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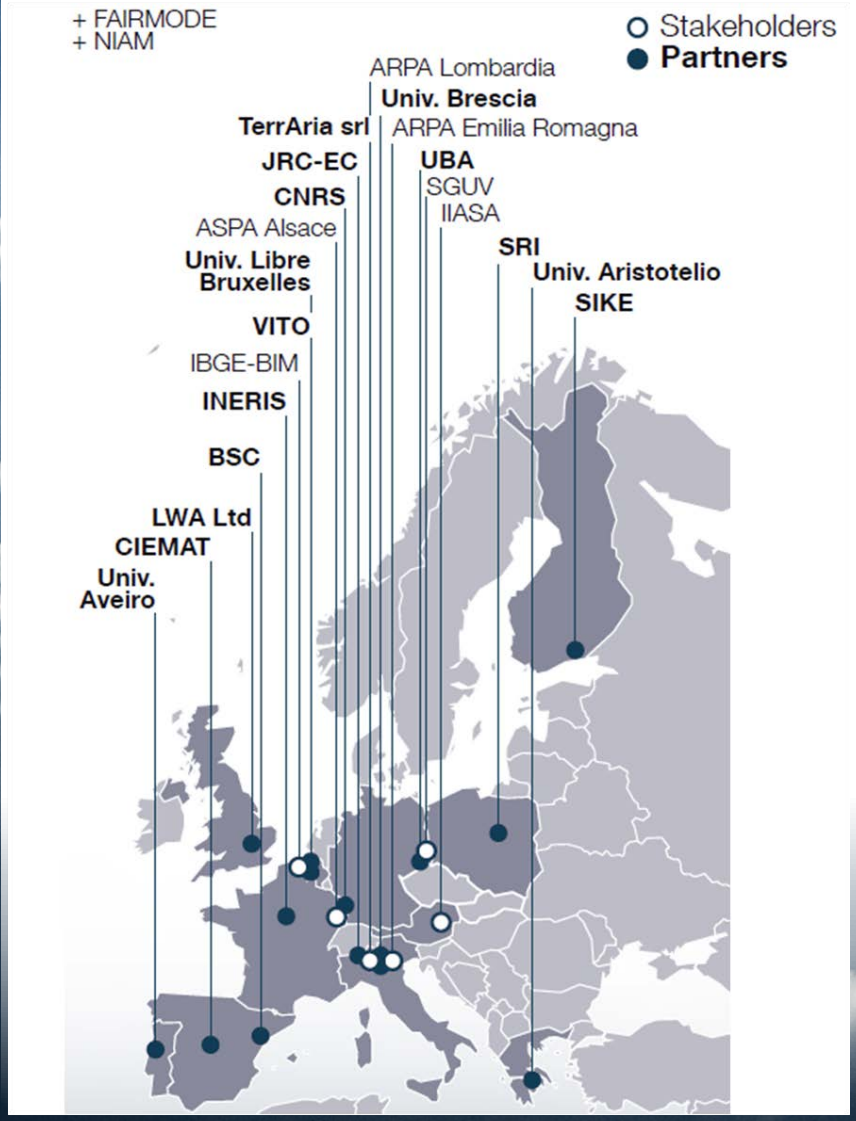

APPRAISAL project results

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FP7-CSA
End: May 2015

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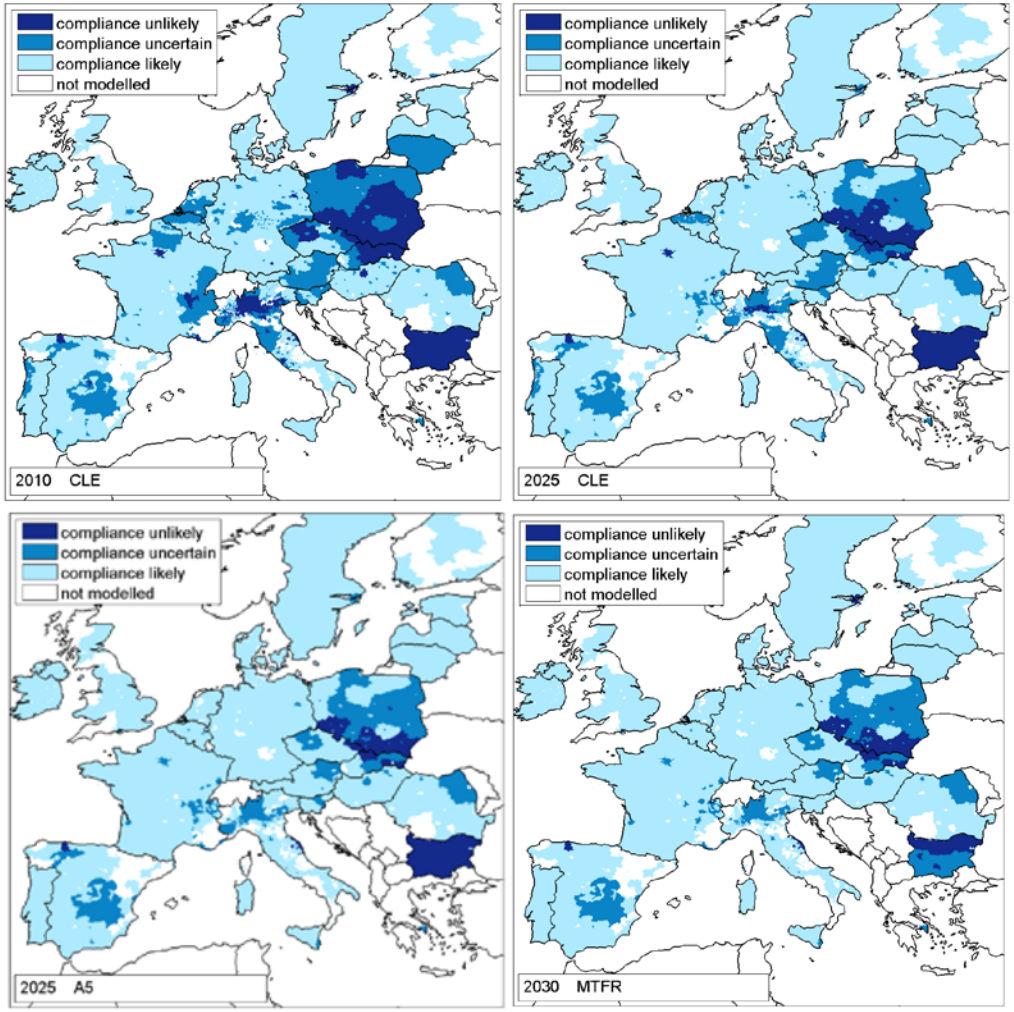
The context: PM10 hotspots



The context: air quality plans

DIRECTIVE 2008/50/EC

CHAPTER IV - Article 23

Where ... the levels of pollutants in ambient air exceed any limit value or target value ... Member States shall ensure that air quality plans are established ... in order to achieve the related limit values or target values

Focus on regional/local scale

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APPRAISAL main objective

Analysis.

What approaches are currently used to design and assess regional/local air quality plans? What are their strengths and weaknesses?

Design.

Which data, models, methodologies, tools could he used to design Air Quality Plans? What are the future research needs to improve these approaches?

Guidance.

How to integrate data, models, methodologies to define a plan?

Support the review of the EU Air Policy

Achievements

1. **Review and gaps identification** in AQ and HA methodologies at regional and local scale
2. **Designing IA framework** interconnecting national, regional, local models and strategies
3. **Key research areas**
4. **Guidance** on integrated air quality and health assessment systems (+ case studies)

1. Review and gaps identification

The main achieved objectives are:

- the online database collecting AQ and HA plans and project (60 contributions from 12 member states);

Review of such plans and projects helps to:

- defines what should be in a regional/local state-of-the-art IAM,
- identifies the **limitations** of the IA systems (see next slides)

2. Design

Approach 1: IAM assesses the impacts of proposed actions

- **Scenario analysis scenario defined by**
  - experts
  - source-apportionment

Approach 2: IAM identifies effective emission reduction measures

- **Optimization approaches**
  - Cost benefit
  - Cost effective
  - Multi-objective

Using the DPSIR scheme for this

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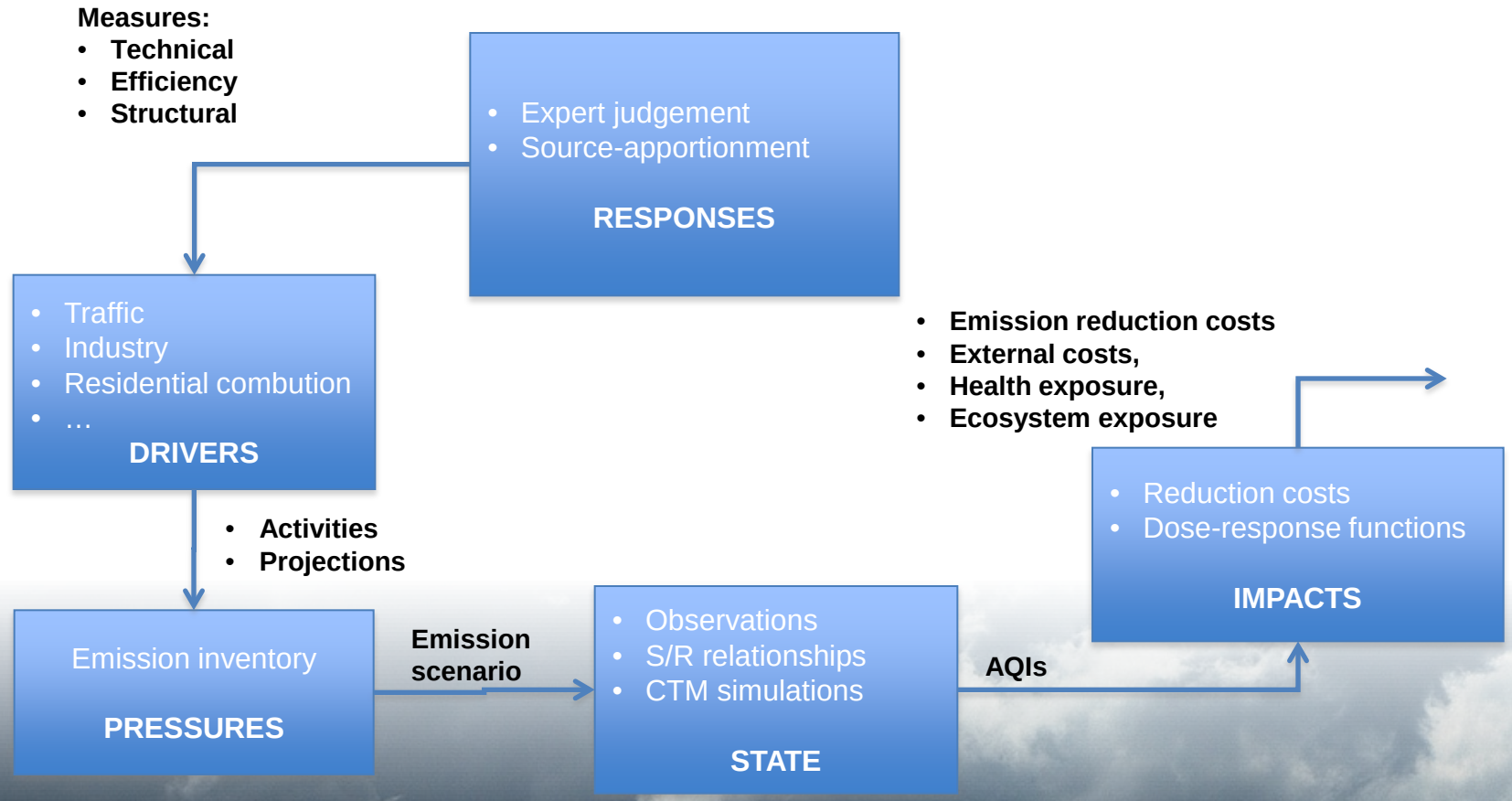
2. Scenario assessment



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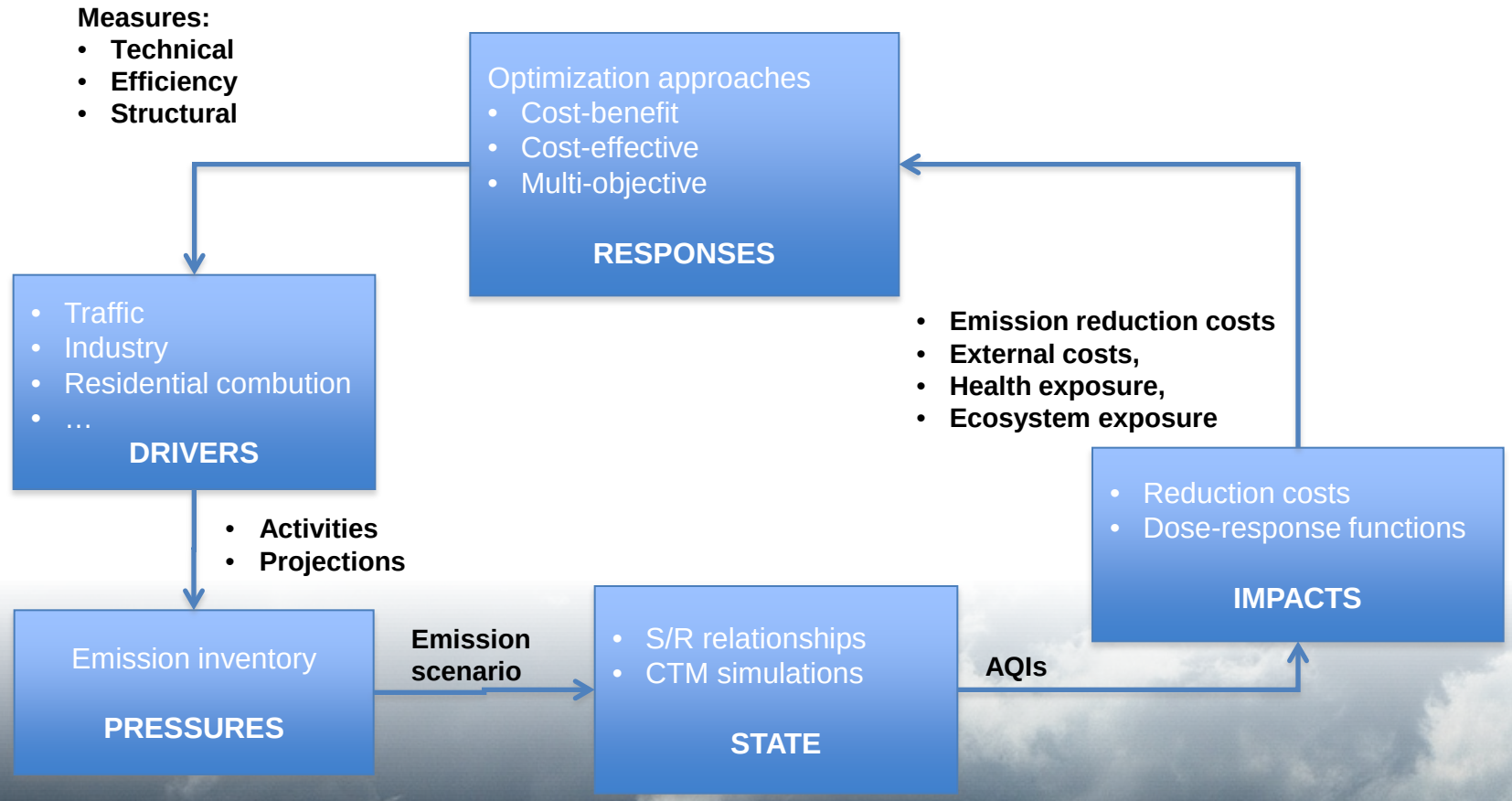
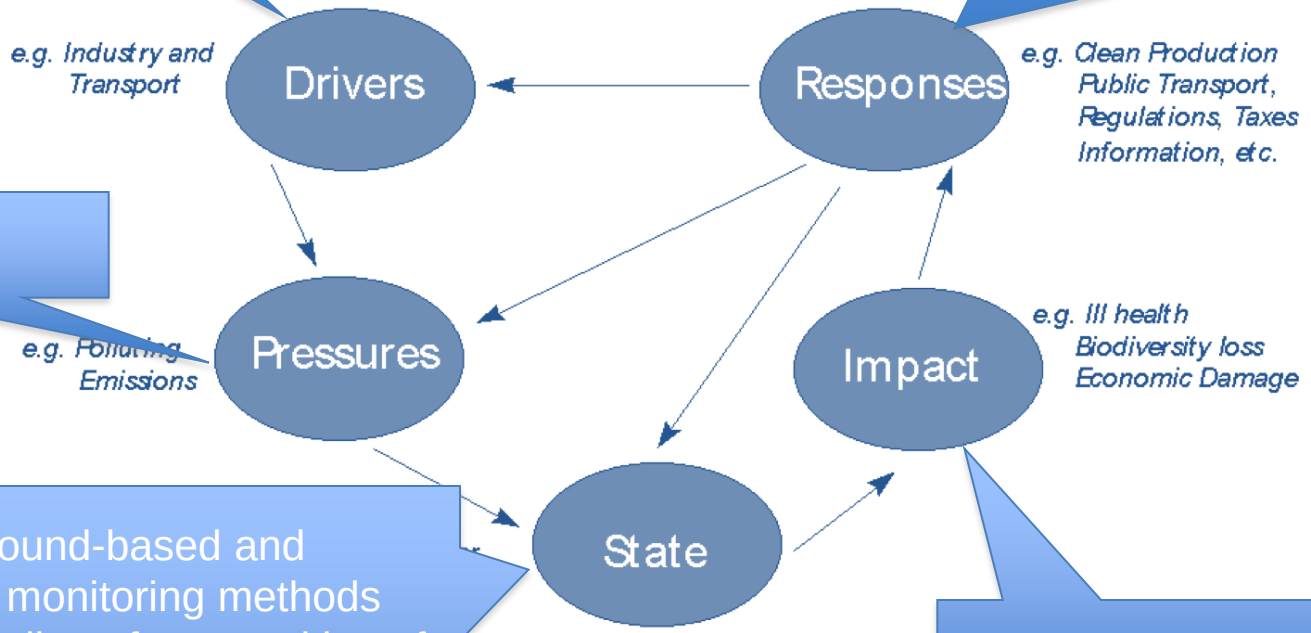
2. Optimization approach



3. Key research areas

integration of information at different scales

- Inclusion of socio-economic aspects in the analysis.
- Energy Efficiency / non-technical measures
- Multi-scale interactions



emission inventories uncertainty

- integration of ground-based and remote-sensing monitoring methods
- better understanding of composition of the various PM fractions;
- source-receptor model identification approaches.

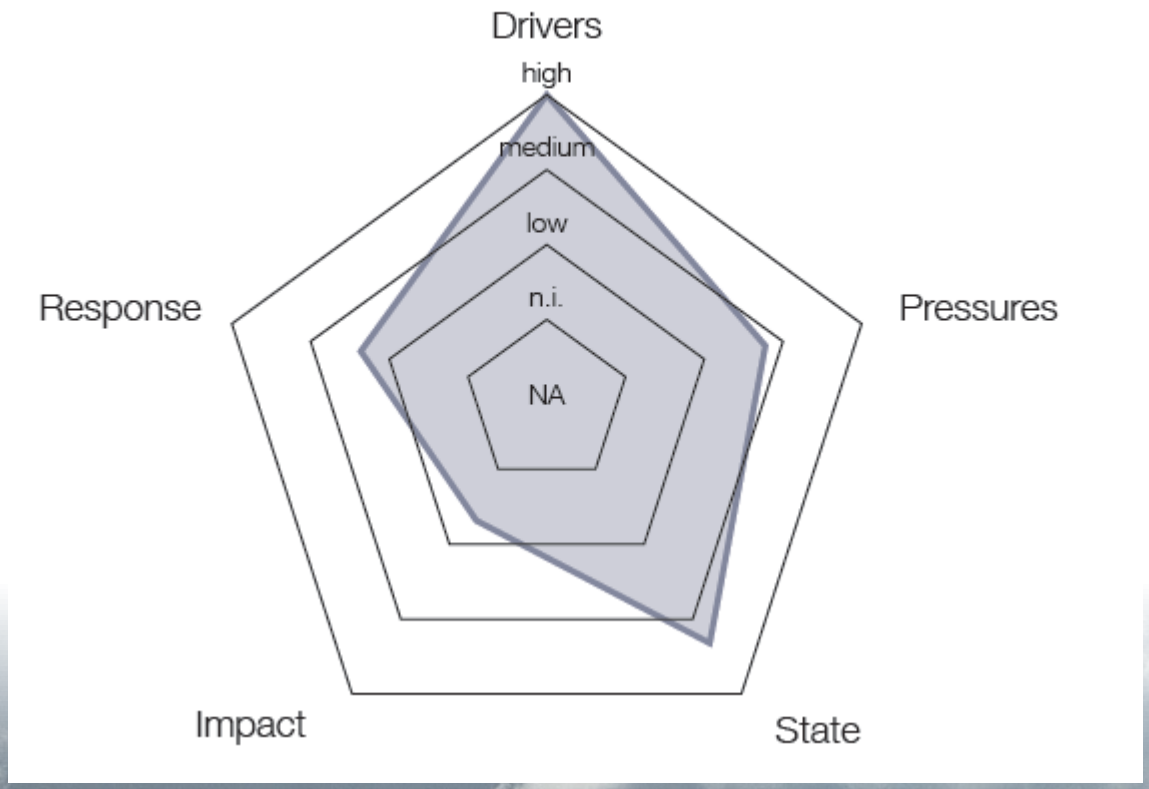
Multi-pollutants exposure.

4. Guidance on IAM

- Provide guidance on how to define and implement AQ plans following the DPSIR approach, defining progressive complexity levels

1 DPSIR blocks	2 Levels of complexity		
	Low	Medium	High
Activities that produce emissions (Drivers)	Top-down information in a limited number of sectors and at a coarse resolution. Detailed projections are not possible. Uncertainty is not considered	Combines top-down with bottom-up approach, preferably with local activity and emission factor information. Uncertainty is not considered	Bottom-up information at the highest possible resolution. The uncertainties for the emissions can be quantitatively calculated preferably using the Monte Carlo methods.
Emissions (Pressure)			
Air Quality (State)	Based on measurements combined with a source apportionment technique to link emissions to air quality indicators. Validation of the source apportionment model through model intercomparison is recommended.	A single air quality model adapted to the studied spatial scale. An operational model validation with observations is required.	A chain of nested models adapted to the different scales ranging from the European to the local scale. An operational model validation with observations is required.
Health assessment (Impacts)	A simple description of exposure from measurements or AQ modelling simulations and a simple description of the spatial distribution and composition of the population.	A more detailed description of the air quality indicators distribution is combined with a simple population description.	Detailed temporal and spatial resolution for the air quality indicators distribution and population data, with the distinction of subgroups with different vulnerability.
	Different sources of uncertainty should be mentioned together with results		
Abatement measures (Responses)	A selection approach based on expert elicitation is used.	Expert based selection is complemented with source apportionment.	The selection of measures is based on an optimisation procedure.
	Uncertainty can be tackled by focusing on no-regret measures		

4. Plans taxonomy (going back to the DB)



4. Two case studies

- Brussels city
- Porto region

- Presentation during the Appraisal final conference:
  11th May 2015, CoR

Conclusions

- Review of methodologies/models to design an air quality plan (DB)
- Design of IAM system framework
- Key research areas
- Guidance
  - Classifying the complexity of IAMs
  - Designing and applying IAM frame/tool in two test cases

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Air Pollution Policies
foR Assessment
of Integrated Strategies
At regional and Local scales

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APPRAISAL final conference
CoR Brussels
May 11, 2015