

Discussion Paper on options for facilitating improved coordination of policies across the global nitrogen cycle: implementing United Nations Environment Assembly (UNEA) Resolution 4/14 and UNEA Resolution 5/2 on sustainable nitrogen management

Paper for consideration by the United Nations Environment Programme (UNEP) Working Group on Nitrogen at its second meeting on 17 January 2023¹

A. Why is there a need to better coordinate policies across the global nitrogen cycle?

1. There are many types of nitrogen, with many different effects both beneficial and harmful to people and the environment. Reactive nitrogen is essential for all life on earth; but nitrogen pollution causes multiple negative impacts on the environment, including:
 - *water quality*: nutrient pollution of coastal seas leads to oxygen depletion. Nitrate threatens drinking water quality;
 - *air quality*: nitrogen compounds contribute 10-50% of fine particulate matter, 100% of nitrogen oxides and 60% of the increase in tropospheric ozone pollution, contributing to heart disease and respiratory illnesses;
 - *ecosystems and biodiversity*: atmospheric nitrogen deposition resulting from nitrogen oxides and ammonia is threatening biodiversity in many biodiversity hotspots globally;
 - *stratospheric ozone*: nitrous oxide is now the dominant cause of ozone depletion for 2020 and beyond; and
 - *greenhouse gases and climate change*: nitrous oxide has a global warming potential 300 times more powerful than carbon dioxide and an atmospheric lifetime of 200 years.
2. The negative impacts of nitrogen therefore cross multiple policy domains, including air quality, climate change, freshwater and marine management, biodiversity, health and food security. This presents challenges when it comes to actions to address nitrogen across its many forms, leading to policy fragmentation and making action on sustainable nitrogen management frequently invisible across and within these same policies and areas.
3. The consequences of this policy fragmentation can be seen in policy trade-offs that can lead to unintended consequences, for example policies to reduce nitrate pollution of water in the European Union (EU) led to the prohibition of manure application to land in closed periods, leading to an unintended peak in atmospheric ammonia

¹ Prepared on behalf of the Task Team, with the support of the UNEP-GEF 'Towards INMS' project.

concentrations; and policies recommending bringing cattle indoors to reduce climate-relevant emissions of nitrous oxide leading to increased ammonia emissions.²

4. Failure to address nitrogen in a coherent way will impact on the world's ability to achieve the Sustainable Development Goals – as sustainable nitrogen management contributes especially to Goals 1 (no poverty), 2 (zero hunger), 3 (good health and wellbeing), 6 (clean water and sanitation), 7 (affordable and clean energy), 11 (sustainable cities and communities), 13 (climate action), 14 (life below water), 15 (life on land) and 17 (partnerships for the goals). Reducing nitrogen waste has also been shown to have significant financial benefits at all levels³.
5. Given the breadth of its potential impacts, aspects of the nitrogen cascade fall within the remit of numerous Multilateral Environmental Agreements (MEAs), UN processes, bodies and organisations and numerous intergovernmental partners.
6. In the absence of a coherent and comprehensive policy approach to sustainable nitrogen management at international level, similar fragmentation is also often reflected at national levels.
7. Addressing this fragmentation through better cooperation and working together to support better coordination of outcomes through existing processes will therefore help UN Member States reach their goals across a range of policy areas.

B. What has been done to address this fragmentation?

8. The rationale and context for a proposed nitrogen resolution was presented by the Government of India, leading to the adoption of UNEA Resolution 4/14 on Sustainable Nitrogen Management⁴ in March 2019.
9. Resolution 4/14 calls on the Executive Director of UNEP, inter alia, to:
 - a. *Consider the options for facilitating improved coordination of policies across the global nitrogen cycle at the national, regional and global levels, including consideration of the case for establishing an intergovernmental mechanism for coordination of nitrogen policies, based primarily on existing networks and platforms, and consideration of the case for developing an integrated nitrogen policy, which could enhance recognition of the need for common action across multiple policy domains;*
 - ...

² See UN Frontiers Report 2018/19 *The Nitrogen Fix: From Nitrogen Cycle Pollution to Nitrogen Circular Economy*: <https://wedocs.unep.org/handle/20.500.11822/27543>

³ Idem.

⁴ <https://wedocs.unep.org/bitstream/handle/20.500.11822/28478/English.pdf?sequence=3&isAllowed=y>

f. *report to the United Nations Environment Assembly at its sixth session on the progress achieved in the implementation of the present resolution*

10. An initial discussion on options was held in Nairobi in April 2019 as part of the High–Level Segment of the Fourth Meeting of the International Nitrogen Management System (INMS-4)⁵, followed by the launch of the UN Global Campaign on Sustainable Nitrogen Management and the adoption of the Colombo Declaration in October 2019⁶.
11. Following a request for nominations, the first meeting of the UNEP Working Group on Nitrogen took place in June 2020⁷. At this meeting, the Working Group decided to establish a Task Team comprised of representatives of UN Member States, MEAs and processes with an interest in the nitrogen cycle, and representatives of UNEP and the GEF, to consider the options requested in Resolution 4/14.
12. The Government of Sri Lanka proposed a second nitrogen resolution to UNEA at its resumed fifth session (UNEA-5.2), co-sponsored by Brazil, the Maldives, Pakistan and Uganda. This resolution was adopted by UNEA (Resolution 5/2)⁸. It requests the Executive Director of UNEP to:

3 (b) identify possible modalities for the options being considered for improved coordination of policies across the global nitrogen cycle at the national, regional and global levels, including among other options, for an inter-governmental coordination mechanism for nitrogen policies, as specified in subparagraph (a) of resolution 4/14;

C. What options are being considered?

13. The Task Team established by the Working Group on Nitrogen met five times between January and December 2021. The Working Group considered four options for improved coordination of policies across the global nitrogen cycle at the national, regional and global levels. These options were initially identified in the UNEP Frontiers Report 2018/2019⁹ and subsequently reviewed at the High-Level Segment of the INMS-4 held at UNEP in Nairobi, April 2019:

- i. Continue with the status quo, essentially a fragmented approach with nitrogen issues being dealt with between multiple MEAs and processes;

⁵ [https://www.inms.international/sites/inms.international/files/Provisional%20INMS-4%20full%20report%20of%20high-level%20segment%20\(30%20July%202019\).pdf](https://www.inms.international/sites/inms.international/files/Provisional%20INMS-4%20full%20report%20of%20high-level%20segment%20(30%20July%202019).pdf)

⁶ <https://apps1.unep.org/resolution/?q=node/286>

⁷ <https://apps1.unep.org/resolution/?q=UNEP-Nitrogen-Working-Group>

⁸ <https://www.unep.org/environmentassembly/unea-5.2/proceedings-report-ministerial-declaration-resolutions-and-decisions-unea-5.2>.

⁹ See footnote 2.

- ii. One (existing) MEA takes the lead in addressing interactions across the nitrogen cycle between water, air, climate, ecosystems and biodiversity, soils, stratospheric ozone etc;
 - iii. Negotiation of a new nitrogen treaty; and
 - iv. Establishment of an intergovernmental mechanism for coordination of nitrogen policies, based primarily on existing networks and platforms.
14. Following the adoption of UNEA Resolution 4/14 on Sustainable Nitrogen Management, the High-Level Segment of the INMS-4 in Nairobi (April 2019)¹⁰ recommended moving forward with option iv, noting also the future potential to progress further with option iii (i.e. a standalone nitrogen treaty). This perspective was affirmed by discussions at the first online meeting of the UNEP Nitrogen Working Group and in subsequent meetings of the Task Team, where it was agreed that options i and ii would not be sufficient to address the challenges posed by nitrogen. Discussions on the draft resolution on nitrogen management prior to and at UNEA-5.2 with a wider-group of Member States, however, demonstrated a need to revisit these conclusions.
15. An outline of some of the advantages and disadvantages of each option is set out in the table in Annex 1. The comparison is aimed at facilitating further consensus development among the options. Consideration of “possible modalities for the options” (UNEA Resolution 5/2 para. 3 (b)) will require subsequent discussion.

D. What considerations have been raised to date in respect of any intergovernmental coordination mechanism?

16. Discussions within the Task Team have identified some key principles that would need to be factored into the development of any intergovernmental mechanism if this is the direction that UN Member States wish to take. These can be summarised as follows:
- a. Any intergovernmental mechanism for coordination of nitrogen policies should focus on supporting different bodies to work better together rather than seeking to impose solutions on other fora.
 - b. Any mechanism must respect the independence of the MEAs, organisations and processes that are relevant to its mandate.
 - c. Appropriate decision making must rest with the Member States within the governing bodies of each relevant MEA, organisation or process.
 - d. The mechanism must be designed in such a way that it is capable of both attracting and receiving funding from appropriate sources; and of channelling or influencing sustainable and adequate funding for sustainable nitrogen management.

¹⁰ See footnote 5.

17. Each of the MEAs, organisations and processes that are relevant to the mandate of any mechanism¹¹ has its own internal decision-making procedures. The creation of a mechanism should not displace these procedures: for example, decisions falling within the remit of each MEA should be taken by the governing body of that MEA, in accordance with its own procedures. However, a useful starting point could be the recognition (where this has not already happened) of UNEA Resolutions 4/14 and 5/2 by the relevant governing bodies and an explicit statement of interest in collective discussions.
18. An assessment will be needed, assisted by the MEAs, organisations and processes, of how an intergovernmental mechanism could support them and what procedures would need to be followed for this to take place. For example, it will be necessary to examine whether an initial decision of each governing body will be required that explicitly recognises any mechanism and establishes a route to communicate with a mechanism or participate in its meetings.
19. Consideration will also need to be given to any barriers that may exist in terms of the form a mechanism might take – in other words, whether there are any structures that could be chosen that any of the MEAs, organisations or processes might not be able to interact with because of their internal rules.
20. Any mechanism would also need to be established at an appropriate level to enable cooperation to take place between MEAs, organisations and processes on the one hand and UN Member States on the other. For example, the initial list of MEAs, organisations and processes set out in Annex 2 includes regional MEAs; UNEP-administered MEAs; non-UNEP administered MEAs; UN organisations; and several non-binding processes or programmes. Consideration will need to be given to how to establish a mechanism so that all relevant MEAs, organisations and processes are able to access and take note of its work and findings where these are relevant to them.
21. The question of timing will also need to be considered, in particular regarding the initial ‘authorisation’ of any mechanism by the MEAs, organisations or processes: at what point it will be necessary to table or propose resolutions or decisions within the various MEAs, organisations or processes and how this can be sequenced to provide the most effective results. At the initial stages of operation, a phased approach could be considered, targeting outcomes from one forum at a time in a chronological order, rather than targeting multiple forums at the same time. However, there are risks inherent in such an approach if insufficient consultation has been carried out or insufficient flexibility built in to adapt.
22. In terms of the involvement of UN Member States, although the discussions to date have recognised the importance of any mechanism comprising representatives of UN Member

¹¹ See Annex 2 for a non-exhaustive list of MEAs, organisations and processes which have or may have an interest in sustainable nitrogen management.

States alongside representatives of the relevant MEAs, organisations or processes, consideration will need to be given to the appropriate level or forum for decision making to take place. As indicated above, each MEA, organisation or process likely to have a policy interest in a mechanism has its own decision-making processes with decisions being taken by the Member States that are Parties to the various MEAs, meeting in the relevant governing bodies. It will be important not to seek or be seen to displace these decision-making processes and for appropriate decisions to continue to be Member-State-driven. Similarly, care is needed in the use of terminology which may be perceived as having varying meaning between different stakeholder groups.¹²

23. It has also been noted that there are many different forms that an intergovernmental coordination mechanism might take. The appropriate form and functions of any such mechanism, and the possible modalities, would need to be determined on the basis of Member State input.

E. Questions for the UNEP Nitrogen Working Group

- 1. Are there any other options that should be considered?**
- 2. Are there additional advantages or disadvantages of each option?**
- 3. What other considerations need to be taken into account for an intergovernmental mechanism for coordination of nitrogen policies?**
- 4. Are any MEAs, organisations or processes missing from the list in the Annex 2?**

¹² An example is the use of the term 'coordination', where Option iv reflects coordination across nitrogen issues and policies, and does not imply coordination of MEAs, organisations or processes, recognizing the autonomy of each. In bringing together diverse policy communities related to nitrogen, other examples of the need to clarify terminology may be expected.

Annex 1: Initial overview of advantages and disadvantages of each of the options identified by the Task Team for improved coordination of policies across the global nitrogen cycle at the national, regional and global levels, including among other options, for an inter-governmental coordination mechanism for nitrogen policies

Option	Advantages	Disadvantages
I. Status Quo	<ul style="list-style-type: none"> - Low financial operating cost. - Familiarity and degree of comfort with existing structures and processes. 	<ul style="list-style-type: none"> - Continued fragmentation. - Lack of visibility / awareness. - Unlikely to fully address negative impacts of nitrogen. - Risk of unintended consequences from fragmented approach. - Any action dependent on lead countries proposing resolutions or decisions under the various existing fora. - Difficult to impose specific, new, legally binding obligations (requires amendment or subsequent / interpretative agreement). - Difficult to leverage resources for actions on nitrogen both at international and national levels.
II. Lead by an existing MEA	<ul style="list-style-type: none"> - Relatively low financial operating cost. - Relies on existing structures (i.e. no need to create new secretariat). - Familiarity and degree of comfort with existing structures and processes. 	<ul style="list-style-type: none"> - Continued fragmentation. - Lack of visibility / awareness outside of lead MEA when compared to options iii and iv. - Unlikely to fully address negative impacts of nitrogen. - Risk of unintended consequences from fragmented approach. - Any action dependent on lead countries proposing resolutions or decisions under the various existing fora. - Significant risk of mandate creep. - 'Real' action limited to remit of the lead MEA.

Option	Advantages	Disadvantages
		<ul style="list-style-type: none"> - Difficult to impose specific, new, legally binding obligations (requires amendment or subsequent / interpretative agreement). - Difficult to leverage resources for actions on nitrogen both at international and national levels.
III. Nitrogen Treaty	<ul style="list-style-type: none"> - Bespoke solution that could address the entire nitrogen cycle. - Raises awareness and visibility amongst lawmakers, policymakers, and the public in a more targeted way than options i and ii. - A new treaty would include new, specific legally binding obligations to address sustainable nitrogen management. - Strengthens opportunity to raise investment in sustainable nitrogen management to reduce nitrogen waste, representing a waste of resources worth several hundred billion USD annually. 	<ul style="list-style-type: none"> - High financial cost, both during negotiating phase and once new treaty adopted. - Would require the establishment of a new Secretariat, entailing both financial costs and administrative requirements. - New and additional funding streams would be required, both to negotiate and operationalise the treaty and to support Parties in the implementation of their obligations. - Slow: would require negotiation of a mandate to even begin negotiations on the treaty itself (estimate 10-15 years based on recent experience). - Unlikely to enter into force quickly (minimum number of ratifications required for entry into force). - Limited initial impact, at least initially would only be likely to include a small number of Member States that would have ratified. - Could divert funding from other priorities - Question whether there is an appetite for another new treaty at this point.

Option	Advantages	Disadvantages
IV. Intergovernmental coordination mechanism	<ul style="list-style-type: none"> - Bespoke solution that could be designed to complement existing mechanisms and address the entire nitrogen cycle. - Faster impact than a new treaty as would not need to wait for entry into force. - Could rely on decision making processes under existing MEAs, organisations and processes: no need to reinvent the wheel. - Would foster cooperation on nitrogen between existing MEAs, organisations and processes and provide a way for them to work together more effectively. - Raises awareness and visibility amongst lawmakers, policymakers, and the public in a more targeted way than option i or ii. - Moderate financial cost for creation and running of secretariat. - Strengthens opportunity to raise investment in sustainable nitrogen management to reduce nitrogen waste, representing a waste of resources worth several hundred billion USD annually. 	<ul style="list-style-type: none"> - Would require the establishment of a new Secretariat, entailing both financial costs and administrative requirements. - New and additional funding streams would be required, both to negotiate and operationalise the mechanism and to support Member States to deliver sustainable nitrogen management. - Action would still depend on lead countries proposing resolutions or decisions under the various existing fora. - Cannot impose specific, binding obligations, other than through existing fora.

Annex 2: Initial list of MEAs, organisations and processes with an interest in nitrogen policy¹³

MEAs

- United Nations Framework Convention on Climate Change (UNFCCC)
- Convention on Biological Diversity (CBD)
- United Nations Convention to Combat Desertification (UNCCD)
- Vienna Convention for the Protection of the Ozone Layer and its Montreal Protocol on Substances that Deplete the Ozone Layer
- Ramsar Convention on Wetlands of International Importance, especially as Waterfowl Habitat
- United Nations Convention on the Law of the Sea (UNCLOS)
- United Nations Economic Commission for Europe (UNECE) Convention on Long-Range Transboundary Air Pollution and its Protocols
- UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes
- Regional Seas Conventions

Organisations

- United Nations Environment Programme (UNEP)
- Organisation for Economic Cooperation and Development (OECD)
- Food and Agriculture Organization of the United Nations (FAO)
- World Health Organization (WHO)
- World Meteorological Organization (WMO)
- International Energy Agency (IEA)

Processes, initiatives and other bodies

- Global Programme of Action for the protection of the Marine Environment from Land-based Activities
- United Nations Development Programme (UNDP)
- United Nations Committee on Food Security (CFS)
- High-level Political Forum on Sustainable Development
- Strategic Approach to International Chemicals Management (SAICM)
- South Asia Cooperative Environment Programme (SACEP)
- Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)
- Global Environment Facility (the GEF)
- World Bank and Regional Development Banks

¹³ The MEAs, organisations and processes in this Annex have been identified as particularly relevant to sustainable nitrogen management. This list is neither exhaustive nor comprehensive.