



# Accelerating sustainable mobility and land-use transitions in rapidly growing cities: Identifying common patterns and enabling factors

**ITF roundtable**

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November 2021

# Horizon 2020 CREATE



Project Summary and Recommendations for Cities

## Urban Mobility:

Preparing for the Future, Learning from the Past

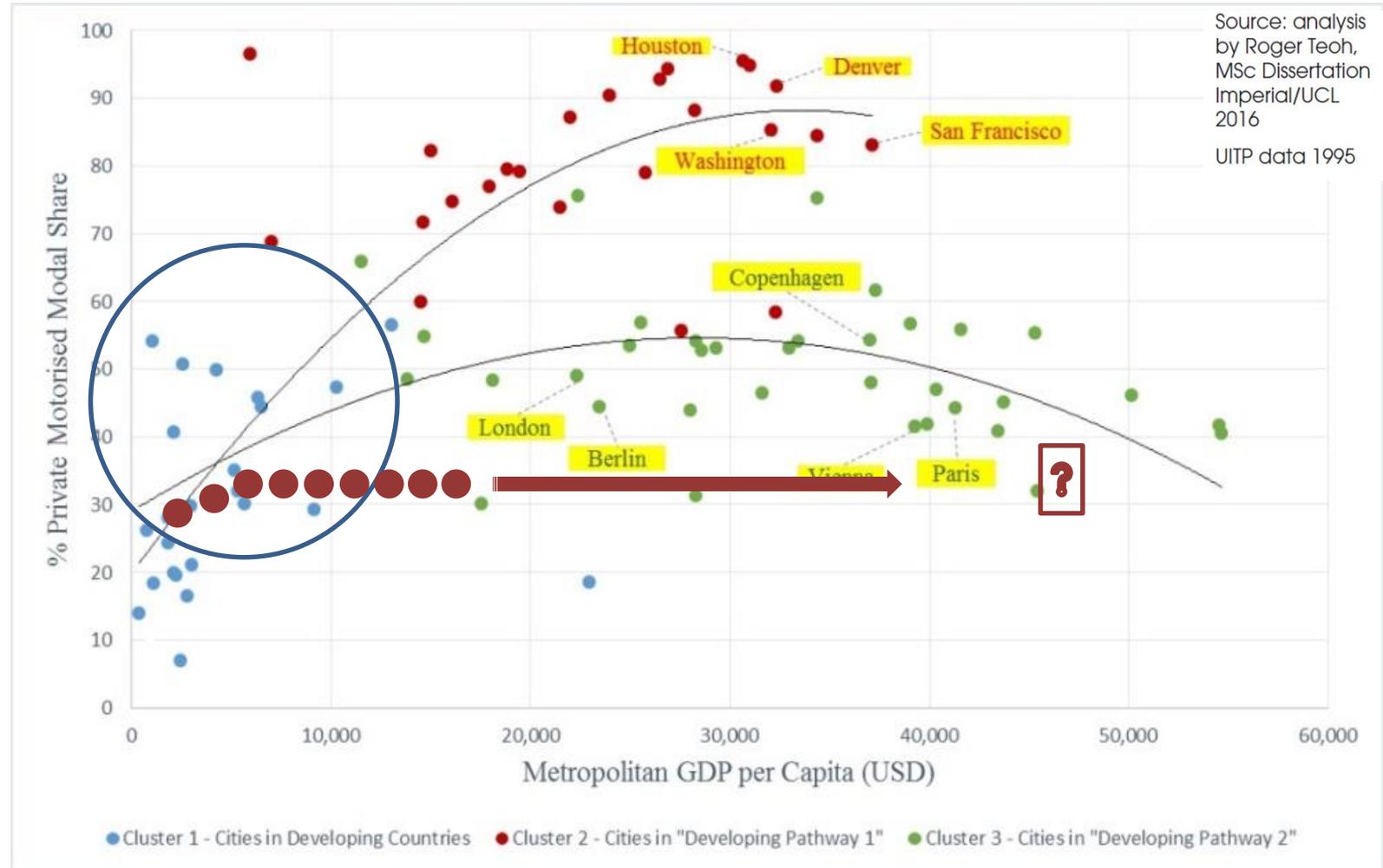


**Congestion Reduction in Europe:  
Advancing Transport Efficiency**

[www.create.eu](http://www.create.eu)

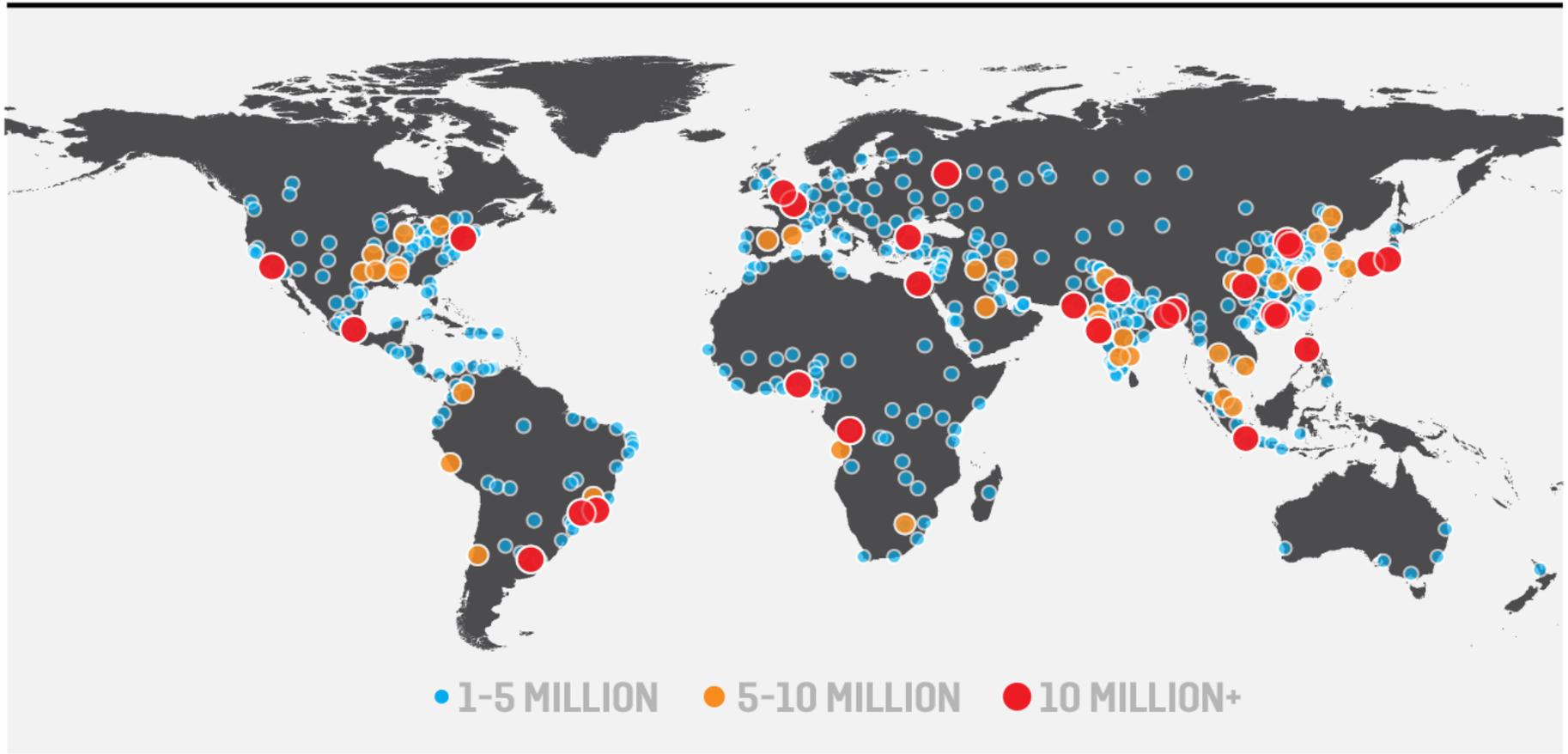


# Urban development pathways



# Why a focus on rapidly growing cities?

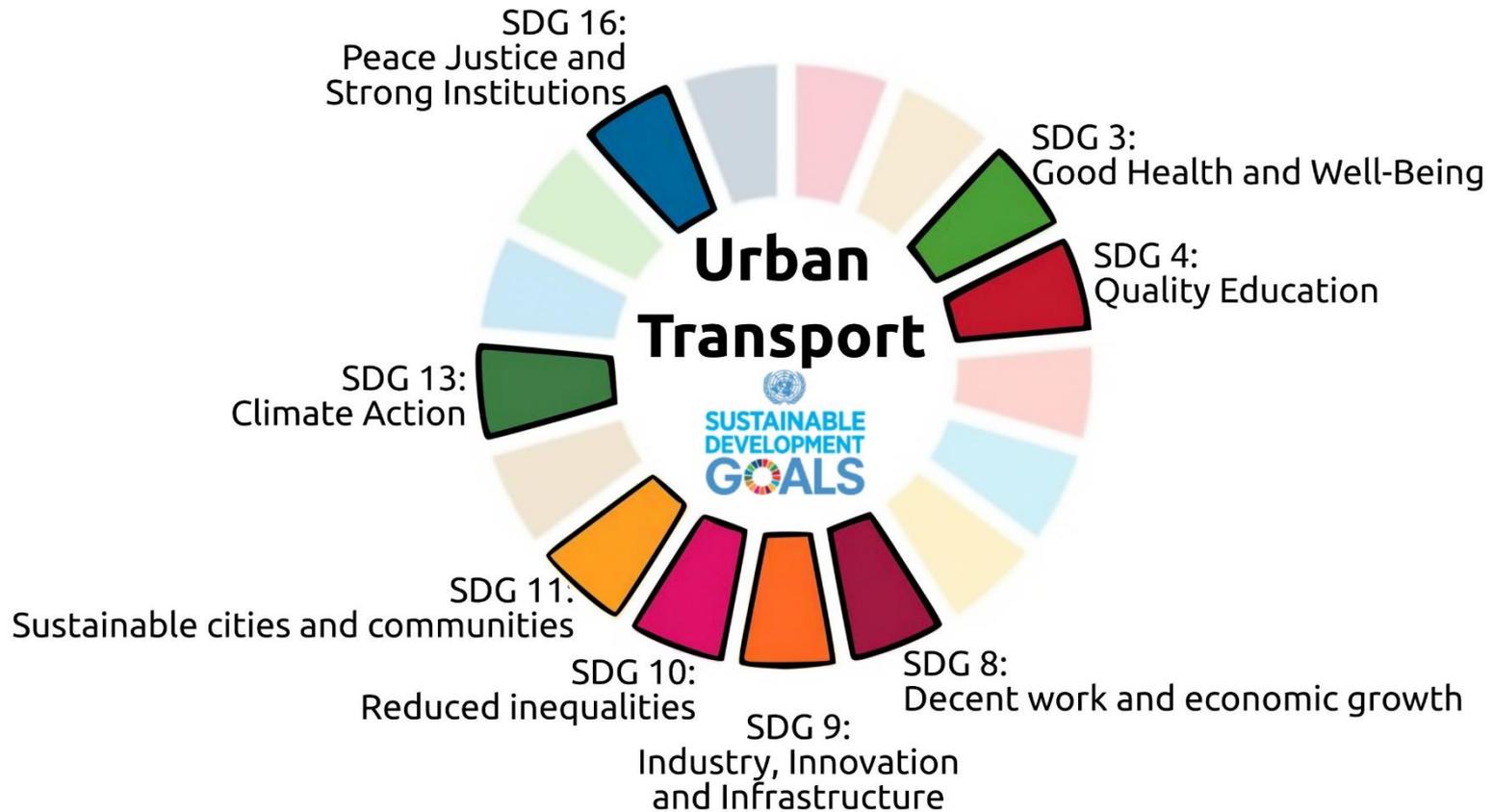
## **FP** Distribution of Cities 2014



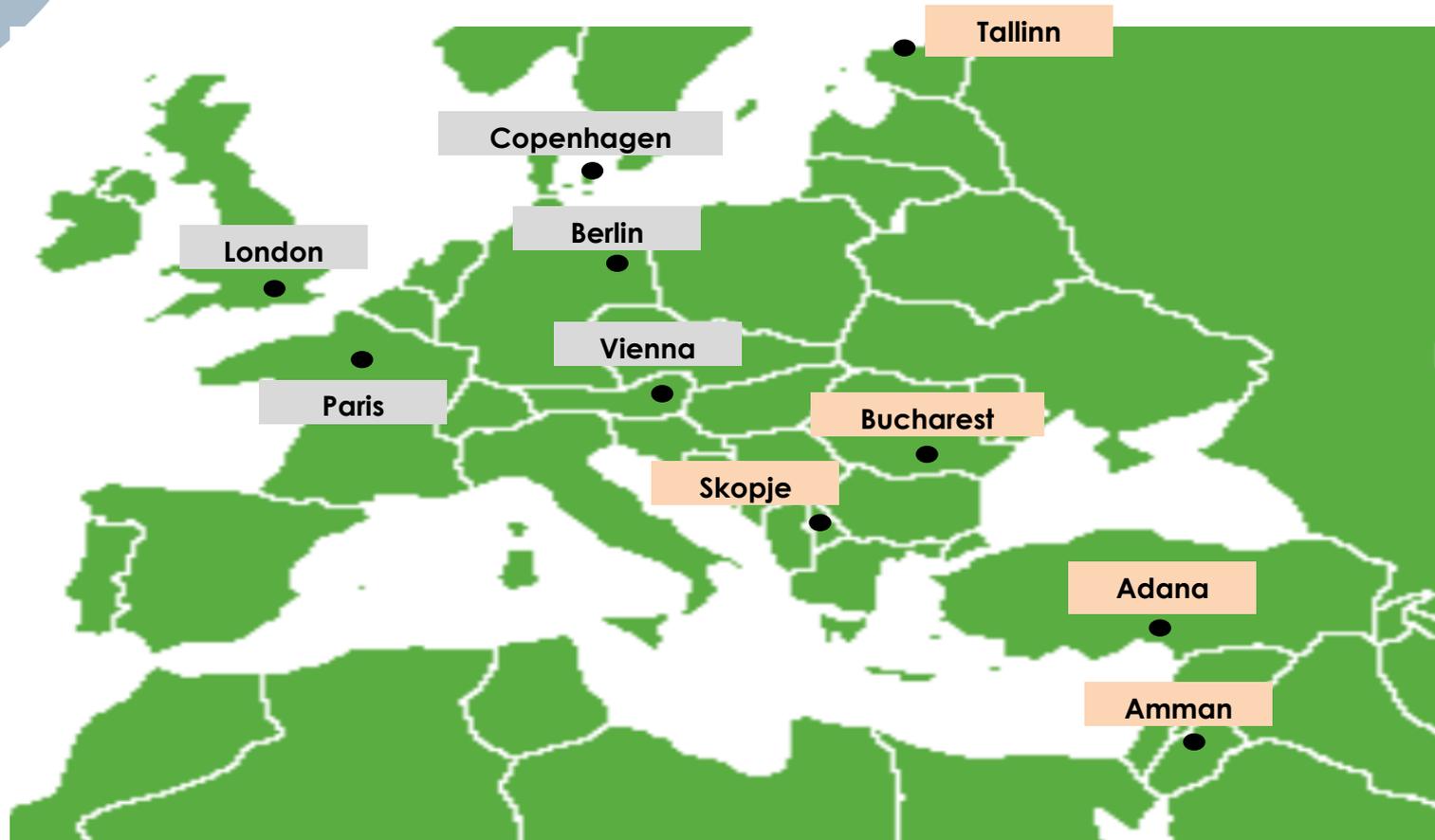
# Rising issues linked with car-oriented developments



# Sustainable urban mobility key to achieve the SDGs



# CREATE Partner Cities



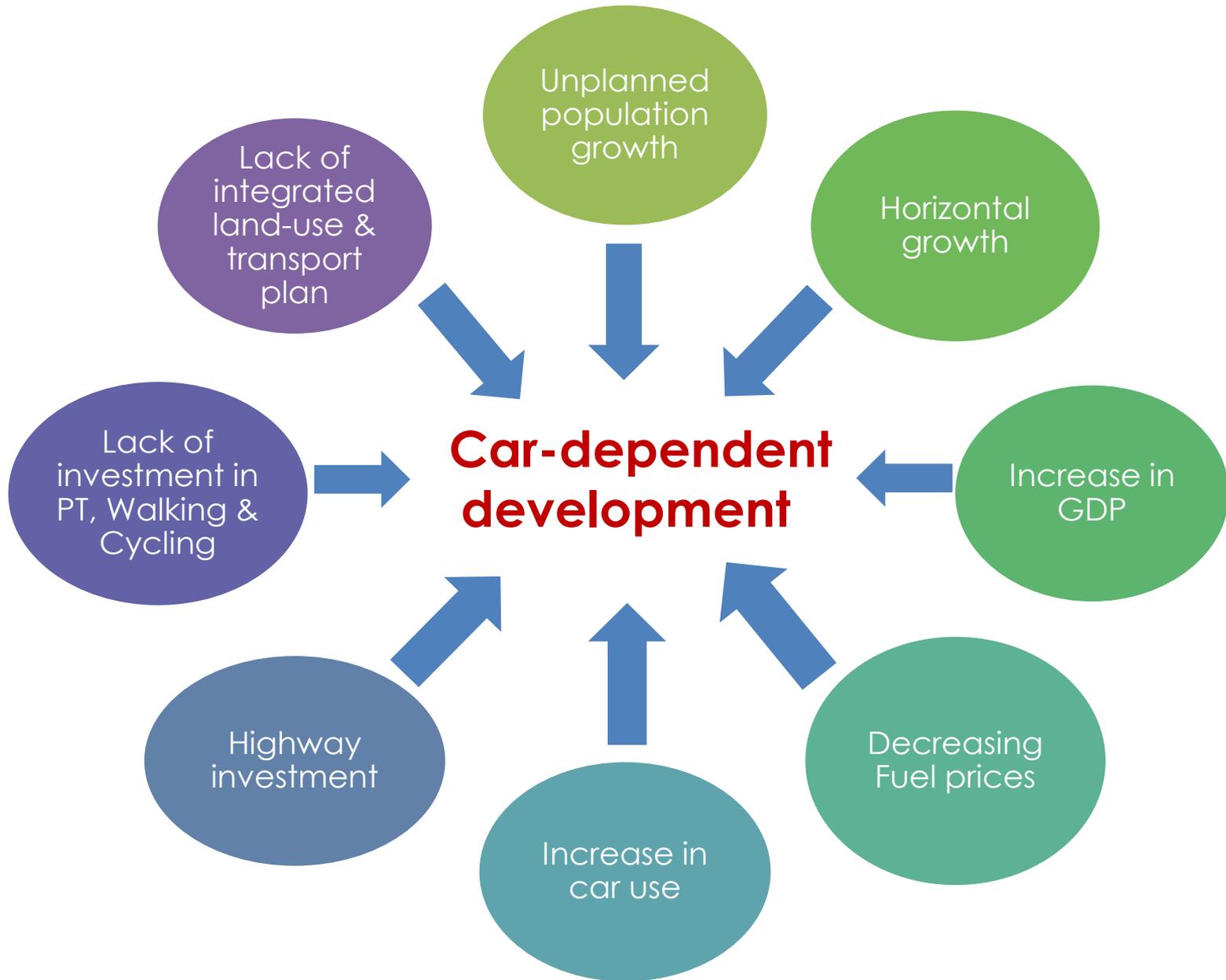
CREATE has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°636573



# Regional differences

Key differences between regions	Post-communist cities - Tallinn, Bucharest, Skopje	Middle Easter cities -Adana, Amman
<b>Urban growth and urban sprawl at the metropolitan level</b>	Gradual growth at the outskirts	Sudden & substantial growth
<b>Land-use and density</b>	Less control over land-use & density	In Turkey density requirements at the national level In Amman limited enforcement of rules
<b>Public transport network</b>	Extensive	Semi formal private operators = backbone of PT
<b>External influence</b>	Heavily influenced by EU	Amman influenced by oil rich countries

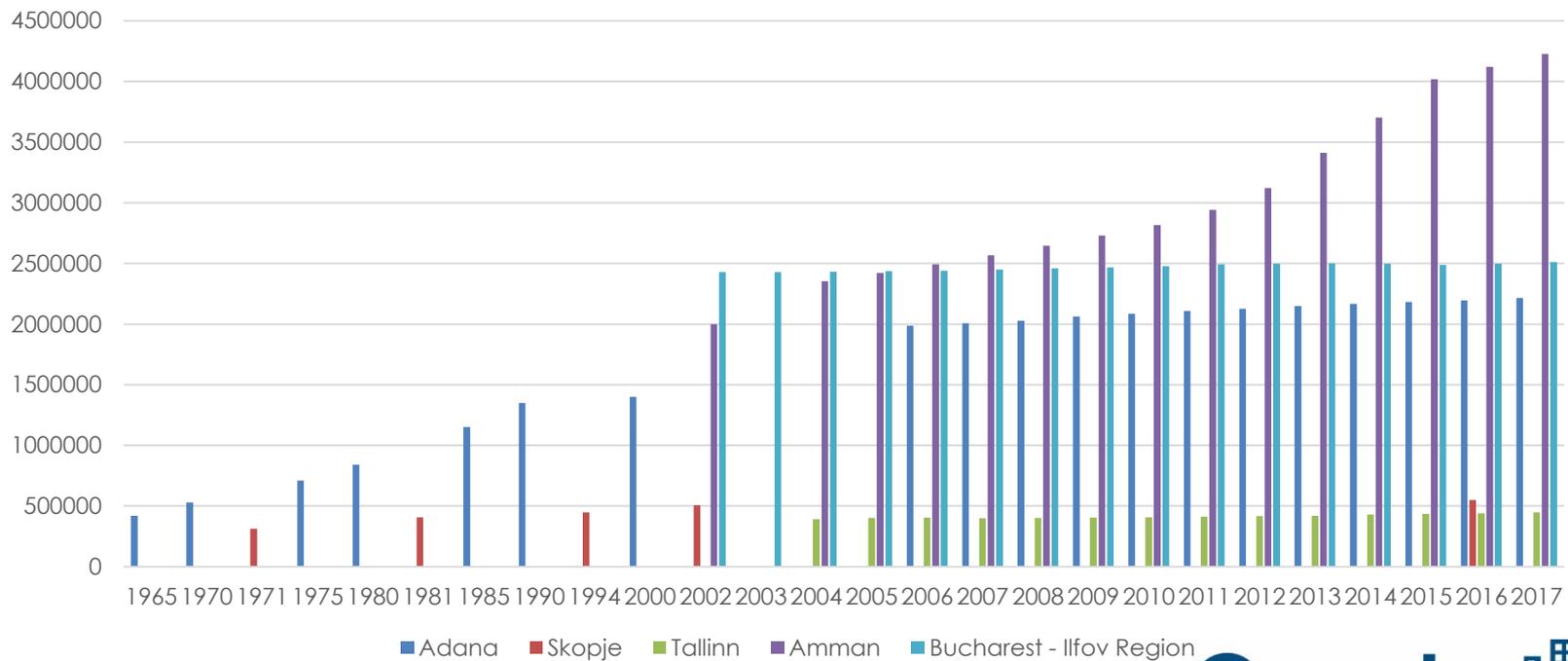
Macro factors (e.g. import of second hand cars)



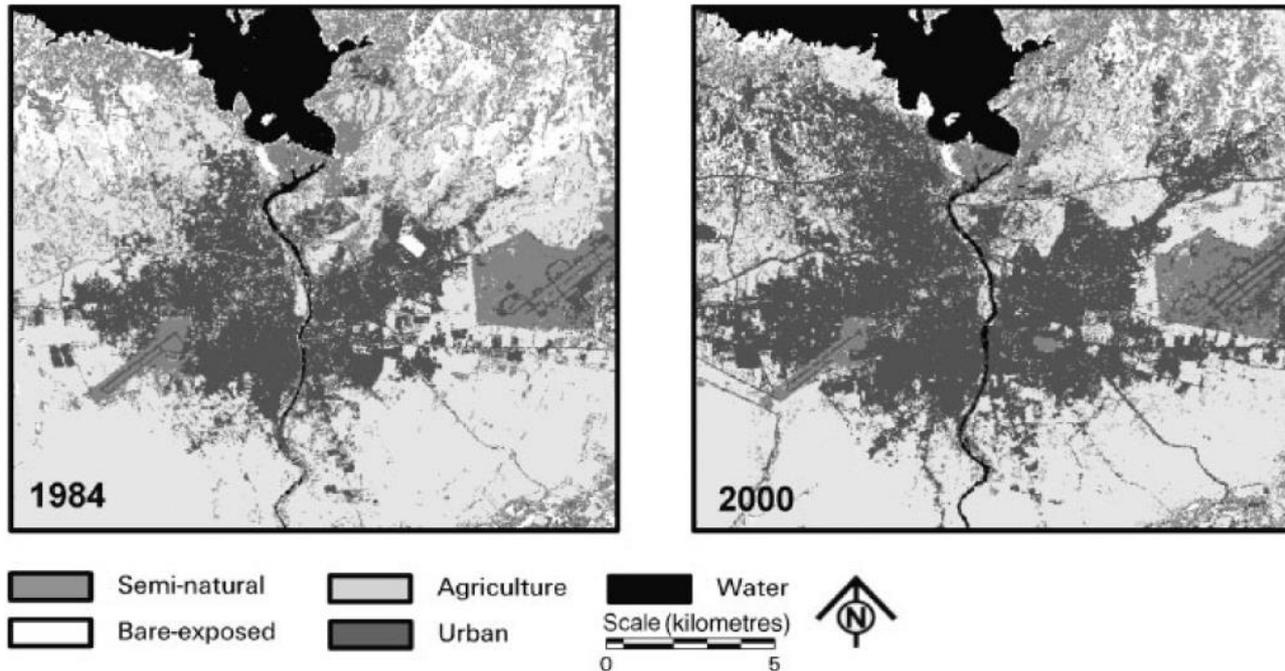
Cultural & Behavioural factors (e.g. social status)

# Rapid urban growth and urban sprawl

Population Growth in Adana, Amman, Skopje, Tallinn and Bucharest



# Land use changes - Adana



Land use changes in Adana. Classified images showing Land-use Land-cover categories of the study area in 1984 and 2000. Source: Alphan, H. (2003) Land-use change and urbanisation of Adana, Turkey. Land Degradation & Development



# Common urban planning issues

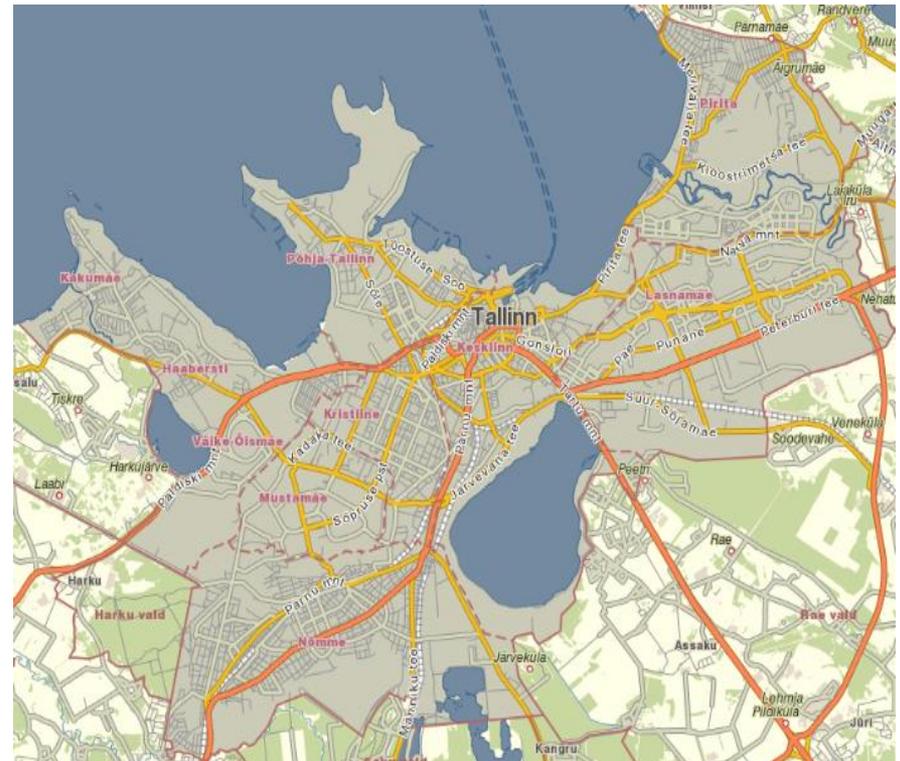
## Most common urban planning issues

Lack of updated urban plans

Lack of regional/metropolitan urban plans

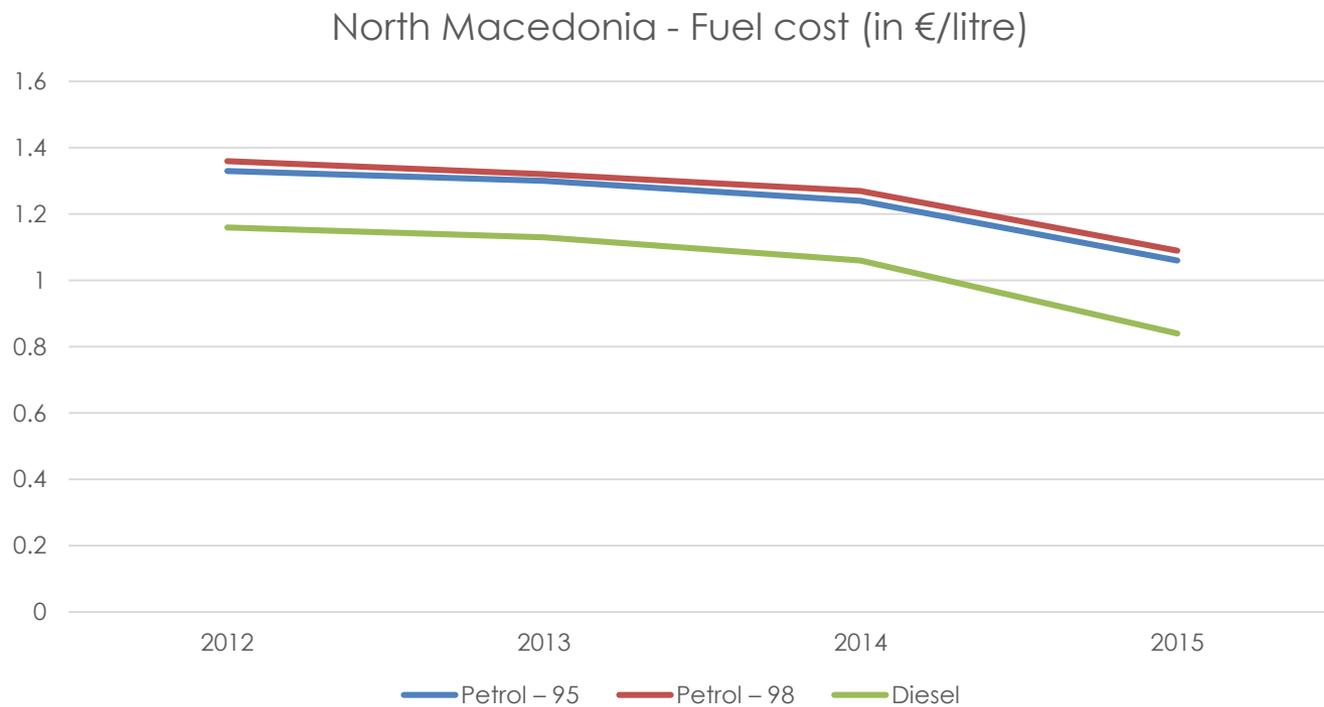
Lack of integration between land-use and transport plans

No density requirements



Tallinn

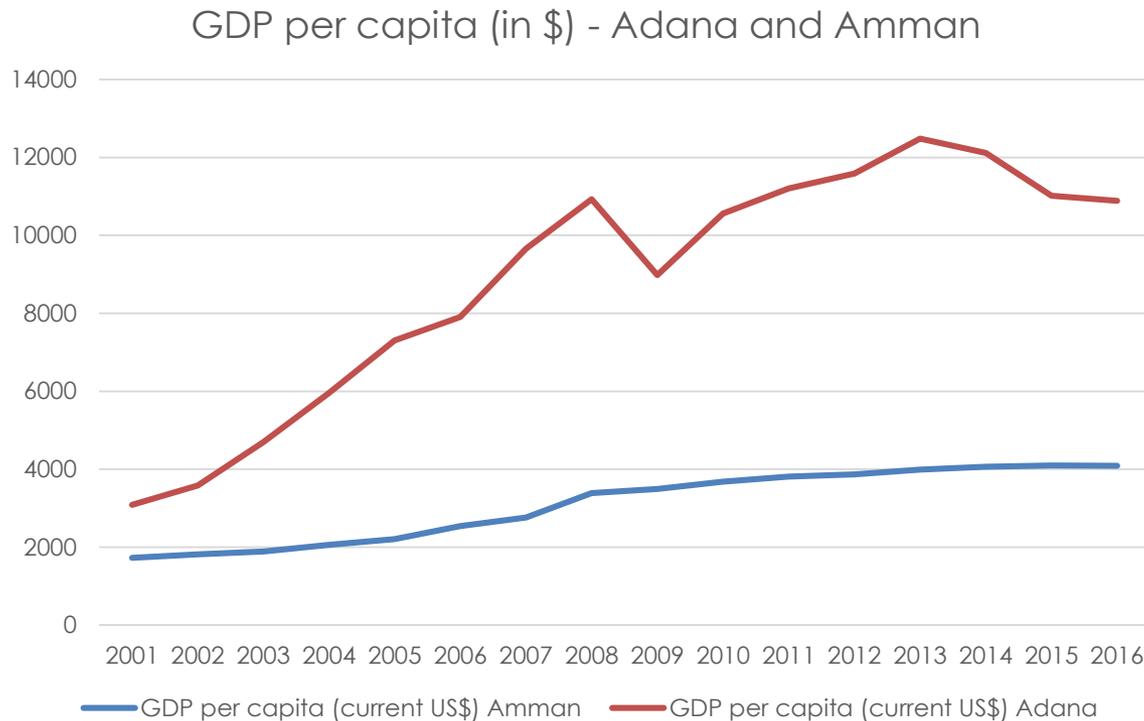
# Decrease in fuel prices



Evolution Fuel Prices in North Macedonia. Vertical axis: fuel cost in North Macedonia Euro/litre; Horizontal axis: year. Source: National Statistics North Macedonia



# Increase in GDP per capita

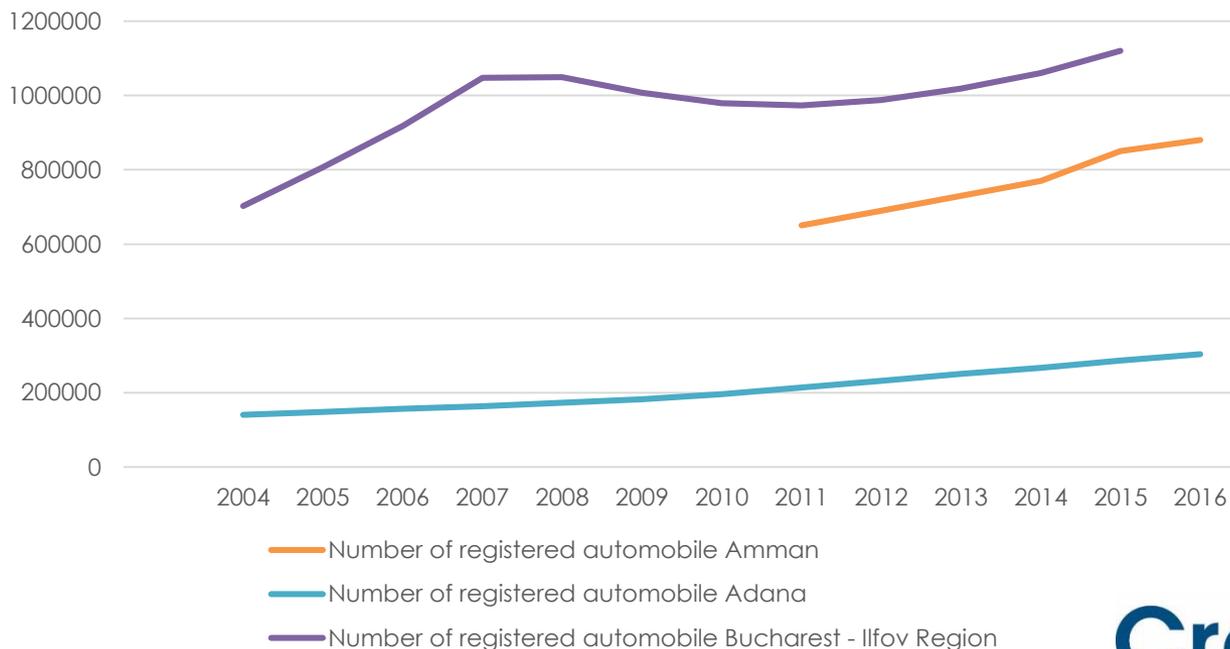


Evolution of GDP per capita in Adana and Amman 2001-2016 period. Source: National Statistics Turkey; National Statistics Jordan



# Increase in car-use levels & investments accommodating the demand for car use

Number of registered private automobiles in Amman, Adana and Bucharest (metropolitan area)

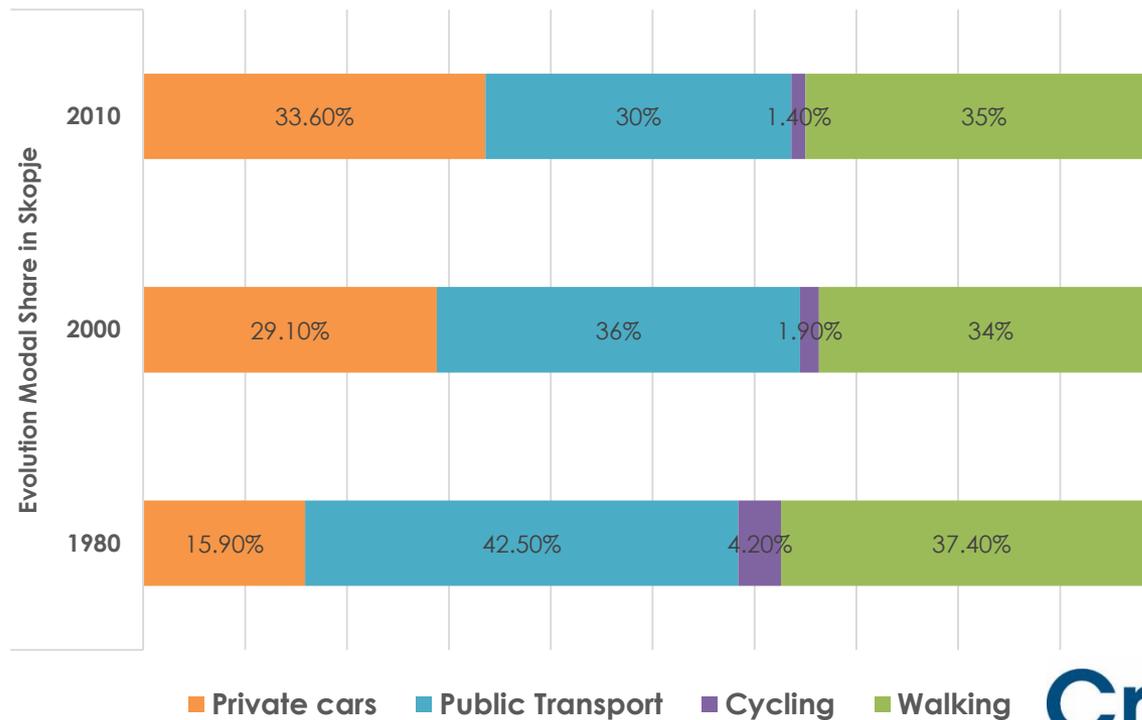


Number of registered private automobiles in Amman, Adana and Bucharest (metropolitan area). Vertical axis: number of private vehicles registered in Adana; Horizontal axis: year. Source: Turkish Institute of Statistics  
Number of private vehicles registered in Adana



# Evolution modal share

## Evolution Modal Share in Skopje



Evolution of Modal Share in Skopje. Source: Traffic studies for transport system in Skopje and Study for Development of public transport system in Skopje until 2000



# Extent to which local authorities can influence/manage factors that lead to car-dependent urban developments

Factors affecting local authorities	Specific example	Level of policy influence/control (local authority)
<b>Macro factors</b>	<ul style="list-style-type: none"><li>- GDP per capita</li><li>- population growth/demographic changes</li><li>- cultural or behavioural factors (e.g. social status)</li></ul>	Limited
<b>National policies</b>	<ul style="list-style-type: none"><li>- decreasing fuel prices</li><li>- import of second-hand vehicles</li></ul>	Moderate
<b>Local policies</b>	<ul style="list-style-type: none"><li>- highway investment</li><li>- lack of investment in active travel</li><li>- lack of dedicated transport plans</li><li>- lack of density requirements</li><li>- urban sprawl</li></ul>	Strong

# Preventing/addressing automobile-dependent urban developments

## Policy actions

Apply cross-sectorial collaboration and system thinking

Focus on prioritising active travel and collective transport modes when building highway or road facilities

Harmonise planning decisions at the metropolitan level

Focus on vision-led planning



# Thank you!

**Dr. Clemence Cavoli**  
**Prof Peter Jones**

CREATE: <http://www.create-mobility.eu/>

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# Policy Perspectives Shape Cities

**C**

**Car-oriented  
city**

- Road building
- Car parking
- Lower density
- Decentralisation

**M**

**Sustainable  
mobility city**

- Public transport
- Cycle networks
- Roadspace  
reallocation

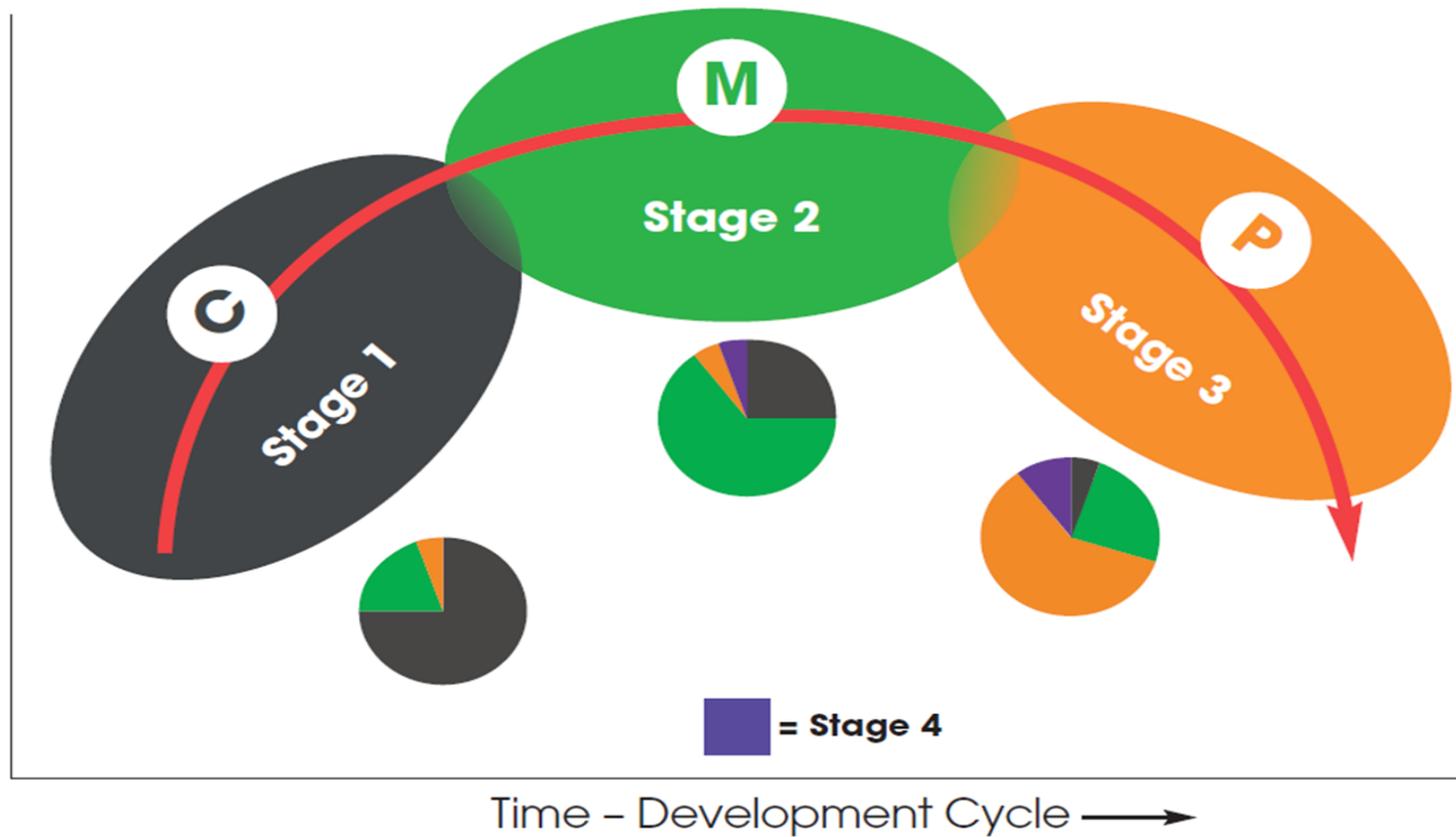
**P**

**City of  
places**

- Public realm
- Street activities
- Traffic restraint
- ToD/mixed use  
developments

# Typical European Evolutionary Trajectory

Policy emphasis on meeting the needs of motor vehicles



# Contrast in policy measures: C → P

The pictures show how this area of London has been transformed from a large traffic roundabout into a vibrant public space at the heart of the community, due to a shift in policy perspectives and corresponding priorities

London, Aldgate Square:

**C** Put in gyratory to increase road capacity (1960s)



Before

**P** Remove, to enhance place and provide new community heartland (2018)



After

# Changing Priorities: Removing vehicle infrastructure:

Rio

Seoul

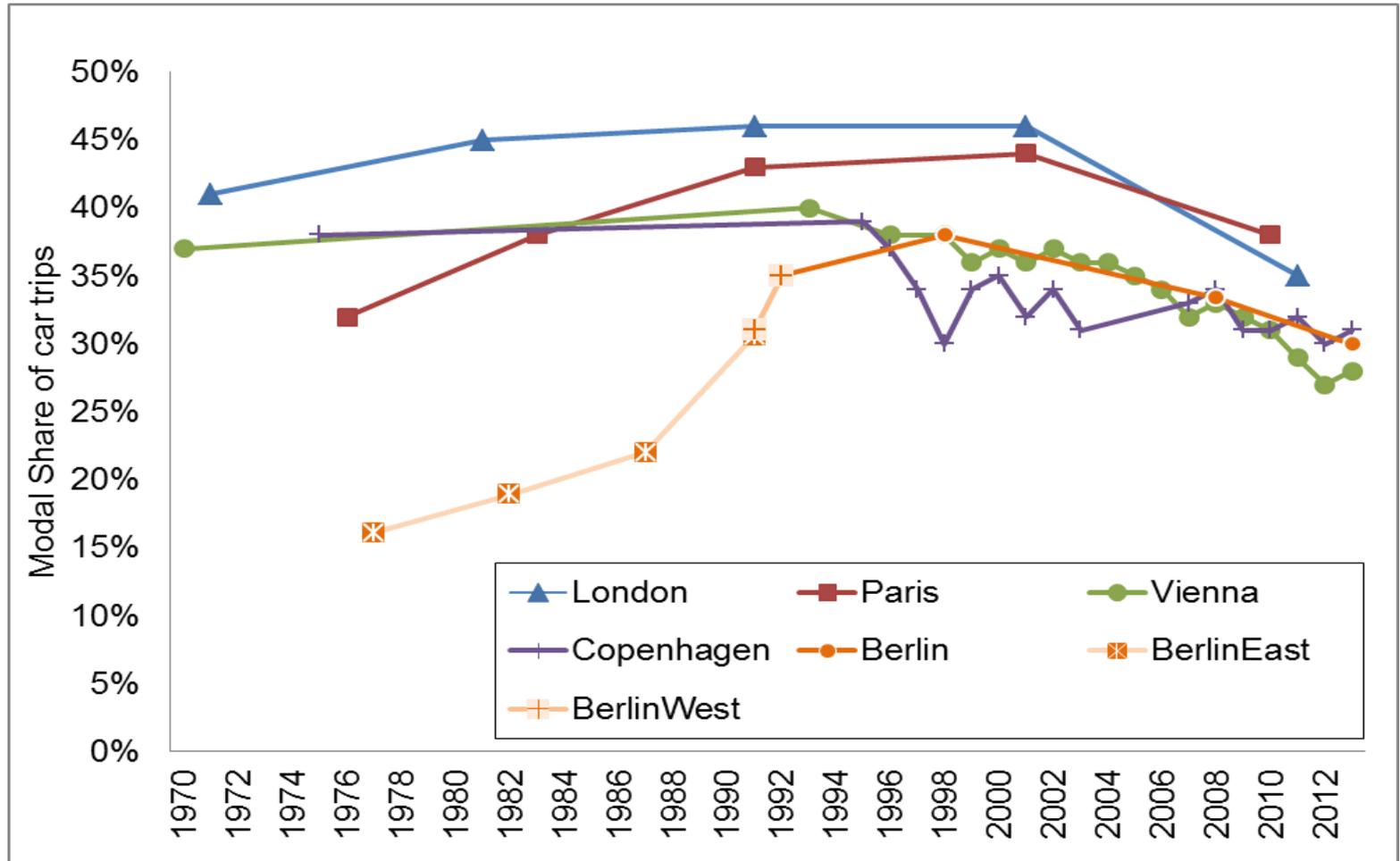
Stage C



Stage P



# Car Driver Modal Shares, Over Time



# How to avoid going through a car-oriented stage?

## Issue

## Suggested solution

Horizontal expansion  
Urban sprawl  
Low density



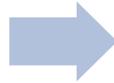
- Integrate land-use & transport planning at the metropolitan level (e.g. metropolitan SUMP)
- Set up density requirements

Decrease in fuel prices / Low  
vehicle cost



- Tax fuel
- Tax vehicle purchase

Behavioural issues



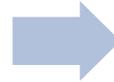
- Run awareness campaigns
- Encourage role models to use alternatives to car use

Investments in highway  
infrastructure



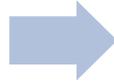
- Limit investments in highway infrastructure & parking facilities
- Ensure that road network focuses on sustainable mobility & liveable cities (including public transport, active travel & place-making)

Increase in car-use



- Disincentivise car use (e.g. smart road pricing, parking management)
- Incentivize alternatives to car-use (e.g. subsidise bicycle use)

Lack of investment in public  
transport & active travel



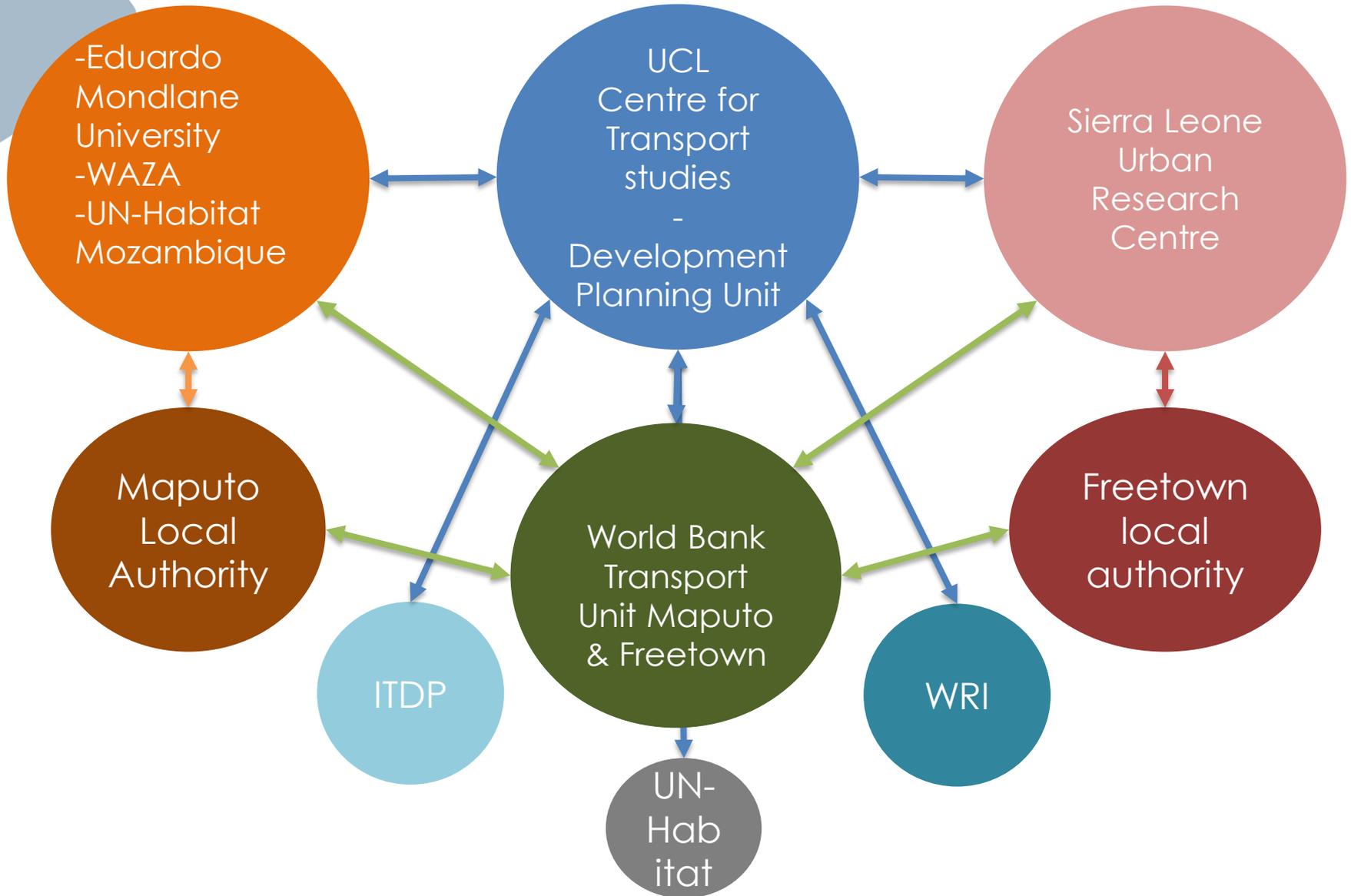
- Prioritise investments in public transport, active travel & place-making
- Generate revenue (through parking management, smart road pricing for instance)

# T-SUM Transitions to Sustainable Urban Mobility



- ESRC GCRF funded
- 2.5 years
- Aims to identify the conditions under which pathways to sustainable and inclusive transport and land use development can be accelerated in growing cities in the Global South
- Maputo, Mozambique & Freetown, Sierra Leone

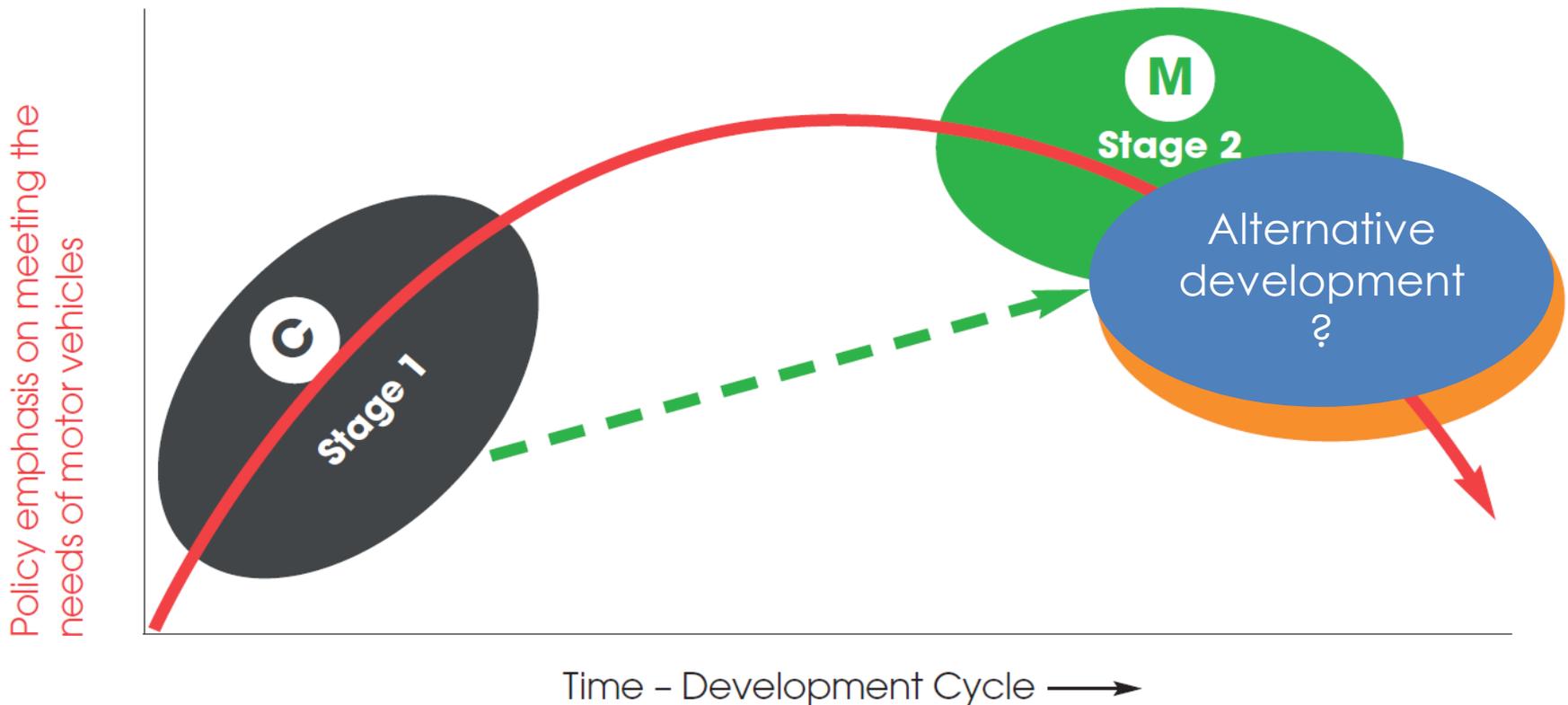
# T-SUM Team



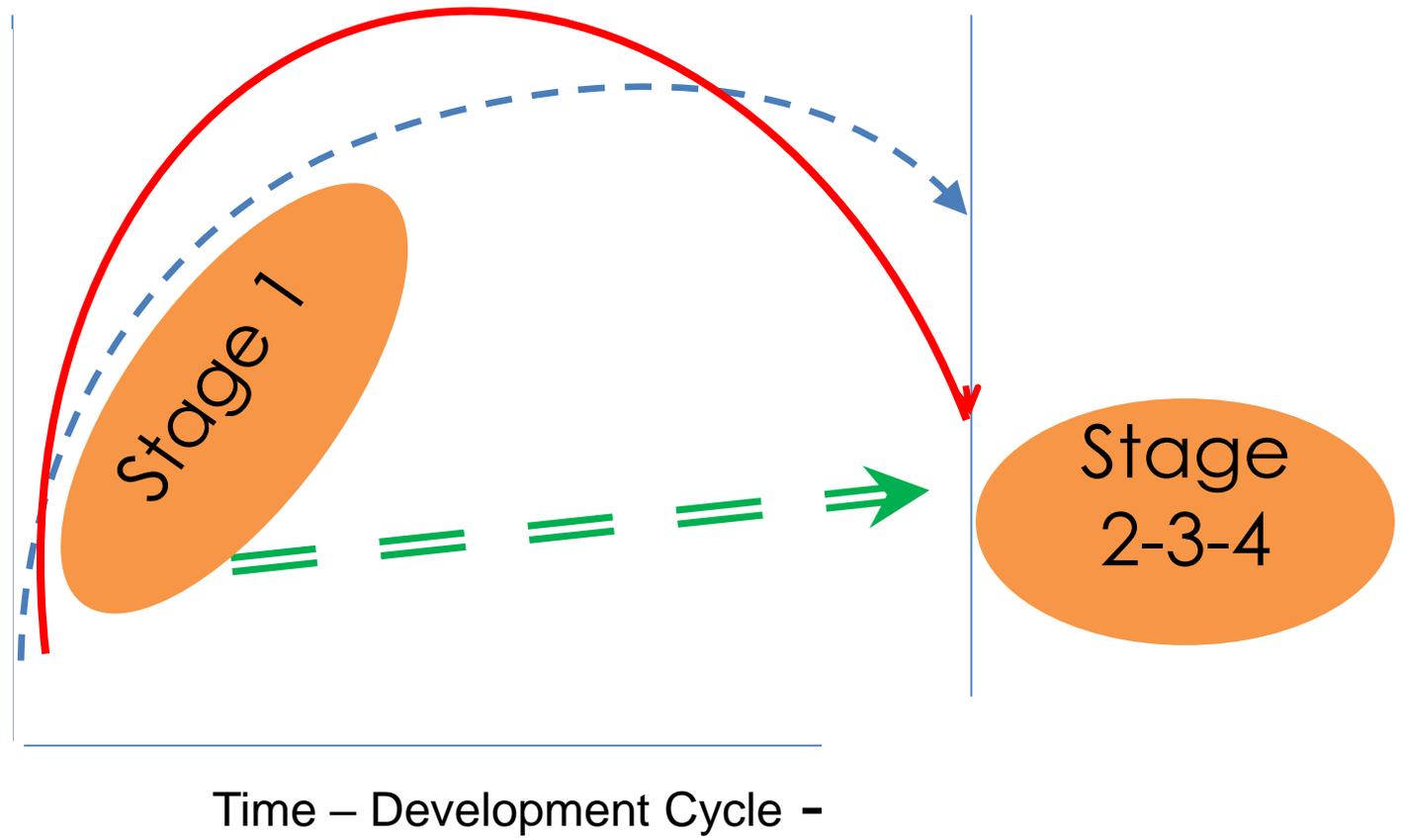
External Advisory Board Members

# The Challenge for African Cities

Can this evolutionary/learning process be short-circuited?



# Can this evolutionary/learning process be short-circuited?



# Key findings

## The CREATE partner cities

**ADANA:** the 2nd metro line is under construction

**AMMAN:** the population will double by 2025

**BERLIN:** almost 3,000 car sharing vehicles, including more than 400 electric vehicles are used

**BUCHAREST:** the public transport system is one of the largest in Europe

**COPENHAGEN:** cycling represents 45% of all commuter trips

**LONDON:** 26.1 million journeys per day

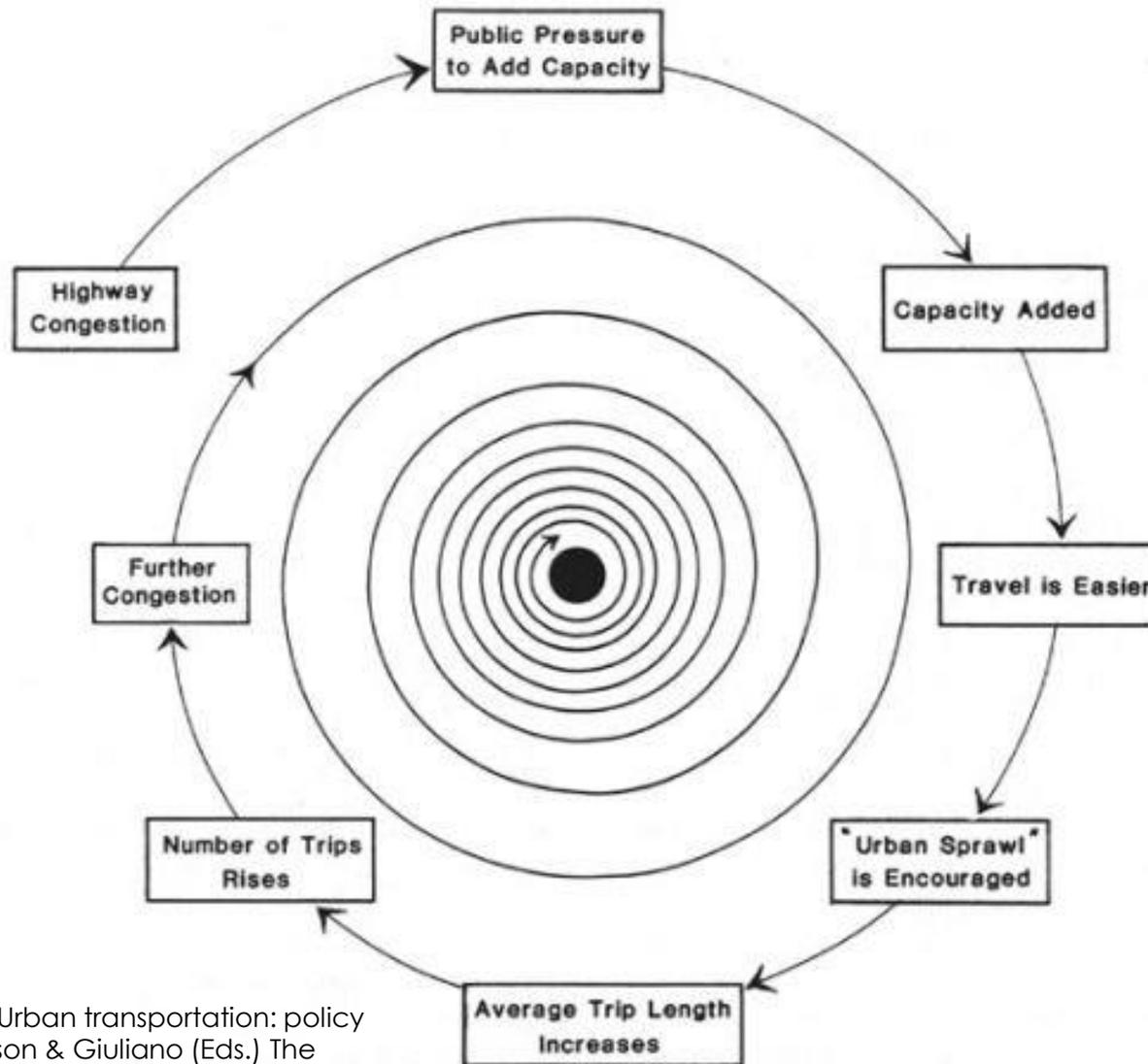
**PARIS-ILE-DE\_FRANCE:** walking represents 39% of modal share

**SKOPJE:** walking and public transport are almost equal in modal share

**TALLINN:** since 2013, residents from the Estonian capital can travel for free

**VIENNA:** the capital city with the highest public transport usage in Europe





Plane, D. A. (1995). Urban transportation: policy alternatives. In Hanson & Giuliano (Eds.) The geography of urban transportation. (2nd ed.) New York ; London: Guilford Press.

# Key challenges

- Limited understanding of transport demand & lack of evidence base policy-making



*“it is also about the political will to base our decision on actual scientific research...”* Participants Tallinn

- Poor walking environment does not encourage people to walk



*“When it rains people take the car instead of the umbrella, and the city is congested”*. Bucharest participant

- Car dependency & Behavioural change (e.g. Social status still linked to car ownership)



- Political recognition associated with highway construction



# What are the current policy priorities for urban transport?

- Highway and bridges construction to relieve traffic congestion & Improving traffic flow
- Increase public transport coverage
- Park and ride
- Parking management
- Integrated transport systems
- Encourage bicycle use
- Electric vehicles

*“We have a mixture of policies, on the one hand the use of motor vehicles is being encouraged by the construction of highways, and on the other end the city tries to encourage alternative mobilities”.*  
Skopje participant

*There is a need to create a “metropolitan transport authority”* Bucharest



# What are the opportunities to short-circuit?

- Congestion & pollution
- Comprehensive transport and urban planning strategy within the city and in the metropolitan area
- Reducing the need to travel
- Initiating cross-sectorial collaborations. E.g. Public-private collaboration
- Providing alternatives to car use
- Smart demand-based, integrated, and accessible collective transport

*“Creating a vision for the city”*

# Key recommendations

- **Redefine congestion**
- **Develop a wider city vision**
- **Full integration of transport and land use planning, at the metropolitan level**
- **Foster cross-sector, multi-level governance**
- **Invest in institutional capacity**
- **Invest in enhanced data collection and data analytics**
- **Be bold: today's radical policy can become tomorrow's orthodoxy**
- **Introduce trials and demonstrations**
- **Run awareness raising, marketing and behaviour change campaigns**

# Rising issues linked with car-oriented developments

