



European
Commission



Joint Research Centre

the European Commission's
in-house science service

Fairmode Technical meeting Guidance & recommendations

Athens

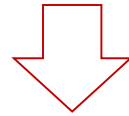
19-22 May 2017

Benchmarking

- Regional & local exp.
- Inter-comparisons

Guidance Recommendations

I. What is the purpose?



II. Is my approach fit for the purpose?



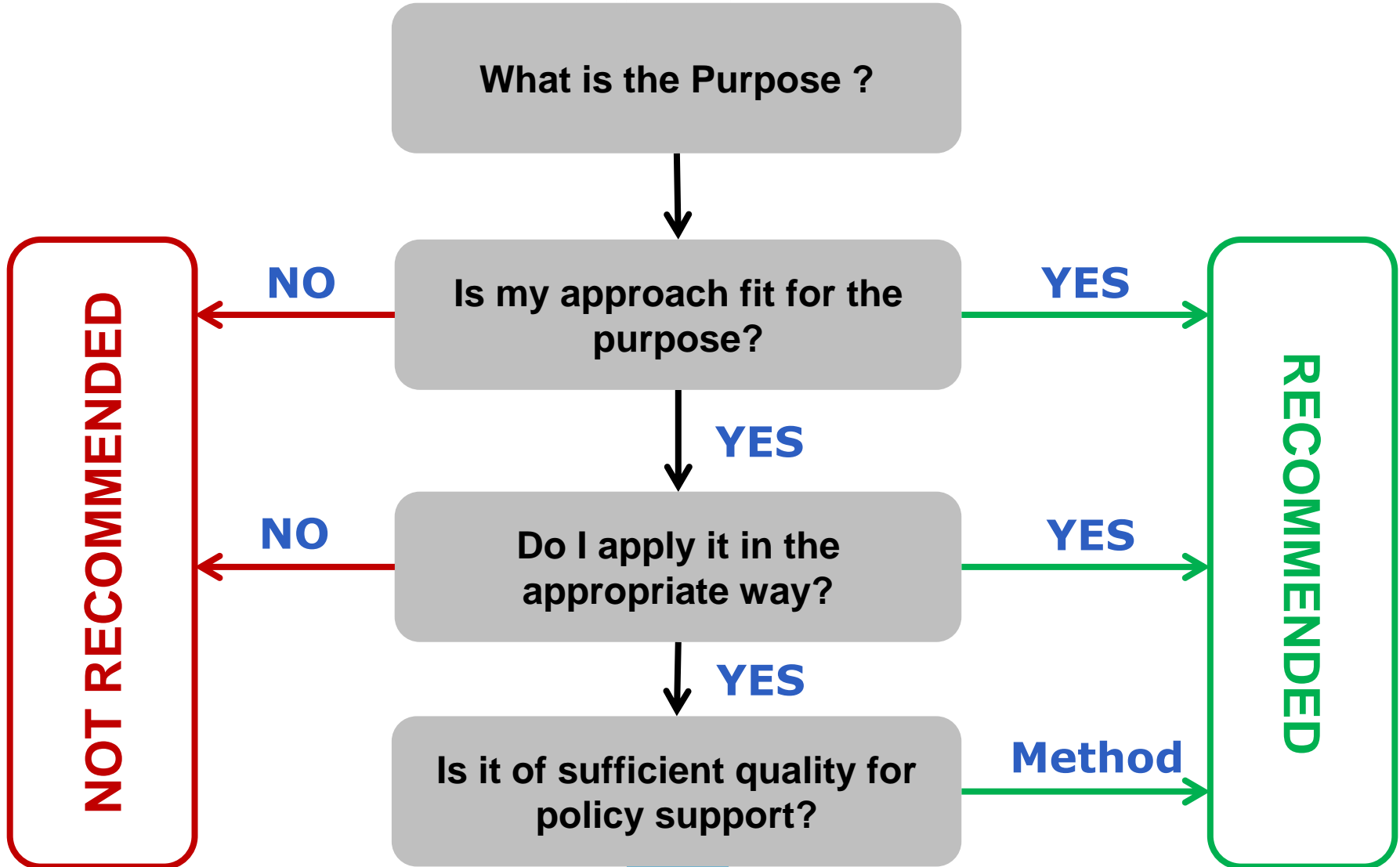
III. Do I apply it in the appropriate way?

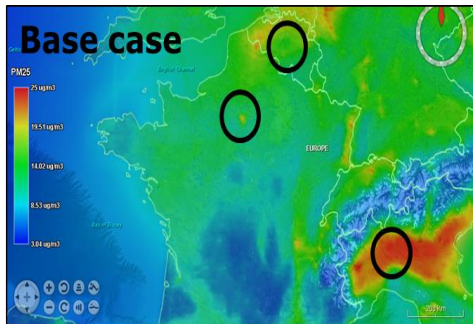


IV. Are my results of sufficient quality for policy?

Training

- Tools & methods
- Datasets...





Benchmarking

Inter-comparisons / tools / Regional & local experiences

- IE, Δ tool, SHERPA, Air quality measure DB

Guidance / Recommendations

What is the purpose?

- Impact assessments (episodes vs. long term, regional & urban)

Is my approach fit for the purpose?

- brute force sensitivities, source receptor relationships (e.g. SHERPA), source apportionment (tagged species or RM...)

Do I apply it in the appropriate way?

- Resolution, treatment of non-linearities, robustness...

Are my results of sufficient quality for policy support?

- ?

Guidance / Recommendations



	What is the purpose	Possible Approaches	Questions
WG1	Concentration maps	<ul style="list-style-type: none"> ▪ Modeling ▪ Monitoring ▪ Data Assimilation ▪ Sensors ▪ Land-use based ▪ ... 	<p>1. Is my approach fit for the purpose?</p> <p>2. Do I apply it in the appropriate way?</p> <p>3. Are my results of sufficient quality for policy support?</p>
	Exceedance & exposure		
WG2	Support to city and region air quality modelling	<ul style="list-style-type: none"> ▪ Bottom-up ▪ Top-down ▪ ... 	
WG3	Calculation of contributions - Episodes & long term - Sectorial & Geographical	<ul style="list-style-type: none"> ▪ Receptor-models (RM) ▪ Tagged species ▪ Brute force ▪ Lenschow incremental emission-based ▪ inverse modelling ▪ exploratory... ▪ ... 	
WG4	Impact assessments - Episodes & long term - Regional & urban	<ul style="list-style-type: none"> ▪ Brute force ▪ SRR (SHERPA) ▪ Src. App. tagged spec. ▪ SRC. App. RM ▪ ... 	

A few examples of possible questions



- What are the characteristics a good modelling application should have to estimate population exposure? Alternatively: what should not be allowed?
- What are the minimum requirements an emission inventory should have to support city scale modelling?
- Can I use the same technique to perform source apportionment for episodes and long term averages
- Is the Lenschow increment a good approach to estimate geographical contributions? If not which one can be recommended?
- Can I use source apportionment for planning purpose? If yes can we detail under which conditions?

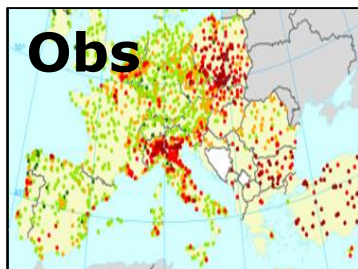
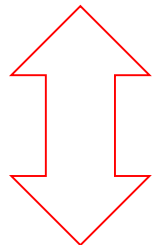
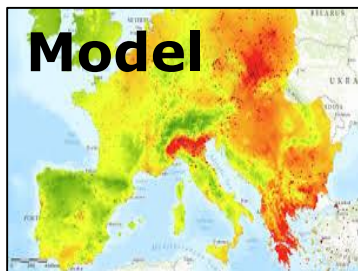
Can we as FAIRMODE come up with a set of recommendations regarding these topics identified in the different WGs?



- Sum-up current knowledge & convey visible messages to the modelling community
- Increase FAIRMODE relevance to policy support
- Guide our WGs discussions

feedback from WGs

Benchmarking



Inter-comparisons / tools / Regional & local experiences

- Composite mapping, Δ tool, Regional/local assessments

Guidance / Recommendations

What is the purpose?

- Concentration maps (NO_2 , PM, O_3)
- Calculation of population exposure (NO_2 , PM)

Is my approach fit for the purpose?

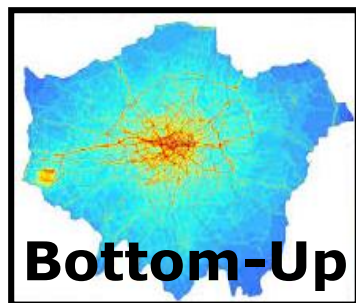
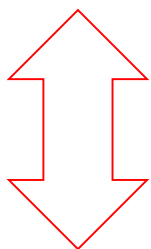
- Modelling (Eulerian, land-use...), monitoring, data-assimilation, sensors...

Do I apply it in the appropriate way?

- Model settings (e.g. resolution, yearly vs. hourly)

Are my results of sufficient quality for policy support?

- MQO



Benchmarking

Inter-comparisons / tools / Regional & local experiences

- Composite mapping, Δ tool, Regional/local assessments

Guidance / Recommendations

What is the purpose?

- Support to city and regional air quality modelling

Is my approach fit for the purpose?

- Type of approach (BU vs. TD)

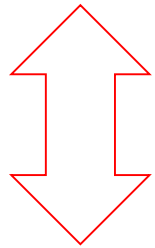
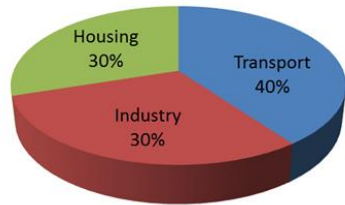
Do I apply it in the appropriate way?

- Resolution, proxies, sectoral details, time profiles...

Are my results of sufficient quality for policy support?

- ?

WG3: Source Apportionment



Benchmarking

Inter-comparisons / tools / Regional & local experiences

- IE, Δ SA tool, SPECIEU

Guidance / Recommendations

What is the purpose?

- Calculation of contributions (episodes vs. long term, sectorial & geographical)

Is my approach fit for the purpose?

- Receptor-models, tagged species, brute force sensitivities, Lenschow increments, emission-based, inverse modelling, exploratory...

Do I apply it in the appropriate way?

- Treatment of non-linearities, robustness assessment...

Are my results of sufficient quality for policy support?

- MQO?