

1st Meeting of the Safer City Streets Network

Paris, France

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Safer City Streets Methodological Framework

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Objective

To develop a methodological framework
that will delineate the scope
of the ITF Safer City Streets network,
address the issues identified in the pilot study,
and define the list of data and indicators
that will be collected for inclusion in the database.



Pilot project

- Undertaken in 2012-2014
- 9 cities:
 - New York, Paris, London, Bogota, Barcelona
 - Chicago, Lisbon, Copenhagen, Lyon
- **Conclusions:**
 - Genuine interest, added value for such a network
 - Several methodological issues need to be addressed
- **Key challenges:**
 - Defining a city
 - Identifying relevant exposure data: passenger-km
 - Collecting injury data
 - City grouping



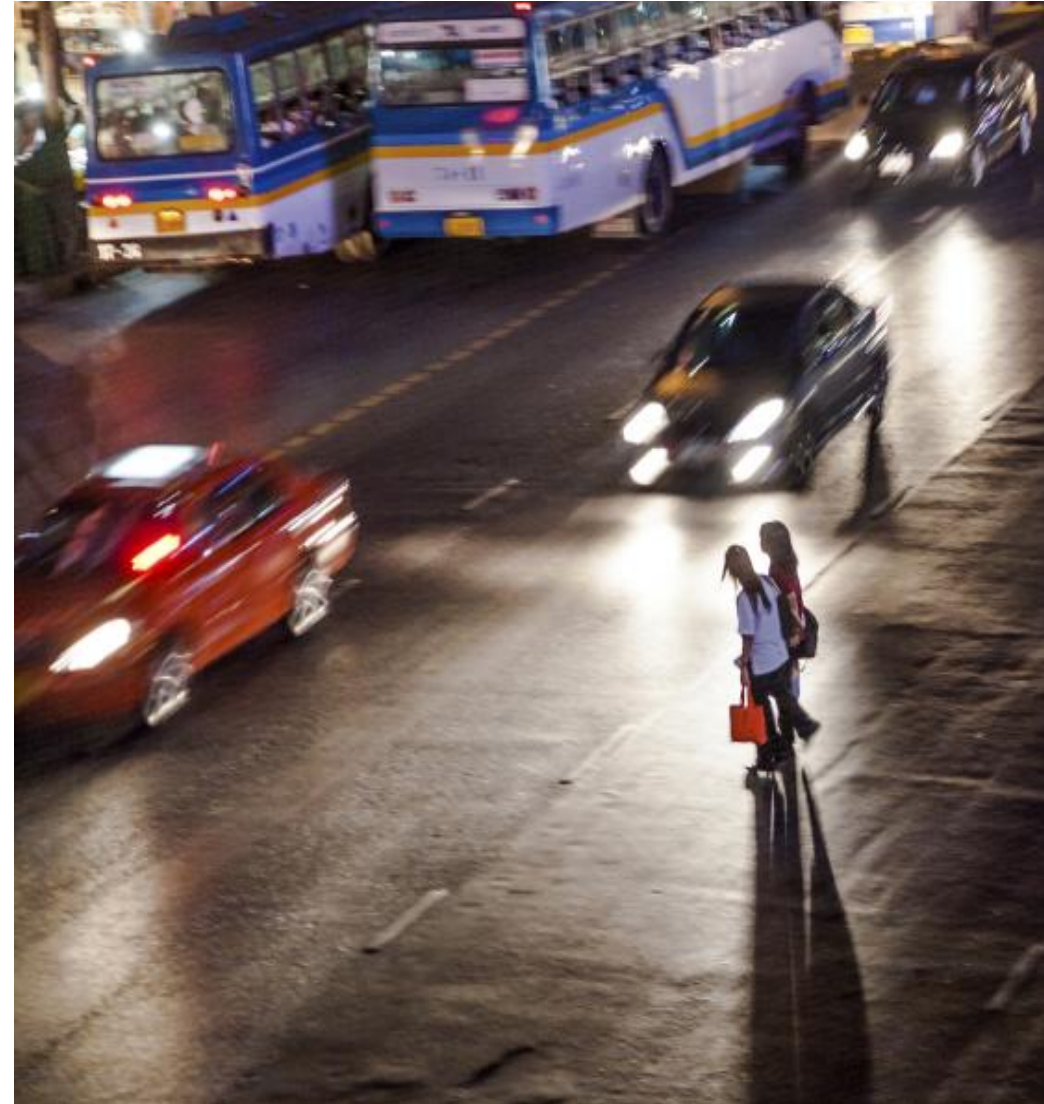
Literature review

- Review of city definitions:
 - Municipality
 - Urban agglomeration
 - Metropolitan area
 - City Proper (UN definitions)
 - Classification of urban areas (Eurostat, UN, Oecd/EC definitions)
- Review of more than 25 major projects and research studies on road safety in cities
- Review of international initiatives on road safety in cities e.g.:
 - POLIS network
 - WRI Sustainable Cities
 - CIVITAS
 - EUROCITIES
 - EcoMobility Alliance
 - Global Road Safety Partnership
- Sources of international traffic and road safety data in cities:
 - CARE
 - Eurostat
 - UITP
 - NHTSA
 - Elltis – the urban mobility observatory
 - Urban Mobility Observatory (SMO)-CAF



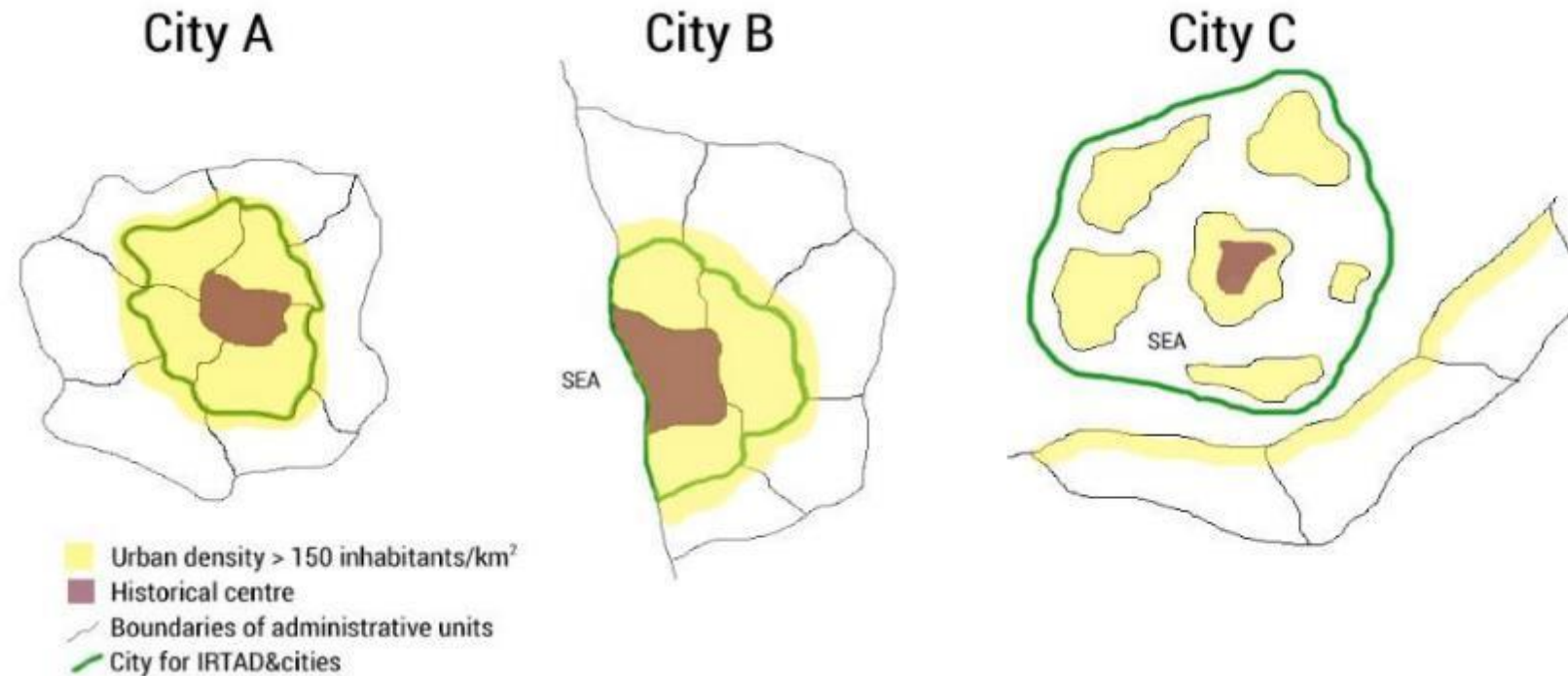
Road safety situation and data challenges in urban areas

- Few international projects or initiatives dedicated to road safety in cities.
- Fatality data alone may not be sufficient, especially for cities of small or medium size.
- Most countries / cities have not yet implemented the dedicated studies required to estimate the number of **serious injuries** on the basis of the MAIS3+ definition.
- Little usable data available in **international road safety databases** (e.g. number of fatalities at administrative unit level).
- **Lack of traffic / exposure data** and safety performance indicators.
- **Data availability and comparability** issues are expected to be considerable.



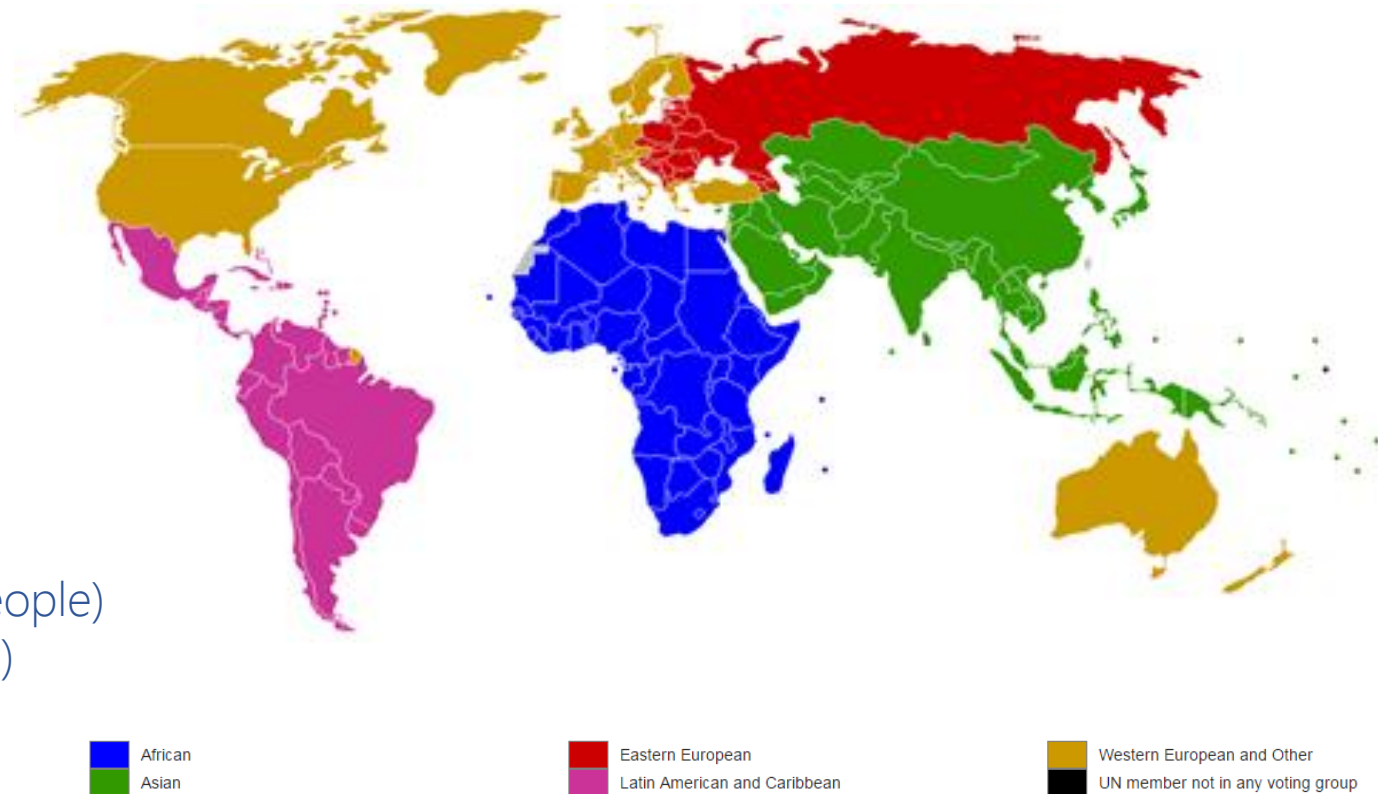
Proposed city definition

- The **City** is defined as the area with clear administrative boundaries containing the historical city centre and the inhabited area. A minimum population density ranging between 100 - 150 inhabitants per km² is proposed for defining the inhabited area.
- The **Greater City** is defined as the area outside the “City” (as defined above), containing an inhabited area with minimum population density ranging between 50 -100 inhabitants per km².
- This definition is based on the one adopted at the **UN city statistics**.



City grouping criteria

- **Geographical** (UN World regions)
 - the African Group
 - the Asia-Pacific Group
 - the Eastern European Group
 - the Latin American and Caribbean Group
 - the Western European and Others Group
- **City size** (OECD, 2012)
 - small-sized urban areas (< 200 000 people)
 - medium-sized urban areas (200 000-500 000 people)
 - metropolitan areas (500 000 - 1.5 million people)
 - large metropolitan areas (> 1.5 million people)
 - mega-cities (> 10 million people)



Data needs

- Data is recommended to be collected mainly from the cities themselves, based on a common methodology.
- To be complemented with existing data from international databases.
- **Fatality data and serious injury data** (preferably on the basis of the MAIS3+ definition).
- A **3- or 5-year moving average** may be defined for greater statistical reliability.
- **Local safety performance indicators** are preferred.
- A two-level data collection, with **“core data”** and **“additional data”**.
- Additional **background information** will be exploited (demographic and socio-economic aspects).



Data framework

Data

1. **Road safety outcomes;** e.g. fatalities and serious injuries per road type and road user type.
2. **Safety performance indicators;** e.g. road user protection indicators (seat belt and helmet use), road infrastructure indicators.
3. **Transport demand and exposure;** e.g. modal split/share of trips (also for non-motorised travel), person-kilometres, vehicle fleet.
4. **Demographic and socio-economic indicators;** e.g. GDP per capita, unemployment rate, population/commuter-adjusted daytime population, road length.

Background Information

Road safety background: e.g. road safety management indicators, road safety measures, mobility plans etc.



Road safety outcomes

- Number of road crash fatalities
- Number of serious injuries in road crashes

Core data	Additional data	Calculated indicators
Number of fatalities by road user type Number of serious injuries by road user type Evolution of fatalities / serious injuries (time series)	Number of fatalities by road type, accident type Number of serious injuries by road type, accident type	Fatalities / serious injuries per person-kilometres (per road user type) Fatalities / serious injuries per road length (per road type) Fatalities / serious injuries per number of vehicles Fatalities / injuries per population (for each age and gender group)

Road Safety Performance Indicators

- Road User protection
- Road Infrastructure
- Vehicles
- Alcohol
- Speeds
- Post-crash care

Core data	Additional data
<p>Daytime helmet wearing rates for PTW driver and for passenger (mopeds and motorcycles)</p> <p>Daytime seat belt wearing rates on front seats of cars (aggregated for driver and front passenger)</p> <p>Daytime seat belt wearing rates on rear seats of cars</p>	<p>Percentage of drivers above legal alcohol limit in roadside checks</p> <p>Mean age of the passenger car fleet</p> <p>Mean age of the motorcycle fleet</p> <p>Mean speed on principal arterial roads</p> <p>85% percentile of speed on principal arterial roads</p> <p>Standard deviation of speed on main urban roads</p> <p>Share of High Risk Sites treated</p> <p>Length of road sections treated - traffic calming</p> <p>Mean EMS response time</p>

Transport demand and Exposure

- Modal split - number of trips
- Traffic - person-kilometres of travel
- Vehicle fleet

Core data	Additional data
Number of trips by mode of travel Number of person-kilometres travelled by mode of travel Total number of vehicles registered at city by vehicle type, incl. mopeds & motorcycles	Person-kilometres travelled by males Person-kilometres travelled by females Person-kilometres travelled by age group

Demographics and socio-economics

- Population
- Urbanisation
- Road length
- Socio-economic indicators
- Post-crash care

Core data	Additional data	Calculated indicators
GDP per capita Unemployment rate Population density Public transport network length Total length of the road network Length of urban motorways Length of unpaved roads Total number of inhabitants per age and gender	Commuter-adjusted daytime population Length of principal arterial roads Length of secondary arterial roads Length of residential roads Number of hospitals / doctors / Intensive Care (IC) beds per population	Length of motorways per 1000Km of road network Length of non-paved roads per 1000Km of road network Length of rail public transport network per 1000Km of road network

Summary

- A **city definition**, tailored to the data availability and analysis needs of Safer City Streets.
- A **data framework** for cities' road safety.
- An **annual survey** among city representatives / network members for data collection.
- Data distinguished into "**core data**" and "**additional data**".
- **Data availability and comparability** may be challenging at the early stages of the project.
- Different types of **analyses** suggested.



Next steps

- Methodological issues deserving **common reflection** may be addressed gradually as the data become available.
 - Understanding city definitions
 - Understanding data definitions
- **Regular updates** of the database with focus on data comparability and potential harmonization.
- During the **analysis phase** (Annual Report, Joint Research Reports), data issues re-discussed and methodology re-defined.



Challenges

- Safer City Streets is a **highly challenging project** with methodological and data analysis complexities.
- New opportunities for **more and better data and insights** for the understanding of urban road safety problems and respective countermeasures.
- **Problems will be addressed gradually** during the next years aiming to improve the availability and quality of the data needed in the project.



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