European Commission

FAIRMODE update
TFIAM meeting

DG JRC
Directorate: Energy, Transport and Climate
EU Commission

Brescia

08-09 May 2018

Joint Research Centre

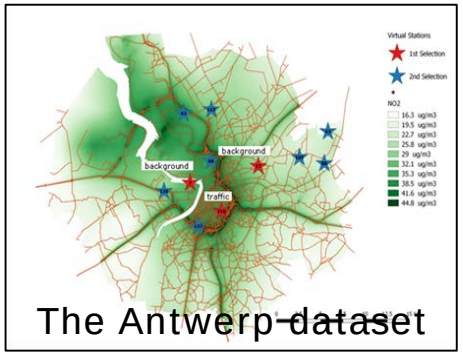
Outline

- **Brief review from the Technical meeting** (Athens June 2017)
  - Spatial representativeness (Dedicated workshop)
  - Composite mapping exercise for emissions
  - Follow-up on the pilot exercise initiative
  - Source apportionment

- **Main points discussed during the Plenary meeting** (Baveno, Feb 2018)
  - Towards Fairmode Recommendations

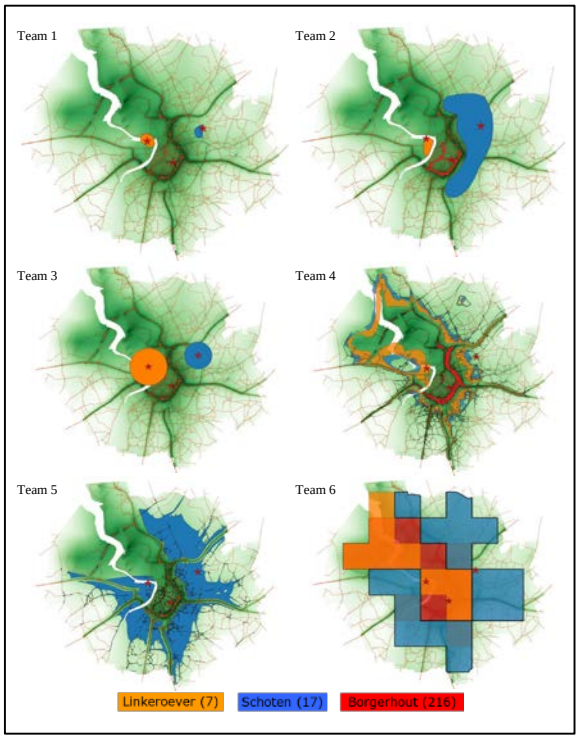
- **Main points for Tallinn meeting:**
  - Technical meeting and joint TFIAM meeting

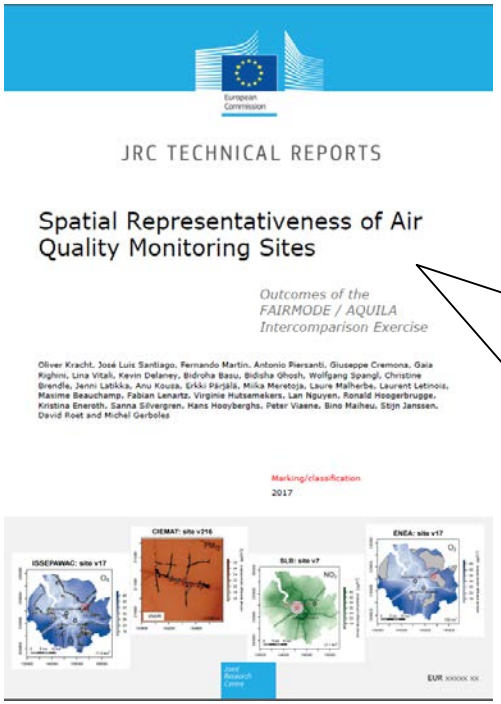
1) Spatial representativeness: a 1,5 day workshop in Athens to finalise the intercomparison exercise and discuss future steps…



The Antwerp dataset

Much better understanding of each other's perspective and move towards solution





Includes main outcome as well as recommendations for future work

Towards:

- **harmonization (definition)**
- **guidelines and guidance**
- **Sensitivity analysis**
- **…**

2) Composite mapping: Extending from assessment to emissions

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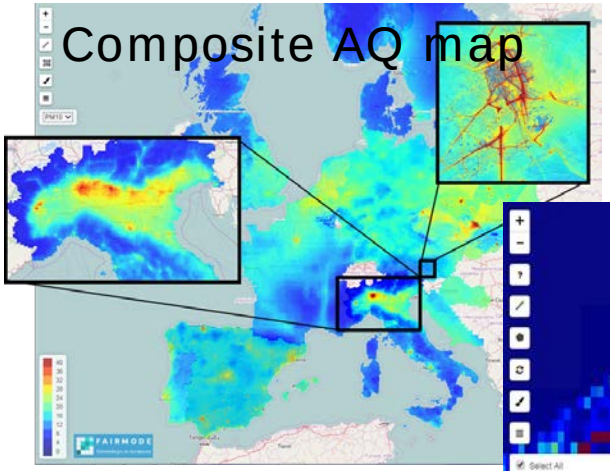

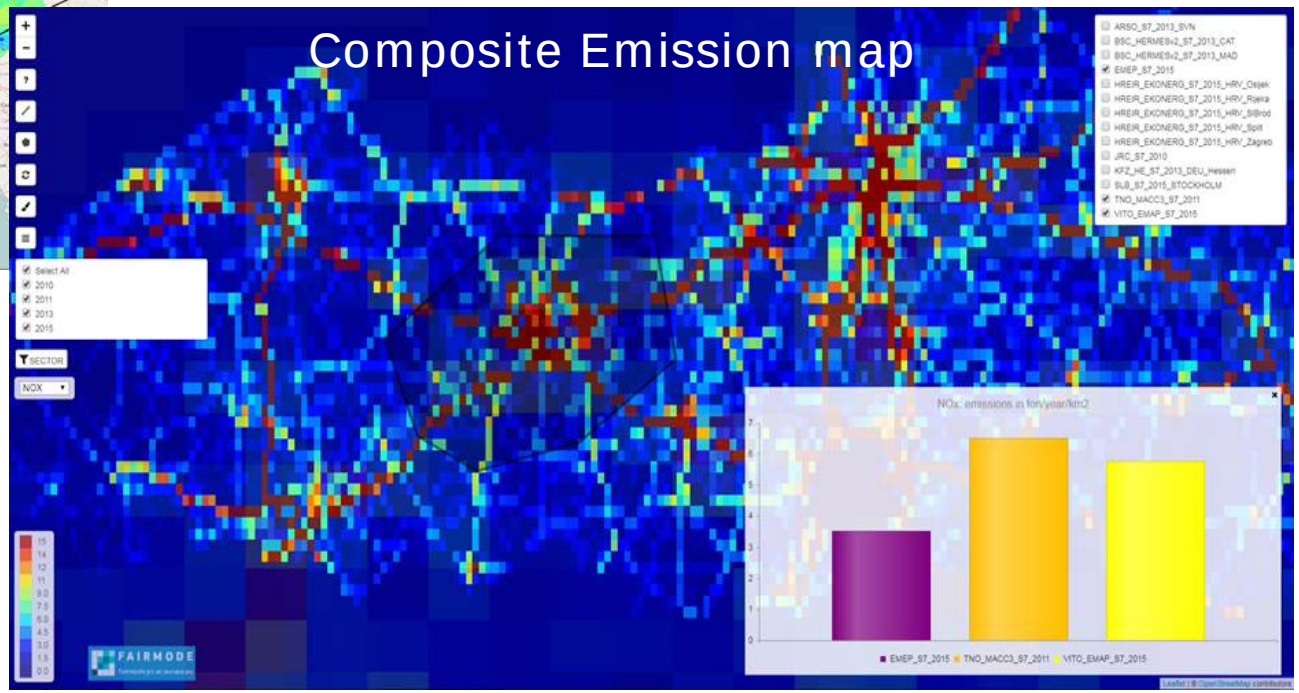

- Comp. mapping platform is now available with EU TD inventories (TNO-MACC, EMEP 0.1x0.1…) as well as BU city/regions/countries inventories (incl. pilots)
- Promote involvement of local emission expertise
- Move towards permanent improvements

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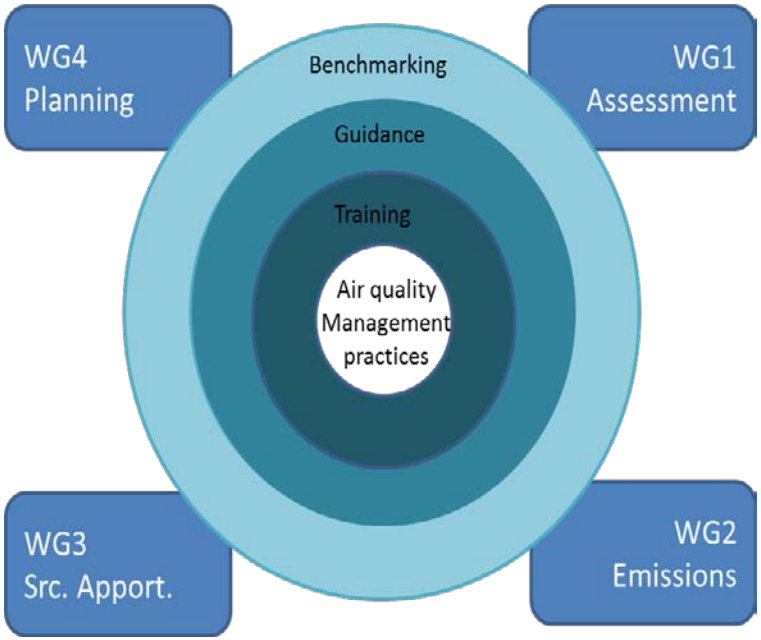
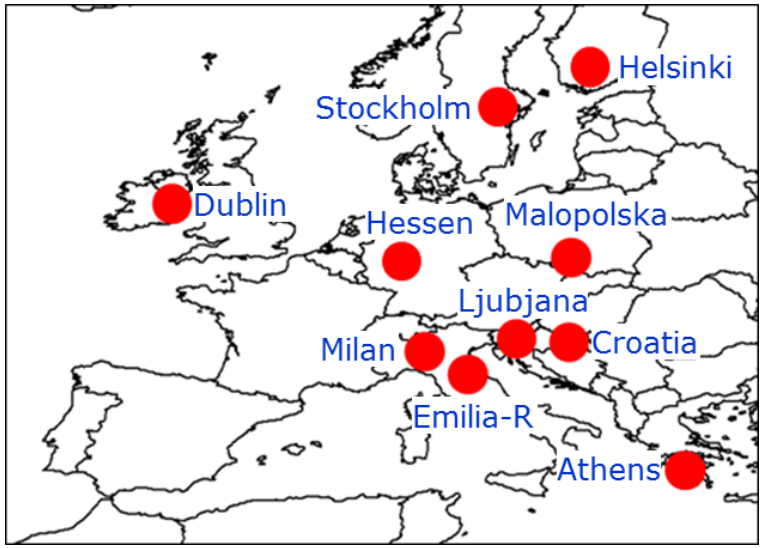
3) Pilot Exercise

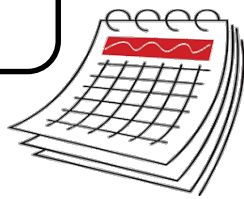




Emissions → Assessment → Source App. → Planning

Mapping
Benchmarking

First meeting in Baveno (half a day meeting) and reporting during plenary



2 to 3 years

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Plan of the work and implementation

Assessing if you are compliant with the Air Quality Directive

Improving emission inventories
Improving modelled concentrations

Designing scenarios to improve air quality

Evaluating key sources and sectors
Evaluating model when testing scenarios

Bottom-up (local) VS top-down (international) emission inventories:

- Sectoral emission check
- Spatial emission check

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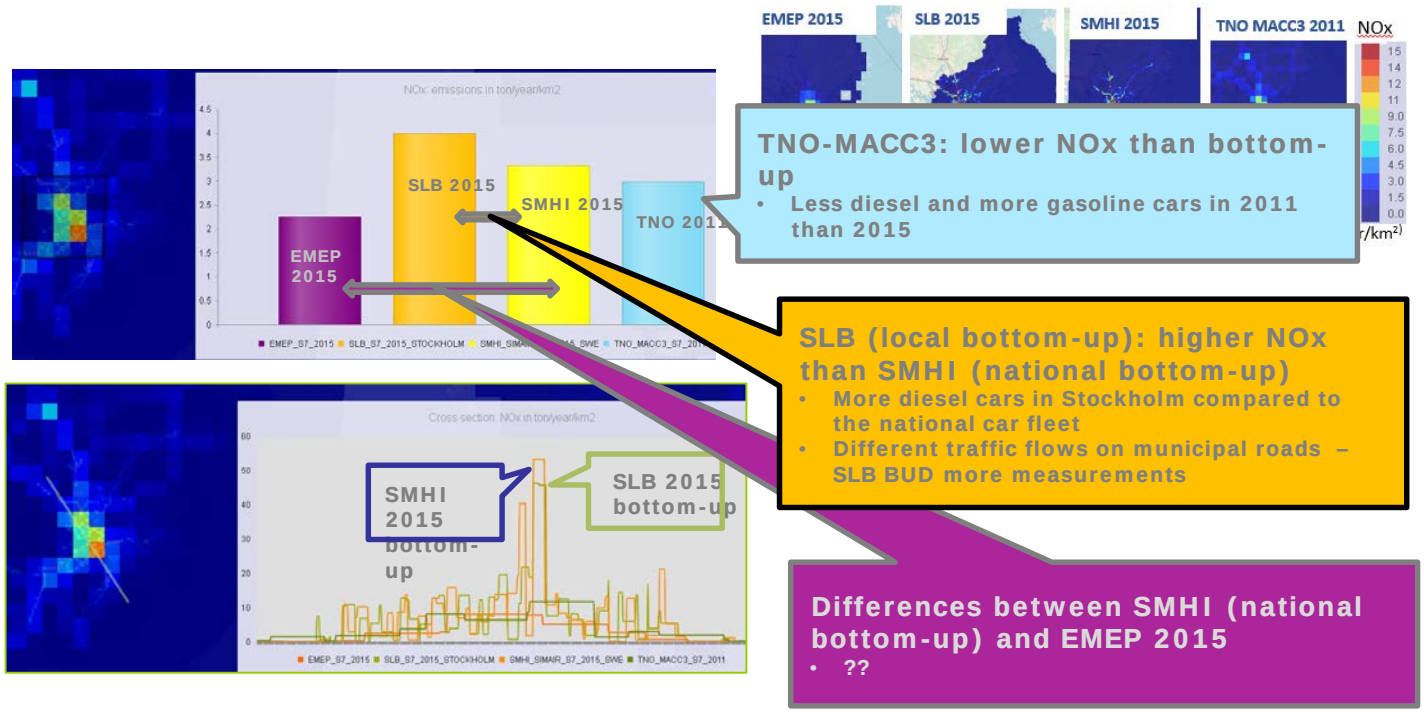
Sectoral and spatial check: an example

Courtesy of Kristina Eneroth



Recommendations

Need to promote a dialogue between bottom-up and top-down communities; learning from and complementing each other:

- Within each member state, establish a platform for regional, local and national experts. The FAIRMODE tools can be instrumental for this discussion
- at European level: top-down communities (Task Force on Emission Inventories and Projections) with bottom-up ones (e.g. from FAIRMODE)

Need for guidance to:

- Compiling bottom-up emission inventories (reporting best practices...)
- Best practices for top downs spatial / temporal disaggregation (which methodologies?)

Source apportionment

- Inter-comparison exercise
  - Final report to be released
- Guidance document (extended to CTM) for technical meeting
- One of the on-going focus is on “spatial source apportionment”

Planning

- Assessment of available methodologies (scenario analysis, source apportionment, source allocation, SRR…) for AQ planning

Fairmode recommendations – still under discussion

- WG1
  - Models should be able to simulate relevant observations of concentration levels at all scales.

- WG2
  - requirements on the (urban) emission data to be used as input for air quality assessments
  - Extend the existing documents to include guidance on urban emission compilation.

- WG3
  - source apportionment: applying the Fairmode source apportionment technical guide
  - Lenschow or incremental approach is not recommended unless it can be demonstrated that
    - a) the contribution of sources to regional background and urban background levels are comparable
    - b) the city emissions do not contribute significantly to the regional background level.

- WG4
  - Methods based on precursor mass-ratios (e.g. tagging species algorithms built-in CTM, source-oriented models, receptor-models) are suited for primary pollutants but not for secondary ones
  - Scenario-based approaches are recommended for secondary pollution

Some of the items we will discuss in Tallinn

- CEN discussions (WG43 and WG44)
- Follow-up Pilot Emissions: “EMEP 0.1x0.1”
- Guidance on SA
- Pilot assessment
- Long term air quality strategies
- Consolidated Recommendations
- …

Links for additional information

fairmode.jrc.ec.europa.eu

Technical meeting and TFIAM joint Meeting:

26-29 June 2018
Tallinn