



Economic and Social Council

Distr.: General
21 March 2017

Original: English

Economic Commission for Europe

Executive Body for the Convention on Long-range
Transboundary Air Pollution

Working Group on Strategies and Review

Fifty-fifth session

Geneva, 31 May-2 June 2017

Item 3 of the provisional agenda

Progress in the implementation of the 2016-2017 workplan

Report of the Task Force on Reactive Nitrogen

Summary

At its twenty-fifth session (Geneva, 10-13 December 2007), the Executive Body for the Convention on Long-range Transboundary Air Pollution established the Task Force on Reactive Nitrogen. The Task Force is mandated to carry out the tasks specified for it in the Convention's annual workplan and to report thereon to the Working Group on Strategies and Review (ECE/EB.AIR/91/Add.1, decision 2007/1, para. 2).

The present report by the Task Force co-Chairs presents the outcomes of the workshop "Towards joined-up nitrogen guidance for air, water and climate co-benefits" organized jointly with the European Commission's Directorate General for Environment (Brussels, 11-12 October, 2016). It also summarizes the work undertaken by the Task Force in accordance with the 2016-2017 workplan for the implementation of the Convention (ECE/EB.AIR/133/Add.1 and Corr.1-2).

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GE.17-04530(E)



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I. Introduction

1. The present report, prepared in cooperation with the secretariat to the United Nations Economic Commission for Europe (ECE) Convention on Long-range Transboundary Air Pollution, presents the work of the Task Force on Reactive Nitrogen in the latter half of 2016 and early 2017, in particular the outcomes of the workshop “Towards joined-up nitrogen guidance for air, water and climate co-benefits” organized jointly with the European Commission’s Directorate General for Environment (Brussels, 11-12 October, 2016). Information on the organization of a special session on agriculture and air pollution (Geneva, 1 June 2017), to be held as part of the fifty-fifth session of the Working Group on Strategies and Review, is also provided, along with information on the supporting information-gathering tasks in relation to national ammonia codes. The report also summarizes the progress achieved by the Task Force with regard to the tasks assigned to it in the 2016-2017 workplan for the implementation of the Convention (ECE/EB.AIR.133/Add.1). Funding provided in support of the current workplan is acknowledged and the issue of sustainability of the future workplan is also addressed.

2. During the reporting period, among others, the Task Force continued to build its collaborative links with the United Nations Environment Programme (UNEP), the Global Environment Facility (GEF) and the ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes, together with the regional marine conventions. Cooperation was also developed with the following partners: the Agriculture Initiative of the Climate and Clean Air Coalition; the Convention on Biological Diversity; the European Union; the Food and Agriculture Organization of the United Nations (FAO); the Global Atmospheric Pollution Forum; the Global Partnership on Nutrient Management and the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (both hosted by UNEP); and the International Nitrogen Initiative.

3. Further discussions on potential collaborations between the Task Force on Reactive Nitrogen and the Task Force on Techno-economic Issues were also held. The Task Force will continue to develop these links, through the invitation of members of the Task Force on Techno-economic Issues to its meetings and ensuring that clear online links are made between the Clearing House of Control Technologies and the ECE Framework Code for Good Agricultural Practice for Reducing Ammonia Emissions (Ammonia Framework Code) (ECE/EB.AIR/129).

4. In addition, the second plenary meeting of the International Nitrogen Management System (INMS) (Melbourne, Australia, 3-4 December 2016) provided a further opportunity for ECE and other intergovernmental organizations to engage with the developing INMS process. The meeting also served to launch the project “Towards the Establishment of an International Nitrogen Management System” (Towards INMS project), funded by GEF through UNEP.

5. The cooperation with the European Commission was further strengthened by the joint organization of the Brussels workshop. This provided an opportunity for sharing experience and best practice in nitrogen management techniques and discussion of a future joint guidance document, and encouraged further collaboration between the Task Force and the European Commission.

II. Workshop “Towards joined-up nitrogen guidance for air, water and climate co-benefits”

6. The workshop “Towards joined-up nitrogen guidance for air, water and climate co-benefits” was organized jointly with the European Commission’s Directorate General for Environment in Brussels in October 2016. It was attended by 80 participants representing Belgium, Canada, Czechia, France, Germany, Hungary, Ireland, Montenegro, the Netherlands, Switzerland and the United Kingdom of Great Britain and Northern Ireland. The meeting included participants from government institutions, universities and research institutions, along with representatives from industry.

7. The joint workshop was co-chaired by Tommy Dalgaard (Denmark), Claudia Marques dos Santos Cordovil (Portugal) and Mark Sutton (United Kingdom), together with Roald Wolters (European Commission). Financial support was provided for the meeting by the European Commission, with an emphasis on increasing attendance from participants from Eastern Europe, the Caucasus and Central Asia. Representatives of the European Commission’s Directorate-General for Environment and Directorate-General for Agriculture and Rural Development and the ECE Task Force on Reactive Nitrogen set the scene for participants with opening presentations. The perspective from the farming industry was given by a representative of the General Confederation of Agricultural Cooperatives in the European Union and a Co-Chair of the European Union Nitrogen Expert Panel. The objective of the workshop discussion was to make the first step towards developing integrated guidance for mitigating undesired effects of nitrogen in agriculture, across nitrogen forms and related environmental issues, while taking into account water, air and climate co-benefits.

8. Following the introductory presentations, background documents were presented on the following topics:

- (a) Theme 1: Principles of overall nitrogen management;
- (b) Theme 2: Housed livestock, manure storage, manure processing;
- (c) Theme 3: Field application of organic and inorganic fertilizers;
- (d) Theme 4: Land use and landscape management

9. Participants worked in groups in four parallel sessions addressing the above-mentioned themes to discuss the current content of the background documents and to consider the outline of a future guidance document to be developed by the European Commission and ECE on joined-up nitrogen management in agriculture. The outcomes from each session were then reported back in plenary the following afternoon.

10. The working groups made progress in developing an outline for the future guidance document. Common challenges identified by the groups included data gathering, including baseline data (especially in regional settings), and the assessment of trade-offs between techniques and their impact on wider issues such as climate change or welfare. The relevant scope for the sections of the future document was also defined. It was noted that continued communication between the four groups working on the different themes would be needed to ensure the coherency of the final product. The issue of balance between developing further integrated guidance and improving communication aimed at the policy level to highlight the need for the integration between air, water and climate co-benefits, was also discussed. It was acknowledged that both approaches were needed, possibly on parallel tracks, and that the INMS project would also contribute to increased communication at the policy level regarding the need for integration. Among

other specific aspects discussed was the incorporation of spatial differences, from local to regional, for example varying climatic regimes, locally popular practices and the role of differing end users of guidance documents.

11. The workshop participants concluded that an integrated nitrogen guidance document was both important and necessary, and agreed that they would continue the requisite work. However, further support in the form of workshops to develop and refine the content would be necessary.

12. The revised background documents,¹ notes from the sessions and a coordinated outline of the future guidance document on joined-up nitrogen management in agriculture were compiled. The intention is to present a 100-page workshop proceedings report, identifying the next steps for the process in advance of the special session on agriculture and air pollution. This document will also be discussed at the twelfth meeting of the Task Force (Aarhus, Denmark, 29-30 June 2017).

III. Progress in the implementation of the 2016-2017 workplan for the Convention²

Item 2.3.1: Further disseminate the Guidance Document on Preventing and Abating Ammonia Emissions from Agricultural Sources

13. Further dissemination of the Guidance Document on Preventing and Abating Ammonia Emissions from Agricultural Sources (Guidance on Ammonia Abatement) (ECE/EB.AIR/120) occurred at the Brussels workshop. The Guidance on Ammonia Abatement is one of the main documents that the new guidance on joined-up nitrogen management would draw upon. The Expert Panel on Mitigation of Agricultural Nitrogen supported the workshop in Brussels through drafting background documents, co-chairing sessions and participating in the meeting. The management of the whole nitrogen cycle (which forms a key element of the Guidance on Ammonia Abatement) was one of the four main themes of the workshop, ensuring that this concept continues to be considered.

14. The Expert Panel on Mitigation of Agricultural Nitrogen continues to explore ways of updating the Guidance on Ammonia Abatement to include the most recent advances in best practice and technology and make this more accessible to users, in particular through the Internet. However, resources remain a limiting factor for achieving this goal.

Items 2.3.3 and 2.3.6: Further disseminate the Ammonia Framework Code, support its implementation and collect and assess information regarding experiences in developing and implementing an integrated approach

15. As noted in the previous report of the Task Force (ECE/EB.AIR/WG.5/2016/2), and in addition to the work listed above, the Expert Panel on the Mitigation of Agricultural Nitrogen has been exploring options to keep the items in the Ammonia Framework Code updated with new practices and to make the document more widely

¹ The background documents together with the agenda of the workshop are available online at <http://www.clrtap-tfrn.org/content/joint-dg-env-tfrn-workshop-towards-joined-nitrogen-guidance-air-water-and-climate-co>.

² In several cases the titles in this section abbreviate or summarize much longer workplan items. For the full text of each item, see ECE/EB.AIR/133/Add.1.

available, i.e., through the Internet. However, a lack of resources has continued to limit progress in this work (cf. para. 14 above).

16. As identified by the Task Force in its previous report, a key challenge at present is to support countries in applying the Ammonia Framework Code when developing their own national ammonia codes, as required by annex IX to the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol). Many Parties that ratified the original Gothenburg Protocol still need to establish their own national codes.

17. To further understand the barriers to the development of national ammonia codes, the Task Force has been engaging in information-gathering, in support of a dedicated one-day special session on agriculture and air pollution to be held as part of the fifty-fifth session of the Working Group on Strategies and Review.

18. A link to an online questionnaire, available on the website of the Task Force in English and Russian versions, was shared with the heads of delegations to the Working Group. Translation of the questionnaire and the responses to it was provided by the Expert Panel on Nitrogen in Eastern Europe, the Caucasus and Central Asia. The questionnaire requests information on national ammonia codes and details on the aspects of nitrogen management they cover, such as managing the nitrogen cycle, housing and feeding for livestock, etc. In cases where a national ammonia code is not yet available, further details are requested to identify the responsible agency and whether support would assist in the development of the relevant document. The information from the questionnaire is planned to be synthesized into a report submitted as an informal document of the Working Group's fifty-fifth session. It can also be used to support the discussion at the special session and made available for wider dissemination.

19. During the morning part of the special session on agriculture and air pollution, countries will present their experiences in developing and implementing national ammonia codes, which will then be discussed by the Parties. The afternoon session will allow for presentations on wider aspects of nitrogen management in agriculture by selected countries, sharing best practice, experiences and challenges encountered. More information on the approach to the special session is included in the annotations to the provisional meeting agenda (ECE/EB.AIR/WG.5/117). On 2 June 2017, members of the Task Force will meet again to discuss the outcomes of the special session and the next steps. The discussion will be continued at the Task Force's twelfth meeting.

Items 2.3.2 and 2.3.5: Prepare and disseminate publication on nitrogen budgets, organize an awareness-raising workshop and provide technical information on making and using nitrogen budgets

20. At its thirty-first session (Geneva, 11-13 December 2012), the Executive Body for the Convention adopted the Guidance Document on National Nitrogen Budgets (ECE/EB.AIR/119). That framework guidance, prepared by the Expert Panel on Nitrogen Budgets, foresaw the provision of specific guidance on each of the eight nitrogen pools of a national nitrogen budget in the form of annexes to the main document (ECE/EB.AIR/119, para. 27).

21. Detailed information to develop nitrogen budgets for six of the eight nitrogen pools has now been drafted by the Expert Panel and the annexes have passed through a review process. These annexes are now published online, and experts are encouraged to apply them to their national situation and submit feedback to the Panel Co-Chairs to allow

further refinement of the guidance. The further two annexes are still in development, with progress expected in the first half of 2017.

22. As noted in previous years, a workshop on the use of the nitrogen budget guidance document would improve awareness and understanding; at the same time, its organization is subject to the availability of resources.

23. Further work on nitrogen budgets is anticipated through activity 1.1 of the INMS project, funded and endorsed by GEF in 2016. A joint meeting of the Expert Panel on Nitrogen Budgets and stakeholders involved in the implementation of activity 1.1 is planned to be held on the margins of the Task Force's twelfth meeting.

Item 2.3.4: Develop a guidance document describing an integrated approach with regard to nitrogen management in agriculture and illustrating its co-benefits

24. As noted in section II, progress was made towards the development of an integrated nitrogen guidance document at the workshop in Brussels. A publication prepared in advance of the fifty-fifth session of the Working Group on Strategies and Review will present the output of the workshop.

25. Guidance documents developed so far have typically addressed particular environmental issues and nitrogen forms, and are fragmented across the nitrogen cycle. Focusing on European agricultural practices as a starting point, participants of the Brussels workshop designed a future concept bringing together existing guidance to reduce the adverse effects of nitrogen use, while maximizing its benefits for food and energy supply. The final guidance, to be prepared under the auspices of ECE in cooperation with the European Commission, would describe an integrated approach to nitrogen management in agriculture, addressing multiple compounds and their synergies, and illustrating the co-benefits of such an approach.

Item 2.3.10: Provide technical information on the effects of human diets on nitrogen use and emissions and the associated synergies

26. The launch of the *Nitrogen on the Table* report in January 2016 concluded the first phase of activity for the Expert Panel on Nitrogen and Food. The second phase of the Expert Panel's work is now well under way. The Expert Panel has two new Co-Chairs, Susanna Kugelberg, (World Health Organization) and Benjamin Bodirsky (Potsdam Institute for Climate Impact Research). The Panel is developing a document for submission to Convention Parties identifying technical and other options for reducing emissions from the agro-food chain in the implementation of their obligations under the Gothenburg Protocol, while relating those to the wider co-benefits for society, including the broader issues of public health.

27. A meeting was held in November 2016 to further the document's development. The report is being developed in three parts: (a) "Food Chain Nitrogen Use Efficiency"; (b) "The Relevance of Nitrogen for a Healthy Society"; and (c) "Making the Case: Nitrogen and Food". The Task Force Co-Chairs encouraged and welcomed feedback from Parties in order to refine the Expert Panel's work.

Item 2.3.7: International framework for nitrogen management linking Convention activities with other conventions at the global scale

28. A proposal for an international framework for nitrogen management made to GEF in partnership with UNEP and the International Nitrogen Initiative has now been endorsed. The Towards INMS project was launched at the second plenary meeting of

INMS in December 2016 and provided a further opportunity for scientists and policymakers to meet to discuss an international framework for nitrogen management and how that could be supported by the relevant science, under INMS. The meeting was held on the margins of the Seventh International Nitrogen Initiative Conference³ (Melbourne, Australia, 4-8 December 2016) attended by the close to 400 delegates from 44 countries, where the Melbourne Declaration on Responsible Nitrogen Management for A Sustainable Future was adopted. The Towards INMS project will combine global analysis with regional demonstration activities, including financial support for regional demonstration actions in Eastern Europe, the Caucasus and Central Asia to significantly strengthen ratification of the amended Gothenburg Protocol and its implementation in those countries.

29. Five demonstration regions have been endorsed in the project, including one funded case in the ECE region, focusing on the Dniester and Prut Rivers and the adjacent part of the lower Danube, which would link very closely with the work of the Expert Panel on Nitrogen in countries of Eastern Europe, the Caucasus and Central Asia. A further, unfunded, demonstration area focusing on the European Atlantic coastline was planned, although progress on that demonstration will depend on the availability of additional funds.

30. Further funded demonstration areas have been agreed in the INMS project beyond the ECE region in:

- (a) South Asia (Bangladesh, India, Nepal and Sri Lanka);
- (b) East Asia (China, Japan, the Philippines and the Republic of Korea);
- (c) The Lake Victoria catchment (Kenya, Tanzania and Uganda);
- (d) The La Plata catchment of Latin America (Brazil, Paraguay and Uruguay).

31. A further unfunded demonstration area is also planned for the Seattle Bay Area (United States and Canada), subject to the availability of funds.

Items 2.3.8 and 2.3.9: Develop and apply indicators of biodiversity targets and provide nitrogen-use indicators related to multiple indicators of environmental quality

32. The activities envisaged under workplan items 2.3.8 and 2.3.9, regarding the development and application of biodiversity indicators and nitrogen-use indicators, will be implemented at a later stage within the framework of the Towards INMS project.

IV. Work of the Task Force in 2018-2019

33. The twelfth meeting of the Task Force will be held in Aarhus, Denmark, alongside the meeting “Innovative Solutions for Sustainable Management of Nitrogen” to be hosted by Aarhus University. Funding for this meeting was provisionally pledged by both Denmark and Germany.

34. Denmark and Germany also pledged funds to support the ongoing work of the Task Force, including the secretariat function, in 2017. Sustainability of the work of the

³ See <http://www.ini2016.com/>.

Task Force remains a key issue, as currently there are no funds available to support the secretariat beyond December 2017.

35. A provisional 2018-2019 workplan for the Task Force will be submitted as an informal document to the fifty-fifth session of the Working Group on Strategies and Review. Throughout the workplan, it will be made clear where activities are only possible with the support of specific resources. However, without core support for the secretariat, many of the items envisaged for the 2018-2019 workplan will be very difficult to implement.
