The Global Partnership on Nutrient Management (GPNM)

…a global forum for advancing member science-based nutrient management policies and practices

The Nutrient Management Challenge

Nutrients – such as nitrogen, phosphorus and other micro-nutrients are essential for plant growth, food production and ultimately adequate nutrition for humans. Nutrients if properly used and managed enhance soil fertility and contribute to food and nutrition security of the world population. However, when improperly managed, they can be associated with a number of adverse effects on soil health, human health and the wider environment.

Access to and use of nutrients in the form of fertilizer across the globe is not uniform. In some parts of the world, there is overuse of fertilizer while in other parts, particularly in Africa, some farmers do not have access to enough nutrients to grow crops and feed the growing population. Both situations –"too much or too little" - can lead to numerous problems. Limited use of fertilizers in Africa has contributed to the decline in soil fertility through the depletion of nutrients, loss of soil organic matter, very low crop yield, food insecurity and soil erosion. Meanwhile unbalanced and/or over application of fertilizers has resulted in several unintended consequences, such as air pollution, increased greenhouse gas emission leading to climate change, and creation of dead zones (eutrophication) in the oceans and thus undermining the important ecosystems and the services and livelihoods they support. Scientific evidence conclusively shows that coastal hypoxia is caused by eutrophication - that is, the overloading of waters with nutrients, especially nitrogen, phosphorous and silicon and/or organic matter. Furthermore, the hypoxic areas also emit the most potent greenhouse gases, especially nitrous oxide and methane.

The result of this is a seeming divide between societal needs for food and energy and a complex web of adverse environmental impacts. This divide, 'the nutrient challenge', is set to intensify, to the cost of countries, as demand for food and energy increases.

The GPNM responds to this 'Nutrient Challenge

The GPNM - a global partnership of governments, industry, science community, NGOs, UN agencies and various international and regional organizations, has been launched to address this challenge (for details on list of partners and GPNM activities detail see www.unep.org/gpa). UNEP/GPA Coordination Office is the Secretariat of the GPNM.

The Partnership recognized the need for strategic advocacy and co-operation at the global level in order to communicate and trigger productive discussion not only on the complexity of the nutrient challenge but also on the opportunities for cost effective policy and investment interventions by countries. The GPNM, among others, aims to enhance the capacities of various stakeholders to design and implement effective management policies in order to address the growing global problem of nutrient over-enrichment.

The GPNM is built on the principle that concerns, opportunities and actions related to nutrients must be embedded into the work of many agencies and fora. It focuses on communicating the challenges of managing nutrients - from food security to dead zones in the world's oceans - and to elucidate how integrated assessment, best practices and the engagement of stakeholders can facilitate more sustainable production and use of nutrients. GPNM provides the space where governments, policy makers and other stakeholders can meet and engage in dialogues to forge more co-operative work across various international and regional fora and agencies addressing nutrients.

The key question is: 'How to promote effective nutrient management, which minimizes negative impacts on the environment and human health, while maximizing the contribution to global food security, poverty reduction and sustainable development'?

Governments' commitment and response to address the challenge

GLOC2: GPNM partners attending the Second Global Conference on Land-Ocean Connections in 2013 have been involved in the discussions on a possible nutrient goal, in the context of the Post-2015 Sustainable Development Goals through various channels. This work has contributed to the ongoing debate at capitals and within the UN-system, which will eventually lead to a set of Goals negotiated by member countries.

Global Forum for Food and Agriculture (GFFA2012): The Agriculture Ministers from 65 States assembled at the GFFA2012 recognized and agreed that their core task is to develop an efficient, adaptable and resilient agricultural sector which builds on three fundamental and equal pillars: diversity, sustainability and productivity. They clearly articulated that sustainable farming must be economically sound, ecologically compatible and socially responsible. They also recognized the range of values provided by ecosystems as a basis for the sustainable use of resources; and committed, among others, to work towards reduction of soil degradation; maintain soil fertility and productivity by sustainable management and reduce the loss of agricultural land.

Rio+20 Summit: The global leaders attending the Rio+20 Summit in the conference outcome document noted "with concern that the health of oceans and marine biodiversity are negatively affected by marine pollution, including … nitrogen-based compounds, from a number of marine and land-based sources… and committed to take action to reduce the incidence and impacts of such pollution on marine ecosystems, including through the effective implementation of relevant conventions….". They also reiterated their commitment to promote, enhance and support more sustainable agriculture, and recognized "the need to maintain natural ecological processes that support food production systems".

GPA/IGR-3: The 64 governments and the European Commission attending the third Intergovernmental Review meeting of the GPA (2012) called for further development of the GPNM and associated regional and national stakeholder partnerships. They committed to engage themselves and step up their efforts to develop guidance, strategies or policies on the sustainable use of nutrients so as to improve nutrient use efficiency with attendant economic benefits for all stakeholders, including farmers, and to mitigate negative environmental impacts through the development and implementation of national goals and plans as necessary.

These examples are clear testimony of the fact that the Governments are fully committed to ensure food security and maintaining the ecological foundation of our agricultural system. Nutrient management is a pivotal area of action.

GPNM Products: The report **"Foundations for Sustainable Nutrient Management"**, scopes out what is important and what works, and recommends four main cornerstones focused on: 1) building a shared interest and agenda among and within countries; 2) engaging stakeholders and forming partnerships; 3) communicating and mainstreaming best practice tools, and 4) promoting integrated approaches in order to guide cost effective decision making. It concludes by charting how strategic action by countries that builds on these corner stones can lead to effective nutrient management, and elucidates the benefits this brings.

Meanwhile **"Our Nutrient World: the challenge to produce more food and energy with less pollution"** provides a global overview of the nutrient management practices and policies with their consequent impacts on human wellbeing and natural environment. The report concludes with a clear message that humanity benefits from nutrients but the current production and use of nutrients must change.

Key facts that help to illustrate the challenge

- Human activities produce around 120 million tonnes of reactive nitrogen each year. Nearly two thirds of this ends up polluting air, water, soil, marine and coastal areas, and adds harmful gases to the atmosphere.
- Some 20 million tonnes of phosphorous are mined every year and nearly half of this - 8 times the natural rate of input - enters the world's oceans.
- One half of the world's population is now thought to depend on nitrogen and phosphorous fertilisers for producing their food. Much of the fertiliser is not used by the crops.
- Over 500 coastal areas are impacted by eutrophication caused by excess nutrients worldwide. These areas now threaten critical ecological and climate goods and services in most large marine.
- Nitrous oxide is a powerful greenhouse gas –estimated to be responsible on current levels for about 11% of the net anthropogenic global warming potential from such gases.

For more information on GPNM and partnership opportunities, please contact:

Christopher Cox
Programme Officer, GPA
Freshwater and Marine Ecosystems Branch (FMEB)
Division of Environmental Policy Implementation (DEPI)
UNEP, UN-Gigiri,
P.O. Box 30552,
00100 Nairobi, Kenya
Phone: +254-20 762 4052
christopher.cox@unep.org
www.unep.org/gpa
www.nutrientchallenge.org

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