politicians, decision makers and stakeholders of the Latin American (LA) region, resulting in ii) the actual implementation of new sustainable transport projects in the various countries of the region. Estimate how these projects would lead to environmental benefits such as reduced transport GHG emissions.

Sustainability and catalytic role

Sustainability is understood as the probability of continued long-term project-derived results and impacts after the external project funding and assistance ends. The evaluation will identify and assess the key conditions or factors that are likely to undermine or contribute to the persistence of benefits. Some of these factors might be direct results of the project while others will include contextual circumstances or developments that are not under control of the project but that may condition sustainability of benefits. The evaluation should ascertain to what extent follow-up work has been initiated and how project results will be sustained and enhanced over time. Application of the ROtI method will assist in the evaluation of sustainability.

Four aspects of sustainability will be addressed:

Socio-political sustainability. Are there any social or political factors that may influence positively or negatively the sustenance of project results and progress towards impacts? Is the level of ownership by the main national and regional stakeholders sufficient to allow for the project results to be sustained? Are there sufficient government and stakeholder awareness, interests, commitment and incentives to execute, enforce and pursue the programmes, plans, agreements, monitoring systems etc. prepared and agreed upon under the project?

Financial resources. To what extent are the continuation of project results and the eventual impact of the project dependent on continued financial support? What is the likelihood that adequate financial resources will be or will become available to implement the programmes, plans, agreements, monitoring systems etc. prepared and agreed upon under the project? Are there any financial risks that may jeopardize sustenance of project results and onward progress towards impact?

Institutional framework. To what extent is the sustenance of the results and onward progress towards impact dependent on issues relating to institutional frameworks and governance? How robust are the institutional achievements such as governance structures and processes, policies, sub-regional agreements, legal and accountability frameworks etc. required to sustaining project results and to lead those to impact on human behaviour and environmental resources? A specific question of interest in the case of TRANSMETRO would be whether there any critical political and regulatory obstacles that need to be overcome to achieve and maintain project objectives in the long term. What are the opportunities and obstacles for expansion of the feeder system and the BRT corridors to other parts of the city?

Environmental sustainability. Are there any environmental factors, positive or negative, that can influence the future flow of project benefits? Are there any project outputs or higher level results that are likely to affect the environment, which, in turn, might affect sustainability of project benefits?

Catalytic Role and Replication. The *catalytic role* of GEF-funded interventions is embodied in their approach of supporting the creation of an enabling environment and of investing in pilot activities which are innovative and showing how new approaches can work. UNEP, UNDP and the GEF also aim to support activities that upscale new approaches to a national, regional or global level, with a view to achieve sustainable global environmental benefits. The evaluation will assess the catalytic role played by this project, namely to what extent the project has: *catalysed behavioural changes* in terms of use and application by the relevant stakeholders of: i) technologies and approaches show-cased by the demonstration projects; ii) strategic programmes and plans developed; and iii) assessment, monitoring and management systems established at a national and sub-regional level; provided *incentives* (social, economic, market based, competencies etc.) to contribute to catalysing changes in stakeholder behaviour; contributed to *institutional changes.* An important aspect of the catalytic role of the project is its contribution to institutional uptake or mainstreaming of project-piloted approaches in the regional and national demonstration projects; contributed to *policy changes* (on paper and in implementation of policy); contributed to sustained follow-on financing (*catalytic financing*) from Governments, the GEF or other donors; created opportunities for particular individuals or institutions ("*champions*") to catalyse change (without which the project would not have achieved all of its results).

Replication, in the context of GEF projects, is defined as lessons and experiences coming out of the project that are replicated (experiences are repeated and lessons applied in different geographic areas) or scaled up (experiences are repeated and lessons applied in the same geographic area but on a much larger scale and funded by other sources). The evaluation will assess the approach adopted by the project to promote replication effects and appreciate to what extent actual replication has already occurred or is likely to occur in the near future. In this particular case, the evaluation will assess the efforts made by the project to disseminate achievements and lessons learned in Guatemala City and Concepcion in Latin America and determine whether there is any evidence of replication in other cities in Guatemala and Chile, or in the wider region, of project results and good practices. What are the factors that may influence replication and scaling up of project experiences and lessons?

Processes affecting attainment of project results

Preparation and Readiness. Were the project's objectives and components clear, practicable and feasible within its timeframe? Were the capacities of executing agencies properly considered when the project was designed? Was the project document clear and realistic to enable effective and efficient implementation? Were the partnership arrangements properly identified and the roles and responsibilities negotiated prior to project implementation? Were counterpart resources (funding, staff, and facilities) and enabling legislation assured? Were adequate project management arrangements in place? Were lessons from other relevant projects properly incorporated in the project design? Were lessons learned and recommendations from Steering Committee meetings adequately integrated in the project approach? What factors influenced the quality-at-entry of the project design, choice of partners, allocation of financial resources etc.?

Implementation Approach and Adaptive Management. This includes an analysis of approaches used by the project, its management framework, the project's adaptation to changing conditions (adaptive management), the performance of the implementation arrangements and

partnerships, relevance of changes in project design, and overall performance of project management. The evaluation will:

Ascertain to what extent the project implementation mechanisms outlined in the project document have been followed and were effective in delivering project outputs and outcomes. Were pertinent adaptations made to the approaches originally proposed?

Assess the role and performance of the units and committees established and the project execution arrangements at all levels.

Evaluate the effectiveness and efficiency of project management by the URC and how well the management was able to adapt to changes during the life of the project. How did the relationship between URC and the local executing agencies in the two cities function?

Determine the performance of the local collaborating/executing agencies (Sub Secretariat of Transport of the Government of Chile (SUBTRANS), Secretariat for Transport Planning of the Government of Chile for the South area of Chile (SECTRA), and the Municipality of Guatemala City; Assess the extent to which project management responded to direction and guidance provided by the Steering Committee and UNEP supervision recommendations; Identify administrative, operational and/or technical problems and constraints that influenced the effective implementation of the project, and how the project partners tried to overcome these problems.

Stakeholder Participation and Public Awareness. The term stakeholder should be considered in the broadest sense, encompassing project partners, government institutions, private interest groups, local communities etc. The assessment will look at three related and often overlapping processes: (1) information dissemination between stakeholders, (2) consultation between stakeholders, and (3) active engagement of stakeholders in project decision making and activities. The evaluation will specifically assess: the approach(es) used to identify and engage stakeholders in project design and implementation. What were the strengths and weaknesses of these approaches with respect to the project's objectives and the stakeholders' motivations and capacities? What was the achieved degree and effectiveness of collaboration and interactions between the various project partners and stakeholders during the course of implementation of the project? the degree and effectiveness of any public awareness activities that were undertaken during the course of implementation of the project; The evaluation will assess the attitude of the media, the general public and the politicians towards BRT and non-motorized transport through a review of media articles covering the last 2-3 years; how the project has stimulated active engagement and motivation of city dwellers and civil society to use, promote, help maintain, improve and keep safe the public and non-motorized transport systems in the two cities.

The ROtI analysis should assist the consultants in identifying the key stakeholders and their respective roles, capabilities and motivations in each step of the causal pathway from activities to achievement of outputs and objectives to impact.

Country Ownership and Driven-ness. The evaluation will assess the performance of the local Governments of the three cities involved in the project (including Panama City), namely:

in how the city/municipal Governments have assumed responsibility for the project and provided adequate support to project execution, including the degree of cooperation received from the various contact institutions in the countries involved in the project and the timeliness of provision of counter-part funding to project activities; to what extent the political and institutional framework of the participating countries has been conducive to project performance; to what extent the Governments have promoted the participation of communities and their non-governmental organisations in the project; and how responsive the government partners were to URC coordination and guidance, and to UNEP supervision.

Financial Planning and Management. Evaluation of financial planning requires assessment of the quality and effectiveness of financial planning and control of financial resources throughout the project's lifetime. The assessment will look at actual project costs by activities compared to budget (variances), financial management (including disbursement issues), and co-financing. The evaluation will:

Verify the application of proper standards (clarity, transparency, audit etc.) and timeliness of financial planning, management and reporting to ensure that sufficient and timely financial resources were available to the project and its partners;

Appreciate other administrative processes such as recruitment of staff, procurement of goods and services (including consultants), preparation and negotiation of cooperation agreements etc. to the extent that these might have influenced project performance;

Present to what extent co-financing has materialized as expected at project approval (see Table 1). Report country co-financing to the project overall, and to support project activities at the national level in particular. The evaluation will provide a breakdown of final actual costs and co-financing for the different project components (see tables in Annex 3).

Describe the resources the project has leveraged since inception and indicate how these resources are contributing to the project's ultimate objective. Leveraged resources are additional resources—beyond those committed to the project itself at the time of approval—that are mobilized later as a direct result of the project. Leveraged resources can be financial or in-kind and they may be from other donors, NGO's, foundations, governments, communities or the private sector.

UNEP Supervision and Backstopping. The purpose of supervision is to verify the quality and timeliness of project execution in terms of finances, administration and achievement of outputs and outcomes, in order to identify and recommend ways to deal with problems which arise during project execution. Such problems may be related to project management but may also involve technical/institutional substantive issues (e.g. the process leading up to the creation of the GCC) in which UNEP or UNDP have a major contribution to make. The evaluators should assess the effectiveness of supervision and administrative and financial support provided by UNEP including:

The adequacy of project supervision plans, inputs and processes;

The emphasis given to outcome monitoring (results-based project management);

The realism and candour of project reporting and ratings (i.e. are PIR ratings an accurate reflection of the project realities and risks);

The quality of documentation of project supervision activities; and

Financial, administrative and other fiduciary aspects of project implementation supervision.

Monitoring and Evaluation. The evaluation will include an assessment of the quality, application and effectiveness of project monitoring and evaluation plans and tools, including an assessment of risk management based on the assumptions and risks identified in the project document. The evaluation will appreciate how information generated by the M&E system during project implementation was used to adapt and improve project execution, achievement of outcomes and ensuring sustainability. M&E is assessed on three levels:

M&E Design. Projects should have sound M&E plans to monitor results and track progress towards achieving project objectives. An M&E plan should include a baseline (including data, methodology, etc.), SMART indicators and data analysis systems, and evaluation studies at specific times to assess results. The time frame for various M&E activities and standards for outputs should have been specified. The evaluators should use the following questions to help assess the M&E design aspects:

Quality of the project logframe as a planning and monitoring instrument; analyse/compare logframe in Project Document, revised logframe (2008) and logframe used in Project Implementation Review reports to report progress towards achieving project objectives;

SMART-ness of indicators: Are there specific indicators in the logframe for each of the project objectives? Are the indicators measurable, attainable (realistic) and relevant to the objectives? Are the indicators time-bound?

Adequacy of baseline information: To what extent has baseline information on performance indicators been collected and presented in a clear manner? Was the methodology for the baseline data collection explicit and reliable?

Arrangements for monitoring: Have the responsibilities for M&E activities been clearly defined? Were the data sources and data collection instruments appropriate? Was the frequency of various monitoring activities specified and adequate? In how far were project users involved in monitoring?

Arrangements for evaluation: Have specific targets been specified for project outputs? Has the desired level of achievement been specified for all indicators of objectives and outcomes? Were there adequate provisions in the legal instruments binding project partners to fully collaborate in evaluations?

Budgeting and funding for M&E activities: Determine whether support for M&E was budgeted adequately and was funded in a timely fashion during implementation.

M&E Plan Implementation. The evaluation will verify that:

the M&E system was operational and facilitated timely tracking of results and progress towards projects objectives throughout the project implementation period;

annual project reports and Progress Implementation Review (PIR) reports were complete, accurate and with well justified ratings;

the information provided by the M&E system was used during the project to improve project performance and to adapt to changing needs;

projects had an M&E system in place with proper training, instruments and resources for parties responsible for M&E.

Complementarities with UNEP strategies and programmes

UNEP aims to undertake GEF funded projects that are aligned with its own strategies. The evaluation should present a brief narrative on the following issues:

Linkage to UNEP's Expected Accomplishments and POW 2010-2011. The UNEP MTS specifies desired results in six thematic focal areas. The desired results are termed Expected Accomplishments. Using the completed ROtI analysis, the evaluation should comment on whether the project makes a tangible contribution to any of the Expected Accomplishments specified in the UNEP MTS. The magnitude and extent of any contributions and the causal linkages should be fully described. Whilst it is recognised that UNEP GEF projects designed prior to the production of the UNEP Medium Term Strategy (MTS) / Programme of Work (POW) 2010/11 would not necessarily be aligned with the Expected Accomplishments articulated in those documents, complementarities may still exist.

Alignment with the Bali Strategic Plan (BSP). The outcomes and achievements of the project should be briefly discussed in relation to the objectives of the UNEP BSP.

Gender. Ascertain to what extent project design, implementation and monitoring have taken into consideration: (i) possible gender inequalities in access to and the control over natural resources; (ii) specific vulnerabilities of women and children to environmental degradation or disasters; and (iii) the role of women in mitigating or adapting to environmental changes and engaging in environmental protection and rehabilitation. Appreciate whether the intervention is likely to have any lasting differential impacts on gender equality and the relationship between women and the environment. To what extent do unresolved gender inequalities affect sustainability of project benefits?

South-South Cooperation. This is regarded as theexchange of resources, technology, and knowledge between developing countries. Briefly describe any aspects of the project that could be considered as examples of South-South Cooperation.

The Consultants' Team

For this evaluation, one independent consultant will be hired, preferably from the LAC region. The consultant should have recognized experience in project evaluation, planning and modernizing municipal transport systems including BRT and NMT in similar countries in Latin America and be fluent in both Spanish and English. The consultant will be responsible for data collection and analysis, and preparing the main report for the evaluation. (S)He will ensure that all evaluation criteria are adequately covered.

By undersigning the service contract with UNEP/UNON, the consultant certifies that (s)he has not been associated with the design and implementation of the project in any way which may jeopardize his(her) independence and impartiality towards project achievements and project partner performance. In addition, (s)he will not have any future interests (within six months after completion of the contract) with the project's executing or implementing units.

Evaluation Deliverables and Review Procedures

The main evaluation report should be brief (no longer than 35 pages – excluding the executive summary and annexes), to the point and written in plain English. The consultant may produce the draft report in Spanish, but will be requested to provide a high quality report in English by the end of the assignment. The report will follow the annotated Table of Contents outlined in

Annex 1. It must explain the purpose of the evaluation, exactly what was evaluated and the methods used (with their limitations). The report will present evidence-based and balanced findings, consequent conclusions, lessons and recommendations, which will be cross-referenced to each other. The report should be presented in a way that makes the information accessible and comprehensible. Any dissident views in response to evaluation findings will be appended in footnote or annex as appropriate.

Review of the draft evaluation report. The consultant will submit the zero draft report latest two weeks after the last country visit has been completed (i.e. tentatively by August 21, 2011) to the UNEP EO and revise the draft following the comments and suggestions made by the EO. The EO will then share the first draft report with the UNEP GEF Coordination Office (Nairobi) and the UNEP Riso Centre for review and comments. The UNEP Riso Centre will forward the first draft report to the other project stakeholders, in particular the Sub Secretariat of Transport of the Government of Chile (SUBTRANS), the Secretariat for Transport Planning for the South area of Chile (SECTRA) and the Municipality of Guatemala City. Stakeholders may provide feedback on any errors of fact and may highlight the significance of such errors in any conclusions. Comments would be expected within three weeks after the draft report has been shared. Any comments or responses to the draft report will be sent to the UNEP EO for collation. The EO will provide the comments to the consultant for consideration in preparing the final draft report. The consultant will submit the final draft report no later than 2 weeks after reception of stakeholder comments. The consultant will prepare a response to all comments that contradict the findings of the evaluation and could therefore not be accommodated in the final report. This response will be shared by the EO with the interested stakeholders to ensure full transparency.

Consultations will be held between the consultant, EO staff, the UNEP/GEF and key members of the project execution team, including URC project staff. These consultations will seek feedback on the proposed recommendations and lessons.

Submission of the final Terminal Evaluation report. The final report shall be submitted by Email to:

Segbedzi Norgbey, Head

UNEP Evaluation Office

P.O. Box 30552-00100

Nairobi, Kenya

Tel.: (+254-20) 762 3387

Email: **segbedzi.norgbey@unep.org**

The Head of Evaluation will share the report with the following persons:

Maryam Niamir-Fuller, Director

UNEP/GEF Coordination Office

P.O. Box 30552-00100

Nairobi, Kenya

Tel: (+254-20) 762 4686

Email: **maryam.niamir-fuller@unep.org**

Peerke de Bakker

Programme Officer, Energy

UNEP/DTIE

P.O. Box 30552-00100

Nairobi, Kenya

Tel: (+254-20) 7623 257

Email: **peerke.debakker@unep.org**

John Christensen, Head of Centre

UNEP Risoe Centre on Energy, Environment and Sustainable Development (URC)

Risoe National Laboratory for Sustainable Energy

Technical University of Denmark

Frederiksborgvej 399, Bldg. 142

P.O. Box 49

DK 4000 Roskilde, Denmark

Tel + 45 46 77 51 30

Email: joch@risoe.dtu.dk

The final evaluation report will be published on the UNEP Evaluation Office web-site **www.unep.org/eou** and may be printed in hard copy. Subsequently, the report will be sent to the GEF Office of Evaluation for their review, appraisal and inclusion on the GEF website.

As per usual practice, the UNEP EO will prepare a quality assessment of the zero draft and final draft report, which is a tool for providing structured feedback to the evaluation consultants. The quality of the report will be assessed and rated against both GEF and UNEP criteria as presented in Annex 4.

The UNEP Evaluation Office will also prepare a commentary on the final evaluation report, which presents the EO ratings of the project based on a careful review of the evidence collated by the evaluation consultant and the internal consistency of the report. These ratings are the final ratings that the UNEP Evaluation Office will submit to the GEF Office of Evaluation.

Resources and Schedule of the Evaluation

This Terminal Evaluation will be undertaken by an independent evaluation consultant contracted by the UNEP Evaluation Office. The consultant will work under the overall responsibility of the UNEP Evaluation Office and will consult with the EO on any procedural and methodological matters related to the evaluation. It is, however, the consultant's

individual responsibility to arrange for his(her) travel, obtain documentary evidence, meetings with stakeholders, field visits, and any other logistical matters related to the assignment. The UNEP Task Manager, UNEP Riso Centre and national project staff will provide logistical support (introductions, meetings, transport, lodging etc.) for the country visits where necessary, allowing the consultant to conduct the evaluation as efficiently and independently as possible.

The consultant will be hired for 63 days. (S)He will travel to Chile (tentatively from June 27 to July 5, 2011) and Guatemala (tentatively from August 1 to August 7, 2011).

DELIVERY TRANSLATED FINAL REPORT September 5, 2011

Schedule Of Payment

The consultant will be hired under an individual Special Service Agreement (SSA). The fee will be estimated as a lumpsum, inclusive of all expenses such as travel, accommodation and incidental expenses.

The consultant will receive an initial payment covering the travel costs upon signature of the contract.

The consultant will receive 40% of the honorarium portion of his(her) fee upon acceptance of a draft report deemed complete and of acceptable quality by the EO. The remainder will be paid upon satisfactory completion of the work, i.e. upon delivery of the final evaluation report in English.

In case the consultant is not able to provide the deliverables in accordance with these TORs, in line with the expected quality standards by the UNEP Evaluation Office, payment may be withheld at the discretion of the Head of the Evaluation Office until the consultant has improved the deliverables to meet UNEP's quality standards.

If the consultant fails to submit a satisfactory final product to UNEP in a timely manner, i.e. within one month after the end date of his(her) contract, the Evaluation Office reserves the right to employ additional human resources to finalize the report, and to reduce the consultant's fees by an amount equal to the additional costs borne by the Evaluation Office to bring the report up to standard.

5.2 Interviewees and evaluation itinerary

Date	Representative	Contact	Status
26-jun-11	Sofía Lopez *Macleta*	sofia@macleta.cl	Confirmed
26-jun-11	Magdalena Morel *Ciudad Viva*	magdamorel@ciudadviva.cl Dominica 14 Santiago Chile	Confirmed
27-jun-11	Guillermo Cuadra *IGYC* *Head of the company*	gcuadra@igyc.cl Guardia Vieja 255-219 Santiago Chile	Confirmed
28-jun-11	Mauricio Casanova *MTT* *Head of studies & development unit*	mcasanova@mtt.cl Amunategui 139, 7th floor Santiago Chile	Confirmed
28-jun-11	Pedro Vidal *MTT*	pvidal@mtt.cl Amunategui 139, 7th floor Santiago Chile	Confirmed
28-jun-11	Cristian Navas *MTT* *Engineering Advisor*	cnavas@mtt.cl Moneda 975, 6th floor Santiago Chile	Confirmed
29-jun-11	Hector Díaz *SOLUTIVA Consultores (Director)*	hdiaz@solutiva.com Diagnonal Pedro Aguirre 1122-102 Concepcion Chile	Confirmed
30-jun-11	Natalia Akiki *SECTRA Sur* *Head of South area*	nakiki@sectra.cl Av. Padre Hurtado 570 Concepcion Chile	Confirmed
30-jun-11	Italo San Nicolo *SECTRA SUR*	isannicolo@sectra.cl Av. Padre Hurtado 570 Concepcion Chile	Confirmed
30-jun-11	Hugo Rubilar *Transport advisor*	hrubilar@multiruta.cl	Confirmed
30-jun-11	Camilo Mejias *Bike user*	camilomejiasn@gmail.com	Confirmed
30-jun-11	Alvaro F. González *Ciclobio (club)*	agonzr@gmail.com	Confirmed
01-jul-11	Hernán Ascui *Professor at University of BioBio*	hascuif@gmail.com	Confirmed
25-jul-11	Fabricio González	fabergg@yahoo.com	Confirmed

	Municipality of Guatemala *Head of Urban Mobility unit*	21 Calle 6-77 Zona 1 Guatemala, Guatemala	
26-jul-11	Alessandra Lossau *Municipality of Guatemala*	algarcia@muniguate.com 21 Calle 6-77 Zona 1 Guatemala, Guatemala	Confirmed
26-jul-11	Eddy Morataya *Municipality of Guatemala*	emorataya@muniguate.com 21 Calle 6-77 Zona 1 Guatemala, Guatemala	Confirmed
27-jul-11	Álvaro E. Arzú *Mayor of Guatemala City*	21 Calle 6-77 Zona 1 Guatemala, Guatemala	Confirmed
27-jul-11	Irma Rodas *Municipality of Guatemala* *Head of International Cooperation unit*	irmarodas@muniguate.com 21 Calle 6-77 Zona 1 Guatemala, Guatemala	Confirmed
27-jul-11	Luisa Galdamez *Municipality of Guatemala*	lgaldamez@muniguate.com 21 Calle 6-77 Zona 1 Guatemala, Guatemala	Confirmed
29-jul-11	Marllory de León *Dinámica Bioambiental* *Project Manager*	dbmdl@dinamicabioambiental.com 3ª calle A 13-60 Res Villas de San Juan Zona 7 Guatemala, Guatemala	Confirmed
29-jul-11	Esteban Piedra Santa *Dinámica Bioambiental*	eps@dinamicabioambiental.com 3ª calle A 13-60 Res Villas de San Juan Zona 7 Guatemala, Guatemala	Confirmed
29-jul-11	Edin Rodas *Dinámica Bioambiental*	ventas@dinamicabioambiental.com 3ª calle A 13-60 Res Villas de San Juan Zona 7 Guatemala, Guatemala	Confirmed
22-ago-11	Amilcar Ordoñez *Green Development* *Technical Manager*	aordonez@greendevelopment.com.gt 8 calle 6-06 Oficina 606 Zona 1 Guatemala, Guatemala	Confirmed

5.3 Financing and Co-Financing Financial Statements

Table 5.1Financing Summary

Promoting Sustainable Transport in Latin America — Status as at 17/11/2010
GFL-2328-2712-4921/Rev.3 — *Amounts in US$
GF/4040-06-07

Component/Sub-component	2006	2007	2008	2009	2010	2011	Total
Personal Component							
Project Personnel							
Senior Economist/staff	13,333	36,780	6,000	24,300			80,413
Senior Economist/guidelines		2,400	11,880	38,234			52,514
Sub-total	13,333	39,180	17,880	62,534			132,927
Travel on official business							
Staff travel	4,444	13,129	5,027	3,109			25,709
Sub-total	4,444	13,129	5,027	3,109			25,709
Component total	17,777	52,309	22,907	65,643			158,636
SUB-CONTRACT COMPONENT							
Sub-contracts							
BRT (Guatemala City)	40,000		20,000	87,324			147,324
BRP (Panama City)			94,843		-94,843		
NMT (Concepcion)				135,776	94,843		230,619
Concepcion II (as replacement of Panama)				173,784	95,578		269,362
Sub-total	40,000		114,843	396,884	95,578		647,305
Component total	40,000		114,843	396,884	95,578		647,305
TRAINING COMPONENT							
Meetings/Conferences							
Kick-off meeting and workshops	12,762			15,020	-15,020		12,762
Sub-total	12,762			15,020	-15,020		12,762
Component total	12,762			15,020	-15,020		12,762
MISCELLANEOUS COMPONENT							
Reporting costs							
Printing of reports					3,846		3,846
Sub-total					3,846		3,846
Sundry							
Sundry	1,310	76			3,710		5,096
Programme support cost					1,310		1,310
Sub-total	1,310	76			5,020		6,406
Evaluation							
Terminal evaluation						131,795	131,795
Sub-total						131,795	131,795
Component total	1,310	76			8,866	131,795	142,047
GRAND TOTAL	**71,849**	**52,385**	**137,750**	**477,547**	**89,424**	**131,795**	**960,750**

Table 5.2 Financing by BRP Component Activity.

Studies	GEF Financing (USD)		MTT Financing (USD)		Total (USD)	
	Planned	Actual	Planned	Actual	Planned	Actual
Analysis of the incorporation of information and management technologies for public transport of Regions				92,652		92,652
Electronic Payment Systems	200,000	173,784			200,000	173,784
Development of Tender Guidelines				275,689		275,689
Management of Studies and Technical Counterpart				250,000		250,000
Total	**200,000**	**173,784**		**618,341**		**792,125**

Source: The planned budget was taken from the PD. The actual funds were taken from the document titled "MTT Co-Financing Project 2010/03."

Table 5.3 Financing by BRT Component Activity

Studies	GEF Financing (USD)		Municipality of Guatemala Financing (USD)			IDB Financing (USD)	Total (USD)	
	Planned	Actual	Planned in PD	Planned in Contract	Current	Current	Planned	Actual
1. Origin and Destination Surveys		18,093	50,000	50,000	7,771		50,000	25,864
2. Traffic Counting	23,250	72,050			6,069		23,250	78,119
3. Market Demand / Willingness to Pay Analysis			25,000	25,000	4,511		25,000	4,511
4. Land Use Plan	13,950			13,950	5,742	2,133	27,900	5,742
5. Public Consultation	9,300			9,300	6,809		18,600	6,809
6. Formulation and Design for Implementation	46,500				10,126		46,500	10,126
7. Evaluation of Operational Costs	9,300				8,335		9,300	8,335
8. Awareness Process	12,500		80,000	80,000	6,139	26,543	92,500	6,139
9. Operational Framework	23,250		75,000	75,000	7,026		98,250	7,026
10. Design of the Regulatory Legal Framework			150,000	150,000	10,644		150,000	10,644
11. Topography	46,500	23,653			3,668		46,500	27,320
12. Environmental Impact	4,650	5,389			4,857		4,650	10,247
13. Traffic Impact	9,300				5,712	2,994	9,300	5,712
14. Audits	1,500						1,500	0
15. M&E	50,000						50,000	??
TOTAL	**250,000**	**119,184**	**380,000**	**403,250**	**87,410**	**31,670**	**653,250**	**206,595**

* According to the Municipality of Guatemala, this activity is not yet complete. To date, only a draft of the report has been delivered by the company hired for this study (Grant Thornton). Source: The planned budget was taken from both the PD and the URC-Municipality Contract. Both are presented in the table. The Total Planned figures use information from the contract. Information of actual expenditures was taken from the Narrative Report 2010/03 of the Municipality of Guatemala.

Note: The financial statements from the NMT project conducted in Concepción have not been provided for the Final Evaluation. The only available records were submitted at the beginning of the project in the PD.

Table 5.4 Financing by NMT Component Activity

Studies	GEM Financing (USD)		MTT Financing (USD)		Total (USD)	
	Planned	Actual	Planned	Actual	Planned	Actual
1. Diagnosis of Current Situation	35,000				35,000	
2. Preparation of Strategy	50,000				50,000	
3. Execution of Pilot Program	50,000		50,000		100,000	
4. Preparation of the Safety Measures Informative brochure	35,000				35,000	
5. Engineering studies to decide on the construction of 14 km of bike paths along main corridors	50,000		35,000		85,000	
6. Engineering studies to decide on the construction of another 10 km of bike paths to link corridors			66,000		66,000	
7. Construction of the 24 km of Bike Lanes			3,040,033		3,040,033	
8. Monitoring and Evaluation	20,000				20,000	
Total	**240,000**		**3,191,033**		**3,431,033**	

Source: The planned budget was taken from the PD. Actual project expenditures were not available for final evaluation, and are therefore not included in the table.

5.4 Expertise of the Evaluation Team

ROSA ANGELICA CASTRO RODRIGUEZ
Ejercito Nacional 225 – B1703, Col Anahuác, Del. Miguel Hidalgo CP 11320
Ciudad de México (México)
Phones: Home (52) (55)26243423 Mobile (52) 1 (55)44482311
E-mail **angelcastro65@yahoo.com**
Date of birth: May 16, 1965
Marrital Status: Married no children

EXPERIENCE

TRANSCONSULT S.C.
Technical Director (9th June 2008 – up to now)
Leadership of 50 Engineers
Technical Leadership in different projects that the company are involved. The projects are planning for Public Transport, transport demand for highways and Infrastructure Design
Planning of the Mass Transport system based on buses for Optibus second phase (Leon – Guanajuato)
Transport Planning analysis for Mexibus BRT (Estado de México)
Mobility Master Plan in Tampico, Madero and Altamira (EStado de Tamaulipas)
Plannig of the "Tren Suburbano 2" (Estado de México)
Transport demand analysis for at least 10 urban and interurban highways
Mexibus and Chimalhuacan BRT Infrastructure design (Estado de México)

TRANSMILENIO S.A.
General Manager (1st February 2006 to 31st December 2007)

ADMINISTRATIVE and FINANCIAL MANAGEMENT
Leadership of 280 civil employees
Negotiations for the non formation of the union of the Company TRANSMILENIO S.A.
Organizational climate analysis
Relations with mass media and the Council of Bogota
Contractual negotiation with concessionaires of the System
Attainment of collateral resources for the sustainability of the Company TRANSMILENIO S.A.
Structuring of the mechanism of financing to achieve liquidity of resources of the Agreement Nation - District for the construction of the infrastructure of Phase III of the TransMilenio System
Programming, organization and coordination of the "Second and Third International Fairs of Mass Transport"
Member of the Board of directors of the FONDATT of the Secretary of Transit and Transport
President of the Board of directors of the Institute of Urban Development - IDU

TECHNICAL MANAGEMENT
Place in operation new services of Phase II of the TransMilenio System
Place in operation 15 km of new trunks, 110 km of feeder routes
Place in operation of the new signaling in stations and terminals

Attainment of license of frequencies for the communications of the TransMilenio System
Migration of the new methodology of communication between the buses equipped with GPS Systems
Upgrade of the operative Control center
Pursuit to the definitive designs of feasibility and of 36 km of new main corridors corresponding to Phase III of the System
Analysis of new technologies of engines for the buses
Design of new services for the TransMilenio System
Analysis of the capacity of the present System and towards the future

TRANSMILENIO S.A.
Deputy General Manager (4th August 2003 to 30th January 2006)

ADMINISTRATIVE and FINANCIAL MANAGEMENT
Accomplishment of workings of Secretary ship of the Company
Secretariat of the Board of Directors of TRANSMILENIO S.A.
Direction of the workings of the Operations Directorates, Planning, Financing, Commercial and Administrative
Functions of Disciplinary Internal Control
Direction in the execution of the corporative strategy fixed by the General Management
Budgetary pursuit of the Company
Application of the system of Complaints and Reclamations
Development of the academic agenda of the "First Fair the International of Massive Transport"

TECHNICAL MANAGEMENT
Synergy for the entrance in operation of Phase II of the TransMilenio System
Coordination in the construction of the Infrastructure
Place in operation of new trunk and feeder buses
Place in operation of Phase II fare collection contract
Planning, implantation and pursuit of the Improvement Plan of the TransMilenio System
Permanent pursuit of the operation of the TransMilenio System
Planning and Consulting related to the computation and technological tools of the Company

TRANSMILENIO S.A.
Technical Transport Planning Director (16th November 1999 to 3rd August 2003)
Planning of the Mass Transport system based on buses for Bogota (Colombia)
Operational design of the second phase
Coordination of the bidding process in order to have private operators
Long term development plan for the TransMilenio system
Origin/Destination analysis
Feasibility design of 42 Km of main corridors
Market studies trough surveys
Studies of land use changes due to the construction of the new system

DEPARTAMENTO NACIONAL DE PLANEACION
Infrastructure and Energy Unit Director (E) (September to November 1999)

Coordination of Telecommunications, Mines and Energy and Transport sectors
Studies and analysis of private participation in infrastructure projects

DEPARTAMENTO NACIONAL DE PLANEACION
Transport Division Manager (September 1998 to November 1999)
Infrastructure and Energy Unit

Elaboration of the National Plan of Development for the Transport Sector (1999-2002)
Planning and pursuit of the General Budget of the Nation for the transport sector
Development of the Regional Plan of Investment in transport infrastructure for the Magdalena's Region
Terms of Reference for technical, financial, legal and commercial structuring for the delivery in concession of the Airport Alfonso Bonilla Aragón of the city of Palmira
Terms of Reference for the study of demand of the Meta River and its potential for transport
Contract supervision of structuring of road BOT'S
Support to the process of BOT of the Atlantic railroad iron network
Participation in Boards of directors like delegate of the National Department of Planning (Caminos Vecinales, Ferrovias, Departamento Administrativo de Aeronautica Civil)

DEPARTAMENTO NACIONAL DE PLANEACION
Policies and support Division Manager (October 1997 to September 1998)
Infrastructure and Energy Unit

Coordination of programs for private participation in the infrastructure sector
Supervision of the study "Program for Road BOT's"
Supervision " Traffic Study Avenida Longitudinal de Occidente"
Coordination of studies for clean water projects and projects related to the participation of the private sector

DEPARTAMENTO NACIONAL DE PLANEACION
International Technical Cooperation – Advisor (February 1995 to July 1996)

Administrative handling of infrastructure projects financed with International Technical Cooperation
In charge of the projects with resources of the World Bank, Inter-American Development Bank, Italian Government and German Government.

DEPARTAMENTO NACIONAL DE PLANEACION
Transport Technical Division (August 1992 to January 1995)
Transport Division – Infrastructure and Energy Unit

Planning and pursuit of the annual budget of the organizations of the sector transport
Papers for Transport Planning policies (CONPES – Consejo de Politica Economica y Social)

CONSTRUCCIONES TÉCNICAS DE INGENIERIA
División de Geosoluciones (June 1991 to July 1992)

Trade and installation of geomembranas and geotextiles used in engineering projects

ACADEMIC EXPERIENCE

UNIVERSIDAD DE LOS ANDES

Professor of Chair of the Faculty of Civil and Environmental Engineering
Cátedra de Transporte Octavo Semestre de Ingeniería Civil
(2001 – 2002)

INTERNATIONAL LECTURER

International lecturer in subjects of urban transport in Latin America (Chile, Peru, Brazil, Honduras, Costa Rica, México y Dominican Republic), North America (Fort Lauderdale, Washington D.C. and New York), Europe (France, Spain, United Kingdom and Germany), Asia (United Arab Emirates) and Africa (Morocco)

EDUCATION

UNIVERSITY OF LEEDS
Postgraduate Studies
MSc. Transport Planning and Engineering
Leeds – UK (1997)

UNIVERSIDAD DE LOS ANDES
Postgraduate Studies
Especialización en Gestión Pública e Instituciones Administrativas
Bogotá – Colombia (1995)

ESCUELA COLOMBIANA DE INGENIERIA
Pre-Grade Studies
Ingeniería Civil
Bogota – Colombia (1991)

LANGUAGES
Spanish – Mother tongue; English - fluent; French – fluent; Portugues - learning

5.5 List of documents

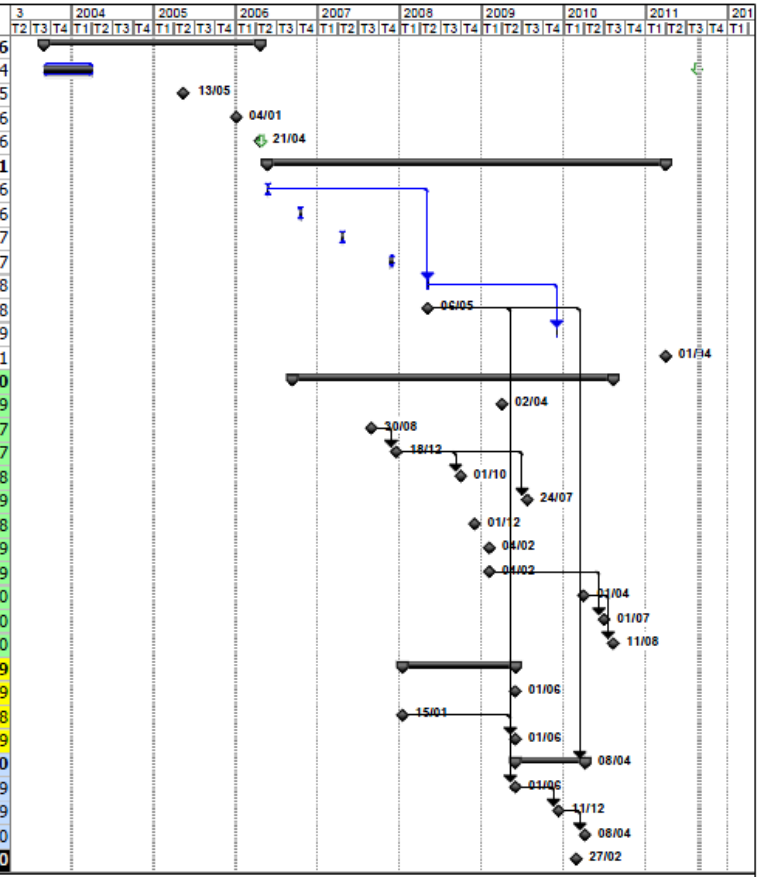
Date	Author	Title
2003/08	UNEP/GEF	Sub project document
2005/05	GEF	Secretariat MSP Agreement Review
2006/01	UNEP/GEF	MPS proposal request for GEF funding
2006/04	GEF	Project Document
2006/05	URC/GEF	Meeting summary report - Inception Workshop
2006/10	URC	1er Informe de misión de seguimiento del proyecto
2006/12	URC	Half yearly progress report
2007/06	URC	PIR FY 07
2007/12	URC	Mission Report: third follow-up mission
2008/05	URC	NESTLAC's midterm project-implementation meeting report
2008/05	URC	Steering committee meeting
2008/05	UNEP	Mission Report Mid Term Implementation meeting
2008/06	URC	Half yearly progress report
2008/06	URC	PIR FY 08
2009/01	URC	Annual progress report 2008
2009/02	URC	Request for budget-neutral project extension for NESTLAC
2009/06	URC	PIR FY 2009
2009/12	URC	Minutes from the final NESTLAC workshop
2010/02	UNEP	Revision to project document
2010/11	UNEP	Summary of cash advances to executing agency Rev3
2011/04	URC	Terminal Report
Talleres		
2003/11	MuniGuate	Diagnóstico Guatemala
2003/11	SECTRA Sur	Diagnóstico Concepción
2003/11	ATTT	Visión del Transporte Panamá
2003/11	Gob. de El Salvador	El nuevo sistema de transporte público de El Salvador
2006/05	MuniGuate	Presentación Transmetro
2006/05	MTT	Presentación Biovias
2006/05	ATTT	Movilidad en Ciudad de Panamá
2009/12	MuniGuate	Transmetro Occidente
2009/12	IGYC	Resultados Implementación Sistema
2009/12	MTT	Estudio Transporte Sustentable
2009/12	SOLUTIVA	Campaña Promoción Bicicleta
Chile		
2007/04	URC/MTT	Collaboration agreement between URC & MTT
2008/01	URC/SOLUTIVA	Consultancy contract & ToR
2008/01	MTT	Complemento al contrato MTT & URC
2008/02	SOLUTIVA	Cronograma del proyecto
2008/07	SOLUTIVA	Afiche seminario bicicleta
2008/07	SOLUTIVA	Programa seminario bicicleta

2008/12	MTT	Solicitud de recursos GEF para BRP
2009/01	MTT	Presupuesto y cronograma para BRP
2009/02	MTT	Cofinanciamiento del Proyecto
2009/04	MTT	Collaboration agreement addendum
2009/05	SOLUTIVA	Transporte intermodal biobici
2009/06	SOLUTIVA	Executive report
2009/06	SOLUTIVA	Informe ejecutivo
2009/06	SOLUTIVA	Informe Final Completo
2009/06	MTT	Consultancy contract & ToR
2009/07	Gob. De Chile	Proyecto de ley mensaje 517-357
2009/11	IGYC	E1 Estado del arte en tecnologías de pago y gestión
2009/11	IGYC	Diagnóstico sistema de pago de Santiago
2009/11	IGYC	Soluciones pago y gestión para mercado nacional
2009/11	IGYC	Actores relevantes y esquemas de negocio en pago
2009/11	IGYC	Diseño sistema pago electrónico Concepción
2009/11	IGYC	Restricciones del diseño para aplicación en otras ciudades
2009/11	IGYC	Anexo a bases técnicas licitación transporte Concepción
2009/11	MTT	Minuta de observaciones al informe de avance
2009/12	IGYC	Pre informe final
2010/03	MTT	Cofinanciamiento del Proyecto 2010
2010/04	IGYC	Informe Final
2010	SECTRA Sur	Resultados de la campaña de promoción CICLOBIO
Guatemala		
2006/09	URC & MuniGuate	Guatemala City Contract
2007/08	MuniGuate	Cronograma de ejecución de estudios
2007/08	MuniGuate	TdR Conteo de buses, tránsito y ocupación visual
2007/08	MuniGuate	TdR Encuesta OD
2007/08	MuniGuate	TdR Tiempos de espera
2007/12	MuniGuate	Evaluación técnica conteos y tiempos de espera
2007/12	MuniGuate	Evaluación técnica encuesta OD
2008/06	ConsultTest	Informe final Conteos de ocupación
2008/07	ConsultTest	Informe final Tiempos de espera
2008/08	ConsultTest	Memoria descriptiva
2008/10	ConsultTest	Informe final Conteos automáticos
2008/10	ConsultTest	Informe final Conteos direccionales
2008/12	MuniGuate	Encuesta de opinión pública
2009/01	MuniGuate	Financiamiento GEF
2009/02	MuniGuate	Informe preliminar Estrategia comunicación
2009/02	MuniGuate	Informe preliminar Evolución urbana
2009/02	MuniGuate	TdR Impacto ambiental
2009/02	MuniGuate	TdR Levantamiento topográfico
2009/07	MuniGuate	Transmetro un año después
2009/12	SIGA	Carta de retiro de estudio ambiental

2010/03	MuniGuate	Informe narrativo
2010/04	Grant Thornton	Propuesta económica Auditoría externa
2010/04	MuniGuate	TdR Auditoría externa
2010/07	BioAmbiental	Informe final monitoreo de aire
2010/07	MuniGuate	Percepción local del proyecto
2010/08	MuniGuate	Adjudicación auditoría externa Grant Thornton
2010/11	MuniGuate	Informe de evaluación ambiental
2011/?	Grant Thornton	Borrador de Informe de Auditoría Gran Thornton
2011/?	MuniGuate	Centrales de Transferencia Eje Occidente
2011/?	MuniGuate	Project Design Document CDM
2011/?	MuniGuate	Justificación TM Occidente
2011/?	MuniGuate	Reducciones del Eje Central

5.6 Project Timeline

Id	Nombre de tarea	Duración	Comienzo	Fin
1	**IDENTIFICATION PROCESS**	**34.45 meses**	**01/09/2003**	**21/04/2006**
2	SubProject identification	7.7 meses	01/09/2003	01/04/2004
3	GEF MSP Project agreement review	0.05 meses	13/05/2005	13/05/2005
4	Request for GEF funding	0.05 meses	04/01/2006	04/01/2006
5	GEF project document	0 meses	21/04/2006	21/04/2006
6	**MANAGEMENT**	**63.5 meses**	**23/05/2006**	**01/04/2011**
7	Kick off meeting	0.15 meses	23/05/2006	25/05/2006
8	First follow up mission	0.3 meses	12/10/2006	19/10/2006
9	Second follow up mission	0.15 meses	19/04/2007	23/04/2007
10	Third follow up mission	0.6 meses	20/11/2007	05/12/2007
11	Midterm workshop	0.05 meses	06/05/2008	06/05/2008
12	Panama city removed from the project	0.05 meses	06/05/2008	06/05/2008
13	Final workshop. Guidelines presented	0.1 meses	02/12/2009	03/12/2009
14	Terminal report	0.05 meses	01/04/2011	01/04/2011
15	**BRT COMPONENT**	**51.15 meses**	**12/09/2006**	**11/08/2010**
16	URC & Guatemala Municipality Colaboration Agreement	33.45 meses	12/09/2006	02/04/2009
17	Terms of Reference OD survey and traffic counts	0.05 meses	30/08/2007	30/08/2007
18	OD & Traffic counts studies contracts signed	0.05 meses	18/12/2007	18/12/2007
19	Traffic counts final repot	0.05 meses	01/10/2008	01/10/2008
20	OD survey Final Report	10.65 meses	01/10/2008	24/07/2009
21	Public Consultation Final Report	0.05 meses	01/12/2008	01/12/2008
22	Terms of Reference Topography	0.05 meses	04/02/2009	04/02/2009
23	Terms of Reference Environmental Impact	0.05 meses	04/02/2009	04/02/2009
24	Terms of Reference Auditoria	0.05 meses	01/04/2010	01/04/2010
25	Environmental Impact Final Report	0.05 meses	01/07/2010	01/07/2010
26	Audit contract signed	0.05 meses	11/08/2010	11/08/2010
27	**NMT Component**	**18.05 meses**	**15/01/2008**	**01/06/2009**
28	URC & MTT Colaboration Agreement	0 meses	01/06/2009	01/06/2009
29	Promoting campaing consulting contract signed	0 meses	15/01/2008	15/01/2008
30	Promoting Campaing Final Report	0.05 meses	01/06/2009	01/06/2009
31	**BRP component**	**11.2 meses**	**01/06/2009**	**08/04/2010**
32	URC & IGYC contract for BRP studies	0.05 meses	01/06/2009	01/06/2009
33	BRP studies PreFinal Report	0.05 meses	11/12/2009	11/12/2009
34	BRP studies Final Report	0.05 meses	08/04/2010	08/04/2010
35	**Earthquake in the Chilean Coast**	**0 meses**	**27/02/2010**	**27/02/2010**



Proyecto: GEF
Fecha: 26/08/2011

Tarea · División · Progreso · Hito · Resumen · Resumen del proyecto · Tareas externas · Hito externo · Fecha límite

Página 1

5.7 Workshops

Workshop	Location	Date	Topic	Participants
Inaugural workshop	Concepción, Chile	23-25 May, 2006	• Current situation of transport in the three demonstration cities. • Shared experiences ○ Bogota: Urban Improvement	8

Mid-term workshop	Guatemala City, Guatemala	8- 9May, 2008	• Implementation and planning of BRT systems
			  ○ Specific aspects of operation
			  ○ BRT infrastructure
			  ○ BRT vehicles
			  ○ Modal integration
			  ○ Business plan and integration
			  ○ Knowledge of the characteristics of the population and marketing
			  ○ BRT impacts
			  ○ ITS systems
				60

Closing workshop	Concepcion, Chile	2-3 Dec, 2009	• Project outcomes
			• Shared experiences
			  ○ Buenos Aires: Sustainable transport
			  ○ Guayaquil: Metrovía
			  ○ San Pedro Sula: Urban planning
				11

Fuente: The list of participants was obtained through correspondence with Carlos Felipe Pardo (22/07/2011).
The rest of the information was acquired from the workshops minutes and the NESTLAC website.

5.8 Comments on the Draft for the Final Evaluation Report

Comment	Answer
Ministerio de Transporte y Telecomunicaciones (Chile)	
1. **Nota al pie 45**. Se indica que “Su ideología económica (la de la Coalición por el Cambio) es abiertamente reconocida como de derecha y se encuentra al otro lado del espectro ideológico del partido sucesor”. Cabe señalar que la Coalición por el Cambio se encuentra al otro lado del espectro ideológico de la “Concertación de Partidos por la Democracia”, la coalición antecesora.	Ok. Cambio realizado. Versión final: "La Coalición por el Cambio asumió la Presidencia de la República de Chile a partir de marzo de 2010. Su ideología económica es abiertamente reconocida como de derecha y se encuentra al otro lado del espectro ideológico de la Concertación de Partidos por la Democracia, coalición antecesora. No es la intención de este documento señalar o definir tendencias ideológicas ni asumir posturas frente a estos temas, sino presentar el contexto político que se presenta en el país."
2.-**Párr. 157**. Se menciona que el Fondo de Compensación del Transantiago (Ley 20.378) es un subsidio transitorio hasta el año 2016. Esto no es del todo correcto ya que dicha Ley instaura dos fondos: uno permanente y otro transitorio hasta el año 2016 (Artículo Cuarto Transitorio). Por otro lado, y a modo de complemento, la Ley contempla un mecanismo de incentivo a la regulación del transporte público mediante la licitación de uso de vías, toda vez que para empresas licitadas el subsidio puede entregarse a la oferta.	Ok. Cambio realizado. Versión final: "Respecto al componente PRB, las regiones de Chile, incluyendo Concepción, han recibido en los últimos años recursos del Fondo de Compensación del Transantiago a partir de la Ley 20.378 (Ley Transantiago) para ser destinados a inversión en Transporte Público y vialidades. Estos recursos son parte de una medida compensatoria a consecuencia de los subsidios otorgados al transporte de la Región de Santiago. Los recursos provienen de dos fondos, uno permanente y otro transitorio hasta 2016. La ley incentiva a la modernización del equipo y tecnología, sobretodo a través del fondo transitorio, aunque no es clara en el establecimiento de condiciones de mejora en la prestación del servicio."

3.-**Sin referencia específica**. Sobre la participación de los actores regionales involucrados y su compromiso en el proyecto PRB, es necesario mencionar que el año 2009 se creó el Consejo Metropolitano de Transportes de Concepción, liderado por el Intendente Regional de la época, con el objeto de discutir y profundizar aspectos de la inminente licitación y sobre la visión de región sobre el transporte público. En este consejo participaron entre otros, académicos, empresarios de transporte, sindicatos de trabajadores, Sectra SUR. En definitiva, el desconocimiento reportado al proyecto de medio de pago electrónico por parte de los transportistas, se contradice con el trabajo de este Consejo.	Ok. Cambio realizado, ver párr. 188. Precisión incluida de la siguiente forma: "En los componentes BTR y PRB la negociación con los transportistas es fundamental. En Guatemala se ha permitido su integración como sociedad privada al sistema. En Concepción, en el año 2009 se creó el Consejo Metropolitano de Transportes de Concepción con el objetivo de discutir aspectos de la licitación en proceso. En este Consejo participaron académicos, empresarios de transporte, sindicatos de trabajadores y la SECTRA SUR."
Departamento de Movilidad Urbana (Municipalidad de Guatemala)	
4. **Párr. 11**. Se hace mención que la demanda diaria de Transmetro en 2007 era de 165 mil pasajeros diarios. Corregimos el dato a 120 mil pasajeros diarios.	Ok. Cambio realizado. Versión final: "En febrero de 2007, la primera línea de Transmetro, un sistema BTR, comenzó operaciones exitosamente en la Ciudad de Guatemala con una demanda diaria de 120 mil pasajeros/día."

5. **Párr. 58**. Me permito aclarar que los estudios fueron los mínimos necesarios en su momento para iniciar con la generación de la línea base ambiental.	La generación de la línea base era uno de los objetivos clave del proyecto. Se esperaba que fuera realizada en su totalidad, no los mínimos necesarios. No se realizaron cambios en el documento sobre este aspecto.
6. **Párr. 80**. Los datos se refieren a mediciones hechas en Eje Sur.	Ok. Cambio realizado. Versión final: "El tiempo de viaje para los usuarios de Transmetro Eje Central se ha reducido a una tercera parte. Con el sistema de buses anterior, el tiempo de viaje era de 90 min, mientras que ahora sólo es de 30 min. Se estima una reducción de emisiones contaminantes de 8,587 toneladas de CO_2 en 2010, lo que implica una reducción del 60% en emisiones contaminantes sobre el Corredor Central.”
7. **Párr. 137**. Menciona que el gobierno local de Mixco aporto recursos, Aclaramos que este municipio aun no hace aportaciones al sistema Transmetro, quedan exclusivas a Villa Nueva y Guatemala.	Ok. Cambio realizado. Versión final: "... Tal fue el caso para la construcción de la Central de Transferencia de Transporte (Centra Sur). En esta etapa, el Gobierno Nacional y los Gobiernos locales de Villanueva y Guatemala aportaron recursos en conjunto en un esquema de asociación público-privada con una compañía extranjera."

8. **Párr. 232**. Se menciona que los recursos destinados a los estudios al BRT Occidente no fueron utilizados eficientemente, ya que la construcción no se ha iniciado. En Transmetro no se considera esta situación, ya que los recursos no contemplan la construcción del eje, si no que analizan la situación y permiten dimensionar la escala del proyecto, así como su pre factibilidad y factibilidad. Al momento de iniciar la construcción estos estudios se tendrán que actualizar y validar pero representarán un menor costo.	El proyecto fue diseñado para asistir en la implementación del proyecto a través de estudios dirigidos a la construcción del Eje Roosevelt. Se esperaba que esta línea fuera construida de forma que las ventajas de los estudios pudieran verse reflejadas en la realidad. La posterior cancelación de su construcción y la realización de otra línea como alternativa sin buscar adaptar el esfuerzo del proyecto NESTLAC para esa nueva línea han hecho que esta evaluación considere que los recursos pudieron ser utilizados de mejor manera.
UNEP Riso Centre	
9. **Sin referencia específica**. There were a number of factors, beyond our control, which counteracted it like local administrative rigidities, but also limited budget for number of follow up missions. On the last, this was one of my comments when I submitted the reports to Peerke; the project had significantly benefited from having a regional UNEP office involved or ONG in place which could have followed up and monitored closely the progress of the project.	Ok. Sobre la limitación de recursos para la realización de visitas al terreno, esto ha sido agregado, ver párr. 217. Precisión incluida de la siguiente forma: "...Considerando que el presupuesto era limitado para estas actividades, es recomendable contar con un fondo de gastos extraordinarios que pueda ser utilizado en estos casos, ya que es preferible contar con información obtenida directamente que a través de intermediarios."

10. **Párr. 29**. "… el Gerente del Proyecto (PM) ~~del PNUMA~~…". En su lugar "...del UNEP Riso Centre (URC)".	Ok. Cambio realizado. Versión final: "Luego de numerosas visitas oficiales realizadas por el Gerente del Proyecto (PM) del URC y de solicitudes a la contraparte para iniciar las acciones planteadas en el programa, el URC y el PNUMA/GEF acordaron remover los recursos destinados para esta Ciudad."
11. **Párr. 29**. Además, de esto, se involucró a la oficina regional del PNUMA en Ciudad de Panamá (ROLAC) a fines de obtener su asistencia en las gestiones.	Ok. Cambio realizado. Versión final: "Por solicitud del PM, la Oficina Regional para América Latina y el Caribe del Programa de las Naciones Unidas para los Asentamientos Humanos (ORALC) fue involucrada para asistir en estas gestiones. Estos esfuerzos no tuvieron éxito."
12. **Párr. 88**. La selección de las ciudades se realizó con relativa rapidez (inmediatamente luego del taller de consulta regional, realizado en Panamá en 2003). No obstante, lo que demoró fue la aprobación del proyecto y la liberación de los recursos.	Ok. Cambio realizado. Versión final: "Es recomendable agilizar la decisión sobre la aprobación de los proyectos y la liberación de los recursos a través de procesos más expeditos."
13. **Párr. 95**. La diferencia obedece en parte a los ahorros de Guatemala y en parte a que se dedicaron USD 25 mil a cada una de las ciudades para la evaluación, la que al final se refundió a una sola para las 3 ciudades.	Ok. La evaluación recomienda que esta aclaración sea incorporada en el estado financiero final agregando rubros específicos sobre esto. No se hicieron cambios en el documento sobre este aspecto.

14. **Párr. 171**. En realidad se trata principalmente de la gestión del PM del URC.	Ok. Cambio realizado. Durante la evaluación "PNUMA PM" siempre tuvo la intención de referirse al PM del URC. De cualquier forma esta precisión ya ha sido corregida. Versión final: "Los esfuerzos realizados por el PM del URC al inicio del proyecto para lograr su arranque y para la reubicación de los fondos tras la remoción de Ciudad de Panamá contribuyeron a que casi todos los productos programados fueran finalizados a tiempo."
15. **Párr. 238**. Totalmente de acuerdo. El problema es que por ejemplo en el caso de Guatemala no se habían hecho mediciones de emisiones anteriormente. El proyecto sirvió en este sentido para que se iniciaran este tipo de mediciones.	Ok. Lamentablemente Ciudad de Guatemala realizó el estudio ambiental al final del resto de los estudios. La evaluación recomienda que este tipo de estudios sean prioritarios de forma que exista tiempo disponible para mediciones posteriores. No se hicieron cambios en el documento sobre este aspecto.