Quantifying the effects of SUMPS

Hector G. LOPEZ-RUIZ

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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.

Link to full report: 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**
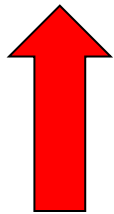5. **Quantify the potential range of effects on CO2**

Normalizing the scores

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

<u>a</u>void unsustainable transport practices,

<u>s</u>hift from unsustainable to sustainable transport modes,

<u>i</u>mprove on current behaviour in transport activities.
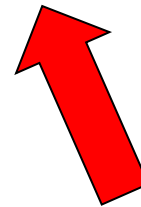
Related to L. SCHIPPERS ASIF methodology:

GHG = <u>A</u>ctivity * modal <u>S</u>hare * energy <u>I</u>ntensity * carbon intensity of <u>F</u>uel

avoid shift   improve
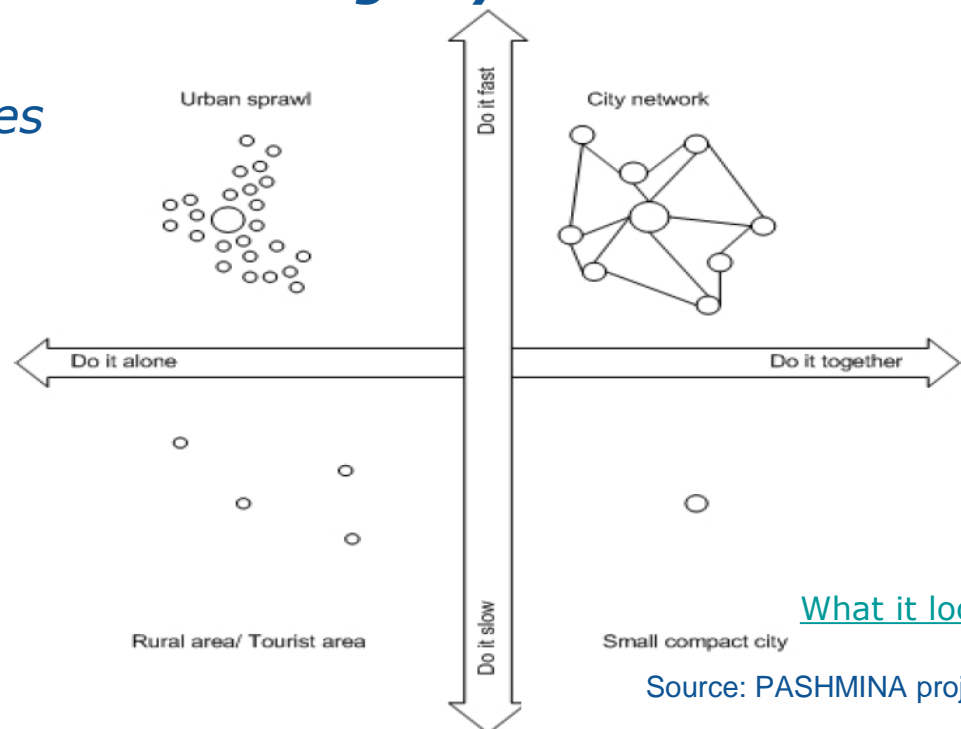
<u>What it looks like</u>?

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

Source: H.G. LOPEZ-RUIZ, 2009

What it looks like?

Source: PASHMINA project, 2011
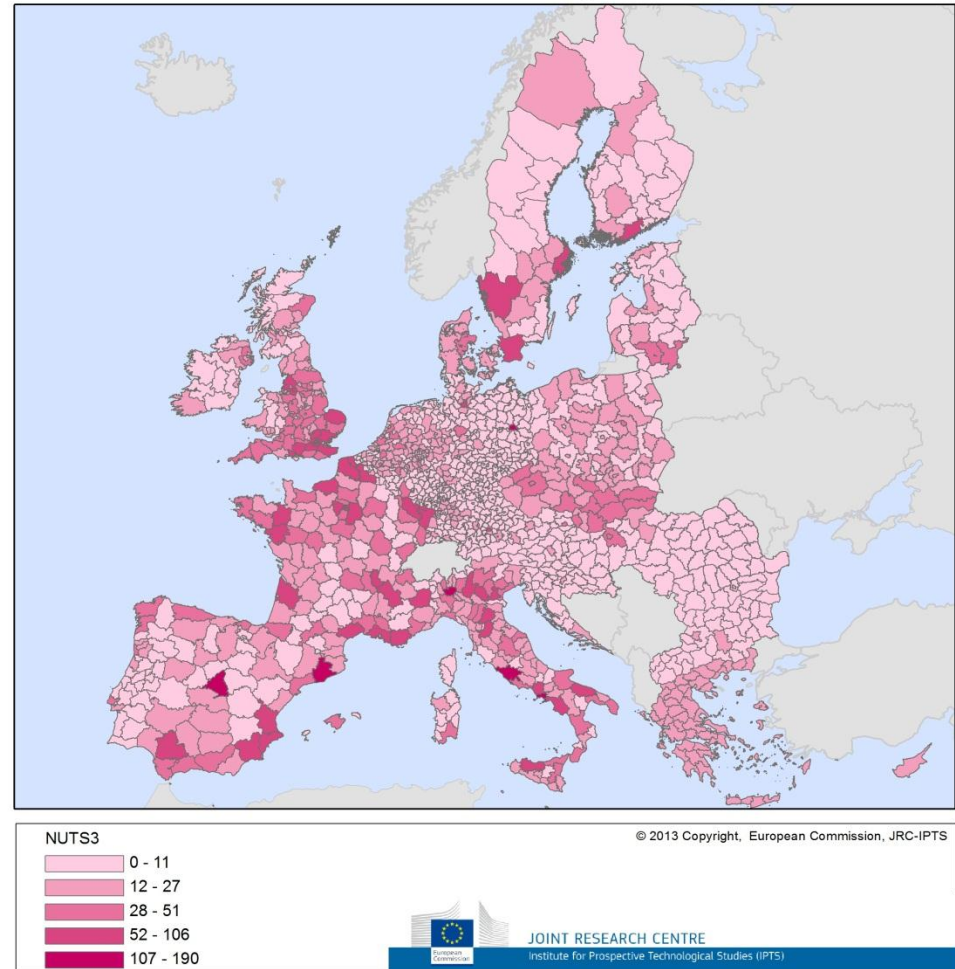
Results

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)

What it looks like?

Selection of results for MS-5

Country-	Urban Emissions 2010 ktons CO2	Urban Emissions 2030 ktons CO2	Reductions 2030 ktons CO2	Percentage
BG	1 485	1 384	100 - 125	7.2% - 9.0%
CY	257	180	15 - 19	8.3% - 10.3%
GR	2 633	2 850	187 - 234	6.6% - 8.2%
MT	177	141	9 - 11	6.3% - 8.0%
RO	1 726	2 272	163 - 205	7.2% - 9.0%
MS-5	6278	6827	474 - 594	6.9% - 8.7%
EU-28	247 729	209 130	14 605 – 18 306	7% - 8.8%

Country	Avoid ktons CO2	Shift ktons CO2	Improve ktons CO2	Reductions 2030 ktons CO2	Population
BG	39 - 49	31 - 38	30 - 38	100 - 125	7 504 868
CY	6 - 7	5 - 6	4 - 6	15 - 19	839 751
GR	73 - 92	57 - 72	56 - 70	187 - 234	42 299 502
MT	4 - 4	3 - 3	3 - 3	9 - 11	417 617
RO	64 - 80	50 - 63	49 - 61	163 – 205	21 413 815
Total MS-5	186-232	146-182	142-178	474-592	72 475 553
Total EU-28	6 504 - 8 152	5 080 - 6 367	4 960 - 6 216	16 544 - 20 735	624771735

Population percentage from EU Total : 12%
CO2 Reduction potential percentage from EU Total : 6.9 – 8.7%

Effects of policy measures

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.

NUTS3	Population NUTS3 2010	Road Accessibility factor	Rail Accessibility factor	Density
Attiki	4 113 979	31	21	1079.2
București	1 937 421	44	36	1228.1
Cyprus	839 751	4	3	86.8
Malta	386 198	6	2	1550.9
Sofia City	1 259 446	39	26	972.7

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.

Country	City Network	Urban Sprawl	Tourist / Rural	Small compact city
BG	1	12	15	0
CY	0	1	0	0
GR	2	5	44	0
MT	2	0	0	0
RO	2	15	25	0

Based on DG-Regio urban classification

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	LOW	MED	MED
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	MED	LOW	LOW
Improvement of the efficiency of city logistics by the use of ICT	MED	LOW	LOW	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	LOW	MED	MED
Car sharing & carpooling schemes.	LOW	LOW	LOW	MED
Telecommunications	MED	MED	LOW	LOW
Multimodal connection platforms	MED	MED	MED	MED
Multimodal travel information provision	MED	LOW	LOW	LOW
Park and Ride areas	LOW	LOW	LOW	LOW
Reallocation of road space to other modes of transport, e.g. dedicated bus lanes	MED	MED	LOW	LOW
Parking management	MED	MED	MED	MED
Dynamic traffic management measures	LOW	LOW	LOW	LOW
Low speed zones	LOW	MED	MED	MED
Information and marketing campaigns	LOW	MED	MED	MED
Promotion of eco-driving	LOW	MED	LOW	MED
Congestion charging zones (area and cordon charging)	LOW	LOW	MED	MED

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	LOW
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	LOW
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	LOW
Dynamic traffic management measures	MED	LOW	LOW
Low speed zones	MED	MED	MED
Information and marketing campaigns	LOW	LOW	MED

Thank you!

For further information

Hector G. LOPEZ-RUIZ
Hector-Guillermo.LOPEZ-RUIZ@ec.europa.eu
hlopezruiz@gmail.com