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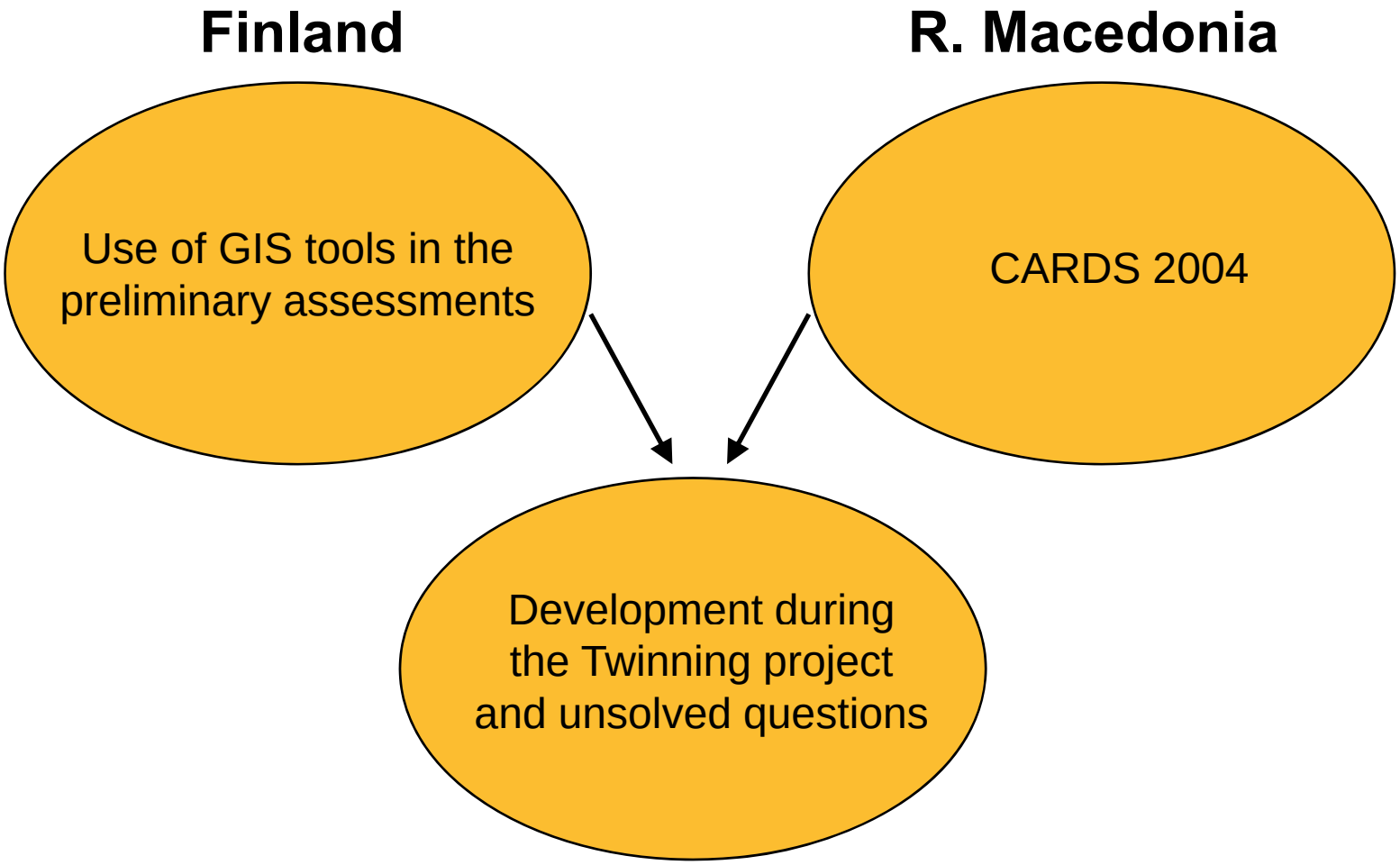
FINNISH METEOROLOGICAL INSTITUTE

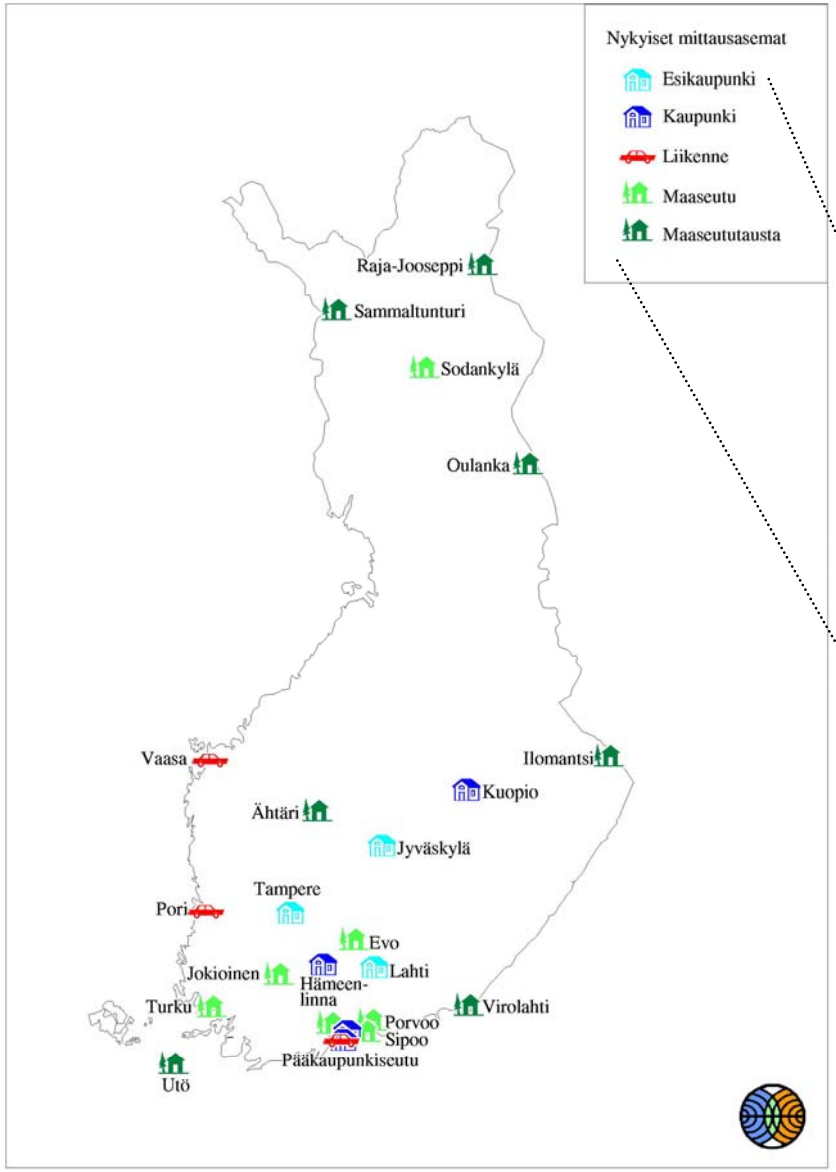
Using GIS tools in preliminary assessment

Birgitta Alaviippola

31.8.2007

Content

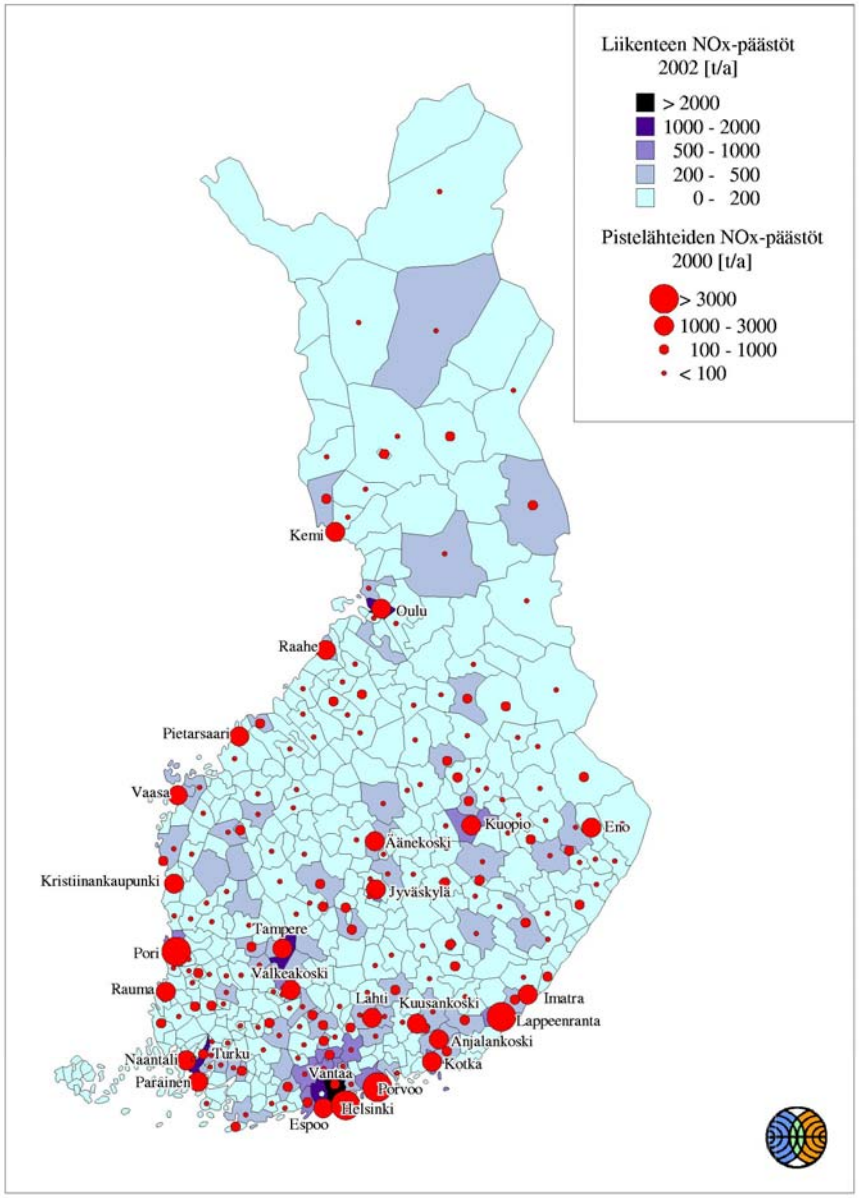

Finland
R. Macedonia
Use of GIS tools in the preliminary assessments
CARDS 2004
Development during the Twinning project and unsolved questions



Location of the measurement stations

O_3 measurement stations

Suburban
Urban
Traffic
Rural
Rural-background

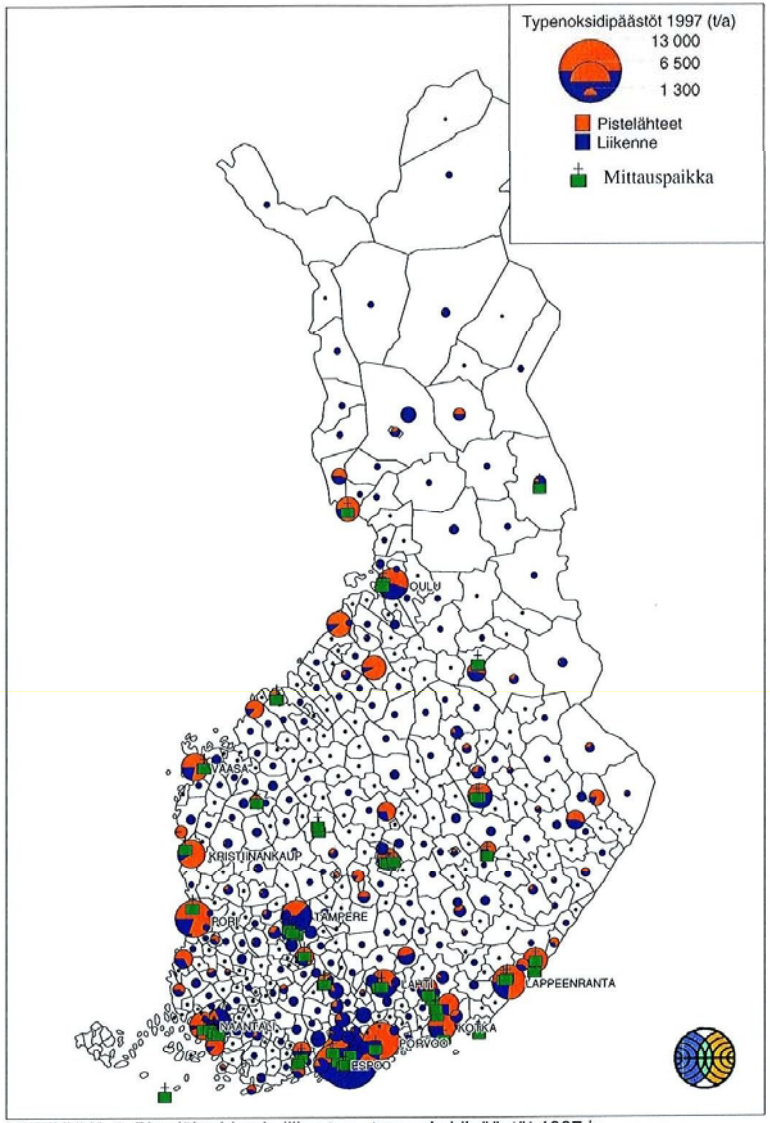


Location and amount of emissions

NO_x emissions (t/a)

Traffic

Point emission sources



LIITEKUVA 4. Pistelähteiden ja liikenteen typenoksidipäästöt 1997 ja typen oksidien mittauspaikat.

Emission sources & measurement stations

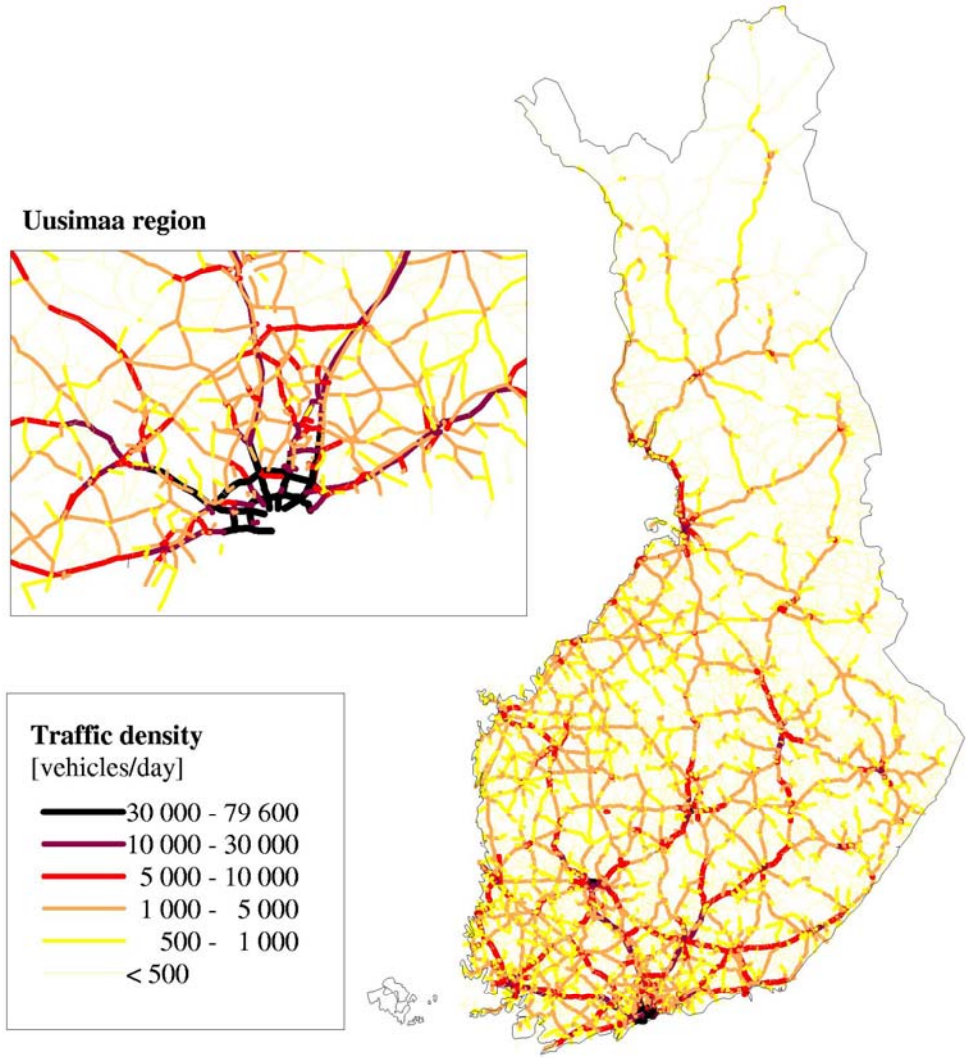
NO_x emissions (t/a)

- Point emission sources
- Traffic

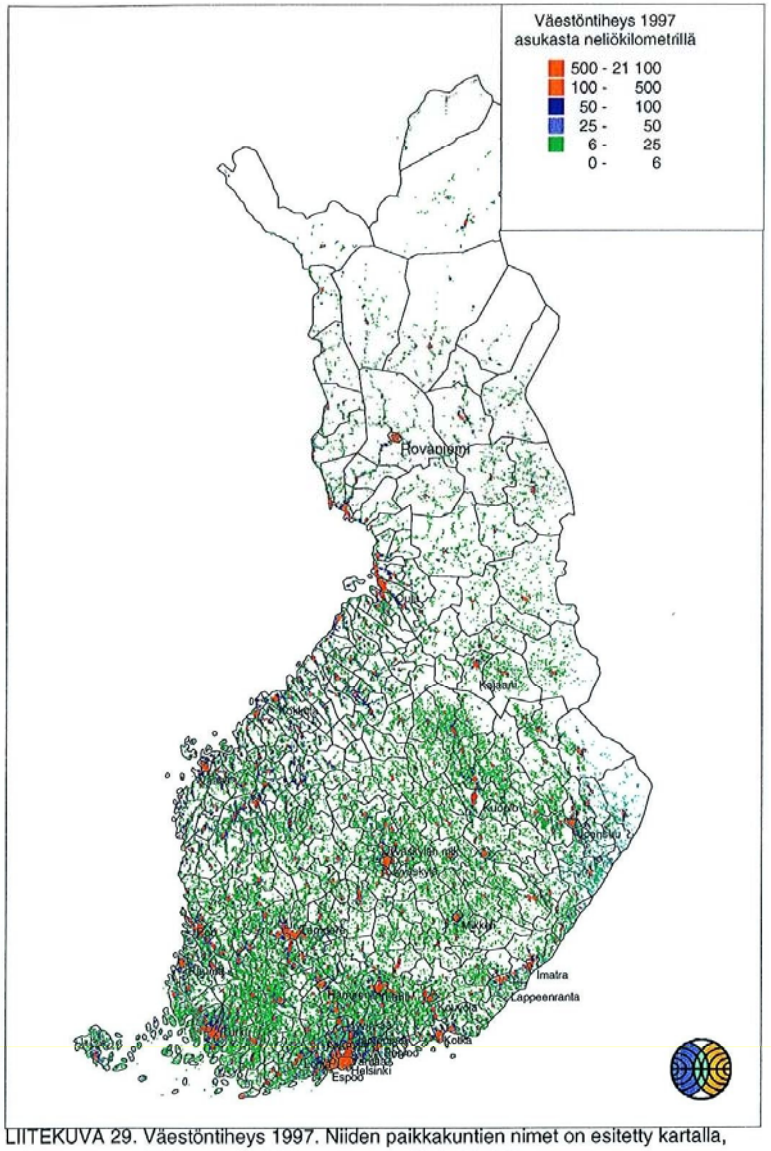
NO_x measurements

- Measurement station

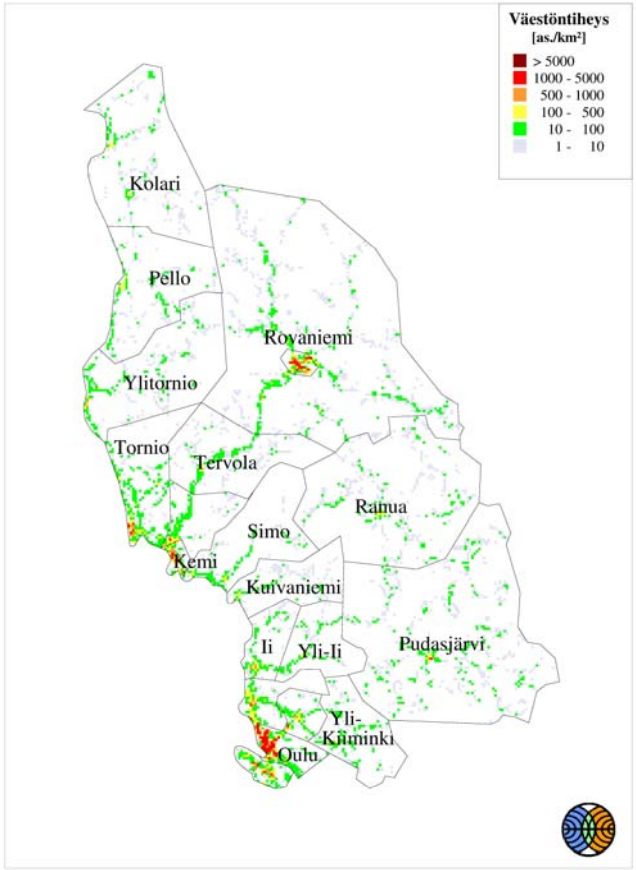
Traffic density (vehicles/day)



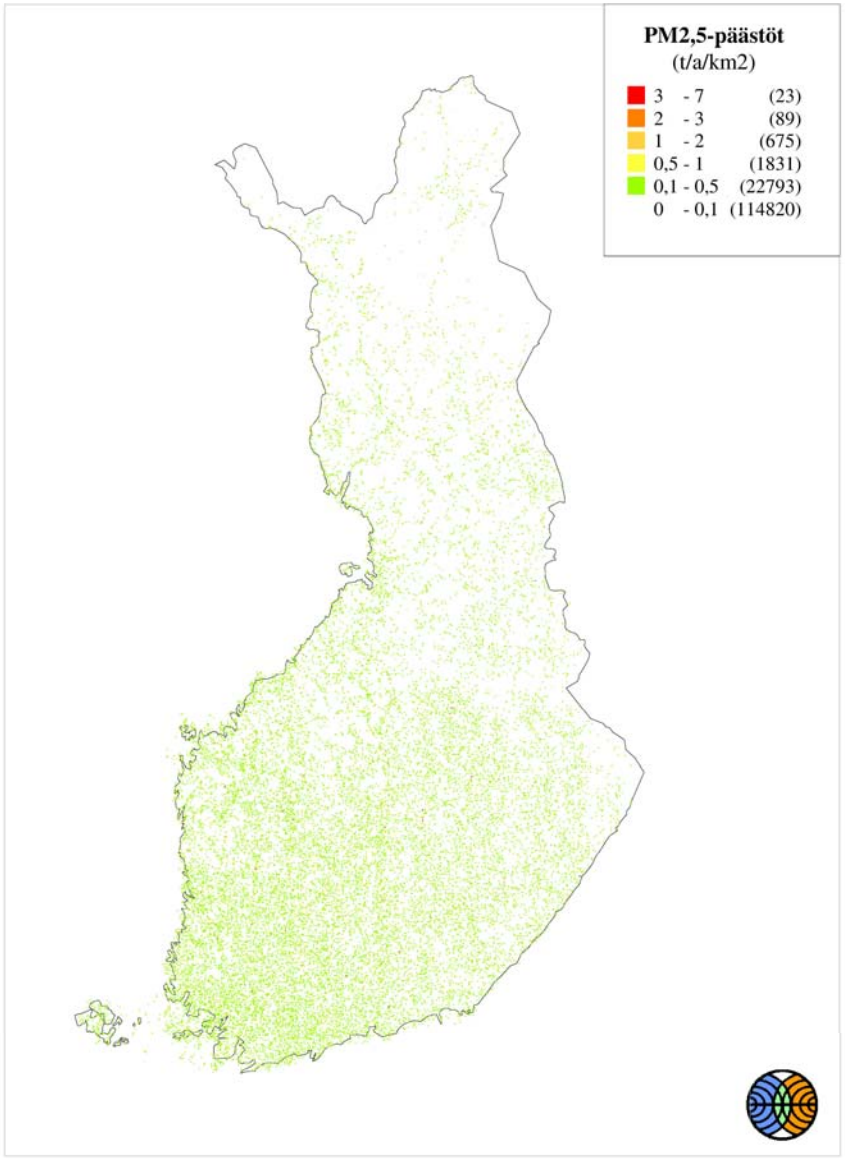
Population density (inhabitants/km^2)



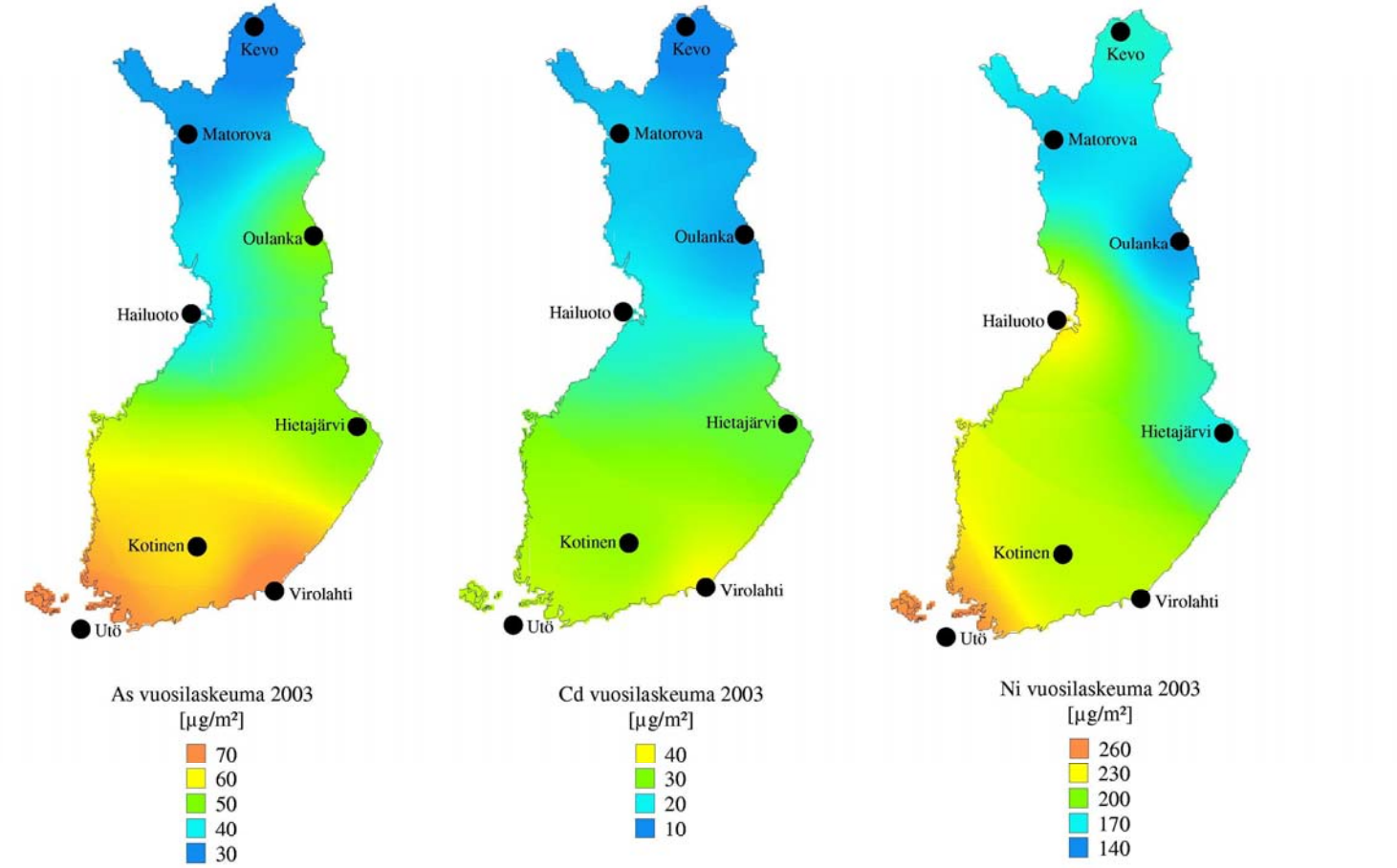
LIITEKUVA 29. Väestöntiheys 1997. Niiden paikkakuntien nimet on esitetty kartalla, joiden asukasluku on suurempi kuin 30 000.



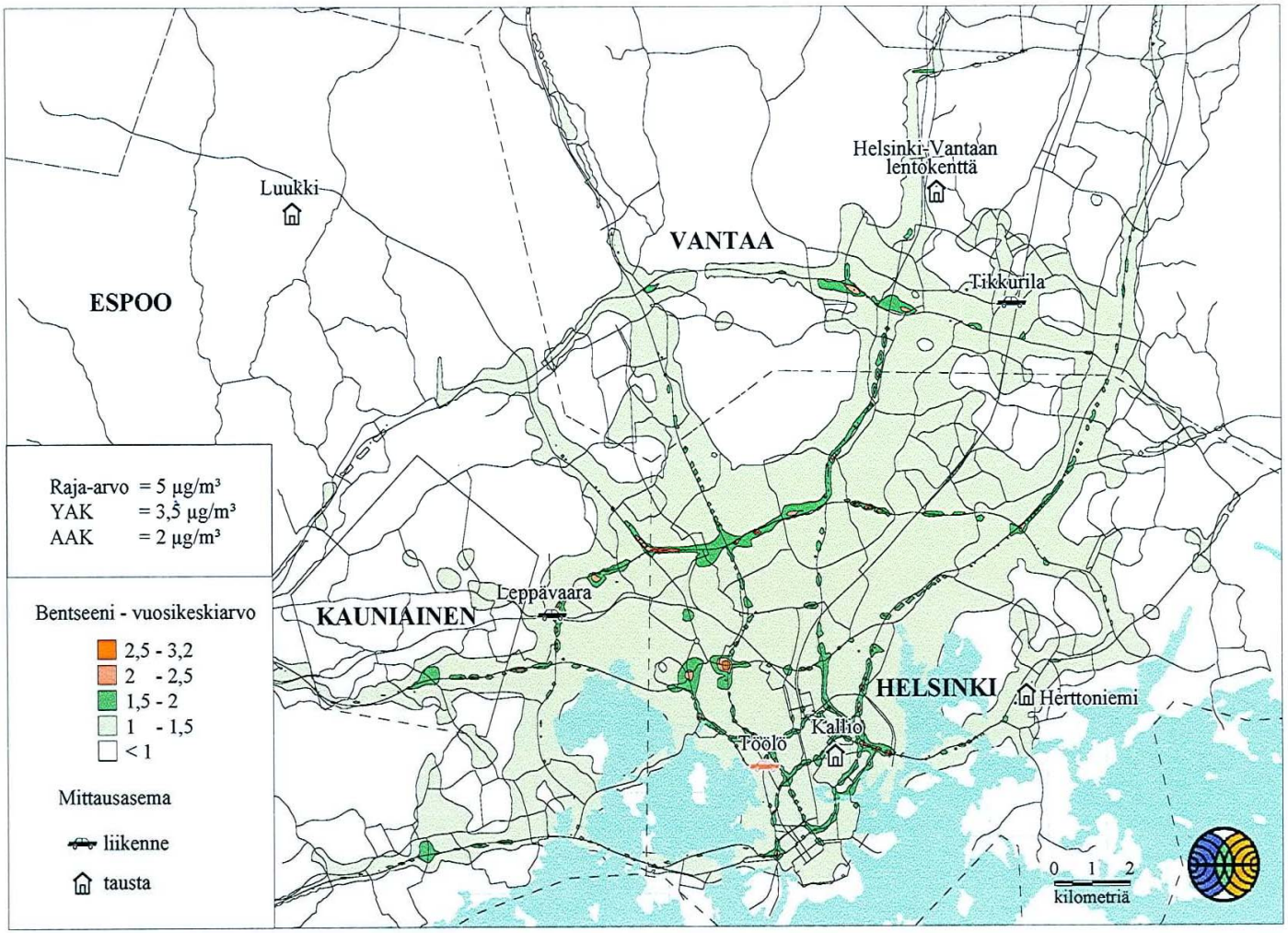
Woodburning emissions ($PM_{2,5}$) (t/a/km^2)



Deposition of arsenic, cadmium and nickel in the background areas (µg/m²)

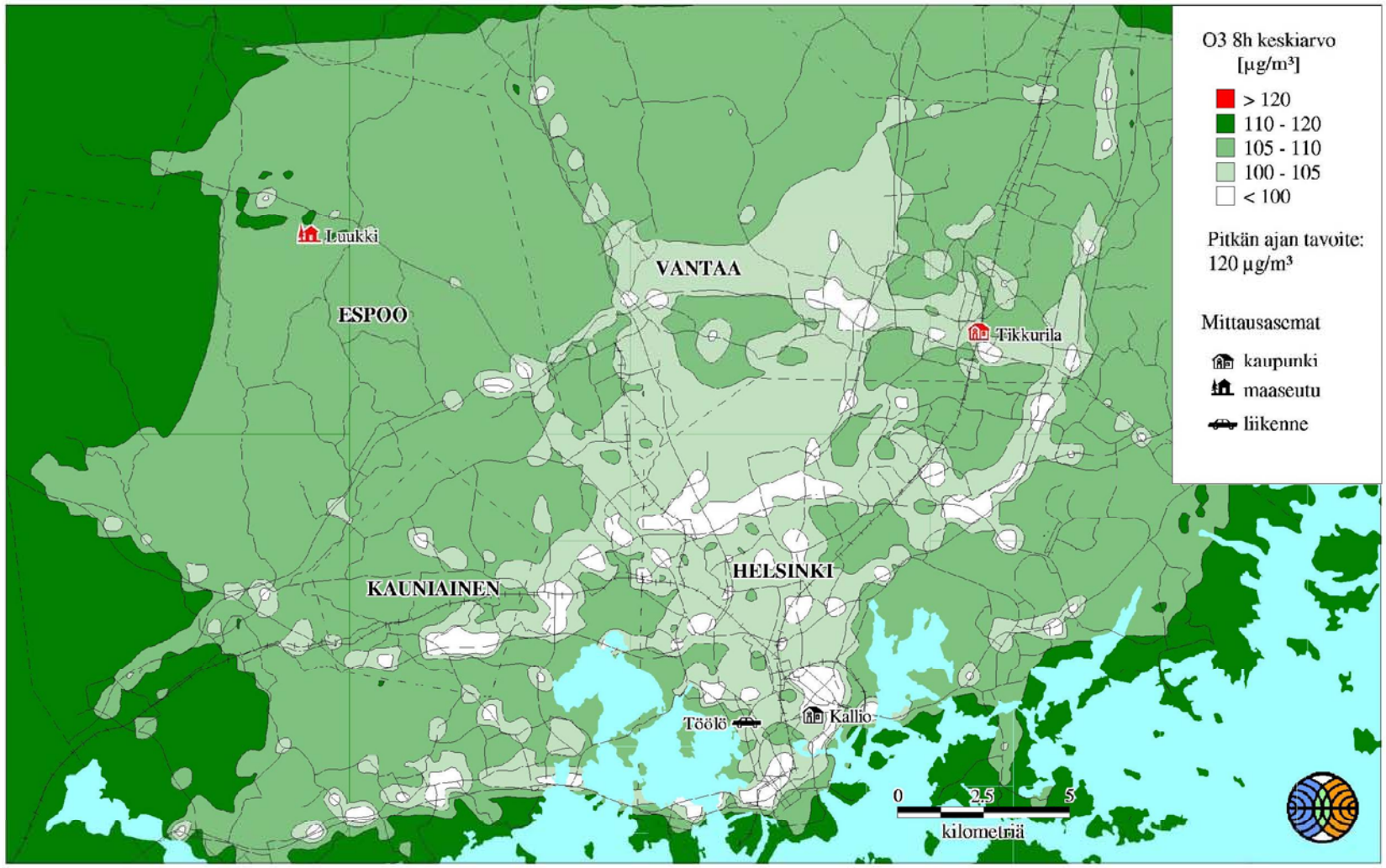


Dispersion modelling of benzene (annual average)



LIITEKUVA 10. Bentseenipitoisuuden vuosikeskiarvo (µg/m³) pääkaupunkiseudulla vuonna 2000.
YAK=ylempi arviointikynnys, AAK=alempi arviointikynnys.

Dispersion modelling of ozone (8h average)



LIITEKUVA 14. Otsonin korkein 8 tunnin keskiarvopitoisuus (µg/m³) pääkaupunkiseudulla vuonna 2000.

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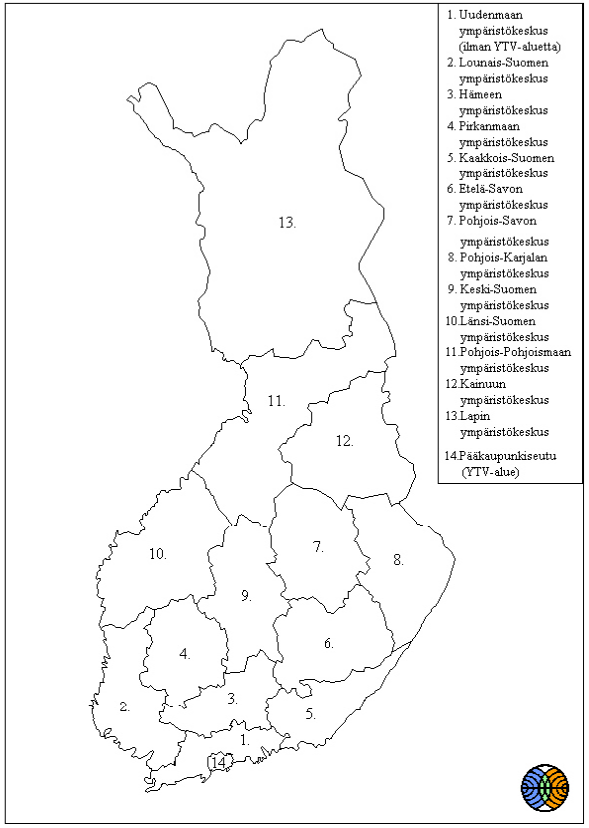
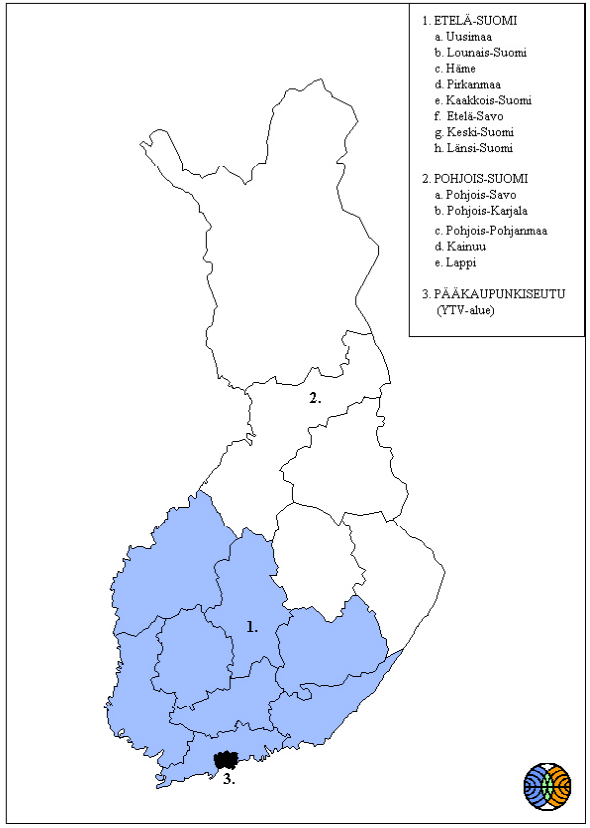
Zones in Finland

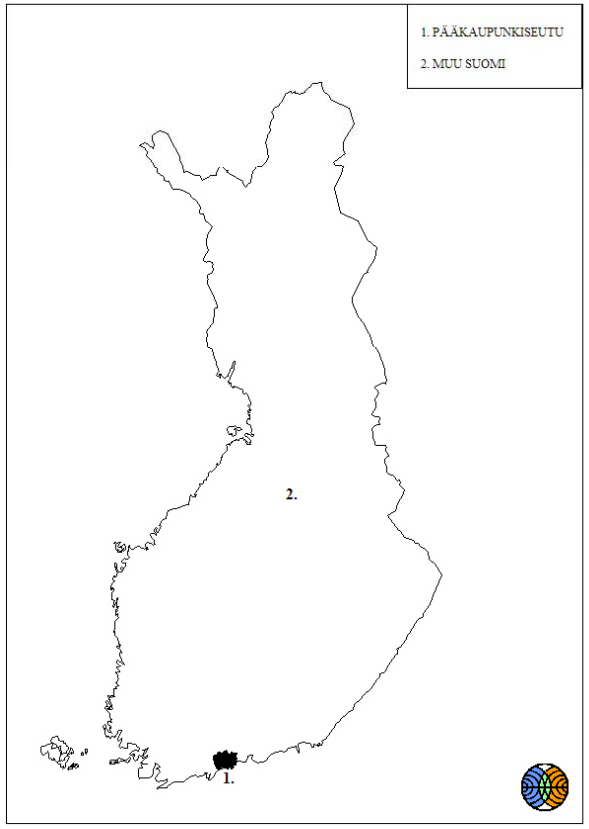
SO_2, NO_2, PM_{10}, Pb, CO (14)



Benzene (3)



Ozone, heavy metals, PAH-compounds (2)

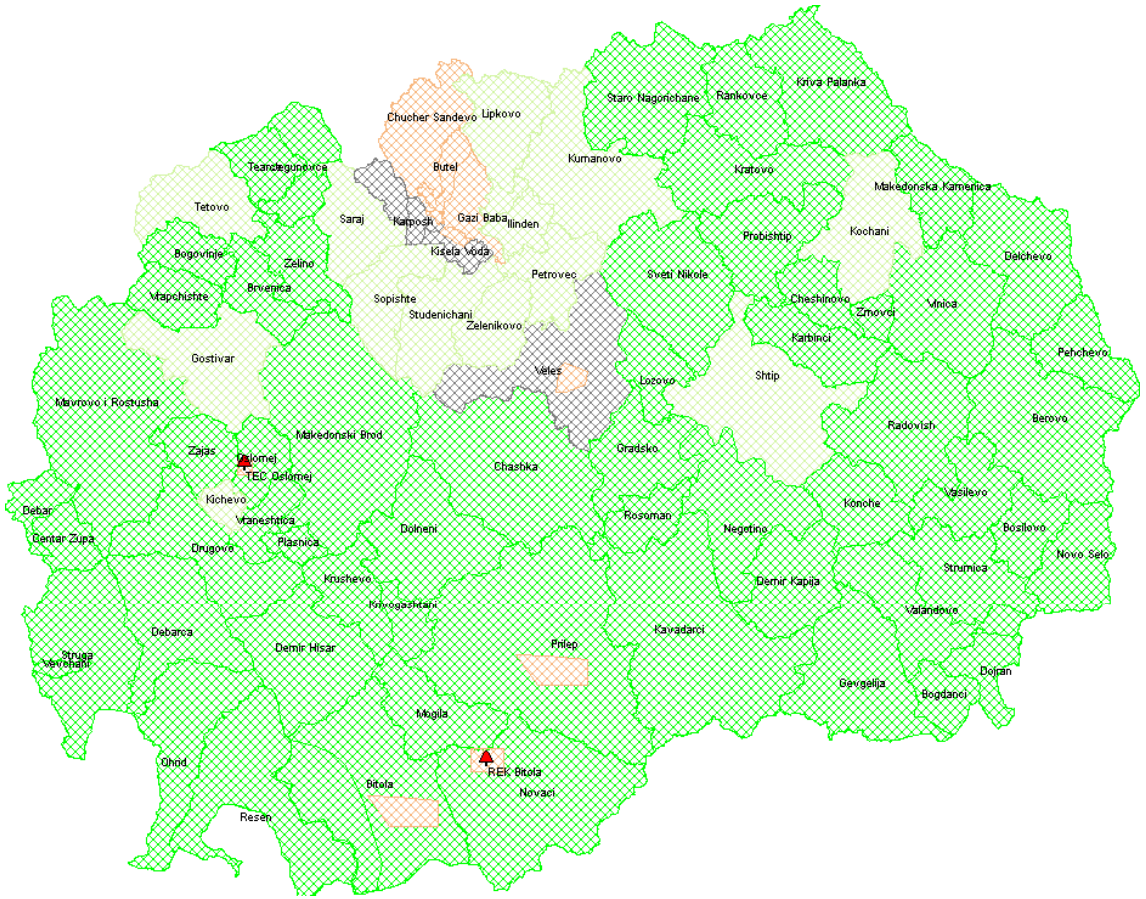


CARDS 2004

- **7 zones and 1 agglomeration based on statistical regions**

CARDS 2004

- **Worst case 2000−2005: SO_2 annual average**



< LAT

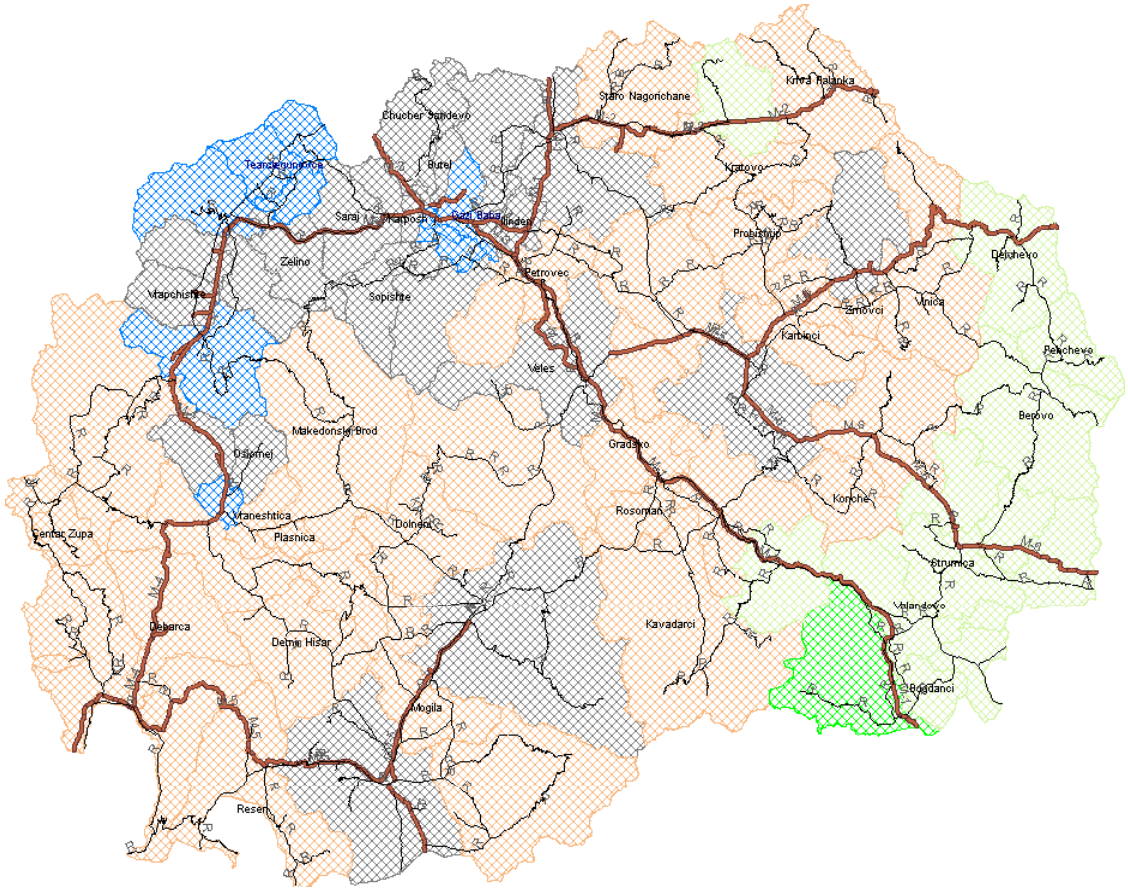
> LAT < UAT

> UAT

> Limit value

CARDS 2004

- **Worst case 2004–2005: PM_{10} annual average**



< LAT

> LAT < UAT

> UAT

> Limit value

> 100 µg/m^3

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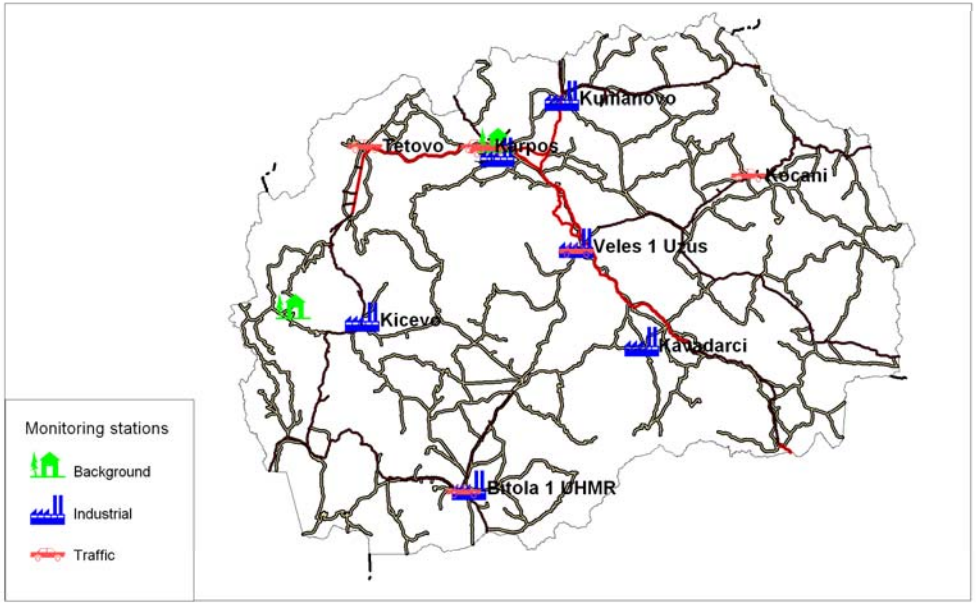
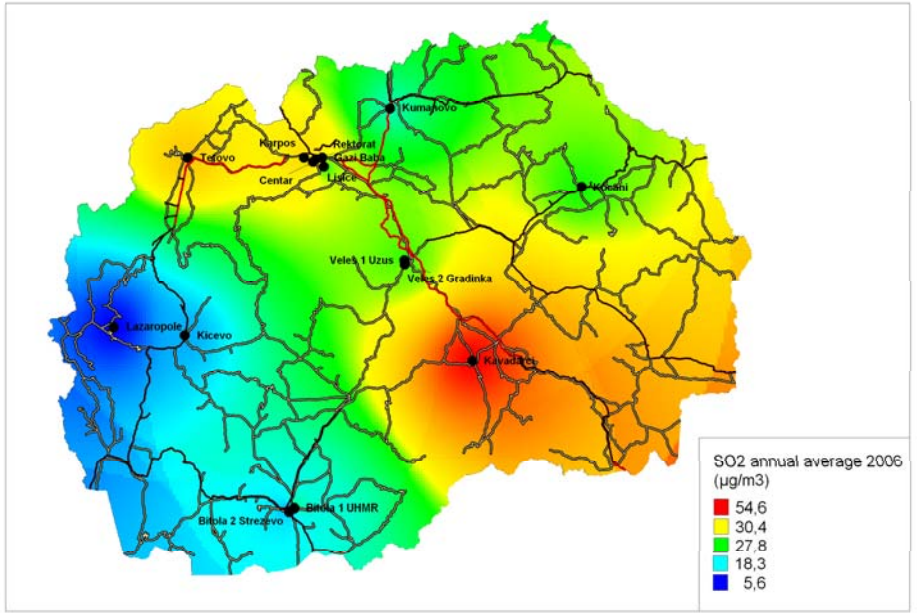
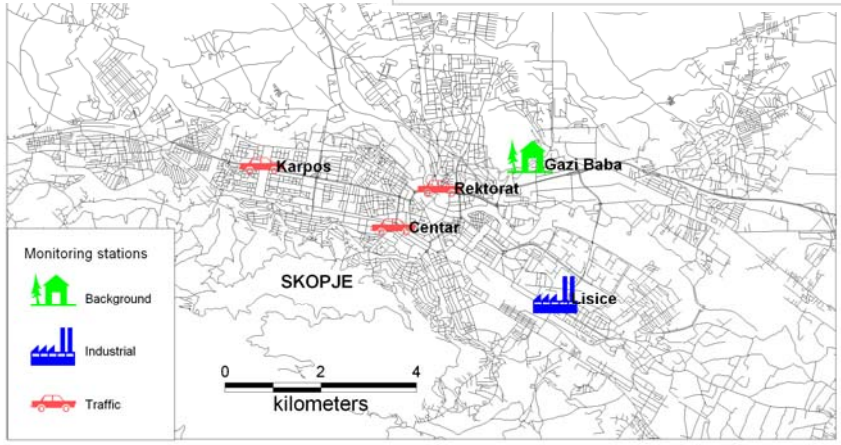
Progress during the Twinning project







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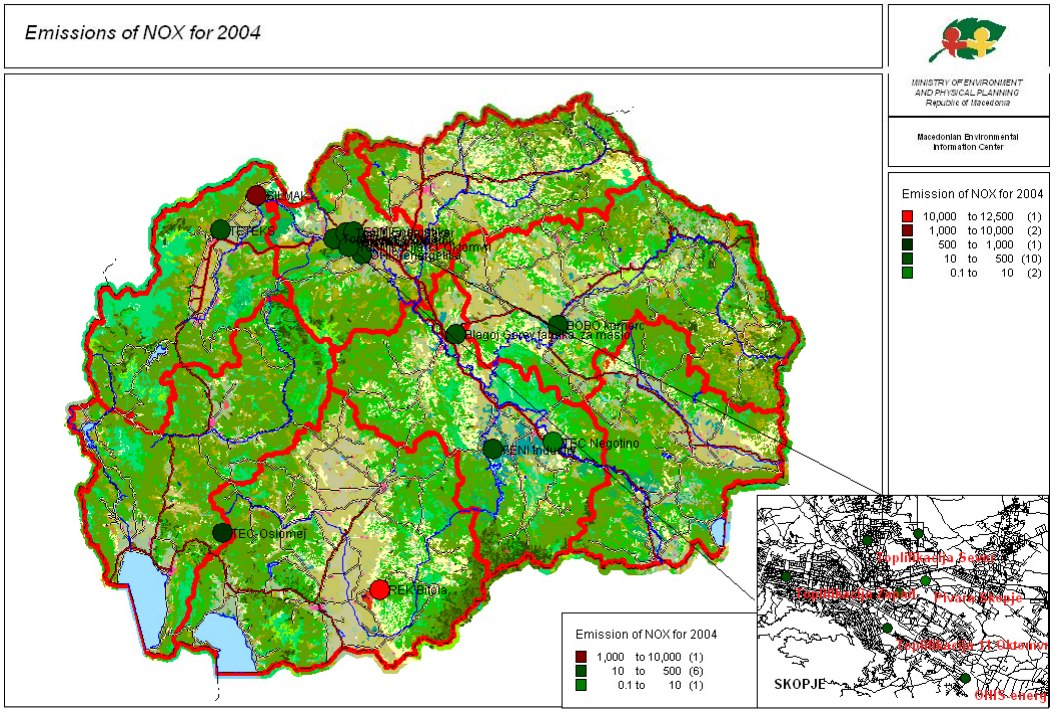
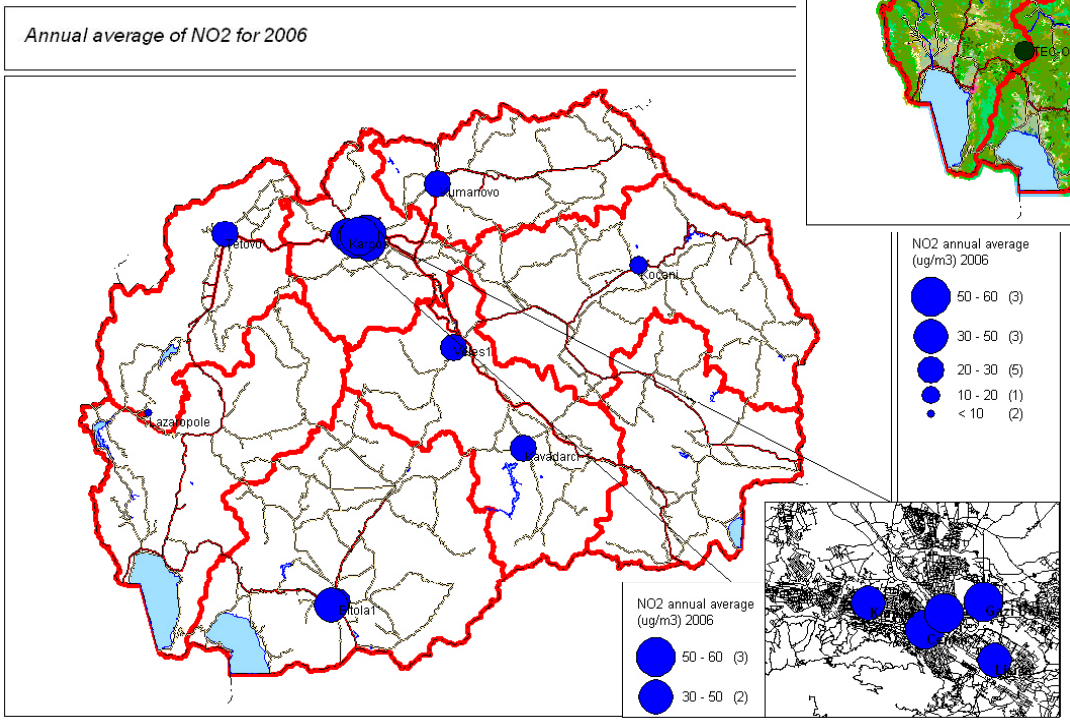
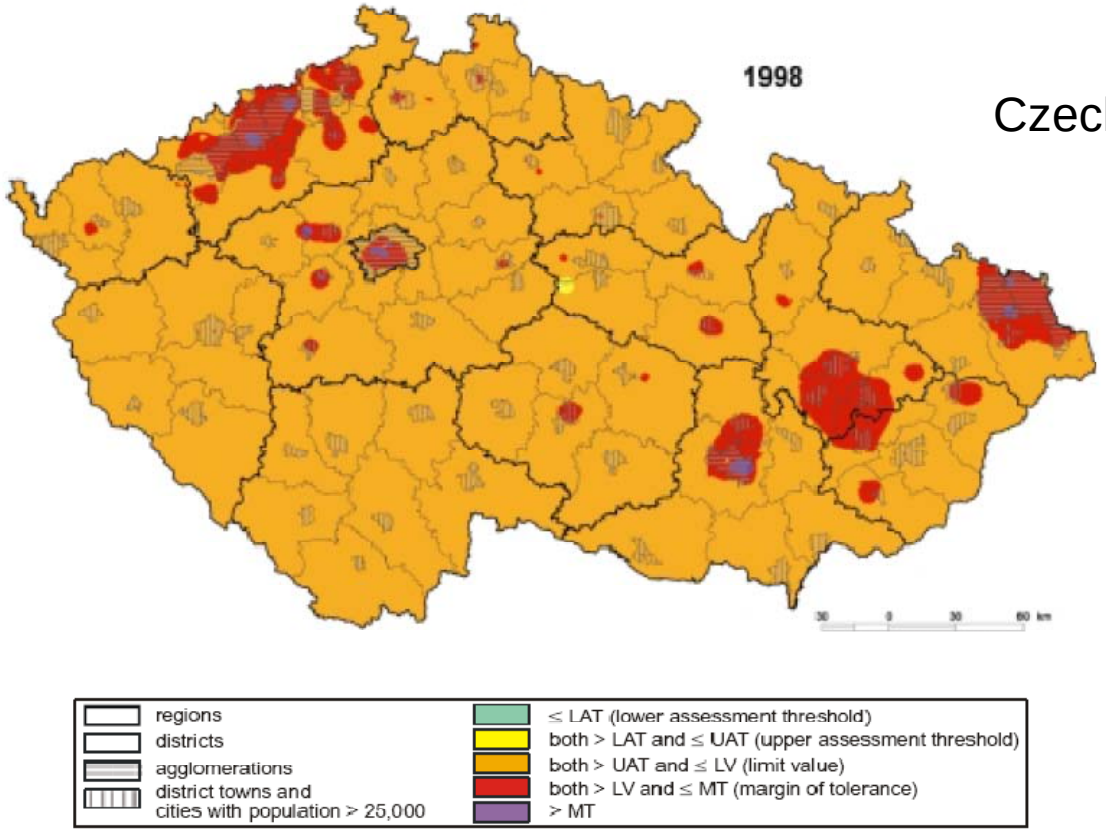
Progress during the Twinning project





Unsolved questions

- **What type of maps to produce? Areas of exceedances?**

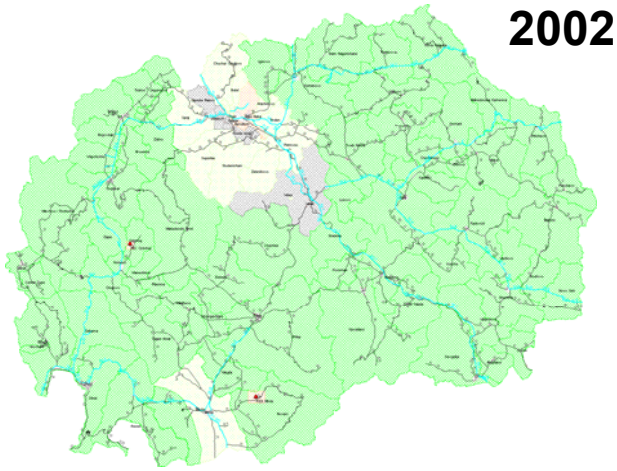


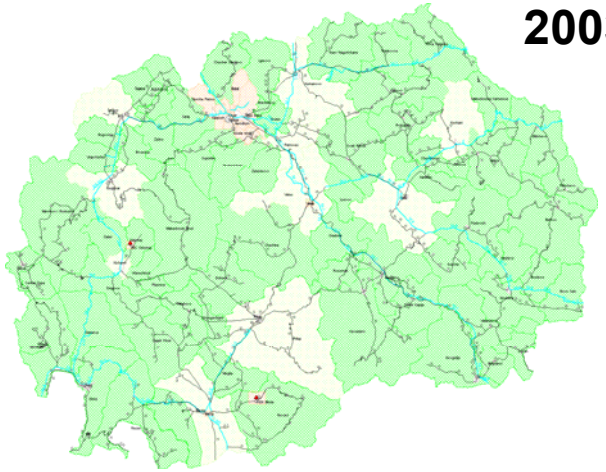
Czech Republic

One year situation or several years? Revision of zones?

SO_2
Annual average

- < LAT
- > LAT < UAT
- > UAT
- > Limit value






Thank you!