

FAIRMODE 13th plenary meeting: Berlin, Germany, 18-19/02/2020

The meeting was attended by about 80 participants from 25 countries among which 19 Fairmode National Reference Points (NRP). The meeting aimed at 1) presenting and endorsing the 2020-2022 roadmap and 2) providing an overview of the status of the on-going and planned collaborations with other projects/activities. A summary of the presentations and discussions is given below. All presentations are available on the [FAIRMODE web page](#).

T. Henrichs (DG ENV) provided an update of the on-going activities regarding EU Clean Air Policy, in particular the lessons learned from the concluded fitness check exercise. He mentioned the recently announced European Green Deal, which includes a 'zero pollution action plan' for air, water and soil in 2021. He noted that over the past five years, the use and reporting of air quality modelling to complement data from fixed monitoring station increased and that stakeholders, especially local and regional authorities, would benefit from strengthened provisions and further guidance related to air quality modelling. This is where the Commission wants to fully use the experience of FAIRMODE.

The FAIRMODE roadmap 2020-2022

P. Thunis presented the main orientations of the FAIRMODE roadmap for 2020-2022. This roadmap naturally follows the activities performed so far and results from the discussions that took place at previous technical and plenary meetings. One of the main changes is the organisation in terms of cross-cutting tasks (CT) rather than into parallel working groups, with a specific outcome (benchmarking, recommendations or guidance) associated to each CT, depending on the level of maturity of each activity. The following feedback were received regarding the new work organization:

- France suggested to better reflect the need for linking the different scales (regional, national and local);
- Croatia stressed the need for a stronger involvement of or at least a better connection with the emission community;
- Germany and Italy expressed some concern about the large amount of CT in the roadmap. Italy proposed to reshuffle (merge or remove) some of the CT, to limit their number.

After discussion and after a detailed presentation of the work covered by each of the CT (see next Sections for details), **there was a general agreement on the current roadmap and the structuring of activities**. Regarding the challenging number of CT, it was noted that some of them will have a limited time span (e.g. Forecast indicators), while others will limit their focus on specific questions (e.g. see "best management practices for AQ" below).

The discussions around the roadmap mostly focused on governance issues. Many National Reference Points (NRP) argued that their role was more than just ambassadors for FAIRMODE activities in their

countries and that this non-funded role was demanding. **Noting that the role of NRP is currently not mentioned in the roadmap, a paragraph will be added to detail the role of the NRP in the final version of the roadmap.**

A. Piersanti (in his capacity as Italian NRP) suggested to formalize the review process for the FAIRMODE documents with a possible voting and/or accounting system. This proposal was not shared by the other participants. It was pointed out in particular that the non-legally-binding / non-funded status of FAIRMODE is one of its main strengths. This freedom brings the creativity and competence building dimension to FAIRMODE and makes it attractive to participants. **It was however requested to extend the deadline for document review to 4 weeks in order to allow NRPs to dispatch the documents within their country and collect feedback. A version of all FAIRMODE documents, including all comments and answers should be made available to all NRP for information. The roadmap for 2020-2022 will be revised to reflect the comments from this plenary meeting and will be uploaded in FAIRMODE's website by the end of March.**

Source apportionment to support AQ management

One of the main goals of this CT is to consolidate the 'source apportionment' guide document, discussing the fitness for purpose of source apportionment approaches. G. Pirovano (RSE) and A. Clappier presented the results of the first round of review of this document that involved 13 experts. Most of the comments were very positive and constructive. These comments have been addressed and will be included in a consolidated version to be uploaded by mid-March 2020 for a second round of review to run until June. G. Pirovano invited experts to contribute to the remaining open issues. Among those, the extension of the guide to NO₂ and O₃ is seen as a priority. Discussion of the more challenging comments and open issues will take place at the next technical meeting. Although this source apportionment guidance document is intended as a living document with sequential rounds of reviews, it was suggested to publish specific versions for referencing, even though not all issues are solved.

Development of an overall QA/QC protocol for AQ assessment

The FAIRMODE community identified the need to develop a QA/QC protocol to ensure that the quality of a modelling application is not determined only by the pass/fail result of the MQO test. P. Thunis and L. Tarrason presented a proposal to set up an overall QA/QC protocol for air quality modelling purposes, based on a two-steps approach: documentation and assessment. While the first stage: 'documenting', implies collecting and merging different sources of information (e-reporting, model documentation system, national procedures), the second: 'assessment', means a series of performance tests to be done (part of which are already considered in the context of CEN WG43). It was stressed that the proposed evaluation tests are a way to harmonize the procedures that exist at the national/sub-national levels with a view of ensuring comparability among results. Germany, France and Austria mentioned that they have protocols in place and offered to share them within FAIRMODE. Some participants stressed the need to cover other pollutants than NO₂, PM and O₃ as well as checking the model input data as well.

Quality control indicators for modelling of AQ forecasts

This activity aims at providing a specific benchmarking framework for modelled air quality forecasts. S. Janssen presented the status of the activities related to the development of these forecast performance indicators, which are now felt as mature. He stressed therefore the need to further test them on various dataset. L. Rouil mentioned that testing the FAIRMODE indicators on CAMS data was a specific task within their own work plan.

Micro-scale AQ modelling

Microscale air quality modelling refers to air quality modelling at high spatial resolution, usually focused on urban environments. F. Martin reminded the various steps performed (surveys, questionnaires, discussions at meetings...) to understand whether or not this activity should be covered by FAIRMODE or not. From the latest questionnaire, it appears that this type of modelling is regularly used in the context of the AAQD, although some challenges were reported to retrieve the statistical indicators that are appropriate for the AAQD. Given its usefulness to provide high resolution information on concentration, exposure or spatial representativeness, **all participants agreed to keep this topic in the roadmap**, to ensure that methodologies to retrieve annual statistics relevant to the AAQD are comparable among each other.

Best practices for local and regional AQ management

E. Pisoni presented the activities planned within this CT. The main objective is to draft a “handbook for plans and programmes”, to support local, regional and national authorities in developing plans and programmes. Given the broad scope of this CT, it was suggested to focus the handbook on well-defined questions, in particular on “quantification” aspects which are often lacking in current air quality plans (the key question to be addressed here is: “how do we translate abatement measures into emission changes and further into concentration changes?”). It was recommended to involve in this work the people who draft plans, to avoid duplications. Willingness to contribute has been expressed by NILU, EEA (analysis of the plans and programmes reported by the member countries and analysis of links of NECD’s National air pollution control programmes with energy plans), UK, Emilia Romagna Region with the PREPAIR project, Belgium, Austria, Denmark and the CLIMAREA project.

Near real time assessment with low-cost sensors

One main outcome of previous FAIRMODE meetings is that (low-cost) sensors are very relevant for FAIRMODE, especially concerning methodologies to combine sensor networks with modelled data and official measurements. J. Wesseling presented the current status of this activity. The discussions highlighted the need to focus the work on the exchange of potential concepts and best practices about the integration of sensor network data in air quality mapping methods.

Compilation of high resolution emission inventories

The focus of this CT is on the compilation of high resolution emissions. M. Guevara introduced a proposal to document the use of ancillary data and define the relevant meta-data that support each emission inventory at urban area. This proposal, based on decision trees, currently addresses the road transport

and residential sectors and is expected to be implemented in the composite mapping platform. The participants welcomed the proposed approach.

Another objective of this CT is to draft final recommendations for the compilation of traffic and residential heating emissions. M. Guevara presented the different approaches to reach this objective. Existing publications and/or the outcome of the metadata decision tree will be used for that purpose. In the meantime, a first draft document for the traffic sector will be circulated among the interested participants for review and contributions. Regarding the other sectors, off-road transport, agriculture and solvents are proposed for future benchmarking. Participants that are interested and/or currently working on the compilation of emissions for these sectors will be identified as a first step.

During the discussion, the need to maintain or increase the number of emission experts within the FAIRMODE community was stressed as a key point. The links with the TFEIP EMEP task force were also discussed, with the suggestion to inform this community about the latest FAIRMODE developments, although the TFEIP community is not directly addressing support to modelling applications. There was also a discussion around the current lack of information in the Informative Inventory Reports (IIR) on the methods and spatial proxies used for mapping the EMEP gridded emissions. So far having this information is not a priority as it is not mandatory and several countries do not report gridded emissions, and the missing gridded emissions are completed afterwards by CEIP using data from CAMS and EDGAR.

Exposure and exceedance model indicators and network optimization

S. Janssen presented the status of the current work carried out under a contract with DG ENV on the assessment of the spatial representativeness of air quality sampling points. The current proposal to assess spatial representativeness is a 'tier based' approach, where methods of different complexity can be used for specific applications. Sensitivity/feasibility studies are now being performed for each methodology and application type, over three cities (Antwerp, Oslo and Krakow). The output of these sensitivity/feasibility analysis will be shared with the FAIRMODE community for discussion and contributions with the goal to draft a guidance on best practices. The tier-based approach was seen as a positive way forward by the community.

L. Tarrason presented an overview of the current situation regarding the siting criteria and sampling point classification, as currently reported. The analysis showed that combining air quality modelling and emission information in a more systematic way to determine the siting criteria of sampling points would strengthen current practices. It also showed that currently there is little focus on the reporting of metadata for documenting the siting criteria of stations and sampling points. To support the analysis, NILU has developed an online tool to check the situation of each individual station in the EU. Although, the tool still needs further testing before being shared with the FAIRMODE community, it was welcomed by the community and its potential future coupling with the composite mapping was discussed as a possibility.

Effectiveness of measures and robustness of AQ projections

E. Pisoni and A. Monteiro presented the two main activities within this CT: deliver (1) recommendations on methods to prioritize measures and policies, and (2) recommendations on methods to assess the robustness attached to the potential impact of a modelled measure. They reported on the outcome of the brainstorming meeting held earlier in Ispra devoted to these two points. The discussions held in Berlin led to the conclusion that we should initially focus on point (2). Most of the discussion then centered on a possible plan for a specific inter-comparison exercise/platform, with the idea of creating a long-term / live (in contrast to a one-shot inter-comparison exercise) platform that would allow for comparing EU top-down with local bottom-up modelling, over a set of specific urban areas in Europe. A draft document will be sent to all interested participants for comments. Representatives from Emilia Romagna as well as from Austria, Denmark, Poland and France expressed their willingness to participate to the exercise.

Update on relevant co-operation and on-going activities

CAMS

L. Rouil (INERIS) gave an overview of the CAMS activities and connections with FAIRMODE. She highlighted the new tools that focus on day to day analysis and episodes with the aim of supporting policy decision and communication. She reminded that planning is not the objective of these tools but rather to provide a “first guess” for qualifying exceedances. Collaborative work would be welcome on the evaluation of the CAMS results by the FAIRMODE “informed users” as well as on the interpretation of these results in the light of FAIRMODE recommendations, especially regarding source-apportionment aspects.

EIONET

A. González reminded the role of the EEA and the connections with the FAIRMODE community. A. Gsella reported on the current status of the e-reporting flows and highlighted the potential fields of collaboration to be continued with FAIRMODE: (1) the possible extension of the MQO to more pollutants and metrics and (2) on the data link between AQ e-Reporting and FAIRMODE.

InDUST

InDUST is an International Network to Encourage the Use of Monitoring and Forecasting Dust Products. A. Monteiro introduced this project to the FAIRMODE community and highlighted the possible connections with FAIRMODE, especially with regards to legislation where subtracting dust contribution is critical in some countries and where models can play an important role (e.g. use of source apportionment to separate biomass-burning from desert dust contributions). To strengthen the links between the communities, she suggested to organize joint events.

Update on CEN WG44

G. Pirovano informed that the technical Specification «Ambient air —Methodology to assess the performance of receptor oriented source apportionment modelling applications for particulate matter» has now been voted and approved officially. The next step is to deal with source apportionment with source oriented models. The next CEN TC264/WG44 meeting, will be dedicated to this topic, in particular

to delineate the scope of the work. Initially planned in Brussels in March, this meeting will be held by VC or postponed (covid19).

Update on CEN WG43

A. Karppinen summarized the current state of play with regard to the technical specification and validation project proposal. He stressed the good connections with FAIRMODE regarding some remaining open issues (e.g. spatial representativeness number of monitoring stations required) towards the practical implementation of the standard. WG43 is currently waiting for the CEN mandate to proceed with the validation project.

A.O.B

The next technical meeting will be organized in Oslo, Norway (29/09 – 02/10/2020) by NILU. Contact: Leonor Tarrasón