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Working Group on Strategies and Review

Fifty-seventh session

Geneva, 21–24 May 2019

Item 3 of the provisional agenda

Progress in the implementation of the 2018–2019 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. In accordance with its revised mandate set out in the annex to decision 2018/6, the Task Force is required to report on progress in its work to the Working Group on Strategies and Review.

The present report of the Task Force presents the outcomes of its thirteenth meeting (Ottawa, 11–12 October 2018) and summarizes the progress in the implementation of the 2018–2019 workplan for the implementation of the Convention (ECE/EB.AIR/140/Add.1).

* The present document is being issued without formal editing.

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I. Introduction

1. The present report presents the outcomes of the thirteenth annual meeting of the Task Force (Ottawa, 11–12 October 2018) having a theme “Progress on ammonia in the context of the Gothenburg Protocol”, which was held back to back with a workshop on ammonia in the North American context and followed by a field visit to Nooksack and Fraser Valley (the North American Demonstration under the project “Towards the establishment of an International Nitrogen Management System (INMS)”. The report also summarizes the progress of the Task Force in implementing the 2018–2019 workplan for the implementation of the Convention (ECE/EB.AIR.140/Add.1).

II. Thirteenth annual meeting of the Task Force on Reactive Nitrogen

A. Organization of work

2. The meeting was attended by 58 experts from 22 countries, including those from universities and research institutions. The meeting was co-chaired by Mark Sutton (United Kingdom of Great Britain and Northern Ireland), Claudia Marques dos Santos Cordovil (Portugal) and Tommy Dalgaard (Denmark).

3. The agenda of the first day of the meeting included the following items:

- (a) Introduction and updates;
- (b) National perspectives on ammonia mitigation, emergence of policies and latest measurements;
- (c) Regional and global perspectives on ammonia mitigation, emergence of policies and latest measurements, including partnership projects and industry.

4. On the second day, the meeting started with a joint session of the Task Force and the INMS project stakeholders. The parallel sessions were followed by a plenary meeting, which had following points in its agenda:

- (a) Focus on nitrogen management in agriculture;
- (b) Updates from the expert panels;
- (c) Implementation of the 2018–2019 workplan and future developments.

5. The costs of organization of the meeting were shared by Canada and the projects “Towards INMS” and “NitroPortugal: Strengthening Portuguese research and innovation capacities in the field of excess reactive nitrogen”.

B. Summary of the main discussion points

6. The Chair of the Working Group on Strategies and Review and representative of Environment and Climate Change Canada, the host of the meeting, underscored the importance of the work of the Task Force and outlined the current and future priorities. She pointed to the importance of a better understanding and cost effectiveness of agricultural nitrogen pollution control for protection of ecosystems in the United Nations Economic Commission for Europe (ECE) region and collaboration of the Task Force on Reactive Nitrogen with other bodies under the Convention, such as the Task Force on

Measurements and Mapping and the Task Force on Integrated Assessment Modelling on ammonia assessments.

7. A representative of the secretariat made an overview of the recent developments under the Convention, which included the revision of the long-term strategy for the Convention, revision of mandates of task forces, capacity building and outreach activities by the secretariat, the upcoming global event on clean air and other issues.

8. A Co-chair of the Task Force from the United Kingdom outlined the key achievements of the work of the Task Force, its current activities and future priorities. He stressed the need for taking a nitrogen perspective and joined up technical information and continued work on national ammonia codes. The current and further priorities of the Task Force included:

(a) Fostering introduction and implementation of national ammonia codes, monitoring related progress and displaying copies of national ammonia codes on the website of the Task Force;

(b) Preparation for a global nitrogen assessment with a link to INMS;

(c) Ammonia assessment in cooperation with the Task Force on Integrated Assessment Modelling;

(d) Finalization by the Expert Panel on Nitrogen and Food of the second phase of the report on nitrogen, food, environment and health, including a special issue and a policy summary;

(e) Finalization by the Expert Panel on Nitrogen Budgets of detailed methodology annexes to the Guidance document on national nitrogen budgets (ECE/EB.AIR/119), implementing submission and reporting in partnership with EMEP and integration with the meeting “Towards Farm Level Budgets for Dairy Systems” under the project “Towards INMS”;

(f) Examining current policies including basis for ratification of the Gothenburg protocol by the Expert Panel on Nitrogen in Eastern Europe, the Caucasus and Central Asia and its input to the project “Towards INMS” through the regional demonstration in Eastern Europe.

9. Among emerging activities of the Task Force, the speaker listed cooperation with INMS and other regions, as well as joint activities to be organized with the European Commission on joined up nitrogen management for air, water and climate co-benefits, and with the United Nations Framework Convention on Climate Change under Koronivia joint work on agriculture. The Co-Chair noted the nitrogen issue being recognized by the United Nations Environment Assembly and the urging need to reduce nitrogen waste.

10. An expert from Canada made an overview of the key messages from the workshop on ammonia in the North American context organized by the Government of Canada on 10 October 2018. She stressed the need for better data to deepen the understanding of ammonia related issues and support effective policy development. Ammonia mitigation was considered possible and there had been examples of substantial reduction in emissions as a result of a combination of voluntary and mandatory measures. Successful ammonia mitigation approaches generally targeted fertilizer use and manure management that included cost effective options. The choice of approach depended on national circumstances, such as political and governance structure, agricultural industry and economics. The experts noted that taking an integrated approach to nitrogen management could achieve co-benefits for addressing multiple pollutants and multiple effects.

11. Several national approaches to nitrogen management and emissions measurements were presented at the meeting. A common agreement was that fertilizers production and

use, manure storage and application were the key areas for further work, and there was a potential for improved management to reduce nitrogen losses.

12. Several presentations were made on regional and global perspectives of ammonia mitigation, emergence of policies and latest measurements, including partnership projects and industry. The need to educate all stakeholders, but not only those in the agricultural sector, was stressed by speakers. The challenges of involving stakeholders for a particular objective and demonstration of cost efficiency of measures were mentioned. Considering other nutrients such as phosphorus was seen important in view of linking to nitrogen driven effects.

13. The first day of the meeting concluded recognizing:

- (a) The need to improve technology that produced long-term effects;
- (b) The need to set specific objectives to farmers taking into account that the authorities and farmers have different goals;
- (c) Importance of demonstrating the economic benefits of application of measures in order to encourage farmers to introduce and implement them, taking into account national specificities;
- (d) The need to consider concerns of farmers other than those related to economy, e.g. issues of trust, that could drive their behaviour change.

14. The Co-coordinator of the Expert Panel on Mitigating Agricultural Nitrogen presented on the latest developments in the work of the Expert Panel. He mentioned in particular the joint work with the Task Force on Emission Inventories and Projections on the update of the Guidance document on preventing and abating ammonia emissions from agricultural sources (ECE/EB.AIR/120) with the goal of computational consistency. There was an objective to make it a live document available on the website with a possibility to improve it on an ongoing basis, and INMS tools were planned to be used for that. Cooperation with the Task Force on Techno-economic Issues on the use of the clearing house of control technology information platform was also contemplated.

15. An expert of the Expert Panel on Mitigating Agricultural Nitrogen informed participants of the work on preparing a descriptive version of the ECE Framework Code for Good Agricultural Practice for Reducing Ammonia Emissions (ECE/EB.AIR/129) and the Guidance document on preventing and abating ammonia emissions with illustration of techniques for better communication with Parties and users.

16. An expert involved in the implementation of the project “Towards INMS” delivered a presentation on development of a joined-up guidance for good nitrogen management and potential synergies with the work of the Task Force, in particular the Expert Panel on Mitigating Agricultural Nitrogen.

17. A Co-Chair of the Task Force from Portugal delivered a presentation on the second phase of the work of the Expert Panel on Nitrogen and Food on behalf its Co-ordinator, where the emphasis was placed on integrating impacts from the whole food chain perspective. The Expert Panel was preparing a special issue “Managing nutrients: the key to achieve sustainable food systems for healthy diets” to be published in “Global Food Security” journal. The main conclusions and messages were going to be included in the report of the panel in 2019.

18. A representative of the Expert Panel on Nitrogen in Eastern Europe, the Caucasus and Central Asia informed participants of recent activities of the Expert Panel, which included studies on nitrogen losses on large scale farms in the Russian Federation and Ukraine; understanding the ways to connect livestock and crops, integration livestock and planting; and the regional approaches on manure management. Future activities will be

focused on dissemination of related information among experts in Eastern Europe, the Caucasus and Central Asia. Among the challenges mentioned by the speaker for the work of the Expert Panel there were the lack of awareness among decision-makers in the target countries and the lack of funding for activities of the expert panel.

19. An expert from the Expert panel on Nitrogen Budgets informed of the current state in terms of the update of annexes to the Guidance document on national nitrogen budgets and informed of national reports on nitrogen budgets prepared at that moment. The annex on waste was not yet finalized due to the lack of resources. He pointed to the issue of resources and support by Parties as a precondition to advance the work of the Expert Panel and to implement the workplan.

20. A Co-chair of the Task Force from Denmark presented the main points to be changed in the revised mandate of the Task Force, which was submitted for adoption by the Executive Body at its thirty-eighth session (Geneva, 10–14 December 2018). He made an overview of the 2018–2019 workplan items and noted that a new item was expected to be added in the workplan in relation to a proposed joint activity with the Subsidiary Body for Scientific and Technological Advice of the United Nations Framework Convention on Climate Change within the Koronivia process. He mentioned the key threats of excess nitrogen and stressed the importance of an integrated approach.

21. The Task Force discussed the progress in the implementation of respective workplan items noting those that required additional funding. The Task Force also discussed possibilities for cooperation with other bodies under the Convention, in particular with the Task Force on Techno-economic Issues.

III. Progress in the implementation of the 2018–2019 workplan for the Convention¹

22. The section below summarizes the results of the review of progress in activities outlined in the 2018–2019 workplan by workplan item.

Item 1.1.2.3: Review of ammonia emission factors for livestock and manure management source sector

23. Coordination has been started between the Expert Panel on Mitigating Agricultural Nitrogen and the Expert Panel on Agriculture and Nature of the Task Force for Inventories and Projections. Both panels recognize that consistency is needed to ensure that there is clarity in terms of national emission estimates and the efficacy of mitigation measures. It is also important to have a consistent approach towards baseline agricultural practices and baseline emission estimates.

Item 2.4.1: Further disseminate guidance document on preventing and abating ammonia emissions from agricultural sources

24. The Expert Panel on Mitigating Agricultural Nitrogen continues to ensure the relevance of the mitigation technologies in the guidance document. This requires reviewing new research methodologies and testing new technologies (for example, novel housing designs or alternative acidification methods) and technologies gaining in importance (like urea fertilizer, controlled release urea). The objective of this activity is to

¹ 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/140/Add.1, forthcoming.

update the information and to support preparation of the next update of the guidance document. It is further planned to develop a page as a clearinghouse for new information, if sufficient funding is available. In order to support further mitigation efforts, it would be timely for the Expert Panel to participate in reviewing the atmospheric ammonia chain, from measurement data and development of emission factors to computing inventories, linking inventories to ambient concentrations and meeting targets. However, this would require additional funding.

Item 2.4.3: Further disseminate the ECE Framework Code for Good Agricultural Practice for Reducing Ammonia Emissions and work with national focal points to support its implementation

25. The Expert Panel on Mitigating Agricultural Nitrogen is planning to provide support to Parties in preparing or advancing their national framework codes of agricultural practices in line with the ECE Framework Code. The experts of the Panel have volunteered to provide direct technical support to a Party expressing such a need. However, this would require additional funding.

26. The Framework Code was translated to Portuguese with funding from the project “NitroPortugal: Strengthening Portuguese research and innovation capacities in the field of excess reactive nitrogen”.

Item 2.4.4: Initiate the development of an ECE guidance document that describes an integrated approach, addressing multiple compounds and their synergies

27. A joint workshop is planned to be organized in cooperation with the European Union in Brussels in October 2019. It will serve as a basis for the draft guidance document on nitrogen mitigation in agriculture, taking into account synergies between ammonia, nitrates, nitrous oxide and other nitrogen compounds and for the establishment of a “top 10” list of options for nitrogen mitigation measures.

Item 2.4.6: Collect and assess information from national focal points regarding their experiences in developing and implementing an integrated approach at TFRN meetings and workshops

28. The Task Force Co-Chairs and experts participated in a meeting on nitrogen in soil, water and greenhouse gases organized within the project “NitroPortugal: Strengthening Portuguese research and innovation capacities in the field of excess reactive nitrogen” (Lisbon, 29–30 November 2018).²

Item 2.4.7: Cooperate with International Nitrogen Management System on the international framework for nitrogen management

29. A meeting on scenario setting for the project “Towards INMS” (New York, 15–18 January 2018) was attended by the Task Force Co-Chairs. The thirteen meeting of the Task Force was held back to back with the meeting under the INMS project and the synergies between the work under the project and the work of the Task Force were discussed. A workshop focusing on issues related to dairy farming nitrogen balances in the International Nitrogen Management System (Melbourne, Australia, 3–7 December 2018) was attended by the Task Force experts.

² See <http://www.isa.ulisboa.pt/proj/nitroportugal> for more information.

Item 2.4.9: Provide nitrogen-use indicators (e.g., nitrogen-use efficiency) related to multiple indicators of environmental quality, including water quality

30. The Expert Panel on Nitrogen in countries of Eastern Europe, the Caucasus and Central Asia, in particular experts from the Russian Federation and Ukraine, were involved in the implementation of the project “Towards INMS” within its component on the regional demonstration of a full nitrogen approach.

Item 2.4.10: Provide technical information on the effects of human diets on nitrogen use and emission and associated synergies

31. The Expert Panel on Nitrogen and Food is currently drafting the chapters of the report to the Working Group on Strategies and Review on possible synergies for linking dietary behaviour and nitrogen mitigation practices through the food system. The Expert Panel is preparing a special issue “Managing nutrients: the key to achieve sustainable food systems for healthy diets” to be published in “Global Food Security” journal. The main conclusions and messages will be included in the report of the Expert Panel in 2019 after the meeting (Edinburgh, United Kingdom, 8–9 April 2019).
