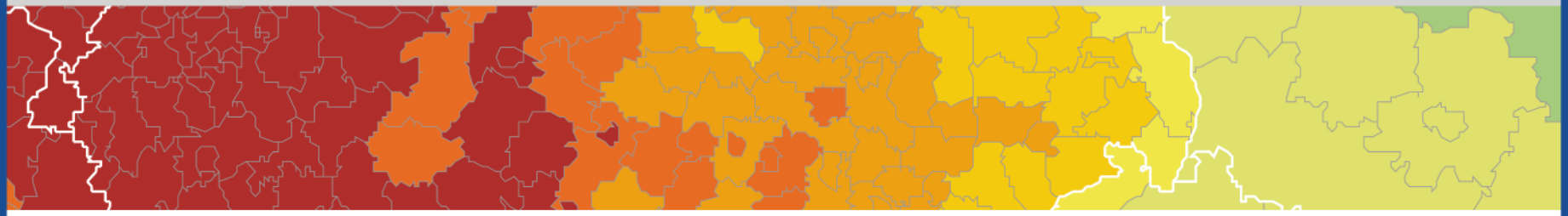
ESPON



Exploiting cooperation/synergy and linkages among ESPON tools

Technical meeting

16-17 May 2013

FUNCTIONAL INDICATORS COMPUTATION

M4D Project – Core Database Strategy

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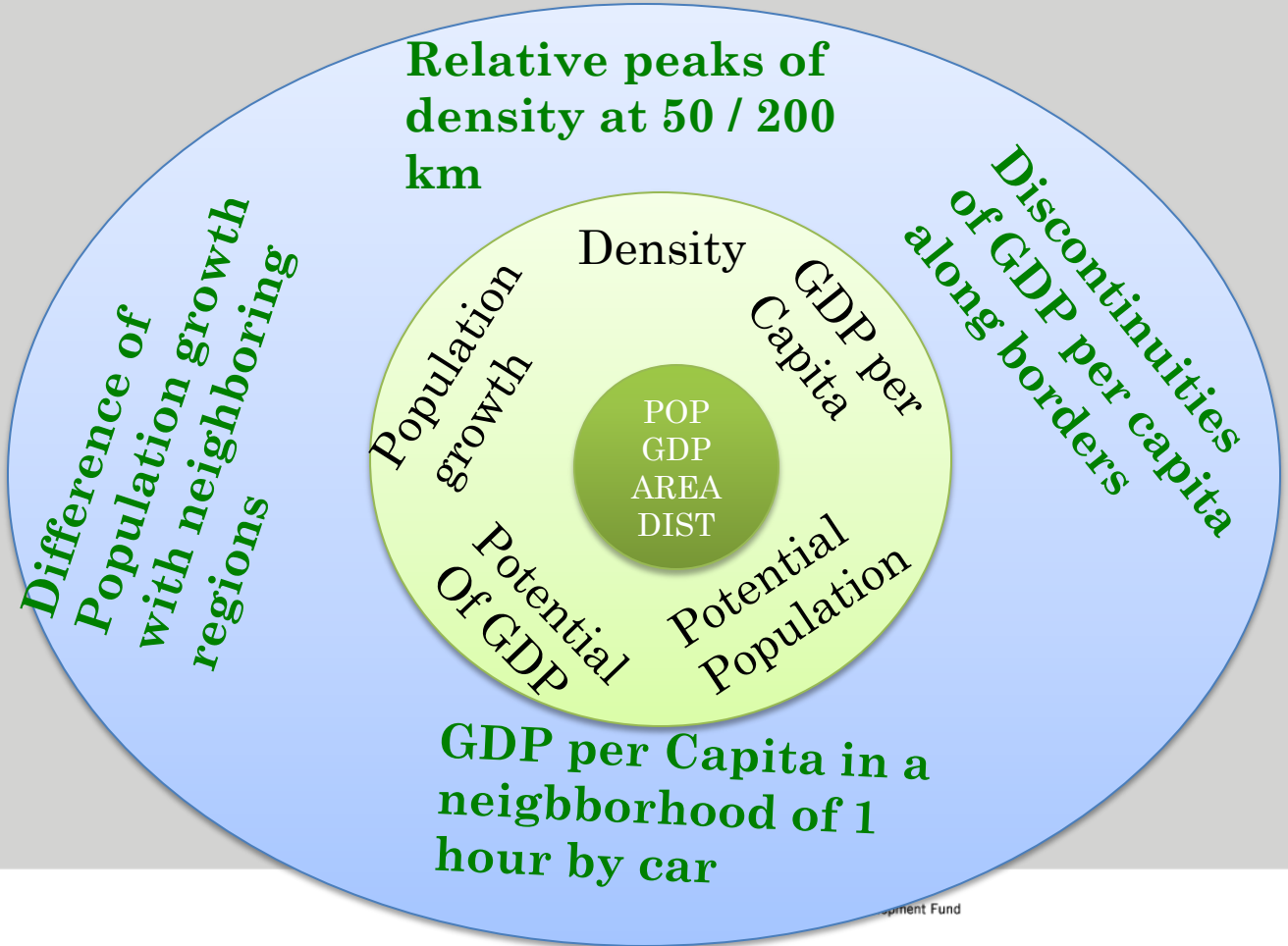
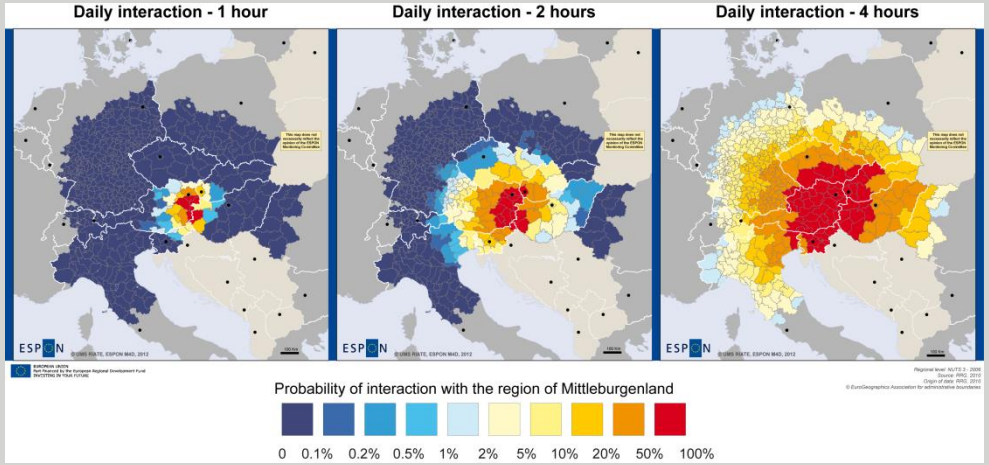
1. What is the tool about ?

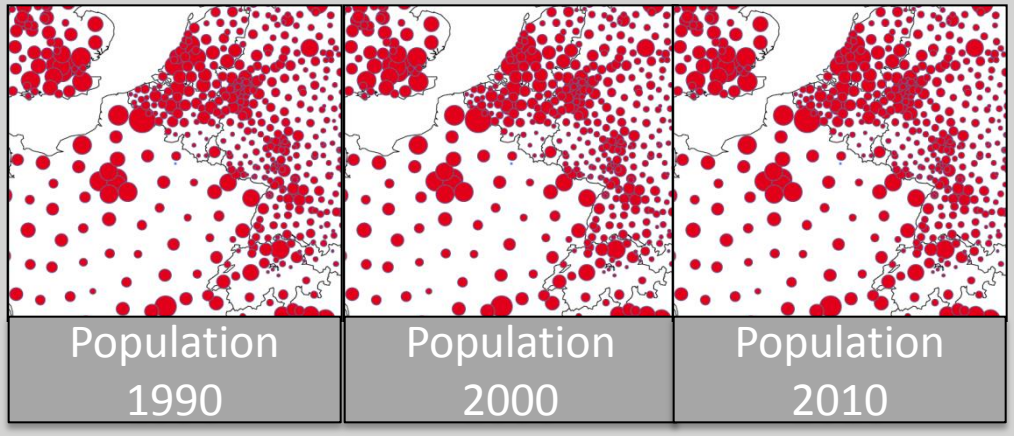
A limited number of core data can be expanded toward a great number of indicators …



2. What are the main inputs used to develop the tool ?



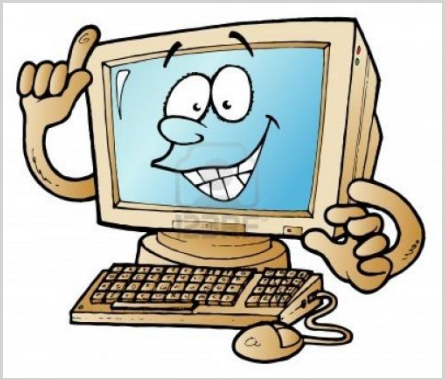
1. Distance matrix between NUTS3



2. Time series of count data at NUTS3

M4D

3. Program written in R language



4. Personal computer

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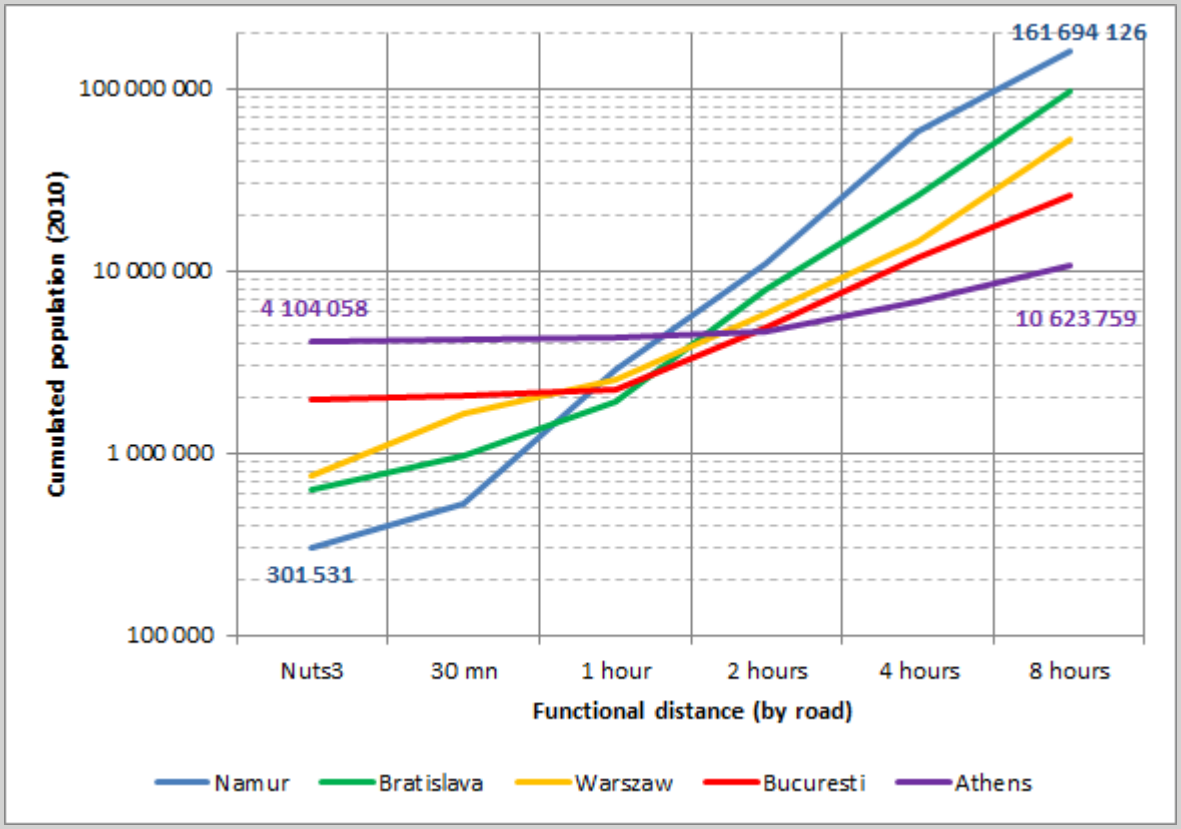
3. Basic outputs

FUNCTIONAL POTENTIAL = Amount of X located at distance lower than D



Example : the potential of population accessible by road from Namur is low at short distance but very high at long distance. The reverse is true for Athens.

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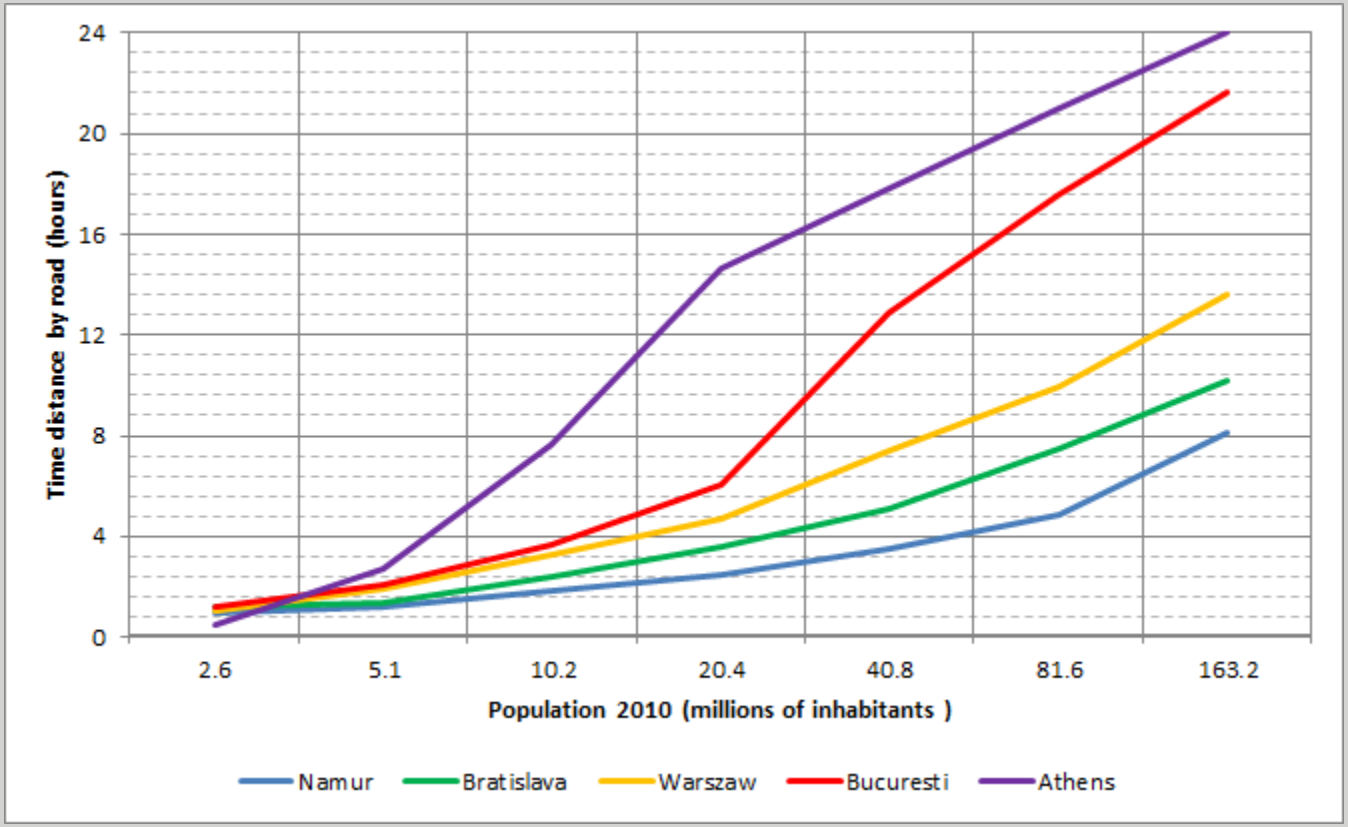
3. Basic outputs

FUNCTIONAL ACCESSIBILITY = Distance D necessary to cumulate X



Example : A firm looking for a market potential of 20.4 millions of inhabitant can find it in 2.5 hours around Namur, but 6 hours around Bucuresti …

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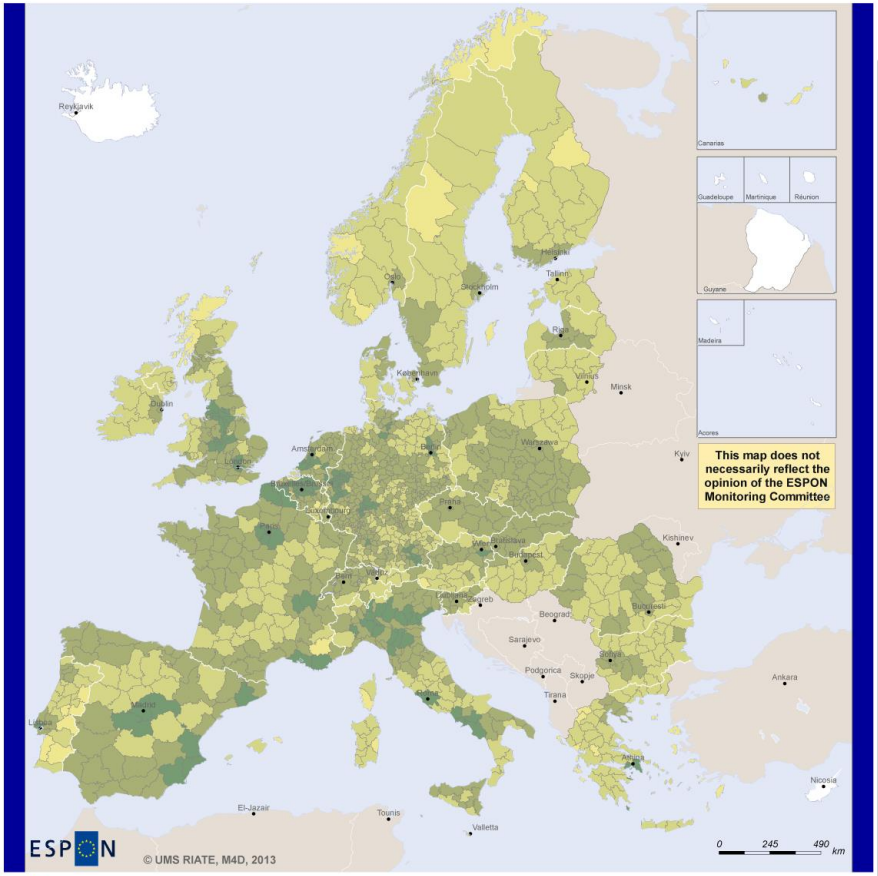
Population reached in 1 hour



Potential population

reached in

0.5 1 2 4 8 16

hour(s) by car

Accessibility

to

0.5 1 2 5 10 20 50

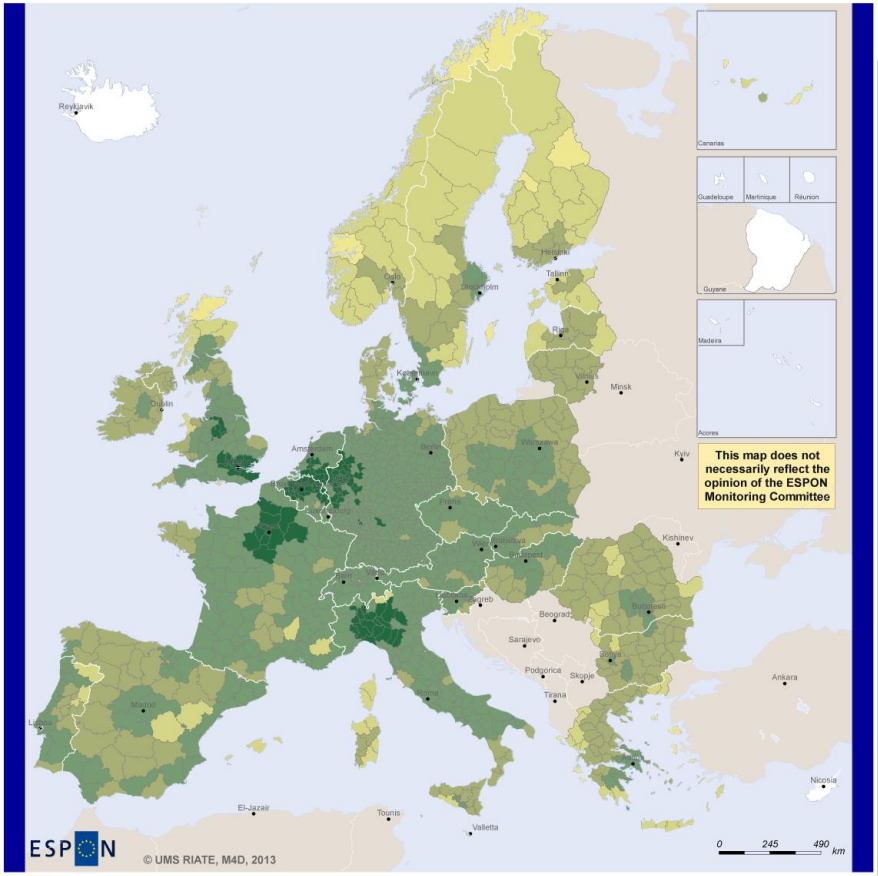
million of inhabitants

Timeline

variation

1998 2000 2002 2004 2006 2008 2010

Population reached in 2 hours by car



Potential population

reached in

0.5 1 2 4 8 16

hour(s) by car

Accessibility

to

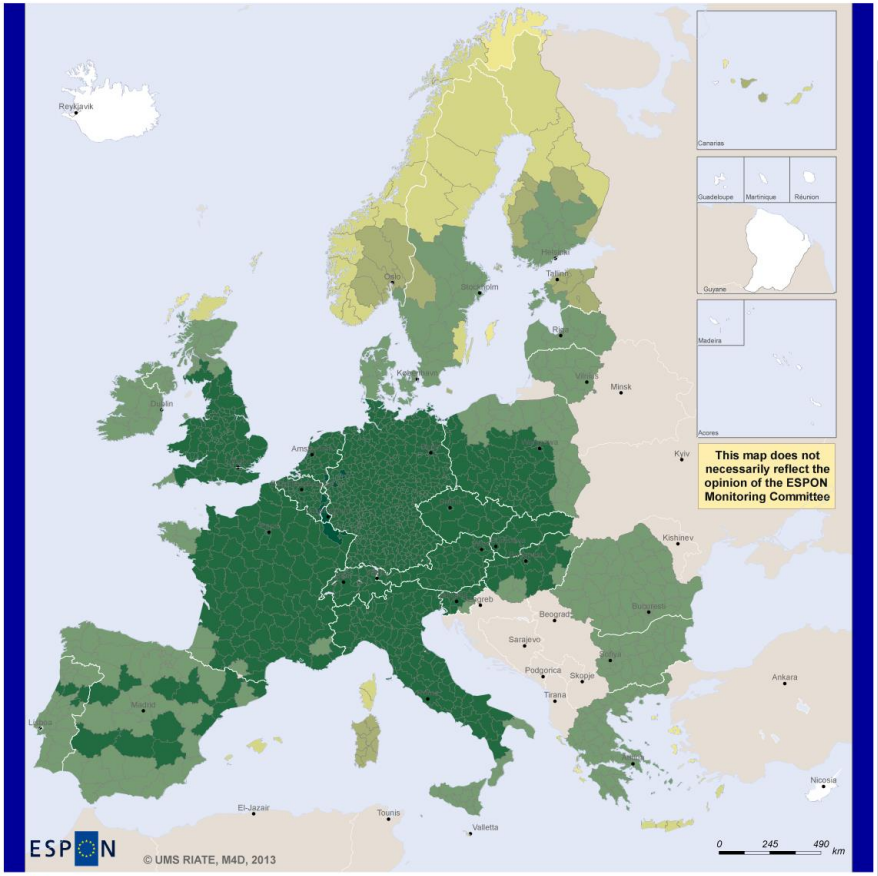
0.5 1 2 5 10 20 50

million of inhabitants

Timeline variation

1998 2000 2002 2004 2006 2008 2010

Population reached in 4 hours by car



Potential population

reached in

0.5 1 2 4 8 16

hour(s) by car

Accessibility

to

0.5 1 2 5 10 20 50

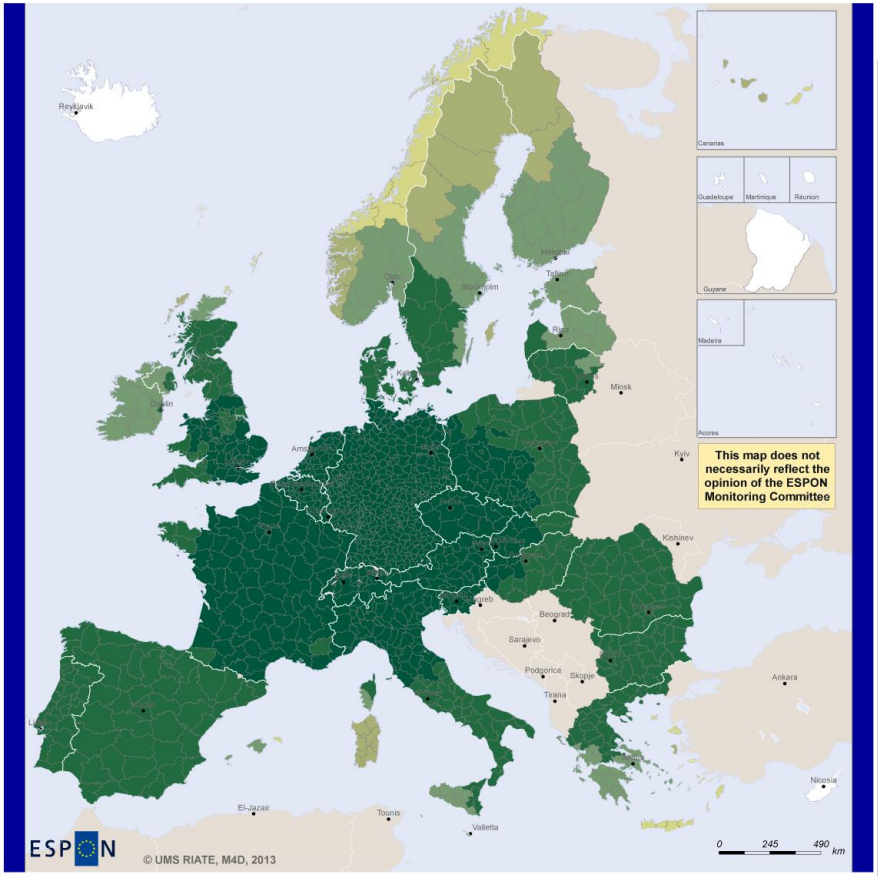
million of inhabitants

Timeline

variation

1998 2000 2002 2004 2006 2008 2010

Population reached in 8 hours by car



Potential population

reached in

0.5 1 2 4 8 16

hour(s) by car

Accessibility

to

0.5 1 2 5 10 20 50

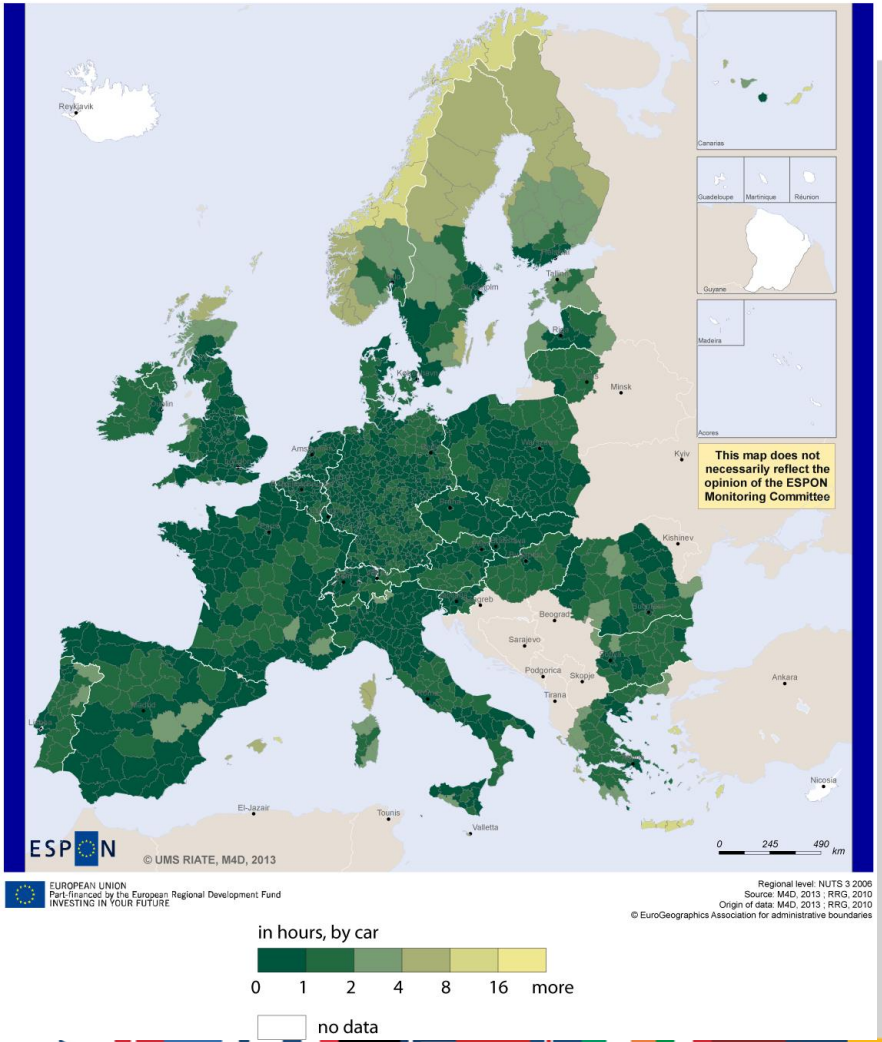
million of inhabitants

Timeline

variation

1998 2000 2002 2004 2006 2008 2010

Time needed to reach 1M inhabitants



Potential population

reached in

0.5 1 2 4 8 16

hour(s) by car

Accessibility

to

0.5 1 2 5 10 20 50

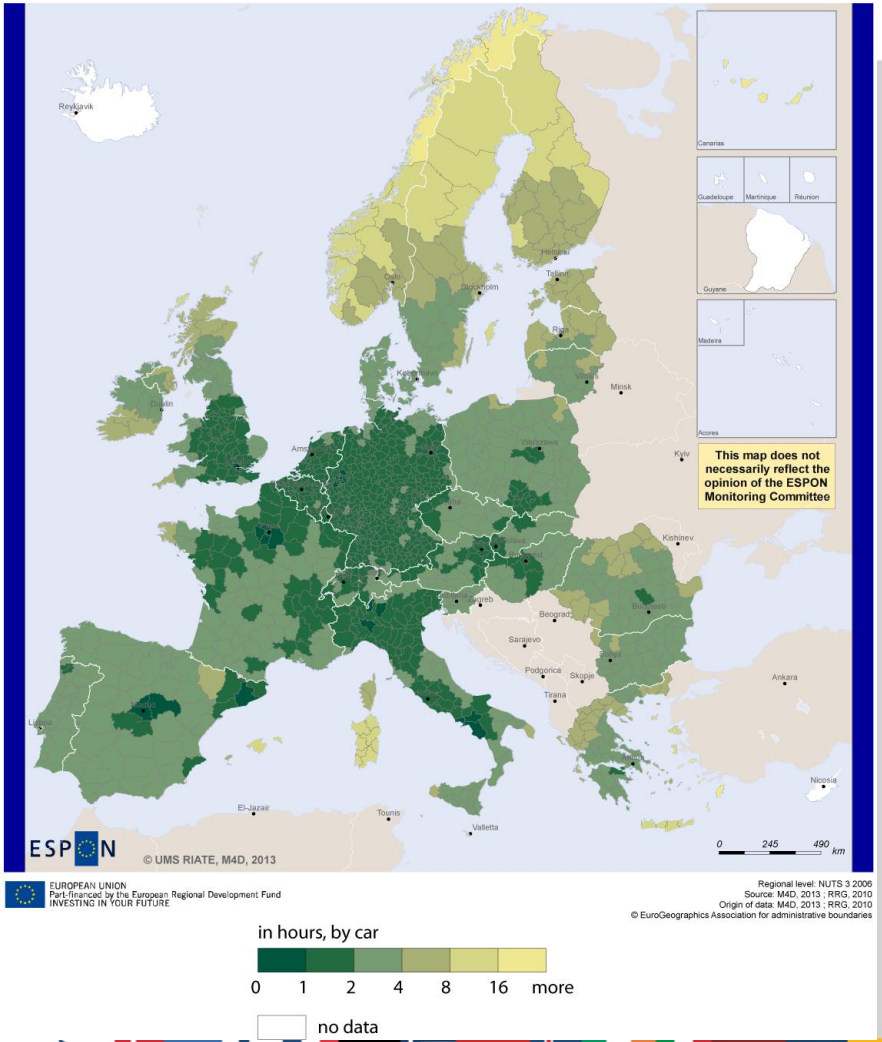
million of inhabitants

Timeline

variation

1998 2000 2002 2004 2006 2008 2010

Time needed to reach 5M inhabitants



Potential population

reached in

0.5 1 2 4 8 16

hour(s) by car

Accessibility

to

0.5 1 2 5 10 20 50

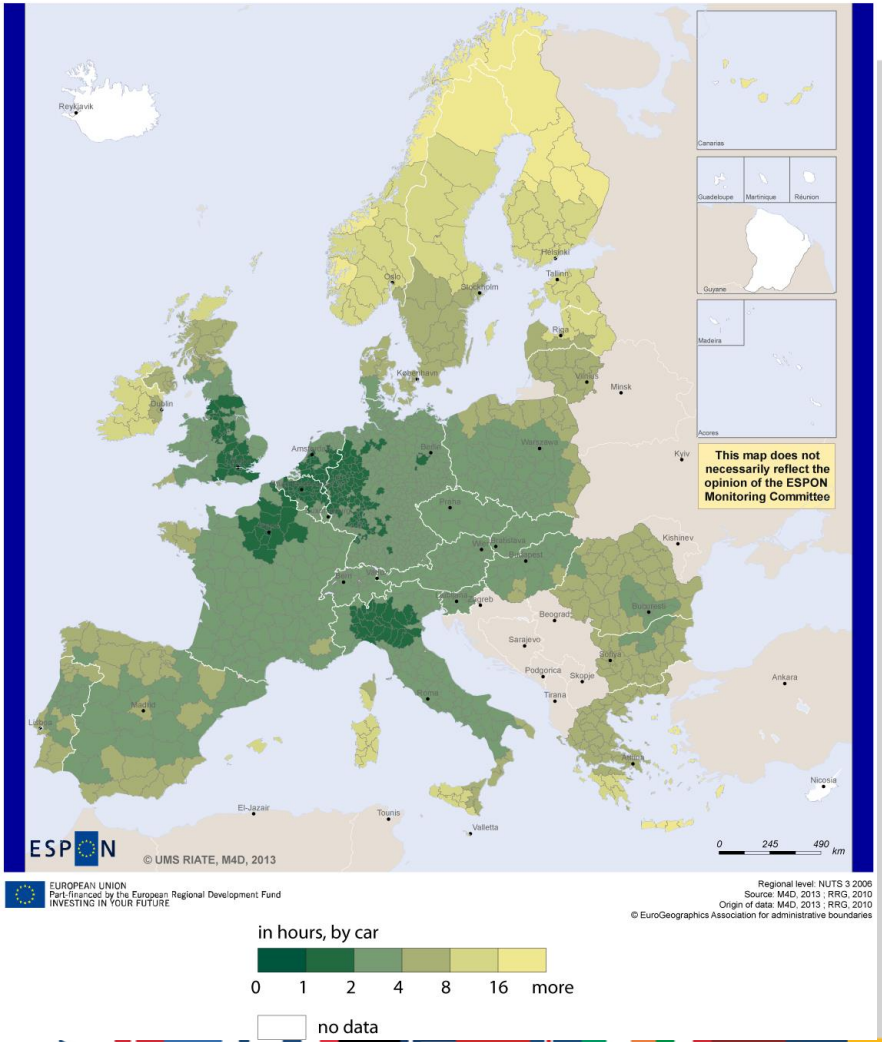
million of inhabitants

Timeline

variation

1998 2000 2002 2004 2006 2008 2010

Time needed to reach 10M inhabitants

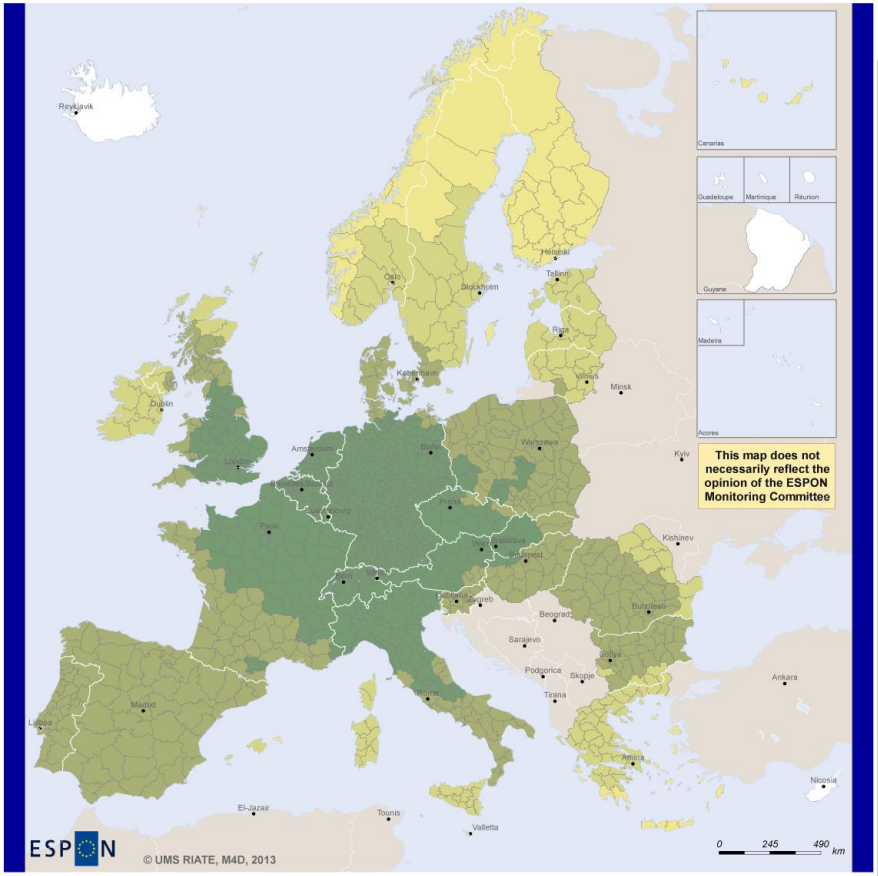


Potential population
reached in
0.5 1 2 4 8 16
hour(s) by car

Accessibility
to
0.5 1 2 5 10 20 50
million of inhabitants

Timeline variation
1998 2000 2002 2004 2006 2008 2010

Time needed to reach 20M inhabitants



Potential population

reached in

0.5 1 2 4 8 16

hour(s) by car

Accessibility

to

0.5 1 2 5 10 20 50

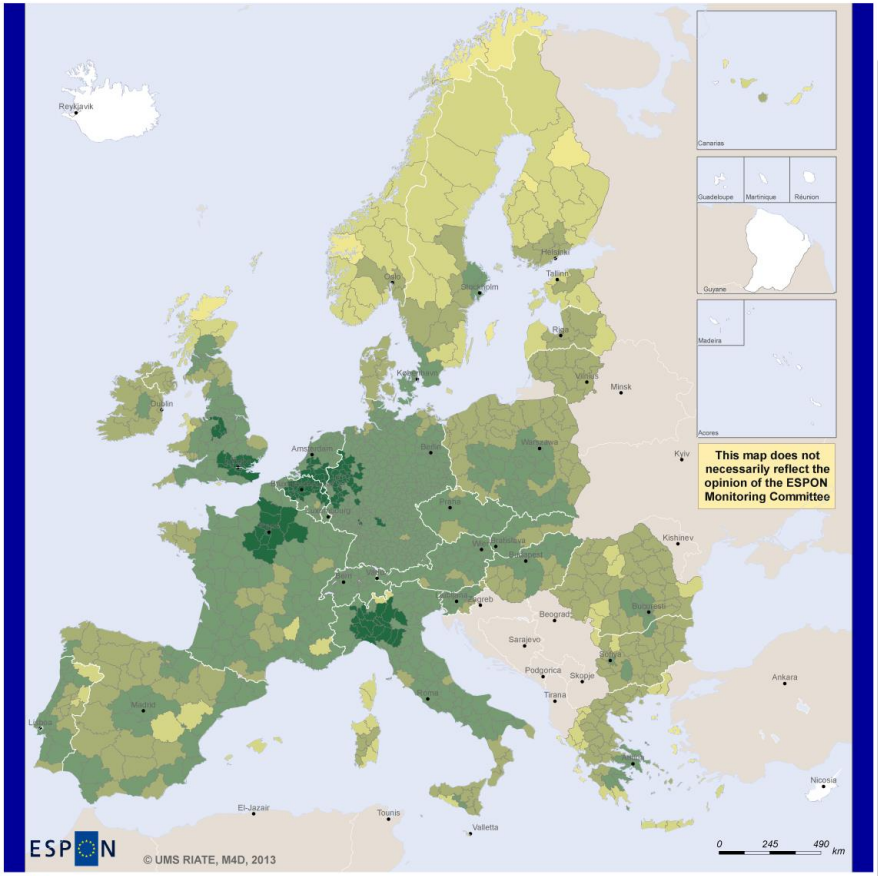
million of inhabitants

Timeline

variation

1998 2000 2002 2004 2006 2008 2010

Population reached in 2 hours by car



Potential population

reached in

0.5 1 2 4 8 16

hour(s) by car

Accessibility

to

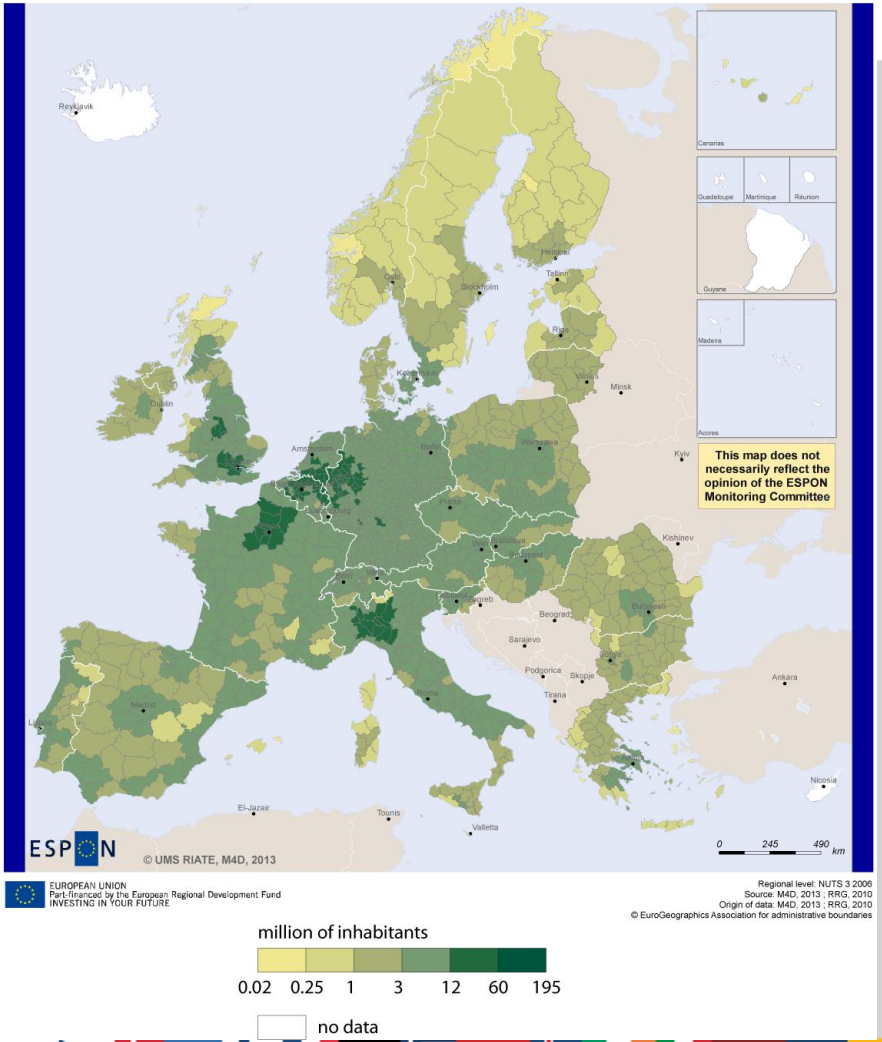
0.5 1 2 5 10 20 50

million of inhabitants

Timeline variation

1998 2000 2002 2004 2006 2008 2010

Population reached in 2 hours by car

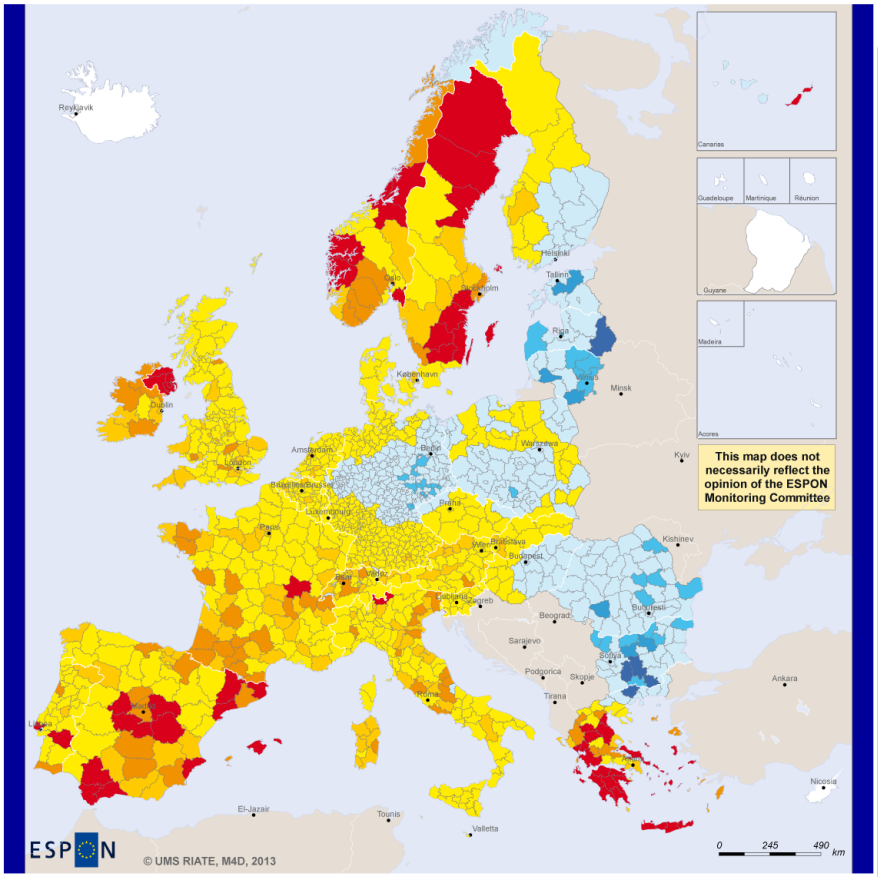


Potential population
reached in
0.5 1 2 4 8 16
hour(s) by car

Accessibility
to
0.5 1 2 5 10 20 50
million of inhabitants

Timeline
variation
1998 2000 2002 2004 2006 2008 2010

Evolution of accessibility



Potential population

reached in

0.5 1 2 4 8 16

hour(s) by car

Accessibility

to

0.5 1 2 5 10 20 50

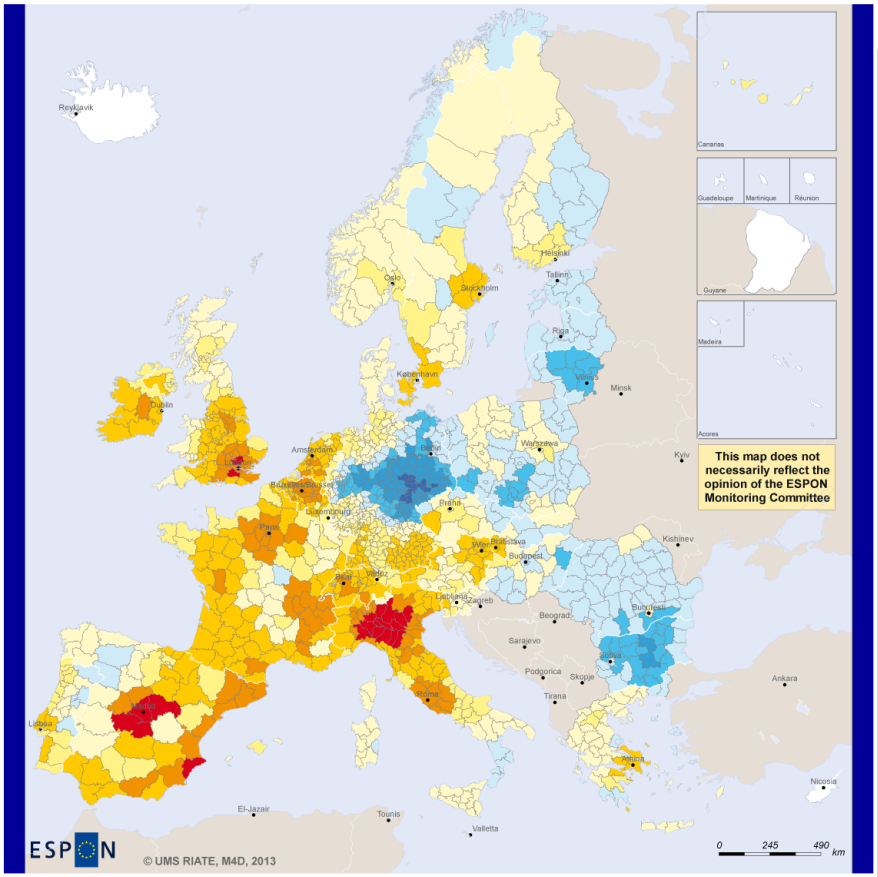
million of inhabitants

Timeline

variation

1998 2000 2002 2004 2006 2008 2010

Evolution of potential population



Potential population
reached in

0.5 1 2 4 8 16
hour(s) by car

Accessibility
to

0.5 1 2 5 10 20 50
million of inhabitants

Timeline variation

1998 2000 2002 2004 2006 2008 2010

4. Needs and main challenges

1. Development of time series of count data (M4D Core database strategy)
2. Acquisition and regular update of functional distance matrix between NUTS 3 units
3. Storage of new indicators difficult (infinite number of possibilities)
4. Implementation of an interface for computation on request

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5. Maintenance and updating

1. No problem for R program …

2. New strategy for Core Data in ESPON III ?

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More Information

Thank you for your attention

Please visit http://www.database.espon.eu

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