

NUTRIENTS: For food or pollution? The choice is ours!

Report of the Side Event organized by the
Global Partnership on Nutrient Management (GPNM)
during the Rio+20 Summit in Rio de Janeiro, Brazil

Session organized with financial support from



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UNEP as the Secretariat of the Global Partnership on Nutrient Management (GPNM) organized this side event during the Rio+20 Summit in Rio de Janeiro, Brazil. The event took place on 17 June 2012 from 10:00 to 12:00 hours at the Banco de CAIXA - Almirante Barroso Auditorium.

The session was organized, firstly, to provide an overview of the main issues concerned with nutrient management, with specific attention to nitrogen and phosphorus. This included reflecting on the nature of the challenge (i.e., benefits versus threats), listing the key threats, the current practices and policies, identification of the future needs (e.g. scientific assessment, global and regional policies). This event also aimed to promote informed dialogues among various stakeholders on the role of nutrient management in sustainable agricultural and food production by providing information, and pointing policy makers and practitioners to good practices, training opportunities and the possibilities for action.

Key messages that were presented during the Session

Too much nitrogen (N) and phosphorus (P) represent major environmental threats that cut across all global change challenges. At the same time, other parts of the world have insufficient access to these nutrients.

There is no current intergovernmental process that handles the full challenge of too much or too few nutrients: a stronger, better-coordinated approach is needed.

A pragmatic way forward would be to extend the mandate of the GPA, which currently has a marine focus, allowing it to spearhead an integrated approach for the management of global N and P cycles (including air, land and water), in partnership with other international processes.

A global nitrogen/nutrient assessment is needed. While scientific evidence of fundamental understanding and threats should be included, the focus must be to address the opportunities, constraints to, and benefits of improved nutrient management, including refinement of an agreed set of nutrient indicators.

Formal extension of the GPA mandate offers the opportunity to re-launch this initiative, including a review of its name to improve its resonance with global society.

Main contents and highlights of the Session

The side event witnessed strong representation from the key stakeholders including International Plant Nutrition Institute (IPNI), International Fertilizer Industry Association (IFA), Government of the Netherlands, International Nitrogen Initiative (INI), Centre for Ecology and Hydrology, National Environment Research Council of UK, Global Environment and Technology Foundation (GETF), United Nations Development Programme (UNDP), International Oceanographic Commission of the UNESCO (IOC/UNESCO), United Nations Environment Programme (UNEP) and others.

Mr. Vincent Sweeney Coordinator, UNEP Coordination Office of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (UNEP/GPA) chaired the session, and with Prof. Mark Sutton, jointly moderated the discussion.

Prof. Joseph Alcamo, UNEP Chief Scientist outlined 5 key assertions about the nutrient challenge:

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| Assertion 1 | There is too much of Nitrogen and Phosphorus around |
| Assertion 2 | Nitrogen contamination has become a systemic problem |
| Assertion 3 | Solutions, yes, but fertilizer is a development issue |
| Assertion 4 | There are new ecological solutions |
| Assertion 5 | Progress on nutrients requires a broad partnership of interests |

On this basis he introduced the session, highlighting the UNEP vision for the importance of the nutrient challenge, emphasizing why a joined-up approach is essential.

Prof Mark Sutton reported outcomes of the Global Overview on Nutrient Management, as described in the summary report provided - “Our Nutrient World: The challenge to produce more food and energy with less pollution -Key messages for Rio+20” (Summary report attached as Annex). He emphasised on the importance of improving “full chain nutrient use efficiency” including optimizing human consumption patterns, as a means to reduce nutrient pollution threats, and the organizational challenge for the world to manage nitrogen and phosphorus in a joined up way. He highlighted that there is currently no global intergovernmental process that fully addresses the nutrient challenge, raising the question: Could the mandate of the GPA be extended and strengthened to include the co-benefits of improved nutrient management for air pollution, climate change and biodiversity, to provide this integrated perspective? Or is a more radical change necessary to form a new body?

After the two key presentations made by Prof. Alcamo and Prof. Sutton, the Panel members were requested to make their interventions and respond to the challenges outlined.

The following panelists spoke:

Dr. Wendy Watson-Wright (IOC/UNESCO Executive Secretary) recognized the essential role of nutrients to ensure food security, while noting the importance of the work of the GPA in reducing the impacts of eutrophication including on hypoxia and fisheries. While these represent key threats in the marine environment, she recognized that it is obvious that a joined-up approach to nutrient management is needed and will have substantial benefits. Such a wide perspective must also include consideration of human population and consumption patterns. For indicators she highlighted that simple approaches are needed, while recognizing that these have limitations. She highlighted that scientific evidence was needed on the relative role of point and non-point sources of nutrients in order to direct future efforts.

Dr. Kilaparti Ramakrishna (Chairperson International Nitrogen Initiative and Director UNESCAP Sub-regional Office for East and North-East Asia, Republic of Korea) highlighted the long term role of the INI in developing a focus on nitrogen, including both the benefits of N use and its threats on a range of environmental problems. He emphasized that future coordination must work with a broad range of stakeholders if better management of the problem should be achieved.

Ms. Ir. A.J.M. Lardinois (Head International Division, Directorate for International Affairs Ministry of Infrastructure and Environment, Government of the Netherlands) highlighted the long-term commitment of the Netherlands to addressing the nitrogen challenge. She emphasized how the complexity of the problem pointed to the need to develop partnerships to make progress in reducing the threats, including national partnerships between sectors. Ms. Lardinois emphasized the relevance of the nutrient challenge to the International Resource Panel (IRP).

Dr. Andrew Hudson (Head, UNDP Water & Ocean Governance Programme, and Coordinator, UN-Oceans) outlined a case study of management of nutrients in the Danube and other rivers flowing into the Black Sea. He explained how a combined investment by the Global Environment Facility and other stakeholders over the last decade had led to improved practices including both point sources and diffuse sources, leading to a reduction in nitrogen and phosphorus loads and an improvement in water quality of the Black Sea.

Mr. Clayton Vargas (Market Development and Innovation Manager, Yara Brazil, representing the International Fertilizer Industry Association) explained developments being encouraged for fertilizer best management practices, including emphasizing of the 4Rs (the 'right nutrient', at the 'right time', in the 'right place' and at the 'right rate'). He made it clear that the industry encouraged responsible use of fertilizers to maximize their benefit for food security, while minimizing the possible adverse environmental impacts, highlighting the benefit of public-private partnerships.

The participants of the session also made their interventions, and the points raised by them that among others merit attention are:

- the need to make fertilizer use more efficient through better management.
- the potential benefits and challenges of financial measures, such as cap-and-trade or nitrogen taxes to encourage better management practices by enhancing the value of nutrients where current prices do not reflect the full environmental costs.
- the recognition that the oil prices increase and consequent fertilizer price increase of 2007-2008 led to many farmers adopting improved management practices to recycle manures.
- consideration that a strategy for nutrient management should focus on identifying a short list of key measures around which consensus can develop, both for action and communication.
- the need to improve not only 'nutrient use efficiency', but also 'knowledge use efficiency': how can ways be found to transfer knowledge more effectively.
- the need to incorporate approaches to reduce food waste both in the supply chain and by consumers, so as to produce more useable food with less pollution
- the identification of "no-regret" based policies and the need to develop further case studies.
- the need for partnerships with other conventions, such as the Convention on Biological Diversity, with reference to 2011-2020 Aichi Target 8, which calls for action to reduce pollution, including from excess nutrients, to levels that are not detrimental to ecosystem function and biodiversity, and the sustainable development goals.

Conclusions

The session agreed that in many areas of the world there is too much N and P in circulation and that N has become a systemic problem. There are many solutions available, but the complexity of the problem requires wide partnership to make progress.

The session noted that there is no current intergovernmental process that addresses the full complexity of the nutrient challenge, embracing the benefits of N and P use for food and energy security, and the collective threats on water, air and soil quality, climate balance and biodiversity. The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) was recognized as having made a start, including through the establishment of the Global Partnership on Nutrient Management (GPNM). However the GPA has a mainly marine focus. The Session asked if development of the GPA was the right approach or whether a more radical change to international processes was needed to address the global nutrient challenge?

The general sense was that a strengthening and extending of the GPA mandate was the right approach. This would build on the existing strengths of the GPA, avoiding to multiply international

conventions, while offering the opportunity for joined-up management of nutrient cycles to deliver simultaneous improvements in the marine, freshwater, atmospheric and terrestrial environment. The new strengthened body should show how the achievement of targets for better management of nitrogen and phosphorus from all sources would deliver quantified co-benefits for other environmental threats, including air quality (especially ammonia and particulate matter), greenhouse gas emission (e.g., nitrous oxide), biodiversity (reduction in atmospheric N deposition), soils (acidification and nutrient depletion), and freshwater water quality.

On the basis of these conclusions, a submission should be prepared for the Committee of Permanent Representatives and the UNEP Governing Council, to extend and strengthen the mandate of the GPA to take a lead on global management of nutrients, fostering a joined-up perspective that can offer simultaneous quantified benefits for other policy processes.

One of the key actions needed is the establishment of a global scientific assessment of nitrogen and phosphorus. It remains an open question whether the priority is for global nitrogen assessment (GNA), given its systemic, multi-sectors interactions, or for nutrients as a whole, including phosphorus. However, it was agreed by the session participants that, while scientific evidence on the nature of the threats is needed, the main focus of the assessment must be on development of the solutions, including refinement of indicators of progress and improving understanding on the barriers to change.

More work is still needed to agree the authorization route for GNA. It is possible that this might be jointly authorized by a strengthened GPA together with the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), the Intergovernmental Panel on Climate Change (IPCC) and the International Resources Panel (IRP).

The strengthening and extension of GPA provides an opportunity to re-launch the initiative with an updated name. Such a change would reflect that many stakeholders had commented that the present name is difficult to communicate with a wider audience. Options for re-launch of the strengthened initiative should maximize the opportunity to improve its resonance with wider society.

The Session closed with a showing of a 4-minute video prepared as a communication tool for the European Nitrogen Assessment (<http://www.youtube.com/watch?v=uuwN6qxM7BU>).