Sustainable Nutrient Management

Global Perspectives and Context

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"Every year, an estimated US$200 billion worth of reactive nitrogen is now lost into the environment, where it degrades our soils, pollutes our air and triggers the spread of “dead zones” in our waterways."

Joyce Msuya
Acting Executive Director
United Nations Environment Programme

The Nitrogen Fix:
From nitrogen cycle pollution to nitrogen circular economy

The global nitrogen challenge

The US$20 billion highlighted the importance of reactive nitrogen in the environment. The consequences are sobering. This is not just because of its magnitude and complexity of nitrogen pollution, but also because of its progress has been made in reducing it. If we do not act, it will continue to pollute nitrogen pollution that contributes significantly to climate change, acidification, eutrophication of lakes and oceans, and the degradation of habitats and ecosystems. Yet there is a silver lining. The positive feedback loop that has driven nitrogen pollution. These include new thinking on both consumption and production in order to seriously address the nitrogen problem.

Nitrogen is an essential element in the nitrogen cycle, which is the exchange of nitrogen between the atmosphere and living organisms. The cycle helps to keep nitrogen in the environment, allowing plants and animals to grow and reproduce. However, human activities, such as burning fossil fuels and industrial processes, have caused a significant increase in the amount of nitrogen in the atmosphere. This has led to a phenomenon called "nitrogen overload," which can have negative effects on human health, food security, and the environment.

Data need & concepts

Improved management practices, Mitigation, Adaptation

C1: Tools and methods for understanding the N cycle

C2: Global & regional quantification of N use, flows, impacts & benefits of improved practices

C3: Regional demonstration & verification

C4: Awareness raising & knowledge sharing

Informing modelling requirements

Options & Scenarios, including Cost-Benefit Analysis

Policy homes, Public awareness, Consensus building,
Better basis for transformational change

Opportunities, Local/region priorities, Policy context, Local data, Barriers-to-change
Laguna de Bay
2013 Ecosystem Health Report Card

Chilika Lake
2014 Ecosystem Health Report Card

2013 Laguna de Bay ecosystem health report card
Development and application of the final source-impact models for Manila Bay in developing nutrient reduction strategies.
Dissolved inorganic nitrogen input from watersheds to coastal areas in five sub-regions (in 2000). Data sources: Sub-regions and DIN values (UNEP-CEP - 2000), Drainage area (HydroBASINS - 2018), Rivers (Natural Earth - 2019), Land (GSHHG - 2013).
Global Nitrogen Campaign Launch
Colombo, Sri Lanka
23-24 October 2019
“Nitrogen for Life - Everywhere and Invisible”
Halve Nitrogen Waste by 2030

- Colombo Declaration on Sustainable Nitrogen Management adopted
- Multi-Actor Dialogue: Science-Policy-Political (250 participants, 30 countries)
- Nitro Concert (over 1,400 participants for inaugural session)
- Campaign Communication Strategy and Marketing Strategy (under development)
Intergovernmental Working Group on Nitrogen Management

AFRICA (7)
- Benin
- Eswatini
- Seychelles
- Sudan
- Uganda (2)
- Madagascar
- South Africa

ASIA PACIFIC (11)
- Bhutan
- Fiji
- Kyrgyz Republic
- Lao PDR
- Myanmar
- Pakistan
- Sri Lanka
- New Zealand
- Iran Republic
- India
- China

LATIN AMERICA & CARIBBEAN (6)
- Brazil
- Chile
- Paraguay
- Haiti
- Guatemala
- Mexico (3)

WEST ASIA (3)
- Oman
- Turkey
- Cyprus

EUROPE (9)
- Croatia
- Romania (3)
- Albania
- Belgium
- Germany
- Sweden (2)
- Spain
- Hungary
- Poland (2)

N. AMERICA (1)
- United States
Inter-convention Nitrogen Coordination Mechanism

UNEP Frontiers
Opportunities

UN Ocean Conference
Lisbon, Portugal

2021-2030 United Nations Decade of Ocean Science for Sustainable Development

Nitrogen is everywhere, yet invisible, across the UN Sustainable Development Goals (SDGs).
Thank you for your attention!

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