Mobilise Your City

Accessing Climate Finance for Urban Transport

Meet the speakers and facilitators of today's training

Speaker
Sasank Vemuri
Coordinator
MobiliseYourCity

Speaker
Ian Jennings
Senior Urban Transport Specialist
EBRD

Speaker
Mathieu Verdure
Senior Project Manager
AFD

Speaker
Kristina Eisele
Programme Advisor
EIB

Facilitator
Mateo Gomez
Associate Mobility Expert
MobiliseYourCity

Facilitator
Anouchka Strunden
Intern
MobiliseYourCity

Learning objectives

Understand basic finance-related concept and terms and how they apply to urban transport

Understand when finance-related issues need to be considered in a SUMP

Learn what additional resources exist leverage investments for implementation

Proposed Structure

1. Introducing the topic with Ian Jennings
2. Basic terms and concepts in project financing
3. Linking measures with financing sources – breakouts!
4. The SUMP cycle and finance
5. The City Climate Finance Gap Fund
6. Leveraging finance for implementation through a SUMP
7. Q&A
8. Wrap-up

Mobilise Your City

The essentials of project financing

Sasank Vemuri

Santo Domingo: Selected SUMP Measures and Cost Estimates

Measure	Cost Estimate
Metro Lines 1 & 2: Increase passenger capacity	480 M$
Metro Line 2: Line extension	564 M$
Construction of 5 BRT or LRT corridors	603 M$
Cowwnstruction of 4 aerial tramway lines	159 M$
Creation of 5 express busway lines	1.51 M$
Infrastructural improvement of intermunicipal networks	606 M$
Infrastructural improvement of internal municipal networks	50 M$
Improvement and expansion of sidewalks and cycling lanes	42 M$
Integration of public transport modes	0.3 M$
Implement public bike-sharing system	15 M$
Develop 'green' corridor along the river basin	5 M$
Provide parking areas in port zones	0.3 M$
Integrated tariff policy	0.6 M$
Social tariff policy	0.6 M$
Transport demand management policy	0.6 M$
Private vehicle fleet modernization policy	0.3 M$
Bus fleet modernization policy	
Parking policy	0.6 M$
Regulation of HDV transit	0.3 M$
Design of secondary (complementary) bus network	0.3 M$
Study on school transport services	0.3 M$
Studies on improvement of transport demand management	1 M$
Improve access to persons with disabilities	0.6 M$
Improve image and attractiveness of bus system	20 M$
Improve communications of public transport services for users	0.6 M$
Integrate city-port interface management in national and local planning	0.3 M$
Implement merchandise delivery and pick-up plan in port areas	0.3 M$
Studies to support urban and transport planning integration	0.6 M$

Source: SUMP Douala, 2019

Funding and finance for urban mobility

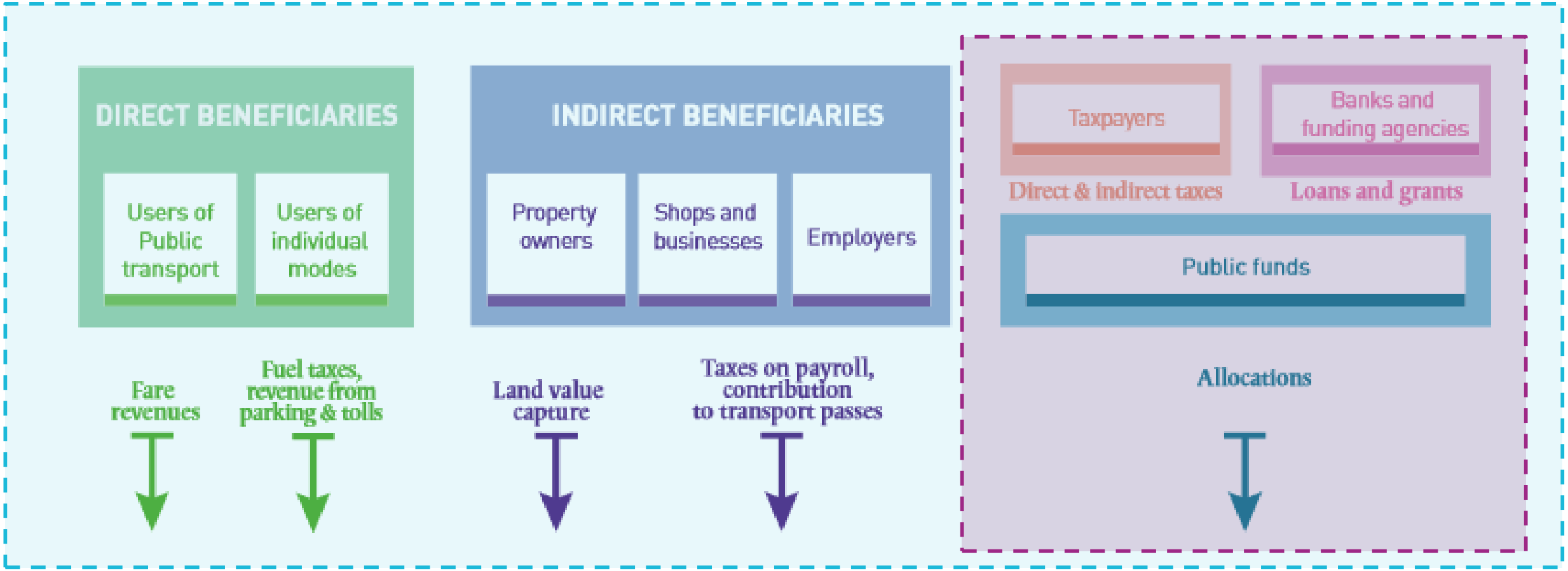
Financing

- **Who finances a project means who, at the outset, raises the cash to build it.**
- This could be the public sector or private sector, who raise debt, equity and/or grants to finance the building of public sector assets

Funding

- **Who funds a project is a question of who ultimately pays for it over the long term; is it the user/customer, the local, national or other taxpayer?**
- Funding can be either short-term, one-off financial flows (e.g. through government grants), or long-term, mostly annual cash flows (e.g. from user charges).
- For public transport projects, funding sources include user fees and ancillary revenues such as advertising, land value capture, cost savings through reductions in fuel subsidies as well as subsidies and grant programmes from government and international donors.

Funding and financing urban mobility projects



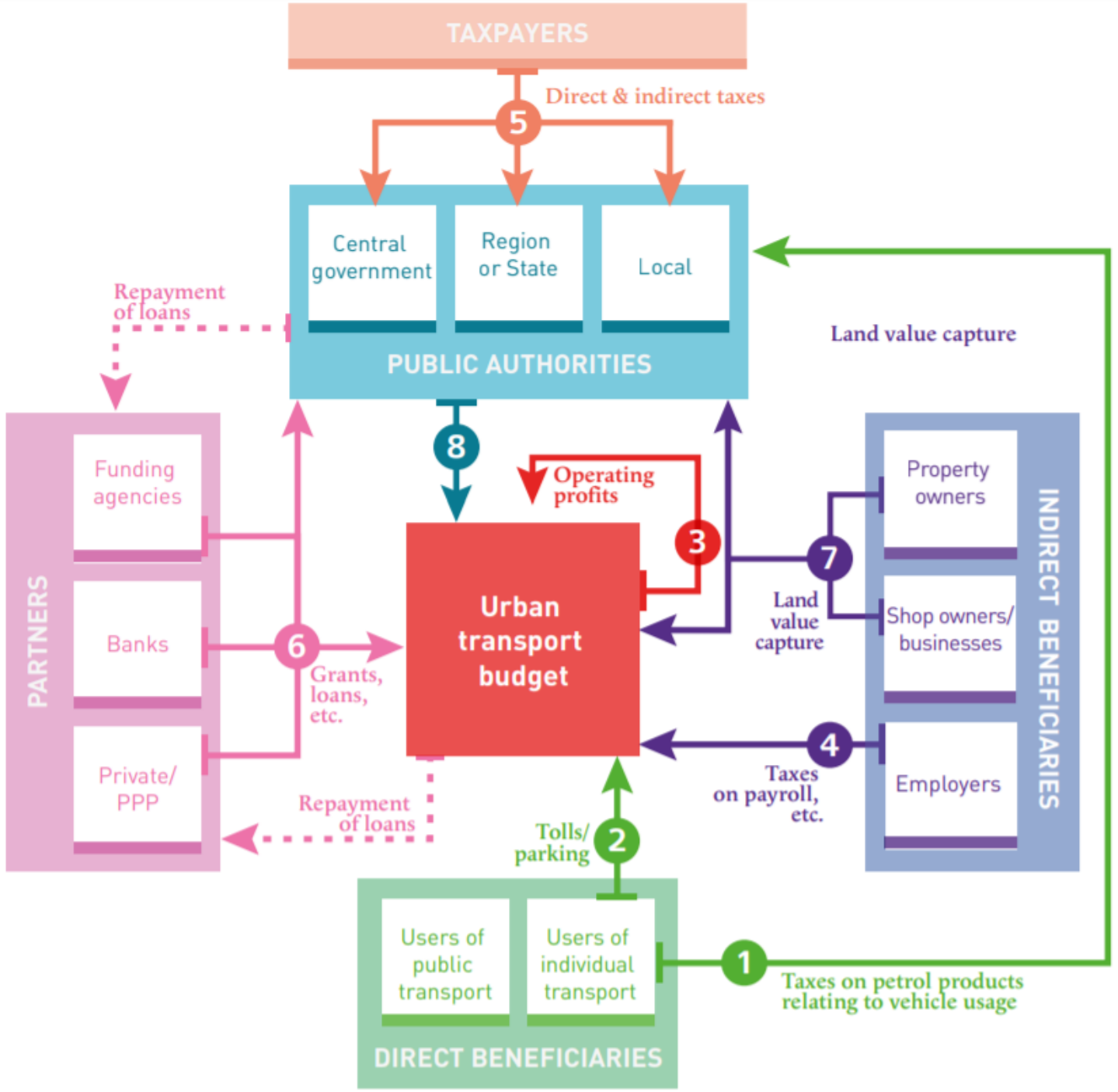
Potenfial **funding** sources

Potenfial **financing** sources

Source: Who pays for Transport (2014)

Who pays for what in transport?

Source: Who pays for transport (2014)



CAPEX & OPEX

Capital expenditures (CAPEX)

- Funds used to purchase physical goods or services (assets)
- One-time purchase
- Property or equipment

Operational expenditures (OPEX)

- Ongoing expenses to run day-to-day business
- Pay-as-you-go
- Operating costs

CAPEX in urban mobility

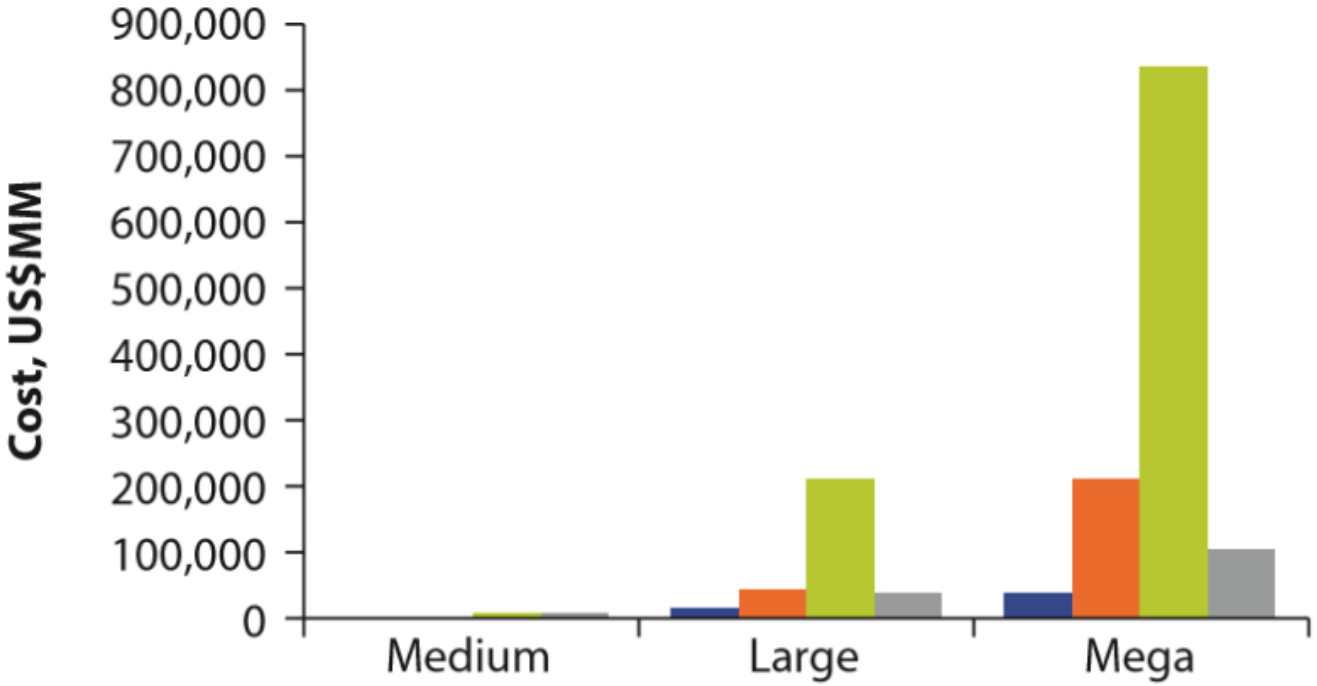
- Rolling stock
- Infrastructure
- Technology

OPEX in urban mobility

- Operations
- Maintenance
- Administration

What are estimated CAPEX and OPEX for different types of cities?

Figure 1.2 Total Estimated Costs (Capital, Operation, and Maintenance) for Medium, Large, and Mega Cities over 20 Years



BRT	2,505	15,030	40,080
Metro	0	41,750	208,750
Local roads	8,350	208,750	835,000
Express roads	2,672	40,080	100,200

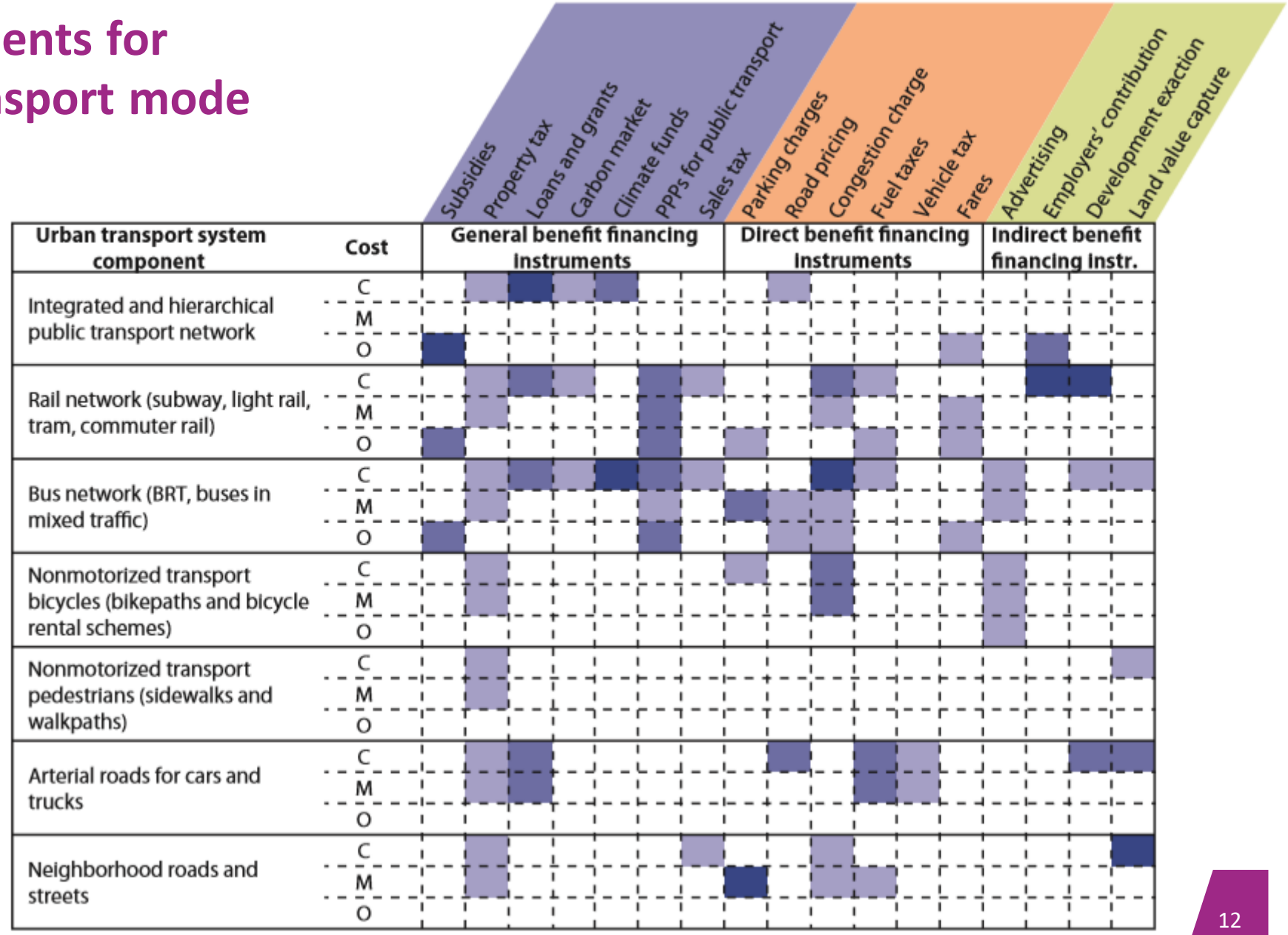
Source: World Bank (2016)

Use of financing instruments for CAPEX and OPEX by transport mode

EX – expenditure
C – capital
M – maintenance
O – operation

The darker the color of the block, the more the instrument was used for that purpose

Source: World Bank



Financial analysis

- Focuses exclusively on revenues and expenditures generated within the project
- **Financial sustainability**: the ability of borrower/ administrations implementation into the future without problem, like over indebtedness
- **Financial viability:** whether the project is able to generate sufficient revenue to cover OPEX, CAPEX and maintain service levels

Economic analysis

- Aims to determine if a mobility project intervention is worthwhile from an overall societal point of view.
- **Cost-Benefit Analysis (CBA):** an often used tool go monetize and analyse the full rage of costs and benefits to society
- **Direct benefits:** reduced travel time for user and due to decongestion
- **Indirect benefits:** reduced road accidents and lower GHG emissions

Active transportation benefits and costs

	Improved Active Travel Conditions	Increased Active Transport Activity	Reduced Automobile Travel	More Compact Communities
Potential Benefits	• Improved user convenience and comfort • Improved accessibility for non-drivers, which supports equity objectives • Option value • Supports related industries (e.g., retail and tourism) • Increased security	• User enjoyment • Improved public fitness and health • Increased community cohesion (positive interactions among neighbors due to more people walking on local streets) which tends to increase local security	• Reduced traffic congestion • Road and parking facility cost savings • Consumer savings • Reduced chauffeuring burdens • Increased traffic safety • Energy conservation • Pollution reductions • Economic development	• Improved accessibility, particularly for non-drivers • Transport cost savings • Reduced sprawl costs • Openspace preservation • More livable communities • Higher property values • Improved security
Potential Costs	• Facility costs • Lower traffic speeds	• Equipment costs (shoes, bikes, etc.) • Increased crash risk	• Slower travel	• Increases in some development costs

Active transport has various benefits and costs.

Source: Victoria Transport Policy Institute, 2020

Example of Economic Analysis for Urban Transport

Table 3: Economic Analysis Results

Item	Total project
Benefit–cost ratio of NPVs	1.53
EIRR (%)	16.4
NPV @ 12% (CNY million)	549.6

EIRR = economic internal rate of return, NPV = net present value.

Table 4: Economic Internal Rate of Return by Project Component (%)

Item	EIRR
Urban roads and TMS	14.9
BRT	24.4
Multimodal hub	25.0
River flood prevention	13.7

EIRR = economic internal rate of return, TMS = traffic management system, BRT = bus rapid transit.

NPV: net-present value
EIRR: Economic – Internal Rate of Return

Example of a financial analysis for a clean bus programme

Step 1

- At operator level: estimate the financial impact of the introduction of different bus technologies (hybrid, CNG, trolley, battery electric, etc.)
- Assess expected revenues (funding) and capital expenditures (vehicle capital and infrastructure) and operational expenditures (fuel, labour, insurance, repair, maintenance, etc.)

Step 2

- Analyse current funding mechanisms. Map allocation of funds for investments in buses and describe and evaluate role of stakeholders in the process
  - Funding sources
  - Re-financing options
  - Stakeholder roles and responsibilities
  - Intermediaries (e.g. leasing companies, national development banks, transit agencies)
  - Beneficiaries (e.g. operators, transit agencies)

The results allow the government to

- Justify the provision of public funding
- Estimate the funding requirements overtime
- Understand the financial (and potential economic) rate of return
- Compare mitigation costs compared to alternative investments
- Develop the right funding mechanism

narrowly defined

”Climate finance refers to ‘new and additional financial resources’ by developed countries to developing countries so that they can meet the full and incremental costs of climate change” – UNFCCC

“Climate finance refers to the financial resources mobilised to fund actions that mitigate and adapt to the impacts of climate change, including public climate finance commitments by developed countries under the UNFCCC “ - ODI

broadly defined

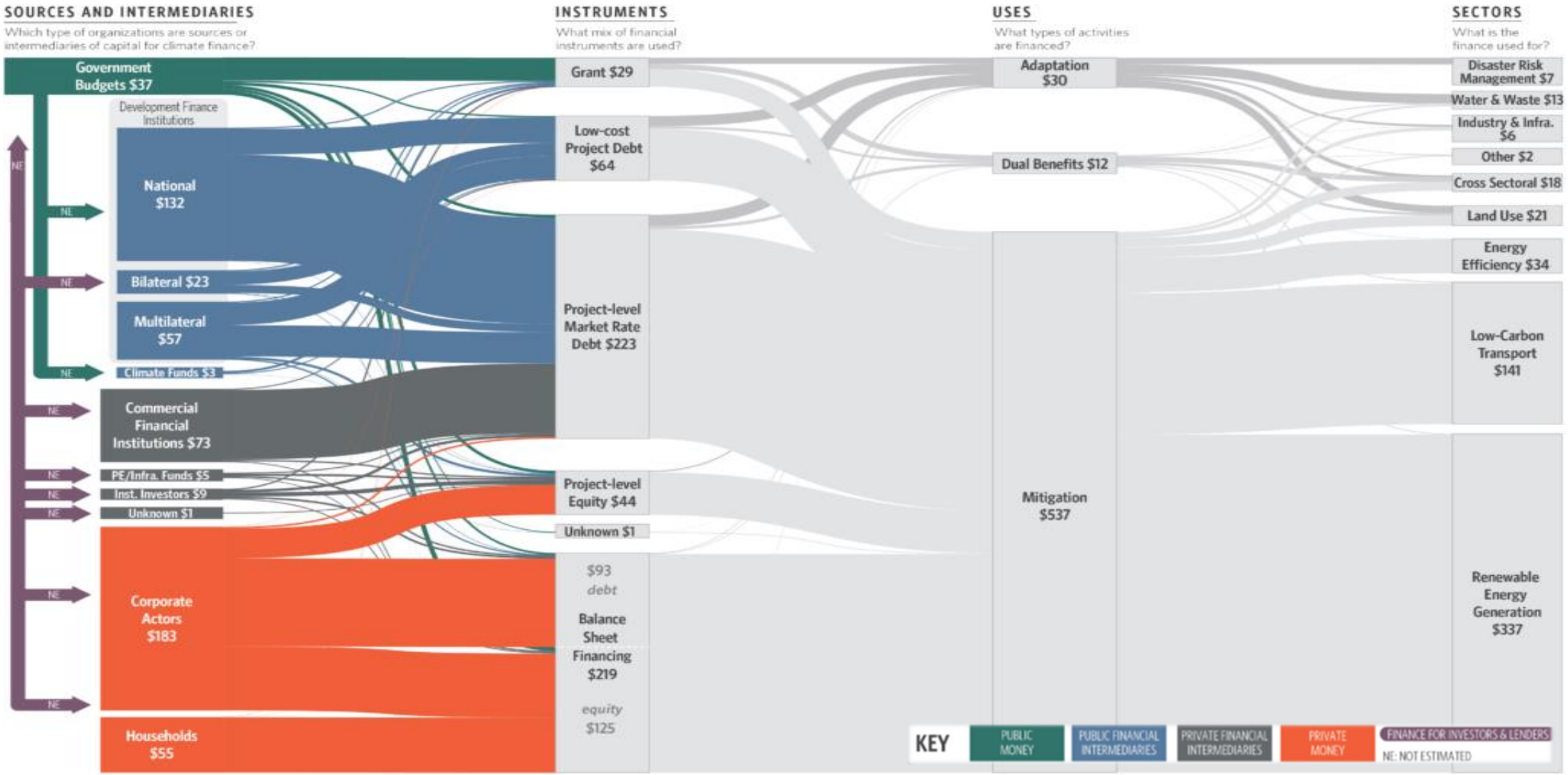
Defining climate finance : no single definition

Mobilise Your City

Common elements of climate finance:

- Intended for mitigation and adaptation activities
- comes from a variety of sources (e.g. public, private, blended)...
- and in different forms (e.g. grants, loans, equity, guarantees)
- is delivered through local, national, regional, and / or international channels

Global Finance Flows 2017-2018 (avg 579 USD billions/2 years)



Source: Climate Policy Initiative, 2019

Breakouts

Linking measures to financing sources

Activity

Imagine that in your SUMP, you have selected the following measure:

- Implementation of Bus Rapid Transit (BRT) system

Please discuss the following questions for the two selected measures:

- What are the financing and funding sources?
- What are capital and operational expenditures?

Results

What are financing sources for BRT?

Notiz hinzufügen

- Loans and grants from bilateral or multilateral development banks
- Public-Private Partnerships
- National government transfers
- Climate finance from international funds (e.g. Green Climate Fund)

What are capital expenditures (CAPEX) for BRT?

Notiz hinzufügen

- Purchase of buses
- Power station
- Construction of infrastructure
- Bus stations
- Ticketing system

What are funding sources for BRT?

Notiz hinzufügen

- Municipal sources
- National government transfers / subsidies
- Fare revenues
- Land value capture

What are operational expenditures (OPEX) for BRT?

Notiz hinzufügen

- Maintenance costs
- electricity, repairments etc
- administrative costs

Mobilise Your City

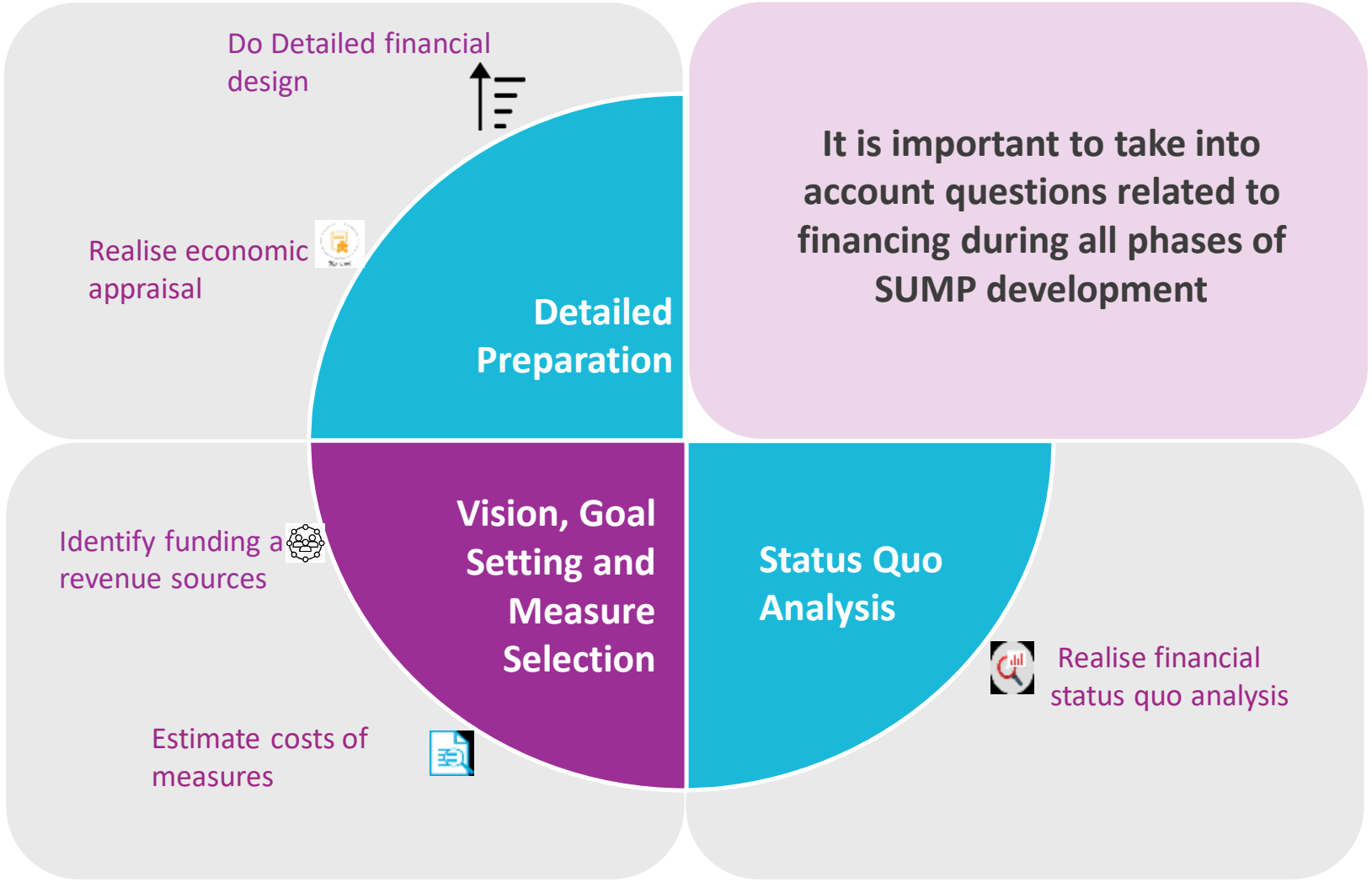
The SUMP cycle and finance

Mathieu Verdure

Contents

1. Revisiting the SUMP Cycle
2. Financing steps along the SUMP Cycle

SUMP Financing Steps along the phases of the SUMP Cycle



Status Quo Analysis

Financing Step 1:
Realise financial status quo analysis

General guiding questions:

- Who are the main financial actors and decision-making processes?
- Public funding: is local public funding available? Do local actors have the required capacities to access national funds if available?
- Private sector: What role does the private sector play today? Could its role be strengthened? Are there public-private partnership mechanisms in place?

An effective financial design for a SUMP builds on current mechanisms, institutions and capabilities

Guiding questions on barriers and drivers

- Which (financial) barriers prevent the implementation of sustainable urban mobility systems?
- Which drivers may facilitate sustainable urban mobility?

A robust analysis of barriers and drivers is an important prerequisite for desigining effective interventions, as interventions aim to remove one or several barriers and may be facilitated by existing drivers

Analyses of financing resources available for urban mobility
Example of Yaoundé SUMP

- On average, **29 billion FCFA available yearly** for urban mobility in Yaoundé
- **Financing resources still mainly driven by national ministries…**
  - main source of funding: national budget. Other resources: international funding (18%), road maintenance fund. Urban mobility funding depends on strategic decisions and is not secured over short/medium term.
  - most of the funds (92%) is channelled through the state ministries, only 8% by the City despite its mandate on urban mobility
- **… and mainly allocated to road investment**
  - 25 billion FCFA for road investment… not enough to cover all needs but rather sizeable compared to benchmarks for similar cities
  - lack of resources for other expenses: road maintenance (4 billion FCFA yearly on average), no public funding for public transport

Vision, Goal Setting and Measure Selection

Financing Step 2:
Estimate cost of measures and scenarios

What are the costs for design and implementation of the SUMP?

Define scenarios with defined actions
(short, medium and long term) – standard: 10 year scenario

- Business-As-Usual (BAU)
- SUMP scenario(s)

→ *Assess the volume of expenditures (CAPEX & OPEX) needed for each scenario and ensure that such volume is coherent with the ability to mobilize funding for the city.*

Provide descriptions of each action as well as integrated package of measures paying attention to technical design, cost, timing, public engagement requirements, anticipated impacts, and potential risks .

Financing Step 3:
Identify potential funding and revenue sources

- **International** (e.g. loans and grants)
- **National** (e.g. subsidies, etc.)
- **Local** (e.g. green bonds, business levies, PT fares, congestion charging, parking, advertising revenue, etc.)

→ *Identifying sufficient funding and financial sources is key for ensuring sustainable implementation.*

Cost-benefit analysis

1. Project Definition
- Project case (and potential alternatives)
- Reference case
- System boundaries (spatial, temporal)

2. Determination of indicators
- Which types/ categories of costs and benefits to be included?

3. Estimation of the (quantitative) impacts
- Impacts on transport (volume, demand)
- Impacts on other indicators

4. Assessment of the monetised impacts
- Monetisation of the impacts

5. Calculation of the economic profitability
- Discounting of the future impacts
- Summing up of all costs and benefits
- Comparing costs and benefits: Determine benefit-cost ratio of the project

6. Interpretation and Conclusion
- Sensitivity analysis, risk analysis
- Assessment of the project:
  - Continue or stop?
  - Optimization, alternatives?
- Recommendations

Mobilise Your City

Financing Step 4:
Realise economic appraisal

Compare SUMP scenario(s) with BAU scenario, taking consideration o various criteria, including:

- **Economic feasibility**: cost, financial profitability, socio-economic profitability, including GHG emissions reduction, time saving, safety impact

Purpose of economic appraisal

1 *Prioritize between alternative interventions and measures (e.g. high priority and quick-win measures)*

2 *Accept or reject a specific intervention depending on its overall benefit to society*

3 *Gain political buy-in and support political decision-making*

4 *Adjust the design of an intervention in order to maximize its benefits and efficiency*

Detailed Preparation

Financing Step 5:
Do detailed financial design

Guiding questions:

- What would be an effective, efficient and feasible financial design? What are the possible financial instruments?
- Which actors are involved and which are their roles? How are the financial flows and which conditions must be fulfilled for disbursements?

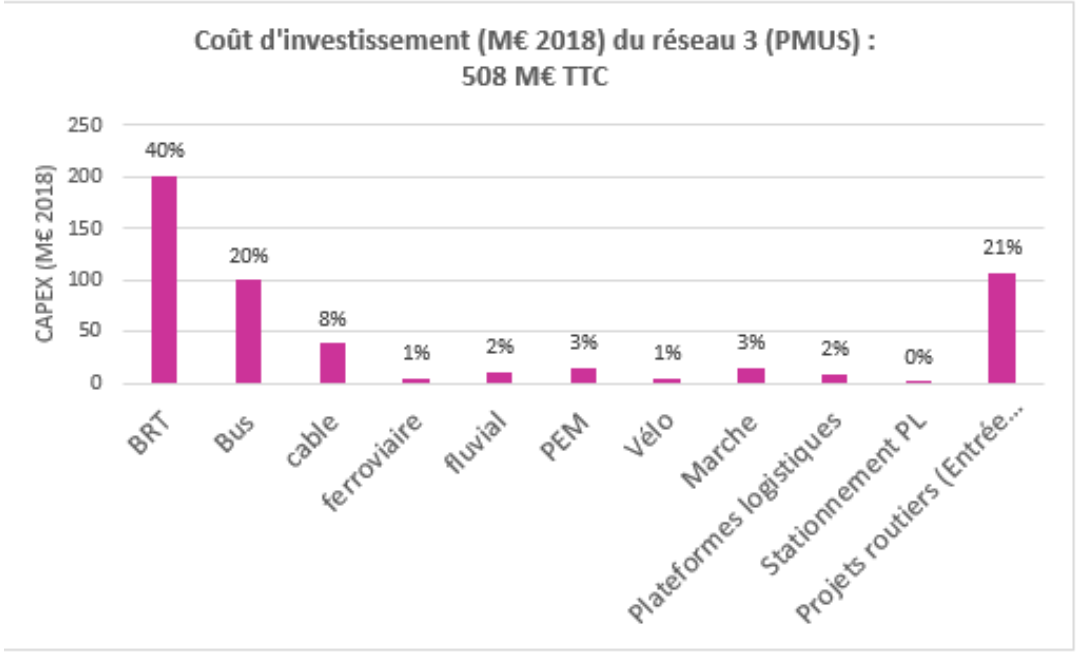
What to do?

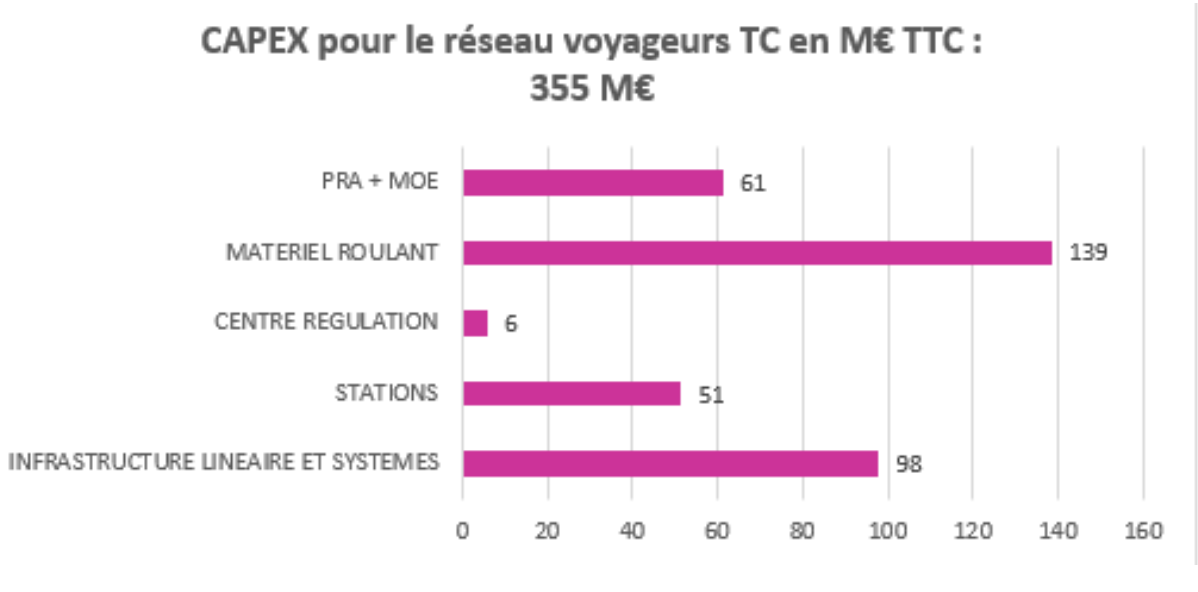
- **Identification of measures** and integrated packages of measures that are financially feasible to implement
- **Budgeting and Finance Plan** that reflects different budget scenarios and identifies high priority as well as quick-win measures
- **Identification of studies** that need to be carried out downstream in order to prepare for implementation of the SUMP. These will essentially be feasibility and engineering studies for the selected measures
- **Assignment of responsibilities** and suggestion of budget allocation to implement measures
- **Development of a budgetary framework** and financially sound and validated measure action plan that includes a timeline for implementation

Detailed Preparation

Cost assessment of action proposed in a SUMP
Example of Douala SUMP

- **Estimated CAPEX for the SUMP: 508 million EUR**
  - Total estimated CAPEX aligned on realistic resources forecasts
  - CAPEX estimates provided for each proposed action
  - CAPEX breakdown provided for main proposed action, eg public transport network





Cost assessment of action proposed in a SUMP
Example of Douala SUMP

- **Estimates for OPEX and revenues provided**
- **Proposed public transport network designed to ensure that revenues are covering at least OPEX**

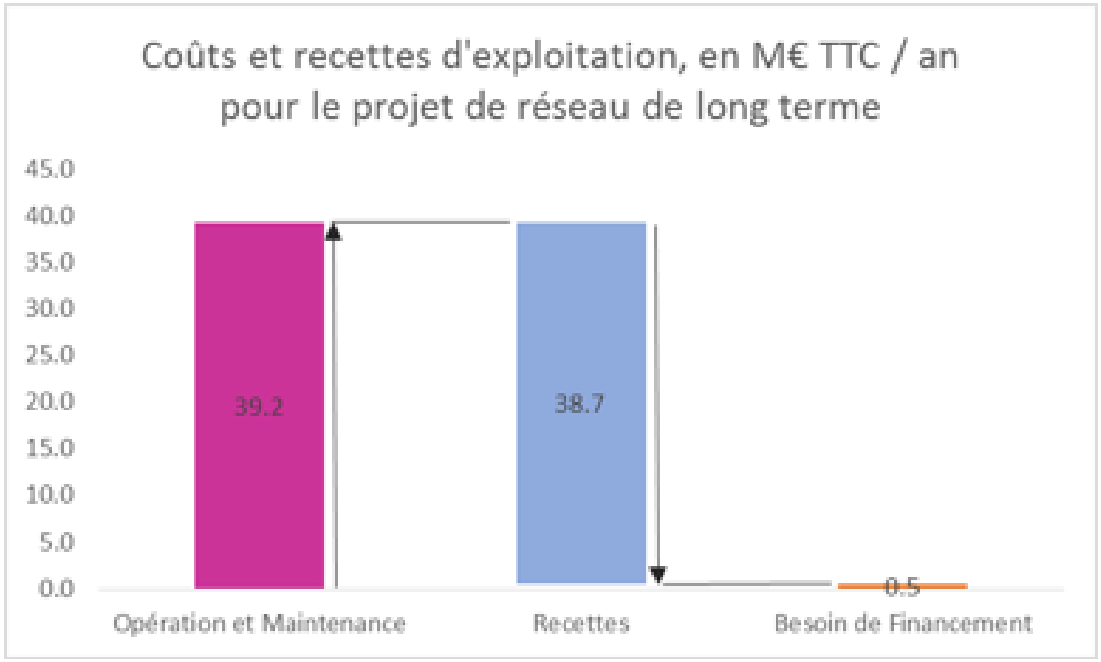


Illustration 31. OPEX du projet de réseau 3. Source : Systra, 2019

City Climate Finance Gap Fund

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

Federal Ministry for Economic Cooperation and Development

THE GOVERNMENT OF THE GRAND DUCHY OF LUXEMBOURG
Ministry of the Environment, Climate and Sustainable Development

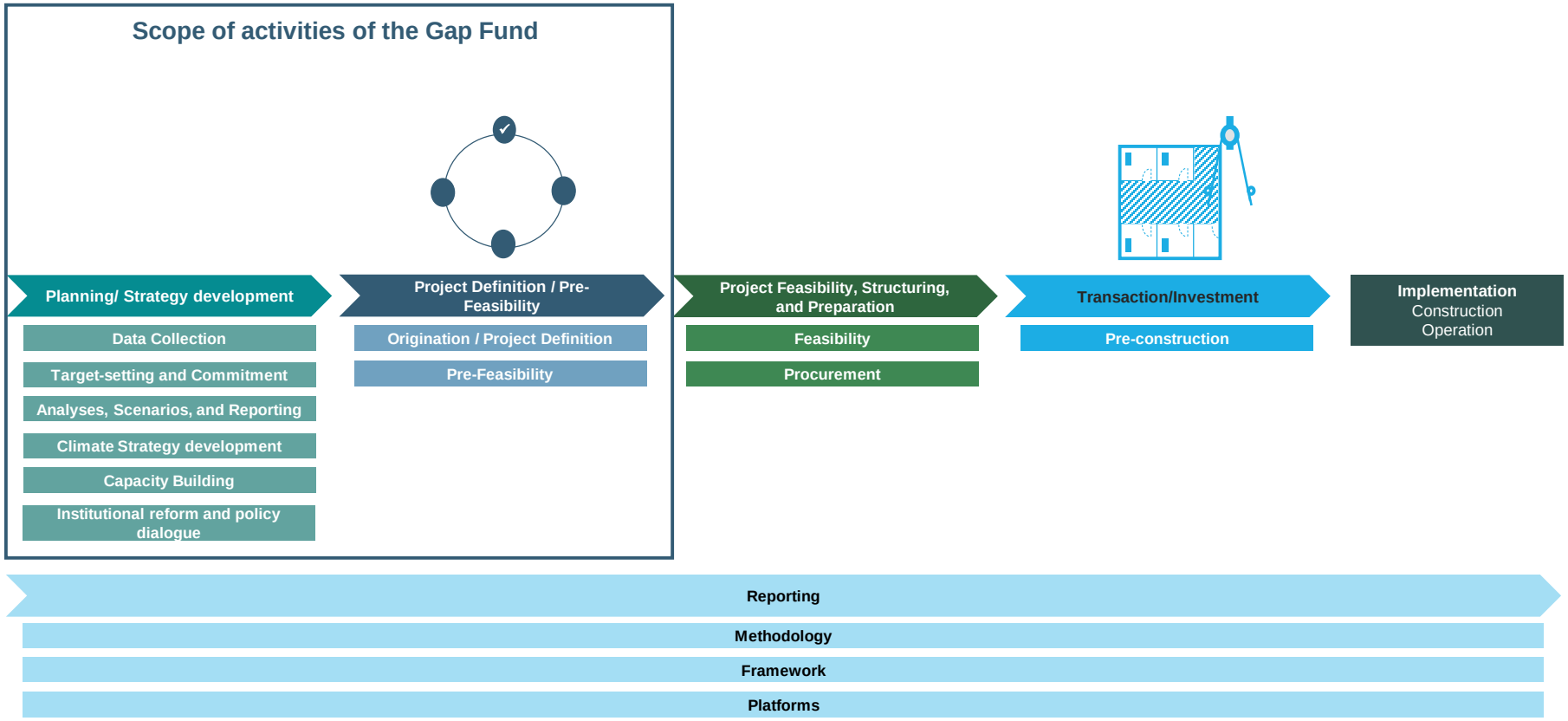
WORLD BANK GROUP

European Investment Bank
The EU bank

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

The City Climate Project Planning and Development Cycle

City Climate Finance Gap Fund



The Gap Fund in a nutshell

City Climate Finance Gap Fund

Why?	Cities are central to meeting ambitious climate targets such as the Paris Agreement but cities in low and middle income countries often struggle with developing climate-friendly and resilient infrastructure
What?	Support cities with early-stage technical assistance in developing climate change mitigation and adaptation projects
Who?	Donors, multilateral banks and implementing agencies, together with city networks
How?	Cities and local authorities can check eligibility and apply via the Gap Fund web site (www.citygapfund.org) with an expression of interest.

What the Gap Fund offers

City Climate Finance Gap Fund

- Supporting city climate strategy development and analytics to assess the climate potential of plans, strategies, and investment programs
- Providing capacity building for low-carbon and climate-resilient urban development
- Supporting the prioritization of investments as part of a climate strategy or investment program
- Defining project concepts and preparing pre-feasibility studies
- Supporting a strengthened approach to project financing
- Matchmaking with additional support sources for later stages of project preparation
- Offering potential support to fill in other project preparation gaps

Eligibility criteria

City Climate Finance Gap Fund

- Countries: low and middle income countries
- Climate action potential: Mitigation and/or adaptation to climate change
- Urban dimension: The project must be situated in or functionally linked to an urban area
- Stage: Early stages of climate investment planning and project preparation:
  - Climate strategy development/ enabling environment
  - Project definition/concept
  - Pre-feasibility

Sectors

- Urban mobility
- Energy efficiency and small renewables
- Solid waste management
- Water and wastewater management
- Greening of urban areas, nature-based solutions
- Green buildings
- Adaptation to climate vulnerabilities
- Affordable housing with an energy-efficient approach
- Multi-sector, area-based investment programs

How to apply

City Climate Finance Gap Fund

We will assess the following:

- extent and credibility of anticipated climate action benefits;
- replication potential and scalability;
- alignment with central and local government commitments;
- positive environmental, social and economic co-benefits;
- potential bankability or creditworthiness;
- political ownership;
- priority at city government and the national level.

For more information:

City Climate Finance Gap Fund

www.citygapfund.org

Thank you!

City Climate
Finance Gap Fund

Mobilise Your City

Leveraging Finance through SUMPs

Mateo Gomez

OBJECTIVES of MOBILISEYOURCITY

- Accelerate the transition to sustainable urban mobility
- Foster more comprehensive, integrated and participatory urban mobility planning
- Facilitate access to financing for urban mobility projects

Contributing Partners

European Commission

On behalf of Federal Ministry for the Environment, Nature Conservation and Nuclear Safety of the Federal Republic of Germany

AFD Agence Française de Développement

FFEM

Ministère de la Transition écologique et solidaire

Ministère de la Cohésion des territoires

Mobilise Your City

Implementing partners

AFD Agence Française de Développement

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

ADEME

Cerema

Codatu

European Bank for Reconstruction and Development

KFW

Wuppertal Institut

Knowledge and Network partners

ITDP Institute for Transportation & Development Policy

PLATFORMA Local & Regional International Action

UCLG United Cities and Local Governments

UN-HABITAT For a better urban future

ECF European Cyclists' Federation

A Strong Consortium of 17 organizations, established at COP21 in Paris

5 donors

8 implementing Partners

5 knowledge and network Partners

Road to results

- 36 M€ of financing from Contributing partners
- 60 Partner cities
- 35 Supported SUMPs
- 8 Completed SUMPs
- 5 Approved SUMPs
- 14 Partner countries
- 10 Supported NUMPs
- 3 Completed NUMPs
- 811 M€ Leveraged financing
  - 236 M€ for cities
  - 574 M€ for countries
  - 60 % from international public loans
  - 30 % from domestic finance
  - 10 % from international grants
- 3470 People trained
- Mitigation of GHG emissions
- 6 million people: more access to public transport
- Improved road safety

MOBILITY PLANNING

Policy Support for member cities and countries through technical assistance

Supporting institutions

- Supporting the preparation of Sustainable Urban Mobility Plans (SUMPs)
- Supporting the preparation of National Urban Mobility Plans / Programmes (NUMPs)

From gaps to plans
The trajectory of Douala‘s SUMP finance

2016
Douala joins MobiliseYourCity

2017 - 2018
SUMP Preparation with support from AFD and Funding from the EU

2019
SUMP approved
Find the summary of the plan here

Key findings
Taxis & mototaxis: 50% of all trips, 80% of motorised trips
Mass public transport: **1%**
Walking: 36%, insufficient infrastructure

Plan
Invest in **mass public transport** (BRT & cable cars)
Integrate **paratransit operators**
Create **transport coordinating entity** and **mobility observatory**
Prepare and Implement **Walking & Cycling Plan**

CAPEX requirements by 2030: 508 M€
OPEX requirements by 2030: 339 M€

From gaps to plans
The trajectory of Douala‘s SUMP finance

2019
Mobilised Finance
320 M€ for infrastructure
2 M€ grant on SUMP soft measures EU

Finance Blend
270 M€ international loan for BRT World Bank
50 M€ in domestic finance (16%) Government of Cameroon

2021
Begining of proejcts

Project Impact
Increased modal share of active and collective transport
Reduction of yearly GHG emissions by 20% in 2030

The Green City Finance Directory

The Green City Finance Directory helps subnational governments and stakeholders identify project preparation facilities that can support them in developing green and resilient infrastructure.

26 Project preparation facilities covering the mobility sector, including:

https://www.citiesclimatefinance.org/green-city-finance-directory/?_sfm_project_type=Transportation%2FMobility

Wrap Up

Basic concept terms

Financing steps along the SUMP cycle

How international organisations can help you leverage additional resources for implementation

Mobilise Your City

Thank you!

MobiliseYourCity Partnership

@MobiliseCity @MobiliseYourCity

Supported by:

Implemented by:

In Cooperation with: