



**United Nations
Environment
Programme**

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**UNEP Working Group on Nitrogen
Fifth meeting**
Nairobi, 9 – 10 January 2024

Report of the fifth meeting of the UNEP Working Group on Nitrogen

Introduction

1. The UNEP Working Group on Nitrogen was convened by UNEP's Executive Director to facilitate the implementation of resolutions 4/14 and 5/2 on sustainable nitrogen management and to strengthen the engagement and ownership of the implementation process by Member States and stakeholders.
2. The fifth meeting of the UNEP Working Group on Nitrogen took place on 9 – 10 January 2024 in Nairobi, Kenya in a hybrid format.

Item 1

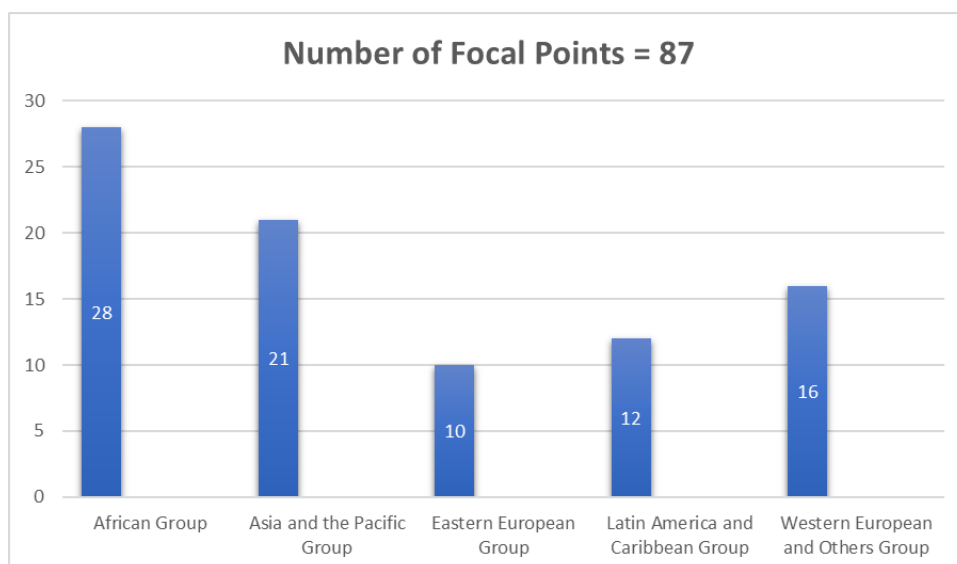
Opening of the meeting.

3. Ms. Heidi Savelli, Head of Source to Sea Pollution Unit, Marine and Freshwater Branch, Ecosystems Division of UNEP, delivered welcome remarks in which she highlighted the need to break silos as nitrogen management cuts across various policy domains. She thanked the Co-Chairs for their exemplary leadership, the focal points of the UNEP Working Group on Nitrogen for their active engagement, the Global Partnership on Nutrient Management (GPNM) for their invaluable technical support throughout the process. Additionally, she extended appreciation to the Government of Denmark for their generous financial contributions.
4. The Co-Chair, Mr. Mihai Constantinescu, Director, Management Unit for the Integrated Nutrient Pollution Control, Ministry of Environment, Waters and Forests of Romania, opened the fifth meeting of the UNEP Working Group on Nitrogen on behalf of the Co-Chairs. Regrettably, Ms. Purvaja Ramachandran, Co-Chair and Director, National Centre for Sustainable Coastal Management, Ministry of Environment, Forest and Climate Change of India, was unable to attend due to illness, and her absence was duly noted.

Item 2

Update by the Co-Chairs.

5. The Co-Chair provided an update on the progress made by the Working Group, and other relevant initiatives, since its fourth meeting which took place on 28 September 2023 in Nairobi, Kenya, both in person and online. The update included the following highlights:
- a. At the fourth meeting of the Working Group, focal points were encouraged to submit their national action plans and give comments on the paper regarding options for improved coordination of policies across the global nitrogen cycle: potential options and modalities.
 - i. The Co-Chairs presented a revised zero draft voluntary action plan during the meeting, offering a template that focal points can use to model national action plans for their countries. Based on this template six submissions were received by the Secretariat from focal points seeking support to develop national action plans.
 - ii. Additionally, the paper on options for improved coordination of policies across the global nitrogen cycle: potential options and modalities was presented at the fourth meeting of the Working Group; focal points were invited to send their comments to the Secretariat. Based on the paper, five focal points sent their written recommendations after the meeting.
 - b. The Co-Chair gave an update on focal point nominations to the Working Group since the fourth meeting: as of 31 December 2023, a total of 87 nominations were received. The following regional breakdown was presented.



- c. The Terms of Reference (ToRs) of the Working group was presented to provide an overview of what the working group has achieved so far, and what is yet to be done in the lead-up to UNEA-6 and beyond. The focal points were reminded that the ToRs are built on the provisions stipulated in UNEA resolutions 4/14 and 5/2 on sustainable nitrogen management.
- d. The roadmap of the Working Group prepared during the 3rd meeting of the Working Group held in Bucharest, Romania was presented, showcasing the milestones achieved thus far including knowledge sharing by focal points.
- e. The Co-Chair presented a word map depicting the most searched terminology related to nitrogen from 2016 to 2022. After the Co-Chair's presentation, focal points reflected further on the word map and brought forth additional terminology to be considered, including the use of bio-stimulants and plant protectors derived from herbal inputs to prevent eutrophication, and the use of synthetic biology in reducing eutrophication in water bodies.

Item 3

Briefing by the UNEP Secretariat.

6. The Co-Chair invited UNEP to provide updates on progress on the Working Group and GPNM to the meeting.
7. The UNEP Secretariat presented the following highlights:
 - a. Ms. Stephanie van der Poel, Programme Officer of the Source-to-sea Pollution Unit of UNEP's Ecosystems Division, gave a brief presentation on the progress made since the 4th meeting in September 2023. She reiterated the need for countries to nominate focal points to the Working Group, highlighting the existence of the Working Group webpage <https://www.unep.org/nitrogen-management-WG> announced during the 4th meeting. The webpage contains all relevant information pertinent to the Working Group and is updated regularly.
 - b. During the inter-sessional period, the Global Partnership on Nutrient Management (GPNM) organized a series of webinars to support the Working Group. These webinars covered topics such as National Action Plans, Good practises in interministerial / interdepartmental coordination, Reducing Greenhouse gas emissions from fertilizer use (a joint FAO/IFA webinar, supported and moderated by UNEP).
 - c. The Secretariat also highlighted several key developments and ongoing endeavours:
 - i. **Wastewater and Nutrient Management: A Key for Climate, Water, Food and Energy Security event**, took place at the UNFCCC COP28 on 10 December 2023.
 - ii. **Report of the Executive Director** entitled "Progress in the implementation of resolution 4/14 and resolution 5/2 on sustainable nitrogen management" -The advanced unedited version of this report is available through the UNEA-6 webpage.
 - iii. Focal points were encouraged to keep checking the UNEA-6 webpage to find updated information on the preparations for the UN Environmental Assembly. A list of side events has also been made available.
8. The Co-Chairs thanked UNEP for the briefing and opened the floor for questions, comments, or reflections.
 - a. Prof. Ramesh Ramachandran, Chair of the GPNM, raised a query regarding the possibility of organizing side events at UNEA-6 other than what Pakistan is planning.
 - b. A focal point asked if there was still room for countries to ask for support in developing their National Action Plans, and whether this support would include training and accreditation.

Item 4**National Action Plans on Sustainable Nitrogen Management.**

9. The Co-Chair gave a recap on the voluntary National Action Plan (NAPs) template introduced during the 4th meeting. He then invited a few focal points to give presentations on National Action Plans on Sustainable Nitrogen Management.
10. Key points from the Japan presentation included:
 - a. There are some issues related to the formulation of the National Action Plan and it is necessary to continue discussing with relevant ministries and experts.
 - b. It is essential to consider the diversified use of N and the benefits/impacts of it. Sustai-N-able Project focuses on resolving the N issue to realize food equity and good health of humans and ecosystems through environmental and socioeconomic dimensions and future planning.
 - c. The definition of "nitrogen waste" needs further discussion, including in this working group and progress toward a common definition and understanding of the matter.

- d. Integrated approaches for sustainable nitrogen management are key but essential principles like carbon neutrality, circular economy and nature positivity are not included in all NAPs.
- e. International cooperation is also essential. Japan has been expanding the scope of existing mechanisms like the Acid Deposition Monitoring Network in East Asia (EANET) to include reactive nitrogen to further engage countries in the region. Low participation in the region remains an issue. Japan promotes the Water Environment Partnership in Asia (WEPA) program by building partnerships to strengthen government capacities through knowledge sharing of water environment governance issues among others.
- f. The Model Project for Improvement of Water Environment in Asia is used to promote sound water treatment technologies. Public awareness campaigns also promote sustainable consumption, production and behavioural change in collaboration with various ministries and stakeholders. Certification for environmentally sound technology is also promoted.

The Co-Chair thanked Japan and opened the floor for questions. A focal point sought clarification on whether “future design” focused on technologies or lifestyle. Japan explained it encompasses both aspects. Another focal point mentioned that Pakistan would be hosting a side event at UNEA-6 focusing on making Nitrogen visible through the SDGs.

11. Key points from the Netherlands presentation included:

- a. It is important to balance between ecological and economic aspects, putting accountability in place and understanding socioeconomic dimensions as well as geographical specificity with a long-term plan. A focal point echoed the previous intervention and suggested that nitrogen waste assessments could clarify impacts.
- b. Different mechanisms including the EU directives are framing the work on nitrogen management, there is also a strong governance philosophy based on integration between nature, water, and climate.
- c. Some of the challenges include different economic, social and administrative consequences, and protests from farmers, among others.

The Co-Chair thanked the Netherlands and opened the floor to questions. A focal point asked whether there were any programs to raise awareness for farmers and farming organisations on alternative fertilizer and water resources. The Netherlands responded that there were. The Vice-chair of the GPNM asked for advice for neighbouring countries to reduce nitrogen emissions and what are the low-hanging fruit for countries that have not started. The Netherlands responded that they have been working with Germany and Belgium and that it is good to engage with organisations of restoration, farmers groups and all relevant stakeholders.

12. Key points from the Romania presentation included:

- a. The initial research phase was challenging due to the difficulty of applying all the different research contexts into a national context. A strong monitoring and implementation plan was developed for the NAPs. Efforts focused on awareness raising, trainings, investments in farm modernization, subsidies, and enforcement measures such as fines.
- b. There is a need for investments, science-based action, knowledge transfer, voluntary guidelines and legal frameworks, public information, and capacity building for institutions. Communication and awareness are key, and huge investments have been made towards these elements.
- c. Investment in communal manure platforms, and equipment of manure management is needed. NAPs impact assessment such as environmental and socio impact assessments are critical and synergies with other actions should be maximized.
- d. Sectoral approaches are important for policymakers, especially collaboration between the Ministry of Environment and the Ministry of Agriculture.

The Co-Chair opened the floor for questions. A focal point asked the imposition of fines on farmers. Romania responded that fines are only levied as penalties for pollution. The Vice-chair of the GPNM asked if there could be binding regulations done and accepted by stakeholders from different sectors. Romania responded that they have the nitrates directive and other regulations and protocols and that the target for ammonia emission is almost reached.

13. Key points from the Trinidad and Tobago presentation included:

- a. Nitrogen management entails divided responsibilities often based on distinguishing between quality and quantity issues. Managing nitrogen requires a holistic approach taking into account the various components which would assist in sustainably managing nitrogen.
- b. Failure to address nitrogen in a coherent way will therefore also impact on the country's ability to achieve the Sustainable Development Goals – as sustainable nitrogen management contributes to 10 Goals.
- c. Lots of effort on resource mobilization, with good projects already ongoing and cross-cutting, including focusing on biodiversity. Trinidad and Tobago would like to receive support to formulate a national action plan from UNEP.
- d. Implementation can capitalize on projects that are already being executed at the national and regional levels such as Integrating Land Water and Ecosystem Management (IWECHO) in Caribbean Small Island Developing States.

The Co-chair thanked Trinidad and Tobago and opened the floor for questions. A Major Group and Stakeholder asked who the target group is to make 30% of the population aware of nitrogen by 2030. Trinidad and Tobago responded that several agencies will be involved in awareness campaigns, conducted at the local level through collaborative efforts.

14. Key points from the Sri Lanka presentation included:

- a. Lots of efforts have been undertaken since UNEA 5.2 such as establishing 4 sub-committees to address various aspects of nitrogen management, as well as awareness raising and capacity building activities. Initiatives have included a first national symposium on sustainable nitrogen management and other workshops aimed at fostering sustainable nitrogen management practices.
- b. Several regulations and strategies have been put in place to: - protect the aquatic environment from nitrogen pollution e.g. Effluent Discharge Standards Gazette Extraordinary No. 2264/17 and Ambient Water Quality Standards Gazette Extraordinary No. 2148/20: - to manage and protect the atmosphere from nitrogen pollution e.g. air emission, fuel and vehicle importation standards, establishing air quality monitoring stations, Vehicle Emissions Testing (VET) programme.
- c. Challenges faced in the pursuit of sustainable nitrogen management include limited government funding, lack of baseline data on different sectors, insufficient awareness, need for technical and financial support for the preparation of national action plans.
- d. Constraints faced by industries related to nitrogen management include evaluation and upgrading of pollution control/ treatments may take considerable time and funding, high cost of emission control systems and installation of emission measurement facilities and wastewater treatment issues in small and medium-scale industries.

The Co-chair thanked Sri Lanka and opened the floor for questions. The Vice-Chair asked what the feedback from the relevant stakeholders is and what is the way forward considering the progress made thus far. Sri Lanka responded that the feedback from the Ministries and other relevant parties has been positive, but further discussion and agreement must be reached on what needs to be done in the short term.

15. Key points from the Germany presentation included:

- a. When it comes to nitrogen, the biggest polluting sector remains agriculture. Germany expects to bring down the emissions of nitrogen to 1 million tonnes per year in 2030, but it is still too much and should be brought down further.
- b. Two essential steps are currently underway in the country: step one- Where and how much do we have to reduce reactive N to protect nature, and step two- What target is politically achievable in an industrialized country like Germany?
- c. The RegioNat project which is running for 21 months will aid in determining how and where at local levels emissions need to be reduced. The project has two objectives: ecological national target and to focus on German districts. An effects-based methodology is utilised.

The Co-chair thanked Germany and opened the floor for questions. The Vice-Chair asked how far they are hoping to go in terms of halving emissions. Germany responded they are yet to define how they can further cut emissions, but expectations are for over 30% by 2030. A Focal Point asked what other issues and political challenges they are facing. They responded that difficulties are due to other issues taking priority and political choices. Another Focal Point pointed out that the seven impact indicators were very different and asked if there were sub-indicators. They were advised to reach out to Markus Geupel who will be at the International Nitrogen Initiative conference in New Delhi, India (February 5-8, 2024).

16. Key points from the United States of America (USA) presentation included:

- a. The need to feed and house a continuously growing population has induced persistent nitrogen pollution; eutrophication and harmful algal blooms have occurred in more than 60% of US estuaries and coastal water bodies and across the globe. Nitrate is one of the most widespread and persistent pollutants in our time.
- b. Our understanding of nitrate dynamics has advanced substantially in the past decades, although its predominant drivers across gradients of climate, land use, and geology have remained elusive. It remains a generational issue in the US.
- c. Lots of effort has been made especially on nitrates. Beyond governments, there are also non-governmental institutions contributing to addressing nitrogen-related matters. Another crucial stakeholder is scientists who can: share resources; exchange ideas and information; study a wide range of crops and growing conditions; reduce duplication of research and extension efforts; develop reliable, consistent recommendations; and share information widely.

The Co-chair thanked USA and opened the floor for questions. The Vice-Chair of GPNM asked to what extent are there enough tools in place to do on-farm juggling that you can count the benefits of the reduced losses and therefore tune inputs accordingly? The USA responded that there are several important tools, i.e., remote sensing and drones to holistically look at farms. Another focal point asked what new genetic crops could offer in this area. The response was yes, they are developing new crops that reduce the nutrient intake. But the most important change would happen with farmers, thus they are designing new fertilizers, super fertilizers, so that the nutrients are not released all at once but spread over time.

Item 5

Improved coordination of policies across the global nitrogen cycle: Potential options and modalities.

17. The Co-Chair briefly went through the background document on Improved Coordination of Policies Across the Global Nitrogen Cycle: Potential Options and Modalities¹. Focal Points were

¹ <https://wedocs.unep.org/handle/20.500.11822/43524>

invited to provide their comments and remarks if any.

18. One of the key points emphasized is the necessity to enhance the integration of science into policy formulation. Modalities and Options should start with the needs presented by the national focal points.
19. The Children and Youth Major Group highlighted the essence of a coordinated Global partnership, a need for capacity building to ensure inclusivity of the future generation in nitrogen management issues and inclusion of vulnerable people in the work of nitrogen management.
20. Furthermore, it was suggested that options and modalities should leverage existing systems and look for intergovernmental cooperation.

Item 6

Summary of the work by the UNEP Working Group on Nitrogen and feedback.

21. The Co-Chair invited the Secretariat to briefly present the report by the Executive Director of UNEP which is to be uploaded on the UNEA website. The report includes, amongst other updates, progress made by the UNEP Working Group on Nitrogen.
22. UNEP gave a brief overview of the advanced unedited version of the report entitled “Progress and Implementation of Resolution 4/14 and Resolution 5/2 on sustainable nitrogen management report of the Executive Director” that was made available in November 2023 on the UNEA- 6 documents website.
23. The report references a summary of the work undertaken by the UNEP Working Group on Nitrogen. UNEP mentioned that the report was due to be finalised on Monday, the 15th of January and thus the Working Group is to update their work by the end of the fifth meeting.
24. The Chair thanked UNEP for their presentation of the draft summary and opened the floor for the Focal Points to give their comments and inputs.
 - a. Focal points pointed out the need for support in the development of National Action Plans should be highlighted in the report. The types of support available that can be provided to Member States should also be indicated.
 - b. The way forward beyond UNEA-6 for the Working Group on Nitrogen should be considered and what can be done to improve the meetings going forward.
 - c. Reference should be made to the challenges faced by the Working Group during its past 5 meetings including the impact of the COVID-19 pandemic.
 - d. Cooperation among relevant stakeholders should be further enhanced, and guidelines on how to manage nitrogen should be developed.
 - e. There is a need for an assessment of nitrogen in all sectors with a focus on resources, capacity building, knowledge-sharing and the challenges faced in this endeavour.
 - f. Inclusion of an appendix from the 4th meeting report in the summary.
 - g. The collaboration between organisations i.e. UNEP and FAO, and the collaboration between GPNM and GWWI should be highlighted.
 - h. The Working Group needs a clear mandate, standard operating procedure and prioritization of the groups’ action plans.
 - i. The role of the GPNM can be spearheaded through training, and all training materials for the partnership and the Working Group need to be standardized.
 - j. A big contributing sector to nitrogen emissions is agriculture. This challenge should be addressed together with UNEP through the NAP, with scientists making propositions on the sustainable use of nutrients.
 - k. It would also be important to have some monitoring framework to track progress across sectors, how to combine them, and how to track the developments around the NAP.
 - l. A platform for sharing experiences from different countries is essential to enhance coordination of policies and regulations.

- m. The Secretariat should inform the Working Group on what data is used on the UNEP Working Group webpage and how to make the best use of the website. Inclusion of various documents in the webpage e.g. nitrogen index document.
25. The Co-chair thanked the Focal Points for their comments and contributions, and the Secretariat incorporated them into the summary report.
26. The Co-chair invited the Chair of the GPNM to give a brief overview on the partnership, progress made since the last meeting and any updates.
27. The Chair of the GPNM thanked the co-chair and gave the following updates.
 - a. During the Steering Committee meeting held on the 18th of December 2023, it was decided that the partnership would put out a public call to broaden membership to both the partnership and the Steering Committee.
 - b. The partnership is looking to appoint a new Chair and Vice-chair, revise elements of the partnership's Charter and revamp the partnership and the GPNM website.
 - c. Focal points were also encouraged to join the partnership. The partnership currently has 130 members and 8 Steering Committee members.

Item 7

Other Matters.

28. The Co-chair invited Riccardo Zennaro, Programme Officer of UNEP to present on the Global Wastewater Initiative (GWWI). Zennaro thanked the Co-Chair and briefed the overview of the GWWI.
29. The GWWI platform began in 2013 and its goal is to change the paradigm around wastewater from waste to valuable resource. It addresses the challenges of wastewater management and sanitation. They have more than 100 members.
30. The partnership works on policy, on-the-ground action, awareness raising, private sector engagement and technology. The challenges faced in the wastewater domain are very similar to those experienced in the nutrient's domain.
31. The way forward for the partnership in 2024-2025 was also highlighted and included addressing wastewater and nutrient pollution in Sabah, Malaysia.
32. The Co-chair thanked Riccardo and opened the floor for discussion of other matters. No further matters were raised.

Item 8

Closure of the Meeting.

33. The Co-Chair thanked the focal points for their participation and UNEP for their work in preparation of the meeting.
34. The Co-Chair reminded the participants that the summary report of the meeting would be uploaded on the meeting webpage along with the presentations from countries that presented during the National Action Plan session (Agenda Item 5).
35. The Co-Chair closed the fifth meeting of the UNEP Working Group on Nitrogen.

Annex**List of Focal Points in attendance (in person or online):**

Argentina
Australia
Austria
Bahrain
Benin
Botswana
Burkina Faso
Canada
Cambodia
Chile
China
Colombia
DR Congo
Eritrea
Ethiopia
Egypt
El Salvador
Gabon
Georgia
Germany
India
Iran (Islamic Republic of)
Italy
Japan
Kyrgyzstan
Libya
Madagascar
Malawi
Maldives
Mauritius
Mozambique
Netherlands
Palestine (state of)
Panama
Peru
Philippines
Romania
Rwanda
Senegal
Somalia
South Africa
Sri Lanka
Thailand
Trinidad and Tobago
Türkiye
United States of America