

**Decarbonising Urban Mobility:  
Comprehensive  
Solutions for Sustainable Cities**  
**13:45-15:15**



**Moderator**



**Mr. Joshua Paternina Blanco**

**Policy Analyst**

**DTEE in Morocco Project Manager  
International Transport Forum (ITF)**



# What we did: Forecasting future urban demand and emissions in Morocco



The strategic framework can **complement more detailed analysis** (UMPs and SUMP) by giving a preliminary outlook and comparing it to **potential policy scenarios**



## What we did: Compared two different scenarios varying on policy ambition by 2050

	Limited Ambition	Higher Ambition
<b>Pedestrian and cycling infrastructure</b>	Moderate (40% of roads)	High (60% des routes)
<b>Mass transport infrastructure</b>	Moderate (projects for 5 cities)	High (projects for +10 cities)
<b>Bus network improvements</b>	Weak (max 30% prioritised)	Moderate (max 50% prioritised)
<b>Tax measures</b>	Weak (social taxation)	Weak (individual motorisation)
<b>Urban densification</b>	Moderate (+10%)	High (+20%)
<b>Cleaner vehicles uptake</b>	Moderate (14% of electric vehicles)	High (34% electric vehicles)

\*Scenarios developed based on a scenario definition workshop, as well as on exchanges with Ministries' authorities and on overall ITF assumptions



# What we found: Private vehicle motorisation will increase massively

40%

Population increase in Morocco 2022-2050

35%

Increases in urban passenger trips in Moroccan cities 2022-2050

25%

Private car share (2022)

50%

Private car share (2050)

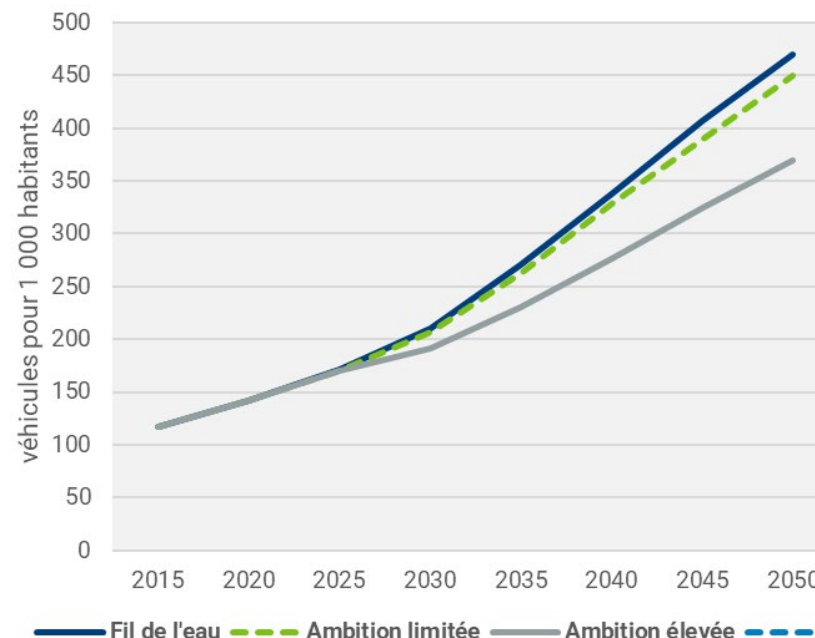
25%

Private car share (2022)

33%

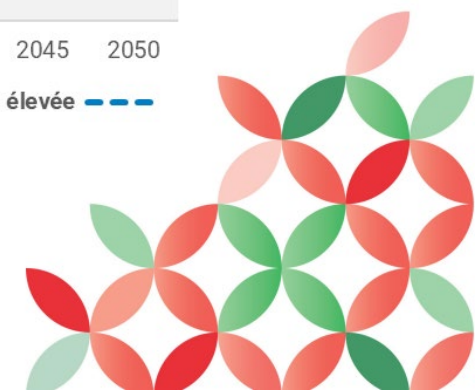
Private car share (2050)

Car motorisation rate in Moroccan cities for three scenarios



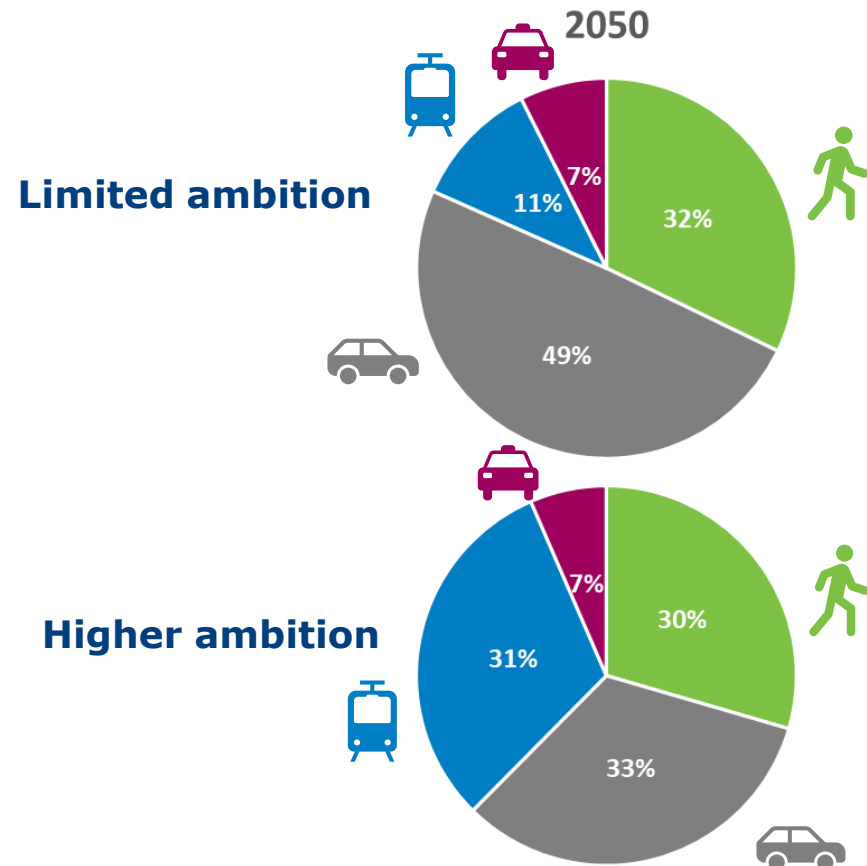
- 2.2 million

Vehicles



# What we found: More than half of transport demand could be done by active and collective modes

Mode share for urban passenger transport activities in Morocco for two scenarios (2050)



## Enablers

60%

Of Moroccan roads have pedestrian or cycling-dedicated infrastructure (vs only 40%)

10 cities

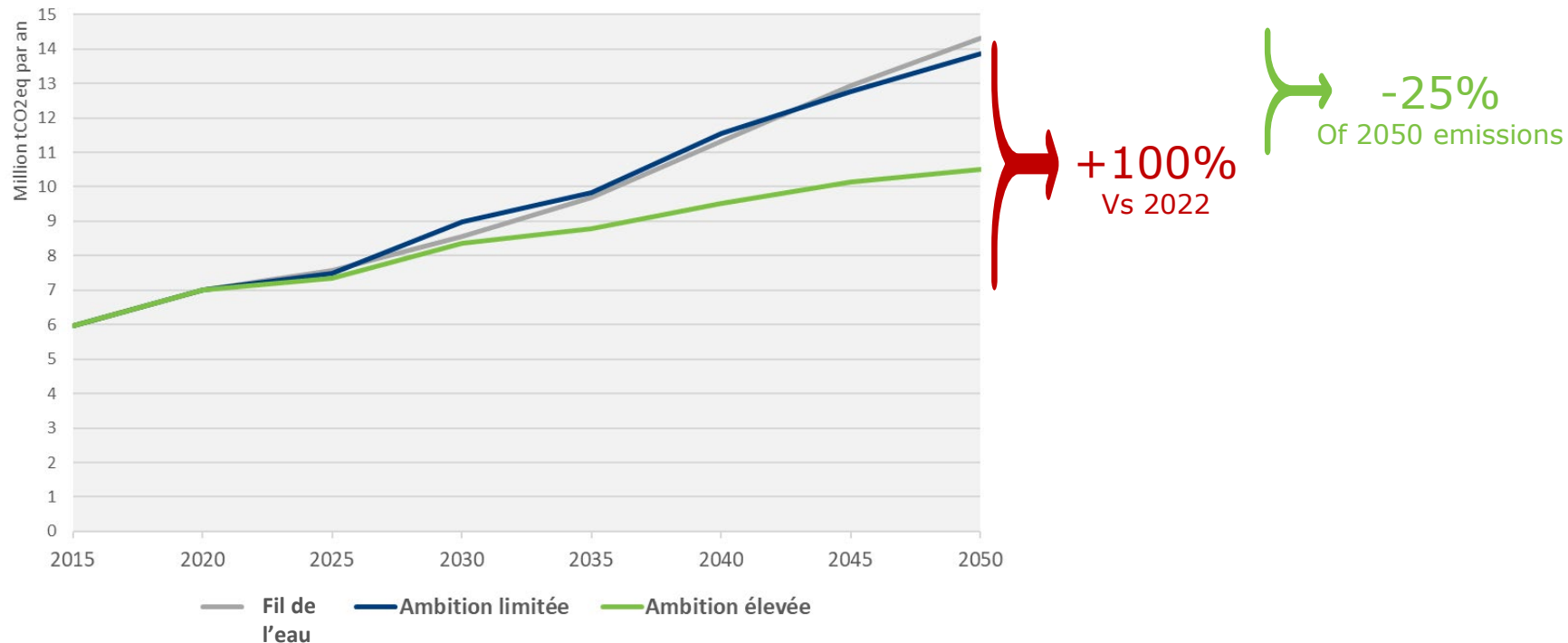
Have mass transit infrastructure projects (vs only 5%)

Higher density



# What we found: Higher ambition will limit GHG emissions growth for urban passenger transport

Evolution of CO2 urban passenger transport emissions (WTW) for three scenarios



## What we recommend

Continue to develop mass transit options (BRT, trams, RER) in more cities, while also improving existing bus services

Implement measures for limiting private vehicle use, especially cars

Foster cleaner vehicle uptake in Morocco's motorcycle, cars and bus fleets

Foster higher urban densities and mixed land-uses to reduce the need of travelling longer distances







**Ms. Émilie Martin**

**Senior Researcher  
Wuppertal Institute**



# Integrated Approaches to Urban Mobility Decarbonisation



**Emilie Martin**

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# The Wuppertal Institute

- > Think tank on sustainable development, climate and energy
- > Department « Urban Living Lab Center », a Collaborating Center created by UN-Habitat
- > Collaborative Projects
- > Capacity-building & Policy
- > Network of universities



## AMERICAS

- 1 Escuela Politécnica Nacional, **Ecuador**
- 2 Universidad de Buenos Aires, **Argentina**
- 3 University Pereira, **Colombia**
- 4 Universidad De la Republica Uruguay, **Uruguay**

## EUROPE

- 5 Blekinge Institute of Technology, **Sweden**
- 6 Technical University of Denmark, **Denmark**
- 7 RWTH Aachen University, **Germany**
- 8 Frankfurt University of Applied Sciences, **Germany**
- 9 Technische Hochschule Ingolstadt, **Germany**
- 10 University of Florence, **Italy**

## ASIA

- 11 University of Kathmandu, **Nepal**
- 12 De La Salle University, **Philippines**
- 13 University of the Philippines, **Philippines**
- 14 Asian Institute of Technology, **Thailand**
- 15 Indian Institute of Technology, **India**
- 16 University of Transport Technology, **Vietnam**

## AFRICA

- 17 University of Rwanda, **Rwanda**
- 18 Cape Town University, **South Africa**
- 19 Akenten Appiah-Menka University of Skills Training and Entrepreneurial Development, **Ghana**
- 20 Mohammed VI Polytechnic University, **Morocco**



# The Wuppertal Institute



Pictures: Muñoz Barriaga, 2019; Bitangaza, 2021; BasiGo, 2023; Martin, 2023; TRI, 2024; Martin, 2023; Martin, 2022



# The Wuppertal Institute in the DTEE project



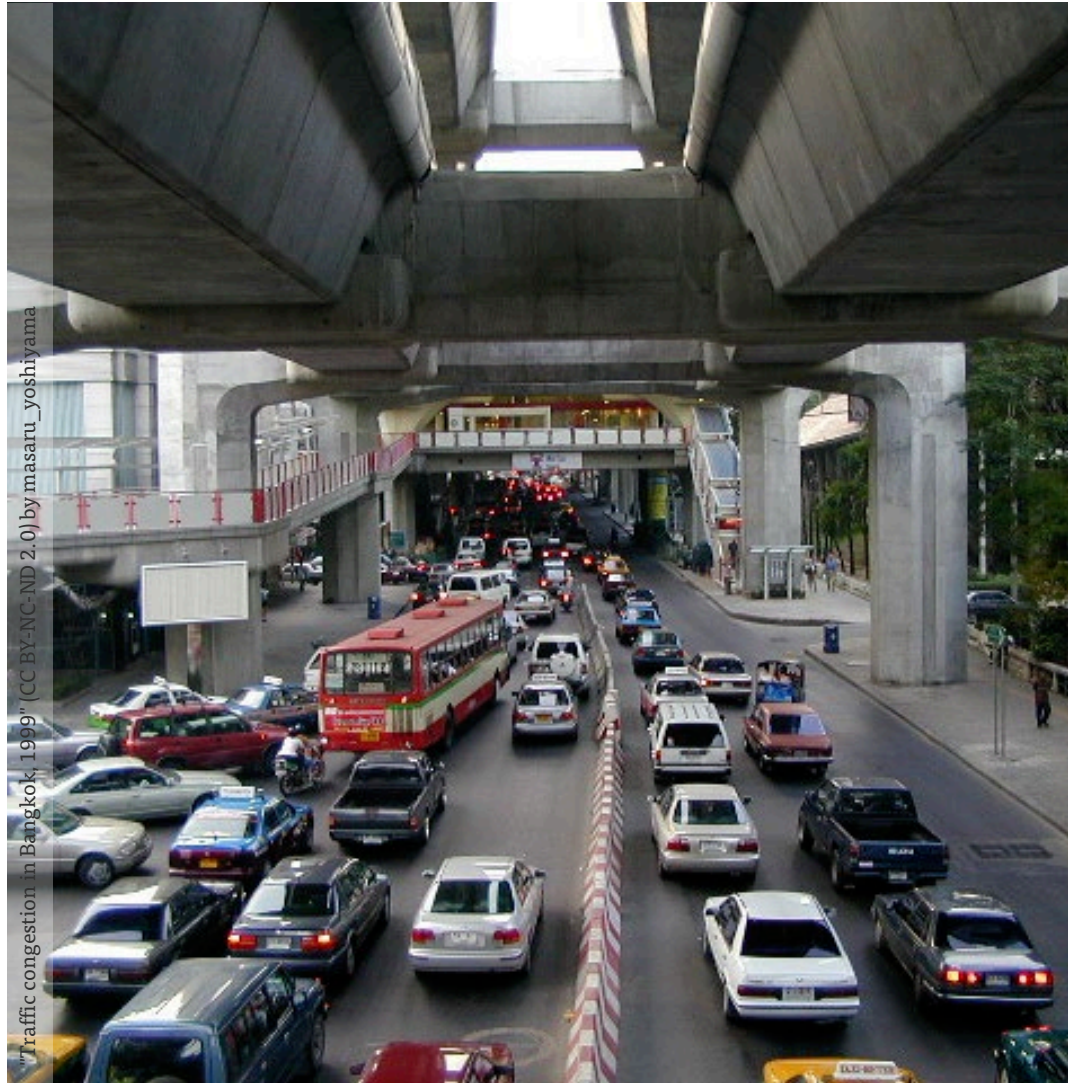
- › Analysis of urban mobility in Moroccan cities
- › Capacity building based on training needs expressed by Moroccan cities



How to design low-carbon  
mobility in cities?



# In which cities do we want to live?





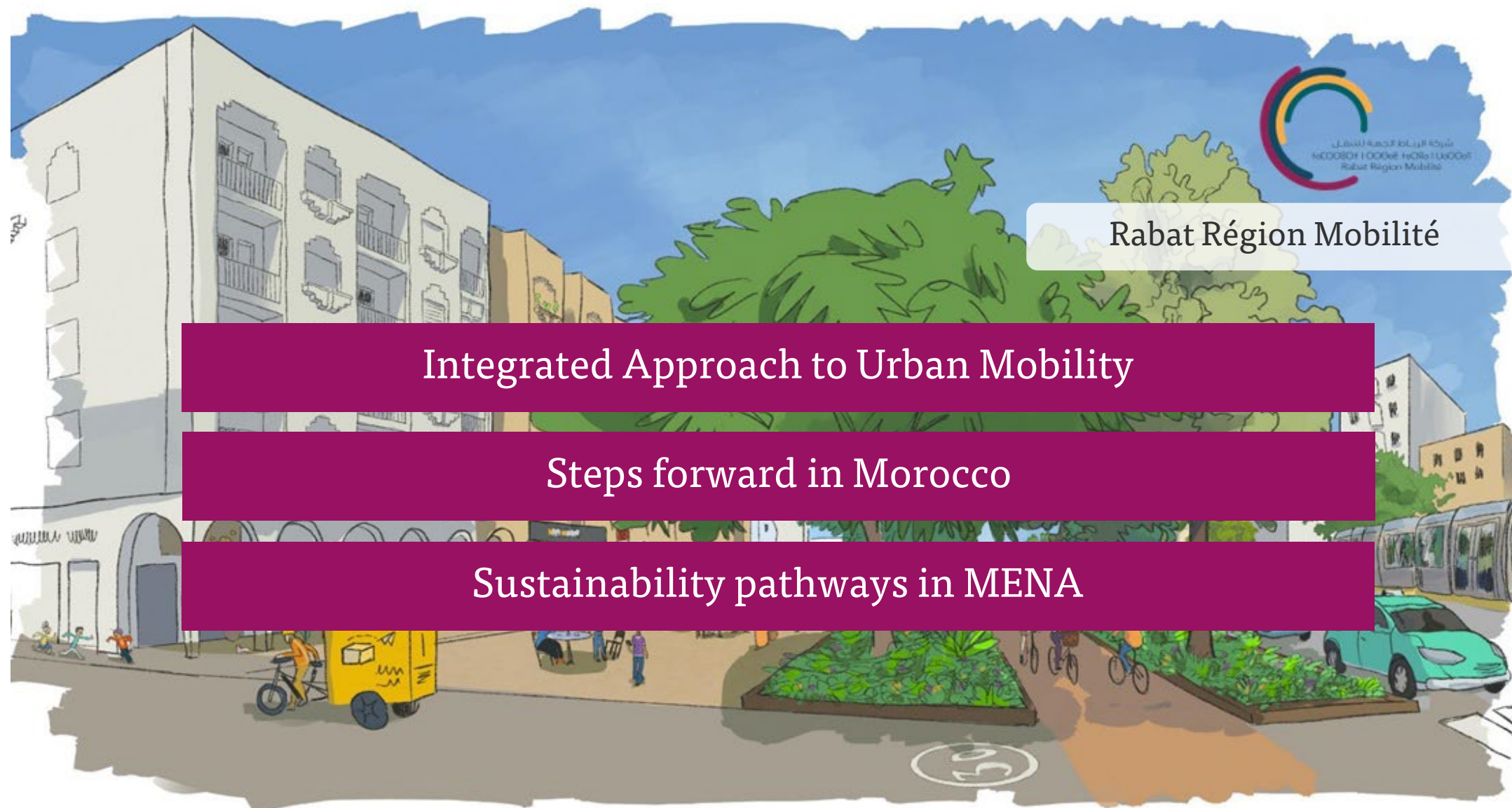
# In which cities do we want to live?



Rabat Région Mobilité



# In which cities do we want to live?



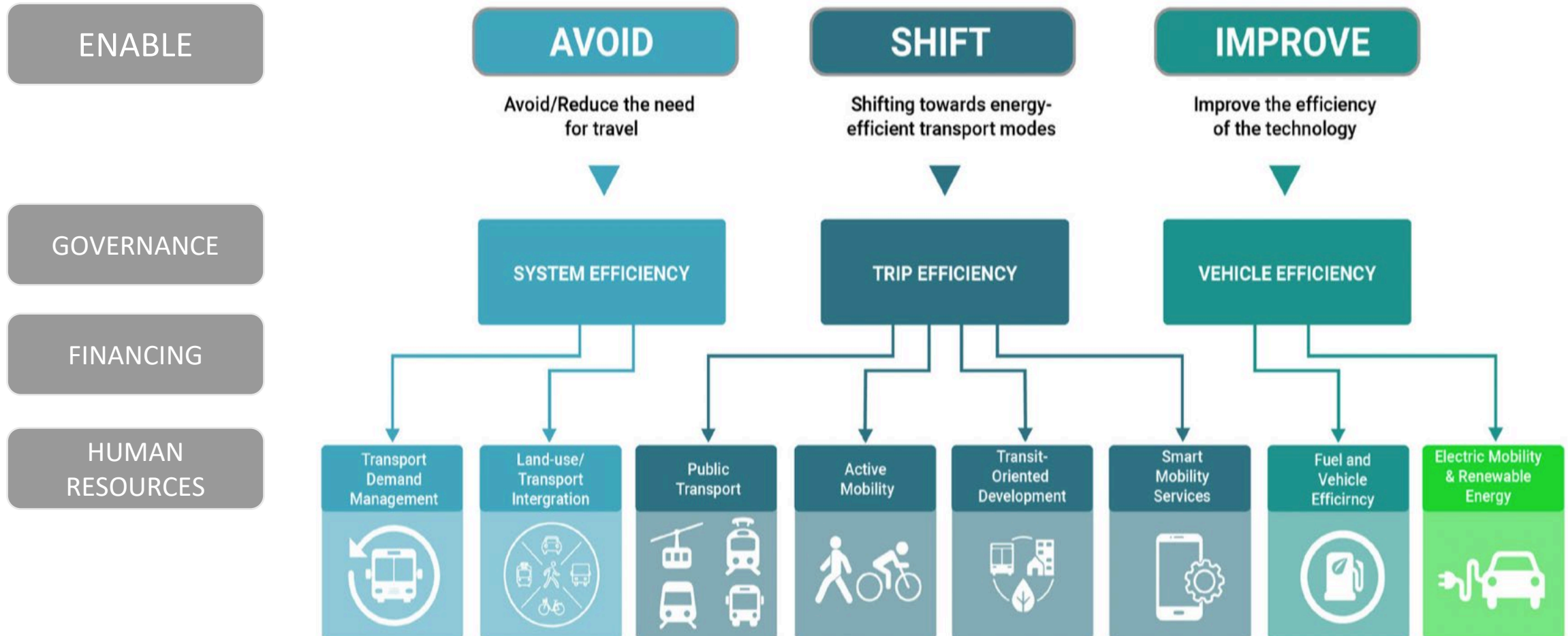
Rabat Région Mobilité

Integrated Approach to Urban Mobility

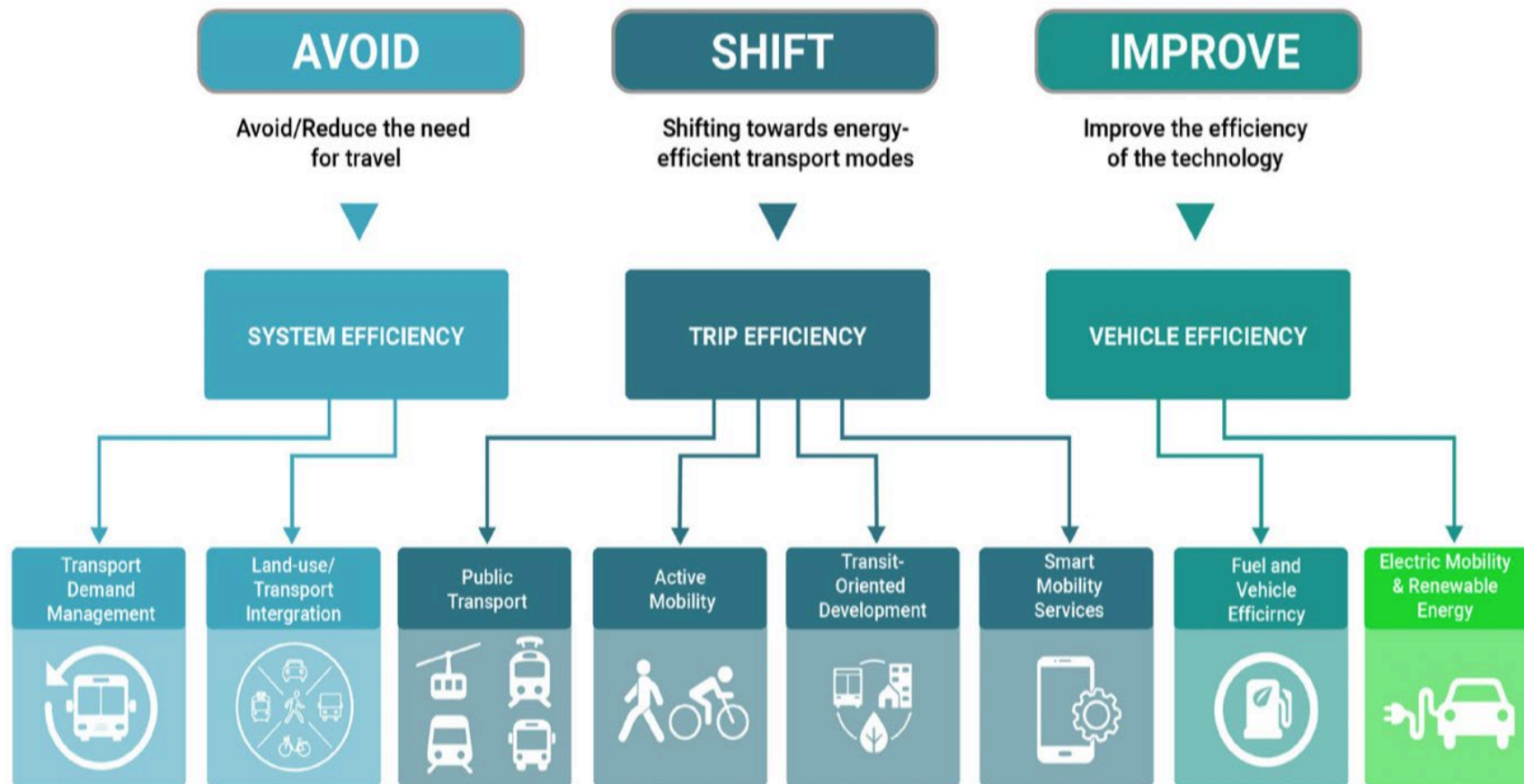
Steps forward in Morocco

Sustainability pathways in MENA

# Integrated Approach to Urban Mobility



# Imbalance



UN-Habitat, 2022

Mitigation potential

Potential for 40-60% of GHG reductions, at lower costs than Improve

Mitigation actions in 2nd-generation NDCs (Slocat, 2022)

5%

20%

66%

# Applying the EASI approach: Morocco

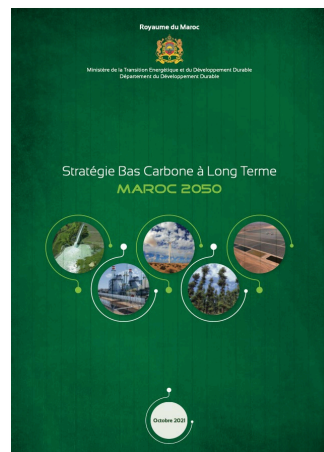
# ENABLE

## Planning

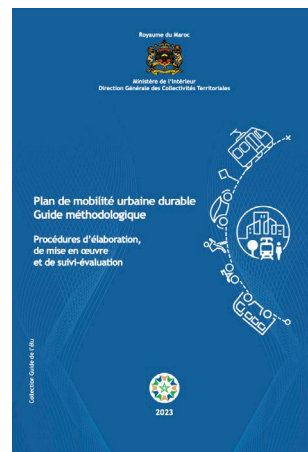
- › GHG mitigation targets & measures in NDC and LTS
- › National Urban Transport Strategy
- › Sustainable Urban Mobility Plans



Royaume du Maroc, 2021

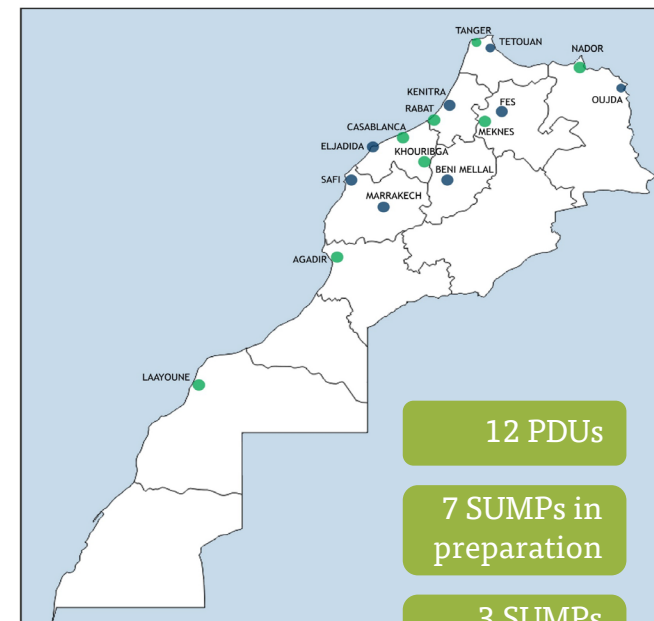


Royaume du Maroc, 2021



Ministère de l'Intérieur, 2023

● Existing plan ● Ongoing



- 12 PDU's
- 7 SUMP's in preparation
- 3 SUMP's planned

DGCT/DMUT, 2024

## Resources

- › Increased financial resources for urban mobility

## Governance

- › Clarifying allocation of responsibilities

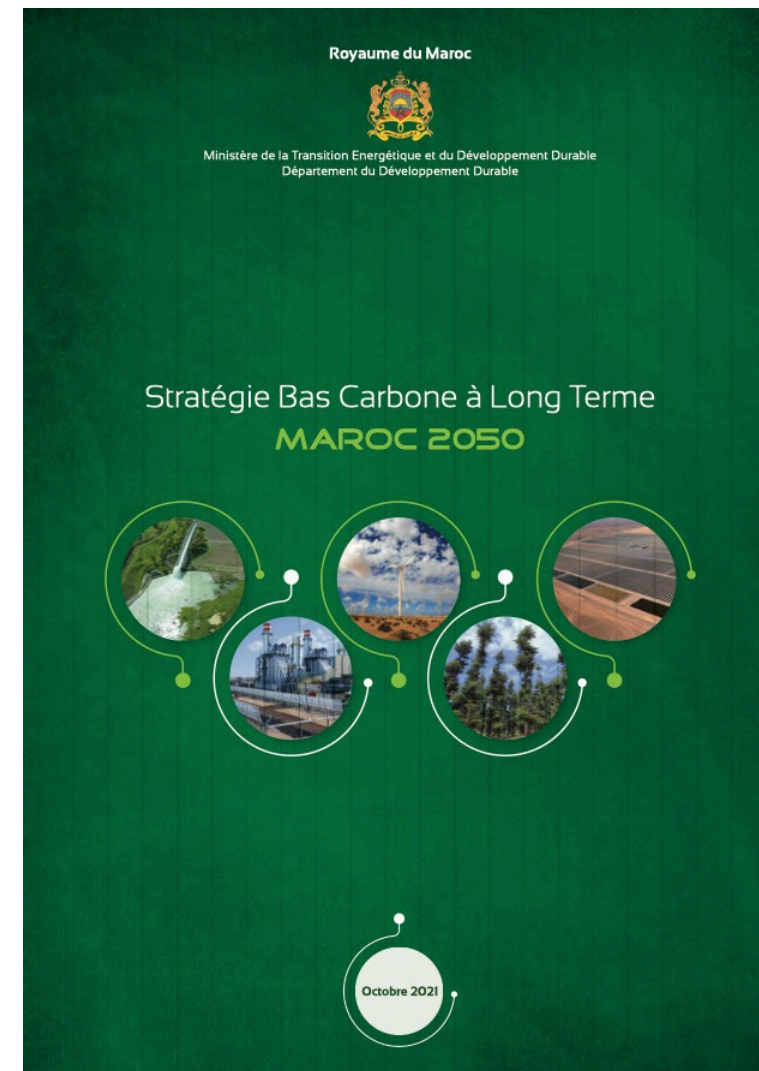


# AVOID

- › Avoid or reduce trips
- › Land use planning
- › Compact and mixed-use cities
- › Transport-oriented development

## Morocco's Long-Term Strategy, 2050

- › Densifying existing fabrics during urban renewal
- › Modulating density based on public transport
- › Introducing compact but pleasant urban forms
- › Promoting urban diversity and limiting the creation of monofunctional areas



# SHIFT



- › Prioritise public transport
- › Prioritise active mobility
- › Prioritise shared mobility





# IMPROVE

- Improving energy efficiency and vehicle design
- Clean energy sources for different types of vehicle



Marrakech, Ncir, 2024



Rabat, RRM (2024)



Rabat, Martin, 2024



Cloud Bike/Telus, 2023



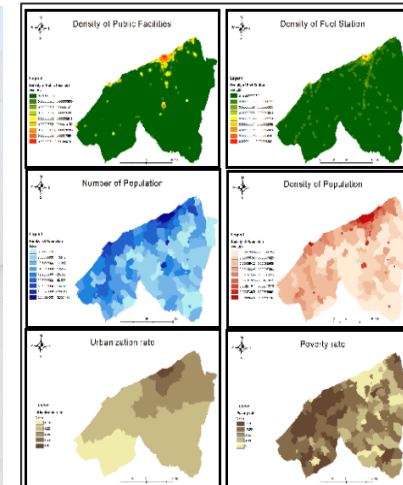
Map Business, 2020



Rabat, Ncir, 2024



Pogo, 2023



**EVPLAN:**  
Electrical Vehicle charging infrastructure Planning and mapping tools for Moroccan and African Cities



Green Energy Park, 2023



Going forward:  
what are actionable pathways  
for *integrated* and *sustainable*  
urban mobility in MENA?

# Integrated approach for *desirable* transitions





# Maintain and accelerate the focus on public transport improvement



Various modes adapted to needs

Integration between modes

Transit Oriented Development

Land value capture

Integrated financing loops



# Empower and leverage the local level



Pictures: Muñoz Barriga/ULLC, 2019



Support citizen design

Lever for active mobility

Citizen-led data collection



# Reconsider innovation



Wattsc, 2023



Baddel, 2023

Combine active & electric



DLR, 2012

Convenient in hot climates

Attract new users to cycling



THANK YOU



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# In-focus Policy Dialogue 1



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Institute for Transport &  
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**Mr Feyzullah Gundogdu**

**Senior Advisor and Head of  
EuroAsia Region  
International Association of  
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**Ms Émilie Martin**

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