Paratransit in Asia

Scalable Solutions to Reform, Modernise and Integrate

2022

Mobilise Your City

1- Why producing a regional paper?

2- For which audience?

3- How to produce a study during Pandemic?

Diagnosis

"One sector but a burgeoning wording revealing the diversity of the urban contexts"

Paratransit in Asia – Regional Urban & Mobility Dynamics

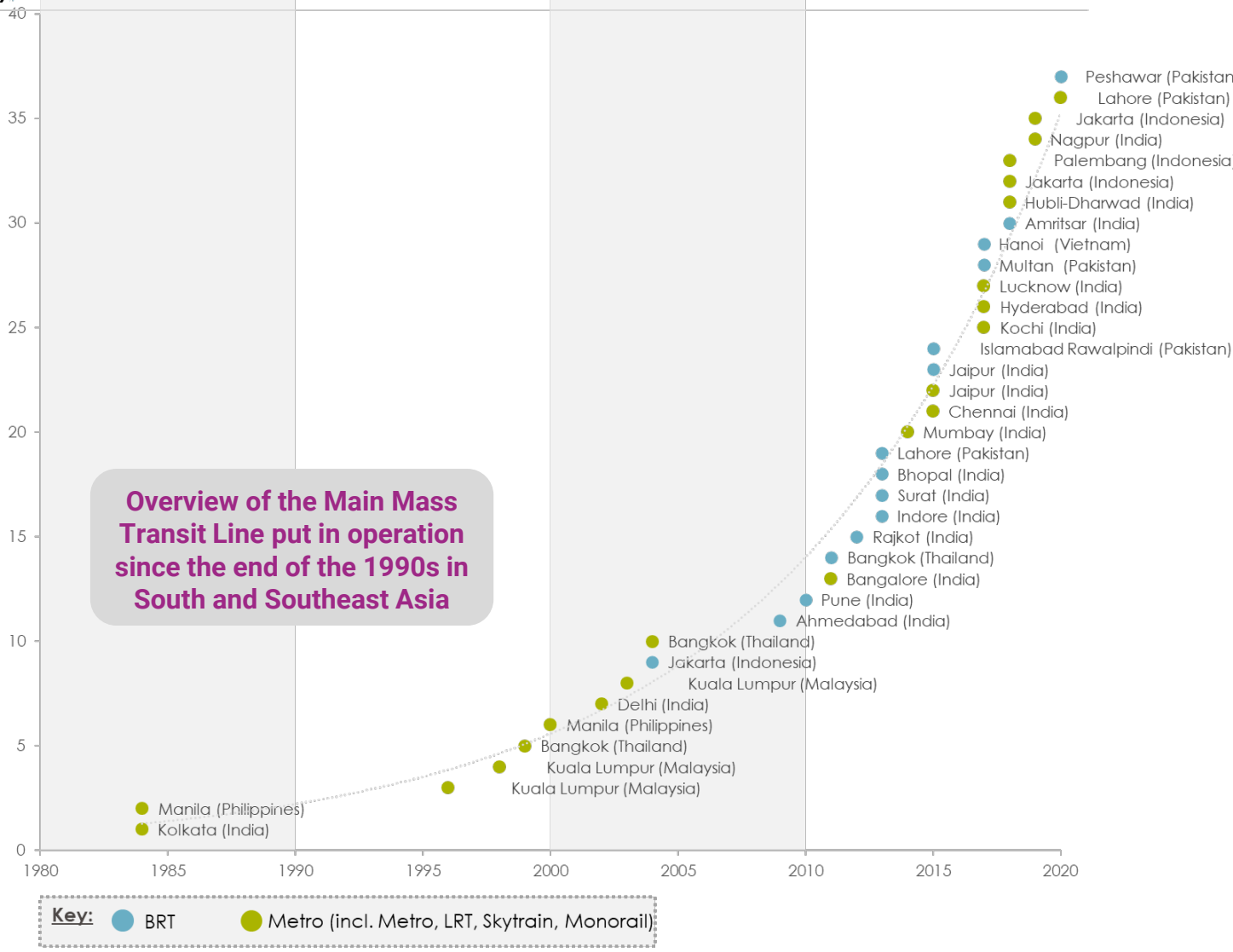*Development of Mass Rapid Transit Systems in Major Cities in the Region*

	1980s	1990s	2000s	2010s
Cumulative Number of Lines	4	10	38	73
Cumulative Network Length (km)	73	311	890	1,488

Bangkok – BRT 2011

Ho Chi Minh City – MRT upcoming

Overview of the Main Mass Transit Line put in operation since the end of the 1990s in South and Southeast Asia

Chart data points (approximate):
- Peshawar (Pakistan)
- Lahore (Pakistan)
- Jakarta (Indonesia)
- Nagpur (India)
- Palembang (Indonesia)
- Jakarta (Indonesia)
- Hubli-Dharwad (India)
- Amritsar (India)
- Hanoi (Vietnam)
- Multan (Pakistan)
- Lucknow (India)
- Hyderabad (India)
- Kochi (India)
- Islamabad Rawalpindi (Pakistan)
- Jaipur (India)
- Jaipur (India)
- Chennai (India)
- Mumbay (India)
- Lahore (Pakistan)
- Bhopal (India)
- Surat (India)
- Indore (India)
- Rajkot (India)
- Bangkok (Thailand)
- Bangalore (India)
- Pune (India)
- Ahmedabad (India)
- Bangkok (Thailand)
- Jakarta (Indonesia)
- Kuala Lumpur (Malaysia)
- Delhi (India)
- Manila (Philippines)
- Bangkok (Thailand)
- Kuala Lumpur (Malaysia)
- Kuala Lumpur (Malaysia)
- Manila (Philippines)
- Kolkata (India)

Key:
- BRT
- Metro (incl. Metro, LRT, Skytrain, Monorail)

Paratransit in Asia – Regional Urban & Mobility Dynamics

High usage of motorized 2 wheelers …
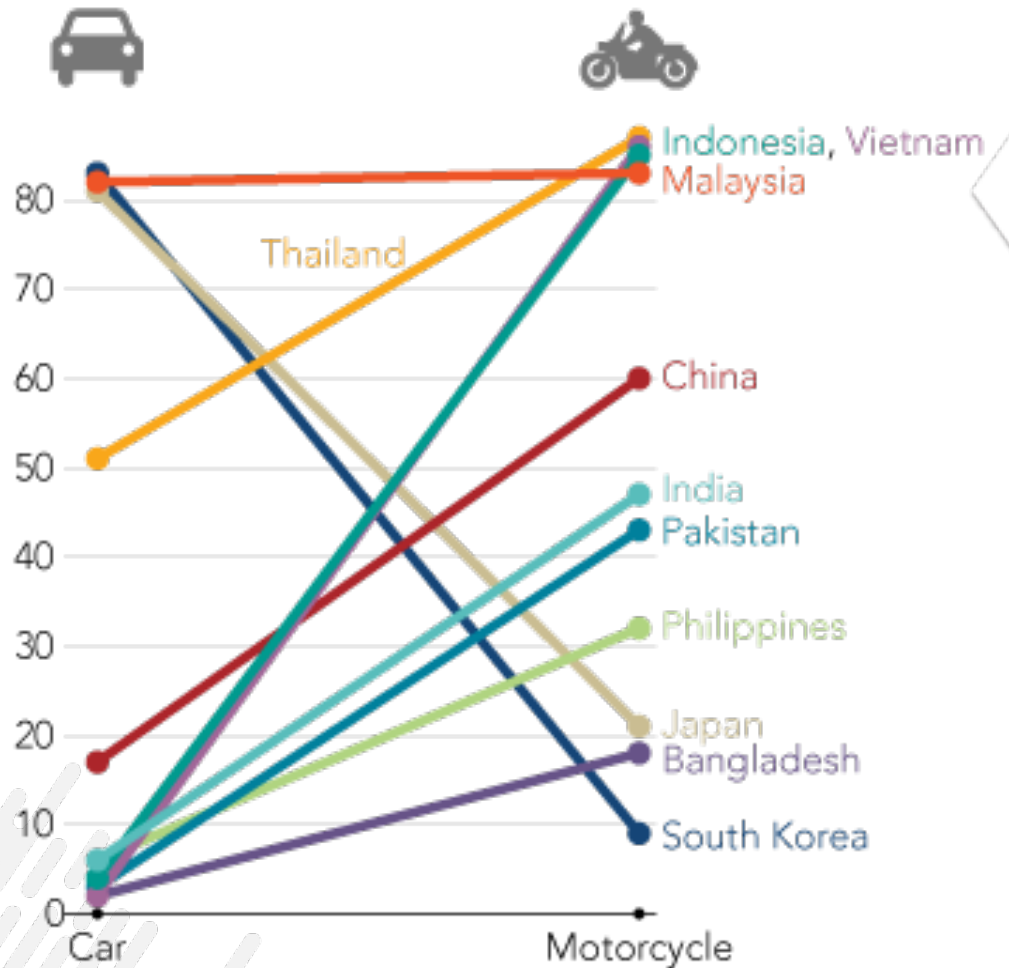
Households that have a motorcycle or a car (in percent)
Source: Pew Research Center, 2015

Ho Chi Minh City – Dien Bien Phu axis at rush hour

1. **Car dominates in relatively few Asian countries**. Instead in places like Indonesia, Vietnam and Thailand, **motorized 2 wheelers rule.**
2. As these countries grow richer, they are likely **to move towards car ownership** (with a consequence to increase the burden on already overcrowded roads).
3. Despite attempts to improve PT infrastructure, due to rapid economic growth, **cars are set to take over motorcycles** and become the dominant form of transport.

Glimpse of the Paratransit Universe in Asia

Types of Vehicles ▶

2-Wheelers — Motorcycle (1-2pax)

3-Wheelers — Tricycle (1-2pax), Motorised Tricycle (2-8 pax)

4-Wheelers — Car (4-8 pax), Van (c. 10 pax), Minibus (15 to 25 pax)

CAMBODIA ▶
- Motodop
- Cyclo
- Remork
- Bajaj

INDIA ▶
- Cycle-Rickshaw
- Auto-Rickshaw
- Vikram/ Tempo
- Force Cruiser
- Tata-Magic
- Mahindra Gio
- Maruti Omni

INDONESIA ▶
- Ojek
- Becak
- Betor
- Bemo
- Mikrolet
- Angkot

PHILIPPINES ▶
- Pedicab
- Tricycle
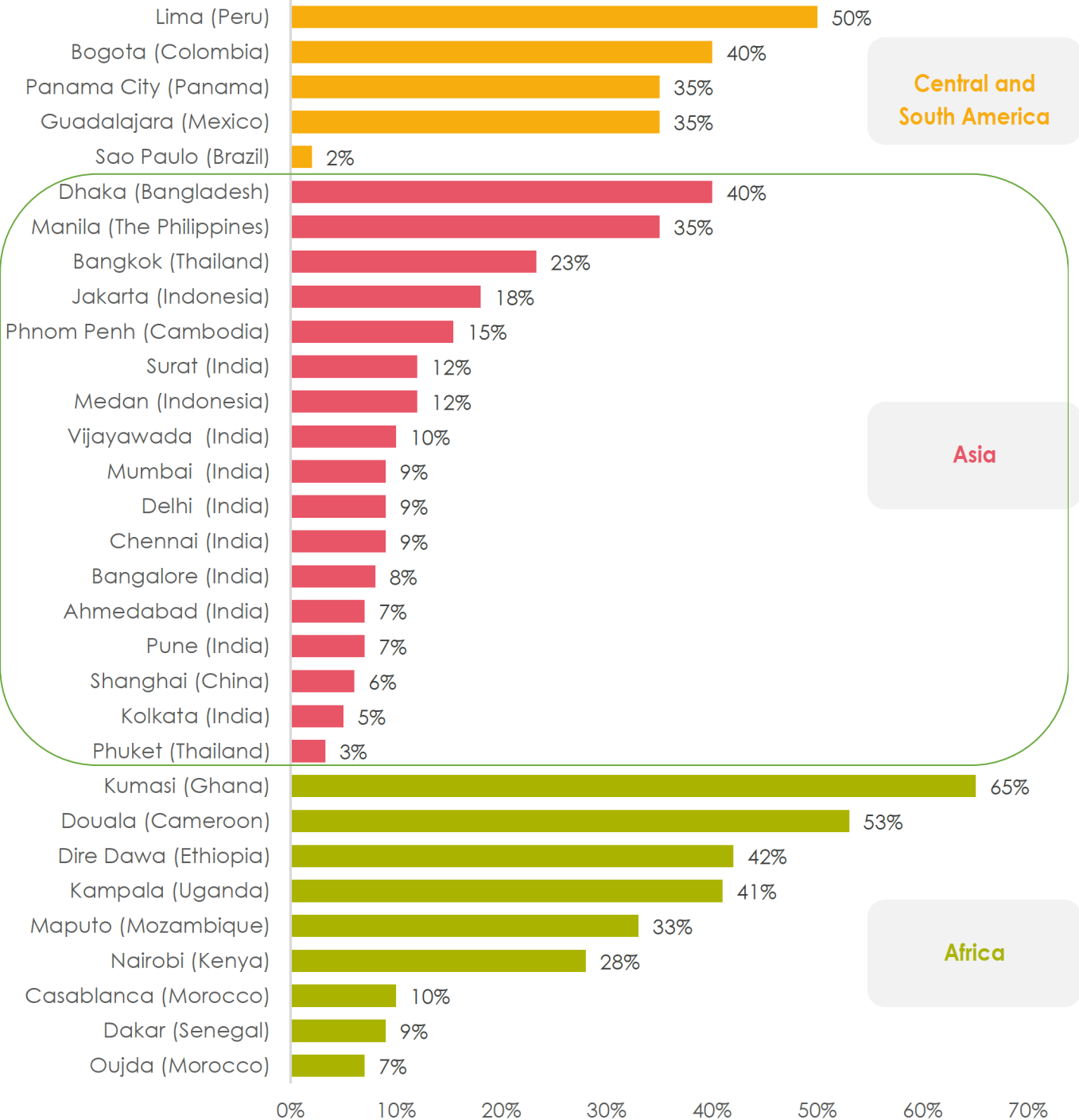- Van UV Express
- Jeepney

VIETNAM ▶
- Xe Om

Overview of the Paratransit Modal Share in Asia

High-Level Overview

Comparison of Paratransit's Modal Share* (in terms of daily trips) in Various Cities in Asia

Source: compilation of various references.
*The modal split is calculated differently in each city

Central and South America

City	%
Lima (Peru)	50%
Bogota (Colombia)	40%
Panama City (Panama)	35%
Guadalajara (Mexico)	35%
Sao Paulo (Brazil)	2%

Asia

City	%
Dhaka (Bangladesh)	40%
Manila (The Philippines)	35%
Bangkok (Thailand)	23%
Jakarta (Indonesia)	18%
Phnom Penh (Cambodia)	15%
Surat (India)	12%
Medan (Indonesia)	12%
Vijayawada (India)	10%
Mumbai (India)	9%
Delhi (India)	9%
Chennai (India)	9%
Bangalore (India)	8%
Ahmedabad (India)	7%
Pune (India)	7%
Shanghai (China)	6%
Kolkata (India)	5%
Phuket (Thailand)	3%

Africa

City	%
Kumasi (Ghana)	65%
Douala (Cameroon)	53%
Dire Dawa (Ethiopia)	42%
Kampala (Uganda)	41%
Maputo (Mozambique)	33%
Nairobi (Kenya)	28%
Casablanca (Morocco)	10%
Dakar (Senegal)	9%
Oujda (Morocco)	7%

Regional Paratransit Key Dynamics

Emergence of Digital Tools

Mobile Internet Users in 2019 ➔ 48% of population in Asia

Pakistan (2016)
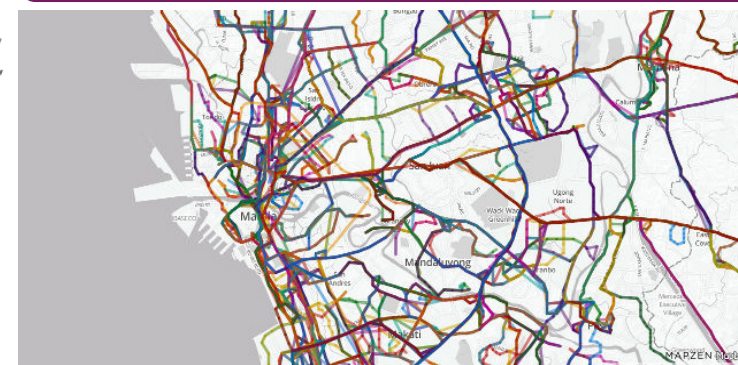Uber, Careem, Shahi Sawari

Bangladesh (2015)
Uber, Pathao, MUV, SAM, Shohoz Rides

India (2010)
Ola Cabs, Uber, Meru Cabs, Carzonrent, Savaari Car Rentals, Fasttrack Taxi App, Mega Cabs

Thailand (2013)
Grab, Line Man, Bolt, True Ryde

Mapping RHAs (2018)

Sri Lanka (2015)
PickMe, MyCabz, Bolt, Uber

Myanmar (2015)
Grab, Oway Ride, Hello Cabs, FastGO, GetRide, OK Taxi

Cambodia (2016)
Grab, PassApp, WeGo, TADA, Eagle

China (2011)
Didi Chuxing, Dida Pinche, Caocao Zhuanche, Yidao YongChe

Vietnam (2013)
Grab, GoJek, Be, GoDee, Mai Linh

Lao PDR (2016)
LOCA, DriveUp

Philippines (2013)
Grab, Go Lag, Hirna, HYPE, Micab, OWTO, U-HOP

Indonesia (2010)
Grab, GoJek, BlueBird, UBER

E-Hailing Services

gojek | Grab | OLA | UBER | DiDi More than a journey | Careem | GO LAG

E-Payment & Smart Ticketing

Load credit → Charge fee

Pay ← → Provide services

Payments
Customers load credit into GoPay, an e-wallet, to pay for multiple services

GoPay charges transaction fees from merchants, the rate is not publicly disclosed

GoJek model

GPS and mapping tools

Regional Paratransit Key Dynamics

Adoption of New & Clean Vehicle Technology

E 3W Market: India fast growing market by 2024, **nearly half of new 3W sold will be EV** (Crisil, 2021)

Number of E-Vehicles (EV) Registered in Selected Asian Countries

Country	Number of electric 2/3-wheelers	Year
Number of electric 2-wheelers registered		
Vietnam	1,350,000	2020
Malaysia	2,000	2020
Thailand	2,300	2020
Indonesia	3,000	2018
India	600,000	2019
Number of electric 3-wheelers registered		
Philippines	4,318	2020
India	2,380,000	2019

Safa Tempo drivers in Kathmandu (Nepal) (source: *Shilu Manandhar, GPJ Nepal*)

Piaggio CNG 3-Wheelers in Bhopal (2019)

Many major cities India in successfully converted from gasoline to CNG 3-wheelers
→ *The immediate result has been reduced emission of pollutants*
→ *But fuel supply (and fueling infrastructure) is a concern (long queues for CNG refueling in Delhi)*

Vehicle Modernization (Electrification)

Electric mobility policies (for production and usage)
→ *Roadmap and Targets* (EV production)
→ *Fiscal incentives* (reducing import tax, subsidy for buyers of electric jeepneys, motorcycles and tricycles, …)
→ *Non fiscal incentives* (charging infrastructure, registration and licensing)

From the Diagnosis to Identification of Reform Levers

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From the Diagnosis to Identification of Reform Levers

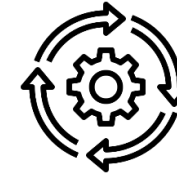Diagnosis ➜ Identifying Externalities
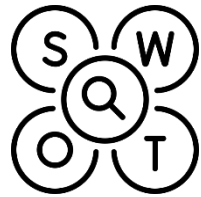
SWOT analysis

For each stakeholders (Local Authorities/ Owners / Drivers / Users)

By type of Paratransit service (On demand / Fixed Route)

Defining priorities and issues to tackle

Integrate paratransit into the mobility system

Reduce negative externalities

Reforming paratransit

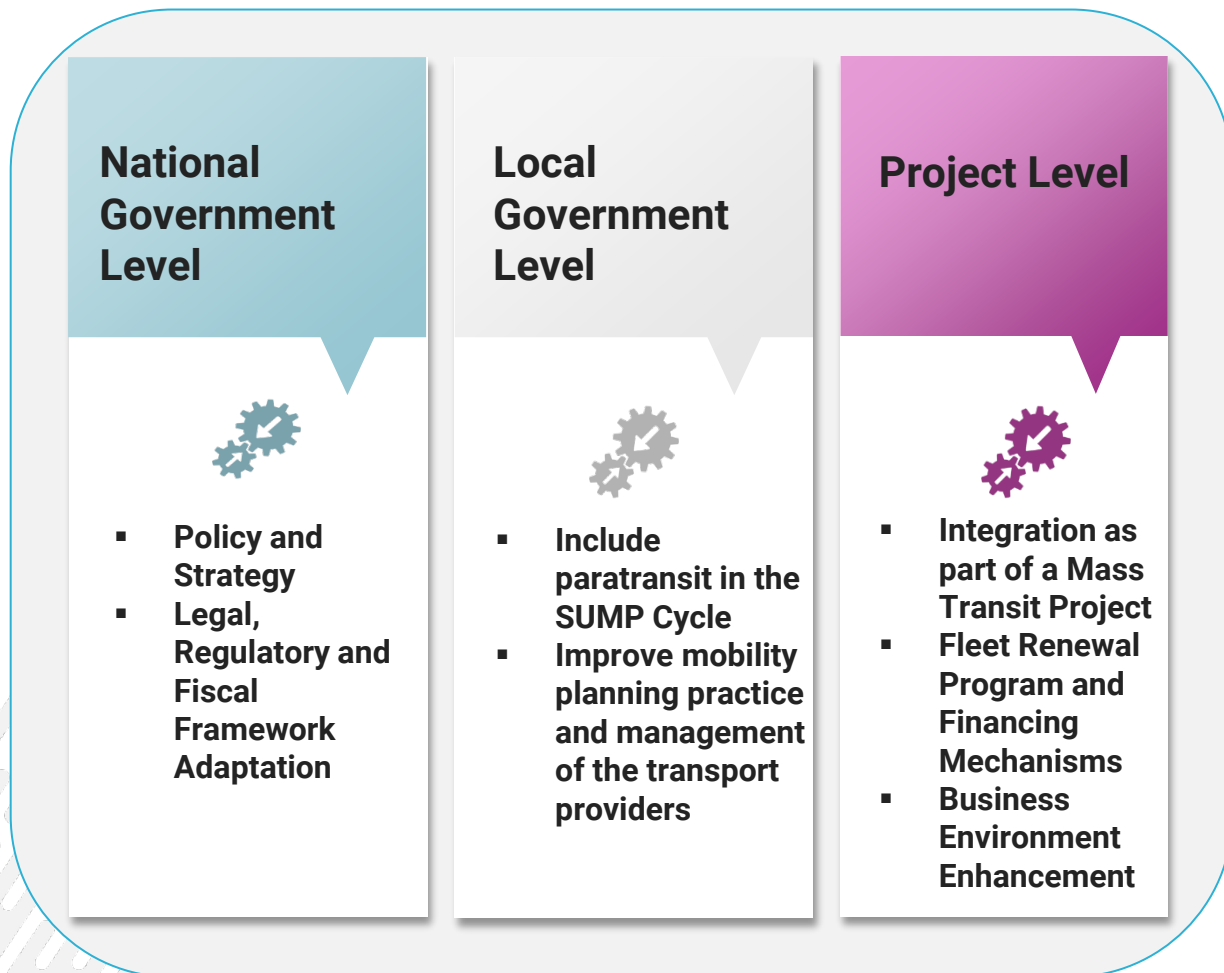**Modernise operations**

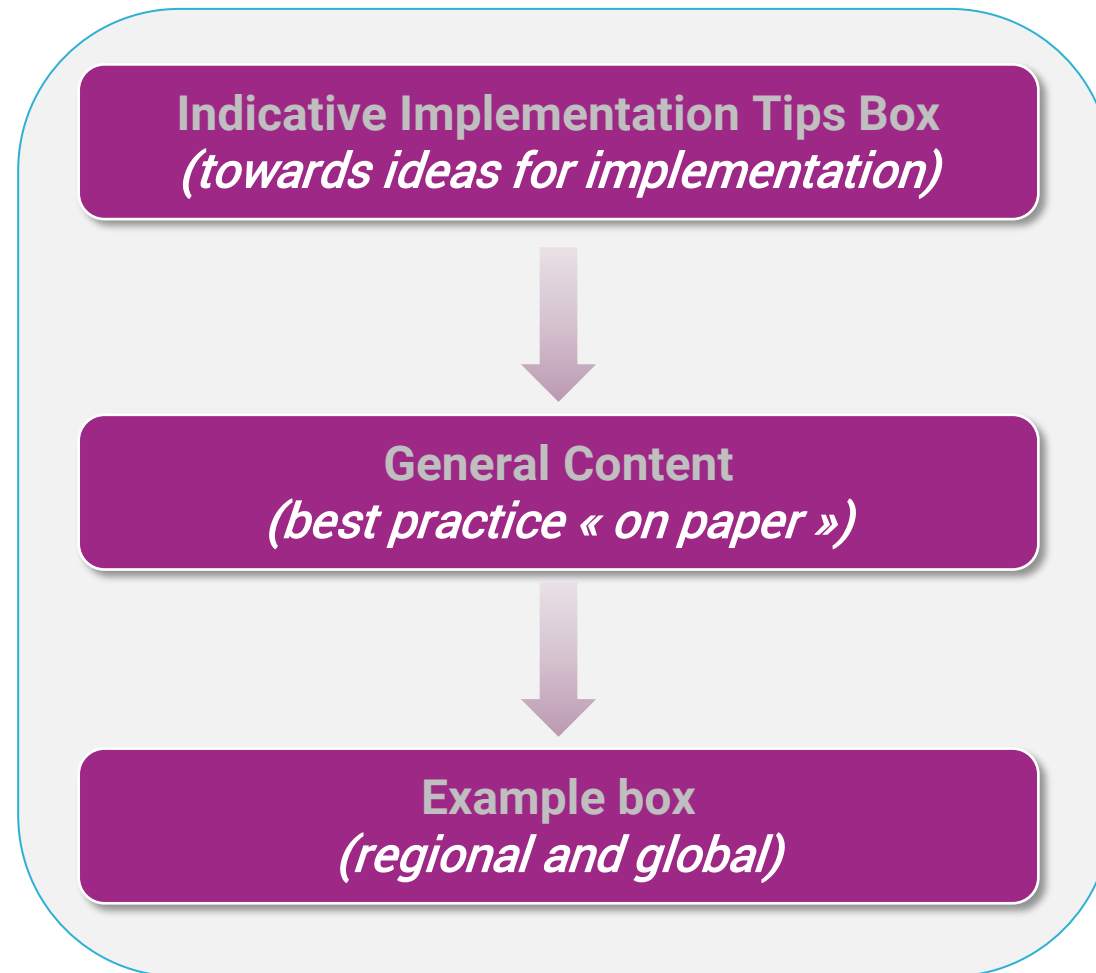**Secure sustainable livelihoods**

Operational Recommendations

"Identifying the relevant level to support the modernisation of the sector"

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Paratransit in Asia - Recommendations Takeaways

Recommendation Levels

National Government Level

- Policy and Strategy
- Legal, Regulatory and Fiscal Framework Adaptation

Local Government Level

- Include paratransit in the SUMP Cycle
- Improve mobility planning practice and management of the transport providers

Project Level

- Integration as part of a Mass Transit Project
- Fleet Renewal Program and Financing Mechanisms
- Business Environment Enhancement

Recommendation Structure

Indicative Implementation Tips Box
(towards ideas for implementation)

↓

General Content
(best practice « on paper »)

↓

Example box
(regional and global)

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National Level

Reform, Modernise & Integrate Paratransit – National Level

Progress →

Component 1 Legislative	Component 2 Regulatory	Component 3 Fiscal	Component 4 Programmatic

Define Framework

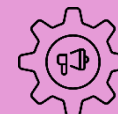**Action N1:** Defining the activity of the paratransit sector within the law

Define Rules

Action N2: Defining and monitoring the minimum conditions to access to the profession
Action N3: Sanction clandestine transport
Action N4: Defining and enforcing the traffic conditions of the vehicles assigned to the service
Action N5: Guarantee and strengthen the social protection of operators
Action N6: Setting and monitoring vehicle emission standards

Define Priorities

Action N7: Using the fiscal level to promote the paratransit reform

Define Actions

Action N8: Defining and implementing specific training courses for the transport professions, including the specificities of paratransit
Action N9: Implementing a national labelling process
Action N10: Supporting industrial sectors raising the level of quality and professionalism of paratransit stakeholders
Action N11: Launch calls for projects for experimentation
Action N12: Seek partnerships with international donors

Example - FAME Programme in India

Define and confirm the role and place of e-paratransit (e-rickshaws) in the mobility ecosystem

Define specific criteria to obtain a licence to operate electric vehicles

Rebates on e-vehicles to encourage the purchase and foster the manufacturing industry; Cheaper tariffs on electricity

Example - PUVMP in the Philippines

Defining the access to the industry through route rationalization

Financial support to the operators to renew their fleet

Operators' trainings (vehicle, operation & management); Capacity building to local authorities in charge of the implementation of the reform

Local Level – Within SUMP Framework Development

Implementation and monitoring
- Conduct the reform of the paratransit industry
- Observatory of urban mobility

Diagnosis phase
- Quantitative surveys
- Qualitative surveys
- User satisfaction surveys

4-Implementing
Proper management, monitoring, reporting and communication

1-Preparing well
Key actors and process

SUMP

3-Elaborating
Effectives measures, clear responsabilities and allocated budgets

2-Rational and transparent goal setting
Vision, objectives, priorities and common targets

Detailing the selected scenarios into measures
(with cost, timeframe, potential impacts and risks)
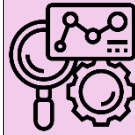- Paratransit routing and operations optimisation
- Paratransit riding quality and comfort improvement
- Reform of the paratransit industry

Elaboration of the vision and the scenarios
- Priorities
- Goals

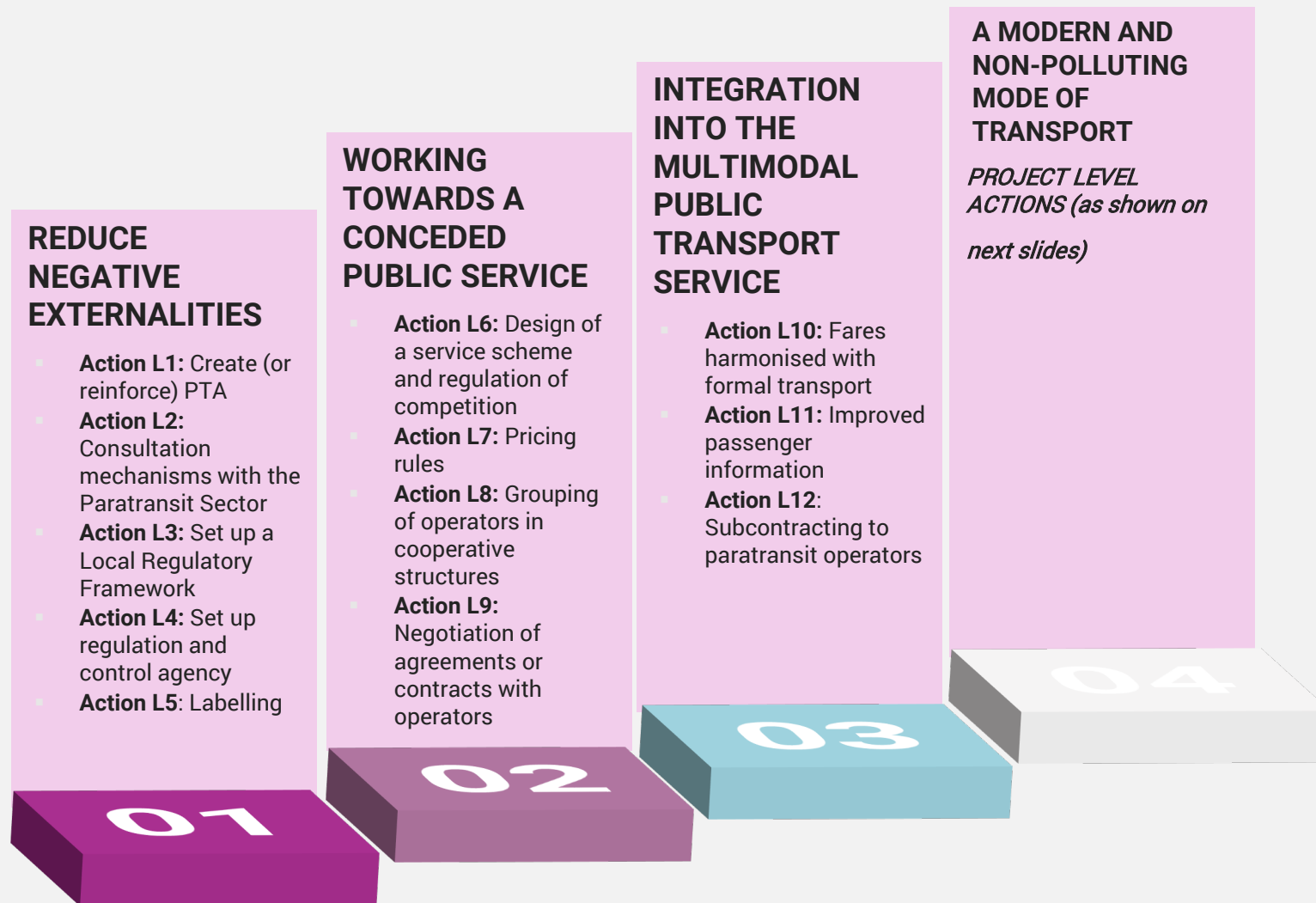|	SUMP's step description
	Example of paratransit consideration at each SUMP's step (inspired by SUMP of Medan Metropolitan Area)

USING MOBILISEYOURCITY PARATRANSIT TOOLKIT SET OF ACTIONS AT EACH STEP OF THE SUMP
[TO BE UPDATED SOON]

Understanding Paratransit
Defining and diagnosing paratransit for sustainable mobility planning

Reforming Paratransit
A catalogue of practical actions for policy-makers and practitioners

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Local Level – Outside of SUMP Development

Steps to Reform, Modernise & Integrate Paratransit - Local Level

REDUCE NEGATIVE EXTERNALITIES

- **Action L1:** Create (or reinforce) PTA
- **Action L2:** Consultation mechanisms with the Paratransit Sector
- **Action L3:** Set up a Local Regulatory Framework
- **Action L4:** Set up regulation and control agency
- **Action L5:** Labelling

WORKING TOWARDS A CONCEDED PUBLIC SERVICE

- **Action L6:** Design of a service scheme and regulation of competition
- **Action L7:** Pricing rules
- **Action L8:** Grouping of operators in cooperative structures
- **Action L9:** Negotiation of agreements or contracts with operators

INTEGRATION INTO THE MULTIMODAL PUBLIC TRANSPORT SERVICE

- **Action L10:** Fares harmonised with formal transport
- **Action L11:** Improved passenger information
- **Action L12:** Subcontracting to paratransit operators

A MODERN AND NON-POLLUTING MODE OF TRANSPORT

PROJECT LEVEL ACTIONS (as shown on next slides)

01

02

03

04

01

- **(L2) Kochi (India): strengthening public consultation with operators** (consultation led to the creation of a cooperative)
- **(L4) India: Creation of dedicated agencies** ARAI (Automative Research Association of India) and ICAT (International Center for Automotive Technology) both specialized in setting up standards and controlling e-vehicles.

02

- **(L6) Jakarta (Indonesia): regulate competition between BRT and paratransit operators** (establishment of a trunk and feeder model)
- **(L8) Manila (Philippines): in the context of the PUMVP implementation**, route rationalization led to Jeepneys operators' consolidation

03

- **(L10) Jakarta (Indonesia): JakLingo intermodal integration progra**mme (passengers can use a combination of minibus and TransJakarta trips with an integrated for 3-hour period)

Project Level – Integrating Paratransit Into a Mass Transit System (P1)

Paratransit Transition Path: Key Project Phases to Integrate Existing Paratransit Services

1- Early-Stage Project Phase

- **Engage paratransit stakeholders** and start a negotiation process
- **Conduct** socio-economic impact **studies**
- Prepare **compensation / scrapping vehicle programme**
- Elaborate training and **capacity building roadmap**

2- Design Project Phase

- **Define a feeder network** for the trunk roads
- Elaborate the **rules for paratransit service operations**
- Adopt **equipment design guidelines** with features that include paratransit operation

3 - Implementation project Phase

- **Conduct compensation / scrapping vehicle programme**
- **Contract with** paratransit **operators**
- Apply n**ew principles for pricing and ticketing**
- Adopt **common passengers' information system**
- **Provide capacity building** for the paratransit operators

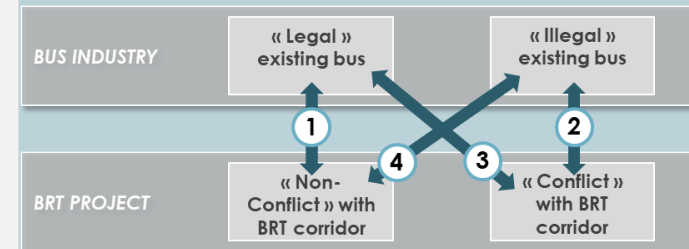### 4 - Operational project phase

- **Monitor the progress of the integration** of the existing paratransit services
- **Conduct audit** and evaluation to adjust the measures

Example – Example of Bus Rapid Transit Peshawar

Synthesis of the Peshawar Authorities' Compensation Proposal to the Paratransit stakeholders

BUS INDUSTRY RESTRUCTURING PROGRAM

BUS INDUSTRY	« Legal » existing bus	« Illegal » existing bus
	1	2
	4 3	
BRT PROJECT	« Non-Conflict » with BRT corridor	« Conflict » with BRT corridor

Proposal for transition to the bus owners / operators

1	No treatment – line to be kept as it is
2	Line to be removed/ or to be shortened after legalisation/ or to be reallocated after legalisation and relocated in « non-conflict » area
3	Line to be shortened / reallocated another line in a « non-conflit » area
4	Line to be legalised or to be removed

Project Level – Dedicated to the Paratransit Sector and Stakeholders

Aid schemes to renew fleets with low-emission vehicles (P2)

Developing the implementation of digital tools (P3)

Professionalisation and capacity building program (P4)

Regional and Global Examples

(P2- Fleet renewal) PUMVP (Philippines):
• Access to modern vehicles with improved travel conditions and safety standards, reduced impact on the environment
• Consolidation of the sector to get access to financial facilitates

(P3- Digital tools) Partnership between Public Authorities and RHAs provider (Jakarta / Singapore) :
• "Grab Posisi" = (GPS) trajectory dataset for urban applications (e.g. solving transportation problems, traffic prediction, transportation planning)
(Digital tools) Complementary actions:
• Ticketing
• Geolocalisation / Mapping
• Passenger Information

(P4- Professionalisation) PUMVP (Philippines):
• Social support program (Tsuper Iskolar program) includes skills and entrepreneurship training (e.g.mechanics training) to provide new livelihood options for affected drivers.
(Professionalisation) Dakar (Senegal):
• Drivers and helpers have access to social protection and loans of the vehicle owners are guaranteed by an Ad Hoc professional association.

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Download available here

Other MobiliseYourCity Materials available on the Knowledge Platform
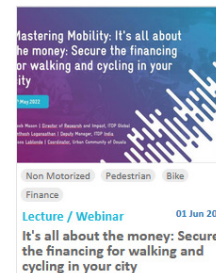
MobiliseYourCity Asia Programme

Solène BAFFI
sbaffi@codatu.org
Project Manager

www.codatu.org
http://mobiliseyourcity.net/

Clément MUSIL
clement.musil@espelia.fr
Programme Manager Officer (PMO)
MobiliseYourCity Asia – Espelia
Consultant

espelia
Conseil pour
la performance publique

Codatu

AFD   Mobilise Your City