



European
Commission



Joint Research Centre

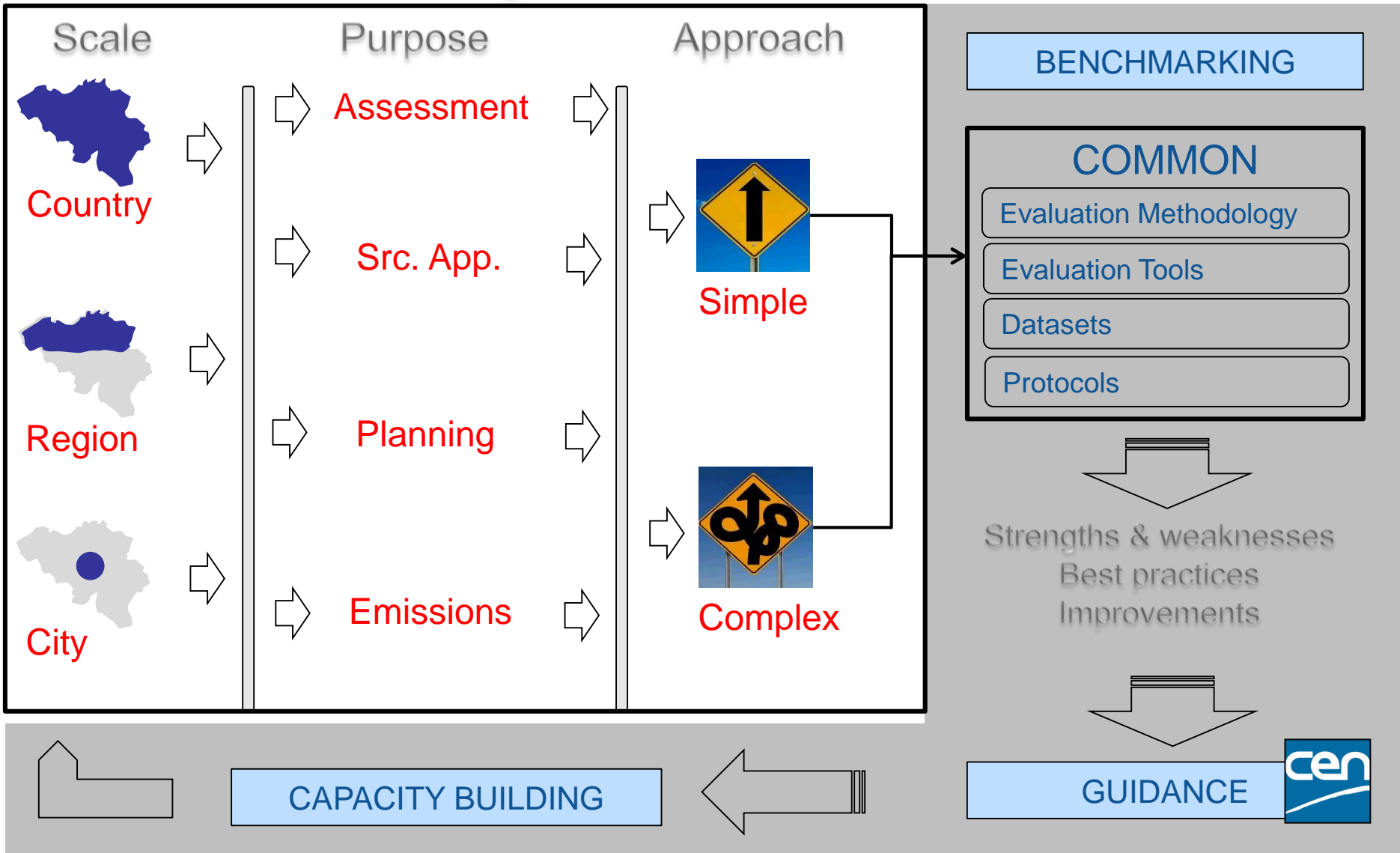
the European Commission's
in-house science service

Can we improve QA/QC and guidance in Fairmode?

Tallinn

28 June 2018

Modelling



Benchmarking

- Regional & local exp.
- Inter-comparisons

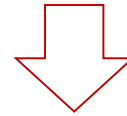
Guidance

Recommendations

Training

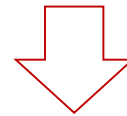
- Tools & methods
- Datasets...

I. What is the purpose?



II. Is my approach fit for the purpose?

- Type of approach
- Choice of settings (characteristics)



III. Are my results of sufficient quality for policy?



Application of models under the EU AQD **2011**

Modelling NO₂ for air quality assessment and planning relevant to the AQD **2012**

Recommendations to the review of the EU AQ Policy **2012**

PM modelling for AQ assessment and planning relevant to AQD **2013**

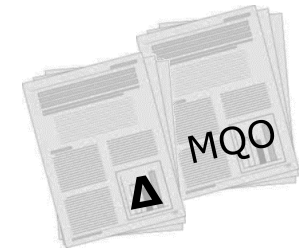
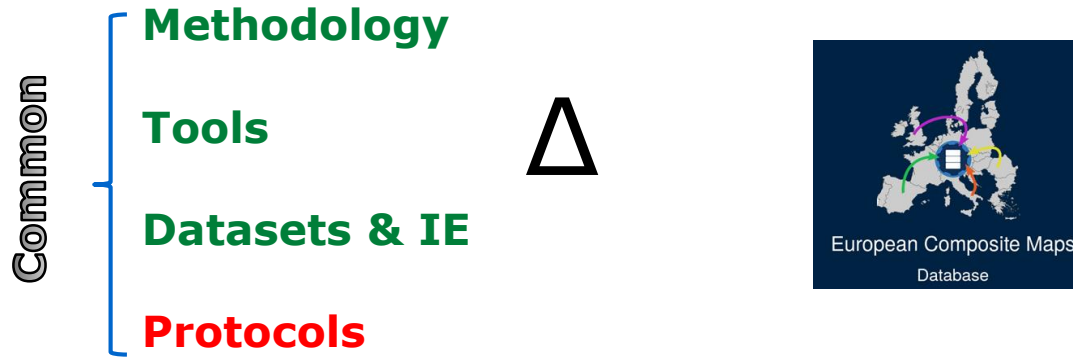
source app. with RM **2014**

Recommendations on e-reporting **2016**

MQO and Benchmarking **2017**

Recommendations. 2018

Benchmarking

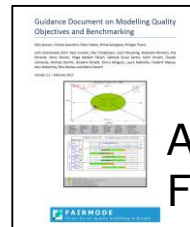


Guidance

What is the purpose ?

Is it fit for purpose?

With sufficient quality?



Assessment
Forecast

Data-assimilation



Overall guidelines on possible model applications and recommended use ?



Benchmarking

Common

Methodology

Tools

Datasets & IE

Protocols

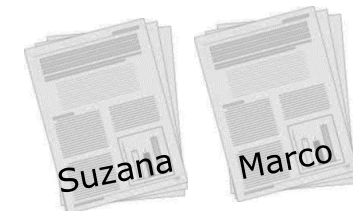


Guidance

What is the purpose ?

Is it fit for purpose?

With sufficient quality?



Information scattered in scientific publications but no guidance available

Benchmarking

Common

Methodology

Tools

Datasets & IE

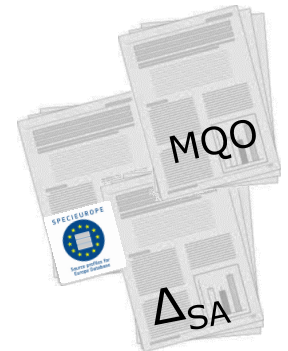
Protocols

Δ_{SA}

SPECIEUROPE



Source profiles for
Europe Database

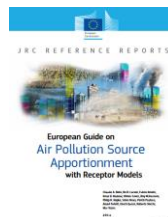


Guidance

What is the purpose ?

Is it fit for purpose?

With sufficient quality?



Benchmarking



Guidance

What is the purpose ?

Is it fit for purpose?

With sufficient quality?



Information scattered in scientific publications but no guidance available

1. **Benchmarking & guidance:** How can we fill in the gaps:
 - ✓ WG1: overall guidance on model applications, protocols
 - ✓ WG2: lacking guidance
 - ✓ WG3: work on purpose(s)
 - ✓ WG4: overall guidance, protocols
2. **Publications:** How can we translate our methodological findings into guidance?
3. **Recommendations:** Where do we place recommendations in the process?
4. **Pilot:** How can we best use the pilot EX. a catalyzer to answer 1-3
5. Back to first guidance → provide answers and fill gaps



Quality assurance for ambient air quality assessment (Directive 2008/50/EC)

To ensure accuracy of measurements and compliance with the DQO:

- (i) that all measurements are **traceable**
- (ii) Institutions operating networks have an established QAQC system (to ensure regular maintenance, continued accuracy of measuring devices). The **quality system** shall be reviewed at least every five years by the relevant NRL.
- (iii) that a **quality assurance/quality control process** is established for the process of data collection and reporting and that institutions appointed for this task actively participate, in the related Union-wide quality assurance programme
- (iv) that the National Reference Laboratories, take part at least every three years in the **Union-wide quality assurance programmes** organized by the Commission's Joint Research Centre.
- (v) that the national reference laboratories support the work done by the European network of **National Reference Laboratories** set up by the Commission.

Documentation and review of site selection



European
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PM intercomparison Ispra 2015



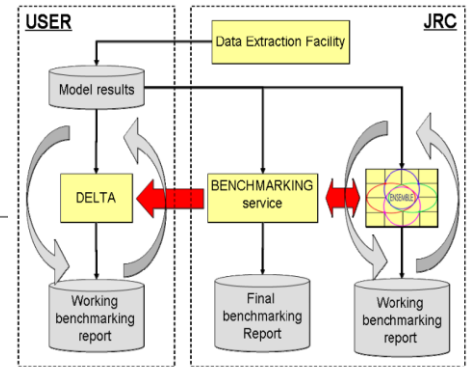
19 July 2018, source: Aquila

A procedure for air quality models benchmarking

P. Thunis, E. Georgieva, S. Galmarini
Joint Research Centre, Ispra

Version 2

16 February 2011



Periodical joint activities

Periodically the JRC organizes a common exercise where the MS modelling community is requested to take part. These exercises may focus on a specific case study, area or period of interest.

Modelling IE extremely useful but more challenging to set-up

Common case of interest to all

Fair common choice

Adaptation to input data...

1. **Benchmarking & guidance:** How can we fill in the gaps:
 - ✓ WG1: overall guidance on model applications, protocols
 - ✓ WG2: lacking guidance
 - ✓ WG3: work on purpose(s)
 - ✓ WG4: overall guidance, protocols
2. **Publications:** How can we translate our methodological findings into guidance?
3. **Recommendations:** Where do we place recommendations in the process?
4. **Pilot:** How can we best use the pilot EX. a catalyzer to answer 1-3
5. Back to first guidance → provide answers and fill gaps
6. **QA:** Inter-comparison, documentation, reviews/audits...