Quantifying the effects of SUMPS

ESD workshop

Madrid, 22 October 2014

Background

European support framework for the implementation of Sustainable Urban Mobility Plans in EU Member States.

Interest on how different urban measures can be used to render transport activities more sustainable

Understand impacts and effects that policy measures might have on the environment, society and the economy.

Report available here: http://ftp.jrc.es/EURdoc/JRC84116.pdf

Five step assessment

1. **Identify scores for policies (five expert sources)**
2. **Normalize scores (one template for all sources)**
3. **Assess the average urban profile of cities within NUTS3 zones according to:**
   - Transport activity
   - Population
   - Employment in NUTS3
   - Commuting rates
   - Rail and Road Accessibility
   - Urbanization rates
   - Density
4. **Establish a tailored NUTS3 weighting system**
5. **Quantify the potential range of effects on CO_2**

Normalizing the scores

Common template according to GIZ A-S-I approach which classifies a policies potential to

avoid unsustainable transport practices,

shift from unsustainable to sustainable transport modes,

improve on current behaviour in transport activities.

Related to L. SCHIPPERS ASIF methodology:

GHG = Activity * modal Share * energy Intensity * carbon intensity of Fuel
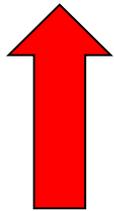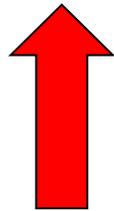
avoid   shift   improve

Weighting system

Different effects of policy measures according to 4 urban profiles developed for the PASHMINA project (2011). These profiles are determined to the following key factors :

*population

*consumption opportunities

*production opportunities

Urban sprawl

City network

Do it fast

Do it alone

Do it together

Do it slow

Rural area/ Tourist area

Small compact city
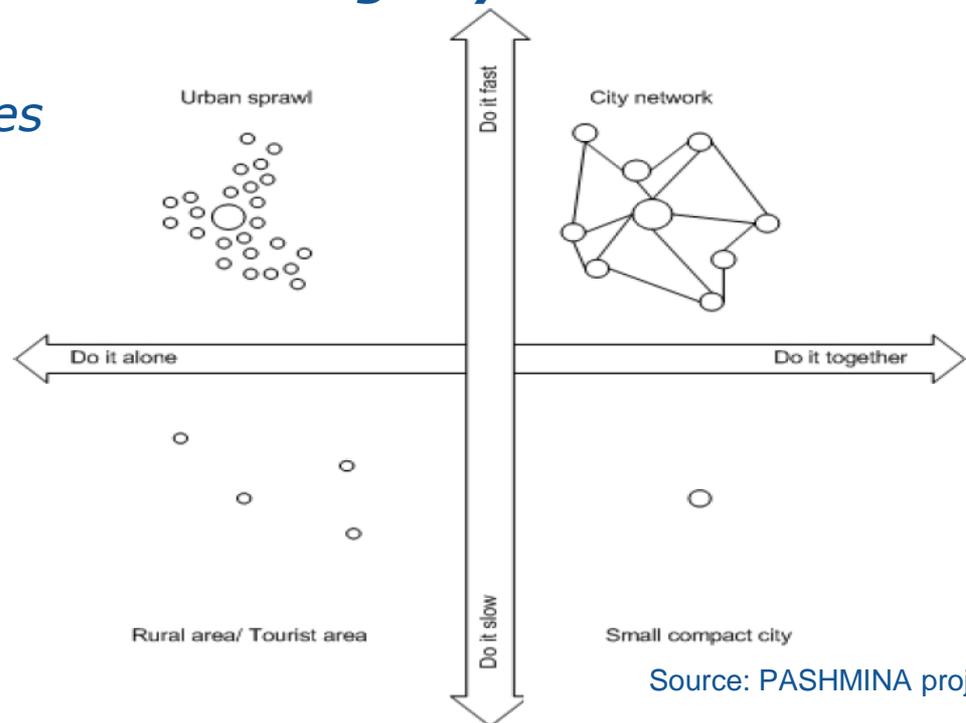
Results

Total potential:

7.0% - 8.8%

(coherent with
GHG Trans-PoRd, 2010 results)

2030 - CO2 REDUCTIONS (ktonsCO2)

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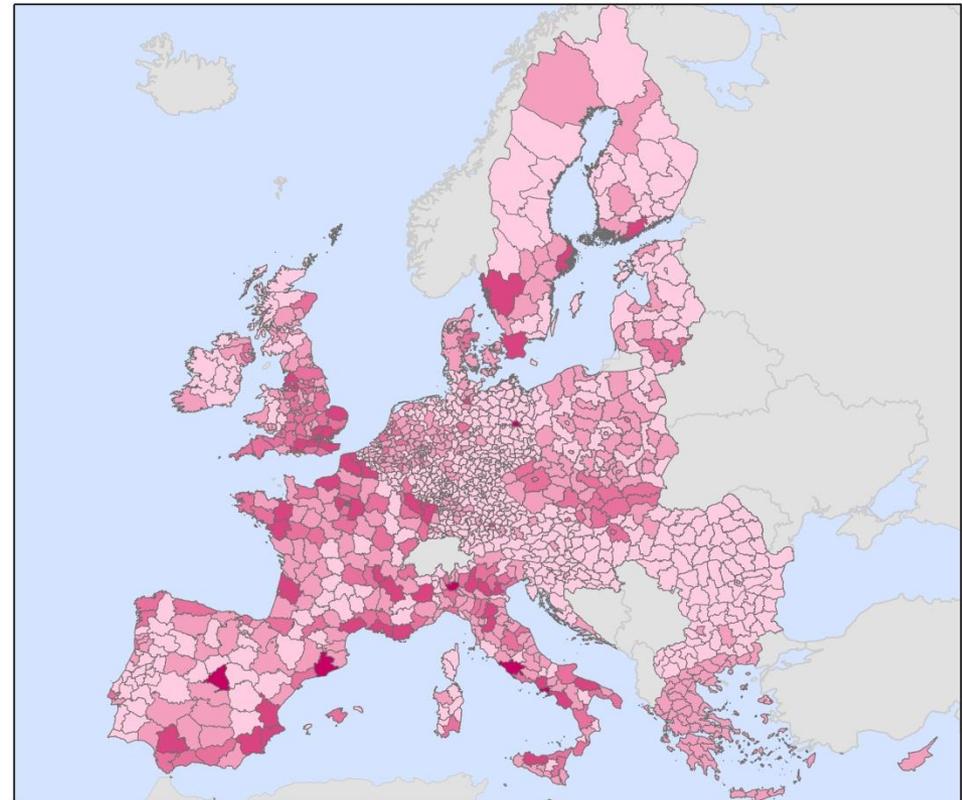
NUTS3
- 0 - 11
- 12 - 27
- 28 - 51
- 52 - 106
- 107 - 190

JOINT RESEARCH CENTRE
Institute for Prospective Technological Studies (IPTS)

Selection of results for the six MS

Country	Urban Emissions 2010 ktons CO2	Urban Emissions 2030 ktons CO2	Potential Reduction 2030 ktons CO2	Percentage
Belgium	7816	5921	393 - 493	6.6% - 8.3%
France	38249	30777	2156 - 2702	7.0% - 8.8%
Italy	37073	31285	2250 - 2821	7.2% - 9.0%
Luxemburg	418	326	27 - 34	8.3% - 10.4%
Portugal	2756	2792	186 - 233	6.7% - 8.3%
Spain	16275	15501	1064 - 1333	6.9% - 8.6%
MS-6	102587	86602	6076 - 7616	7.0% - 8.8%
EU-28	240515	209130	14605 – 18306	7.0% - 8.8%

Country	Avoid ktons CO2	Shift ktons CO2	Improve ktons CO2	Potential Reduct. 2030 ktons CO2	Population
Belgium	155 - 194	120 - 151	118 - 147	393 - 493	10,839,905
France	847 - 1062	662 - 830	646 - 810	2156 - 2702	64,658,856
Italy	884 - 1108	691 - 867	675 - 846	2250 - 2821	59,190,143
Luxemburg	11 - 13	8 - 10	8 - 10	27 - 34	502,066
Portugal	73 - 91	57 - 71	56 - 70	186 - 233	10,573,479
Spain	418 - 524	327 - 410	319 - 400	1064 - 1333	46,667,174
MS-6	2388 - 2992	1865 - 2339	1822 - 2283	6076 - 7616	192,431,623
Total EU-28	5742 - 7197	4485 - 5621	4379 - 5488	14605 - 18306	503,379,305

Population percentage from EU Total : 38%

CO2 Reduction potential percentage from EU Total : 42%

Effects of policy measures

Highly populated cities with high densities and important levels of PT shares will have lower potentials and vice versa. The cities with high road transport use will have higher potential impacts.

Accessibility and population density are directly linked to the potential for CO_2 reductions. Accessibility indicator is defined as the number of people that can be reached by car/rail, where the attractiveness of destinations is defined by their population size, subject to the car/rail travel time to reach them.

Effects of policy measures

NUTS3	Population NUTS3 2010	Road Accessibility factor	Rail Accessibility factor	Commuting Indicator	Density
Madrid	6,369,162	61	63	1.0	789
Barcelona	5,375,774	72	69	0.7	693
Sevilla	1,877,060	33	42	0.2	133
Paris	2,256,239	204	246	0.3	21319
Seine-Saint-Denis	1,530,463	197	226	0.1	6467
Val-de-Marne	1,335,073	197	219	0.1	5415
Rhone	1,740,620	149	171	0.3	530
Bouches-du-Rhône	1,977,112	96	135	0.4	389
Milano	4,006,330	159	138	0.0	1998
Roma	4,194,068	94	88	0.1	772

Measure	City Network	Urban Sprawl	Tourist / Rural	Small
Investment and maintenance, including safety, security and accessibility	LOW	MED	LOW	LOW
Public transport coverage (line density, stop density, walking distances between stops) & public transport frequencies.	LOW	MED	LOW	LOW
Interoperable ticketing and payment systems	LOW	LOW	LOW	LOW
Taxi Services (individual and collective)	LOW	LOW	LOW	MED
Dedicated walking and cycling infrastructure investment and maintenance & Bike sharing schemes	LOW	LOW	LOW	MED
Improvement of the efficiency of city logistics by the use of ICT	MED	LOW	MED	LOW
Measures to improve the energy efficiency and environmental performance of vehicles and/or use of alternative modes.	MED	LOW	MED	LOW
Corporate, school and personalised mobility plans (or workplace travel plans)	LOW	MED	LOW	LOW
Car sharing & carpooling schemes.	LOW	LOW	LOW	MED
Telecommunications	MED	LOW	MED	MED
Multimodal connection platforms	MED	MED	MED	MED
Multimodal travel information provision	MED	LOW	MED	LOW
Park and Ride areas	LOW	LOW	LOW	LOW
Reallocation of road space to other modes of transport, e.g. dedicated bus lanes	MED	LOW	MED	MED
Parking management	MED	MED	MED	MED
Dynamic traffic management measures	LOW	LOW	LOW	LOW
Low speed zones	LOW	MED	LOW	MED
Information and marketing campaigns	LOW	MED	LOW	MED
Promotion of eco-driving	LOW	MED	LOW	MED
Congestion charging zones (area and cordon charging)	LOW	MED	LOW	LOW

Measure	Avoid	Shift	Improve
Investment and maintenance, including safety, security and accessibility	MED	LOW	MED
Public transport coverage (line density, stop density, walking distances between stops) & public transport frequencies.	MED	MED	LOW
Interoperable ticketing and payment systems	LOW	MED	LOW
Taxi services (individual and collective)	LOW	LOW	LOW
Dedicated walking and cycling infrastructure investment and maintenance & Bike sharing schemes	MED	MED	LOW
Improvement of the efficiency of city logistics by the use of ICT	MED	LOW	MED
Measures to improve the energy efficiency and environmental performance of vehicles and/or use of alternative modes.	LOW	LOW	MED
Corporate, school and personalised mobility plans (or workplace travel plans)	MED	LOW	LOW
Car sharing & carpooling schemes.	MED	LOW	LOW
Telecommunications	MED	MED	LOW
Multimodal connection platforms	LOW	LOW	LOW
Multimodal travel information provision	MED	LOW	MED
Park and Ride areas	LOW	LOW	LOW
Reallocation of road space to other modes of transport, e.g. dedicated bus lanes	MED	MED	MED
Parking management	LOW	MED	MED
Dynamic traffic management measures	LOW	LOW	LOW
Low speed zones	LOW	MED	LOW
Information and marketing campaigns	LOW	LOW	MED
Promotion of eco-driving	LOW	LOW	LOW
Congestion charging zones (area and cordon charging)	MED	MED	MED

Measure	Economic	Social	Environmental
Investment and maintenance, including safety, security and accessibility	-	LOW	MED
Public transport coverage (line density, stop density, walking distances between stops) & public transport frequencies.	MED	MED	MED
Interoperable ticketing and payment systems	LOW	LOW	LOW
Travel information provision systems	LOW	MED	MED
Taxi services (individual and collective)	-	LOW	LOW
Dedicated walking and cycling infrastructure investment and maintenance & Bike sharing schemes	MED	MED	MED
Freight distribution centres & Freight delivery points	MED	MED	MED
Improvement of the efficiency of city logistics by the use of ICT	MED	MED	MED
Measures to improve the energy efficiency and environmental performance of vehicles and/or use of alternative modes.	-	LOW	LOW
Corporate, school and personalised mobility plans (or workplace travel plans)	LOW	MED	MED
Car sharing & carpooling schemes.	-	LOW	LOW
Telecommunications	LOW	LOW	MED
Multimodal connection platforms	MED	LOW	LOW
Multimodal travel information provision	LOW	LOW	MED
Park and Ride areas	LOW	LOW	LOW
Reallocation of road space to other modes of transport, e.g. dedicated bus lanes	LOW	LOW	MED
Parking management	LOW	LOW	MED
Dynamic traffic management measures	MED	LOW	LOW
Low speed zones	MED	MED	MED
Information and marketing campaigns	LOW	LOW	MED

Thank you!