



### ***GPNM Action Plan: 2015 -2016***

Major recent global events (e.g., GPA/IGR-3, Rio+20 etc), recognized the adverse impact of present (mis)use of nutrients and called for development of strategies and policies to promote sustainable use of nutrients and demonstrate attendant economic benefits for all stakeholders. The “Our Nutrient World” report clearly demonstrated that nutrients represent a nexus that unites many of our concerns, and improved management of nutrients would simultaneously make quantified contributions toward meeting existing global commitments for improving/protecting water, air, soil, climate and biodiversity, with consequent contribution to food and energy security, and net social and economic benefits.

In view of the above, GPNM will continue its advocacy and consensus building role in 2015 and 2016, and work with stakeholders to create a policy forum which could further stimulate discussions and assessment of scientific evidence. It will make use of these discussions and assessments in order to try and reach an inter-governmental agreement which would support global actions towards sustainable nutrient management. Some areas of immediate actions envisaged for GPNM to lead and/or facilitate are:

- Building knowledge through sharing of lessons learned to assist governments and other stakeholders in the analyses of policies, development of business models and choice of technological options for sustainable production and use of nutrients
- Creation/development of a global knowledge-base on policy experiences and ways to adapt such experiences to specific national circumstances and make it available to all stakeholders through the web
- Promotion of activities that raise awareness and dissemination of information for enhancing capabilities of partners
- Facilitation and/or development of new approaches and projects to complement governments’ efforts to reform/develop policy frameworks as a necessary foundation for sustainable nutrient management
- Offer opportunities to develop networks among the members in order to establish and strengthen a community of practice
- Develop indicators to assess progress towards globally agreed targets (e.g., Aichi target 8, GPA/IGR-3 Manila Declaration, Rio+20 outcomes etc.)
- Setting of region/nation specific targets on NUE, nutrient load into coastal waters, nutrient and biodiversity (e.g. Aichi target 8)
- Secure commitments from stakeholders on regular reporting on the progress towards NUE and publish periodic reports on progress
- Holding of periodic meetings of partners to share experiences and define agenda for action
- Identification, review and compilation of best nutrient management practices (covering cost-effective and sustainable technology and policy options) under different socio-political settings and dissemination of them through web and face-to-face meetings/workshops
- Development of a “policy toolbox” related to managing nutrient impacts from key source/sectors, to support national actions, especially development of nutrient reduction

strategies, and designing of training module and associated curriculum to disseminate the key contents, targeting resource managers and policy makers

- Production of policy briefs, information documents and case studies to promote sustainable nutrient management.
- Facilitation of dialogues for policy reform in support of technological and management innovation to promote nutrient use efficiency
- Facilitation and design of cost-effective on-the-ground interventions reflecting interests of the partners
- Development of eXtension training programme and facilitation of exchange of scientific data, methodologies and research applications among various stakeholders to support national/country-level research and extending the BMPs to the small holder farmers through eXtension, outreach and technology transfer.

The Secretariat will seek to set in motion effective policy dialogues complemented by developing partnerships and stakeholder engagement that can lead to strategic action by countries for effective nutrient management while supporting actions that demonstrate the benefits.

In summary, the GPNM Secretariat has programmed two distinct but complementary sets of activities envisaged to support this Action Plan:

I) GPNM will support its members' work in a way that maximizes the contribution of nutrient management to global development, food security and a low carbon society. The primary focus will be to build consensus to promote nutrient use efficiency and facilitate on-the-ground actions to this effect.

II) The GPNM Secretariat will continue to support implementation of the current GEF funded Global Nutrient Cycle project, which is halfway in its implementation phase and due for completion in 2016. Furthermore, the Secretariat will help facilitate the project preparatory phase to develop the full project "Targeted Research for improving understanding of the Global Nitrogen Cycle towards the establishment of an International Nitrogen Management System (INMS)", which has received GEF approval and has secured a project preparatory grant of USD 150,000 from the GEF Secretariat.

The core activity/ components planned for the period 2015 – 2016 are outlined under the following four headings: (1) Knowledge Generation, (2) Extension and Technical Services, (3) Outreach and Advocacy, and (4) Partnership and Network Development.

#### 1. Knowledge generation

A number of tools have been developed in recent years to increase awareness of the nitrogen issue by decision makers and the general public, as well as to educate farmers and others in the agricultural sector on better nutrient management. These include the N-Calculator, a 'nitrogen footprint' model, N-Sink, a simple geo-spatial tool designed for watershed managers, and N-Visualisation, a tool with animations that helps users understand the effects of different measures on the environment, economies and land use. The GPNM Secretariat will facilitate a process to synthesise this knowledge as well as case studies of policy initiatives by national governments (e.g., Nutrient based subsidy of India,

banning of phosphorus in detergent in Jamaica) and make it available to governments and other stakeholders by:

- Building knowledge through sharing of lessons learned to assist governments and other stakeholders in the analyses of policies, development of business models and choice of technological options for sustainable production and use of nutrients;
- Developing a global knowledge-base on policy experiences and ways to adapt such experiences to specific national circumstances and making it available to all stakeholders through the web;
- Drafting of policy documents that promote the availability of methods to improve nutrient use efficiency;
- Drafting of a guidance document on sustainable nutrient management at farm level, based on the review of Best Management Practices (BMPs) under different socio-economic and ecological settings;
- Identifying key research needs that would fill gaps in knowledge and foster/strengthen integrated assessment and analysis in order to generate new knowledge; and
- Supporting the development of indicators to assess progress towards globally agreed targets (e.g., CBD Aichi target 8, GPA/IGR-3 Manila Declaration, Rio+20 outcomes etc.).

## 2. Extension and technical services

Nutrient best management practices (BMPs) are designed to maximize the benefits of using nutrients and to minimize the negative impacts of their misuse or over-use. To date, most focus has been put on BMPs for mineral fertilizers, while there remains a major challenge to further develop and mainstream BMPs for livestock manures, sewage and other nutrient sources.

There is considerable scope for farmers to improve the efficiency of their nutrient management. For example, in Europe with the passing of the 1991 European Union (EU) Nitrates Directive, several European states such as Denmark and the Netherlands have demonstrated management practices with considerable economic and environmental benefits through reduced nitrogen pollution. However, a key barrier to improve nutrient use efficiency is the existence of fertilizer subsidies in many countries. Such subsidies can mean that there is reduced motivation for good nutrient stewardship, including effective recycling of all nutrient resources (including manures). Furthermore, existing education and extension services often focus on increasing production through fertilizer use, rather than on applying fertilizer (and other nutrient resources) more efficiently and making both economic and environmental gains.

In working with the GPNM partners, the Secretariat will seek to meet its aims by:

- Facilitating the development of new approaches and projects to complement governments' efforts to reform/develop policy frameworks as a necessary foundation for sustainable nutrient management;
- Helping governments and regional bodies in setting of national and region specific targets on nutrient use efficiency (NUE), assessing nutrient load into coastal waters, and nutrient load induced changes in the biodiversity (e.g. CBD Aichi target 8);

- Working to secure commitments from stakeholders on regular reporting on the progress towards goals for improved NUE and publishing periodic reports on progress;
- Developing and strengthening web-based tools to disseminate knowledge and experiences to support stakeholders action on the ground;
- Supporting the development of a “policy toolbox” related to managing nutrient impacts from key sources/sectors, in order to support national actions, especially development of nutrient reduction strategies;
- Facilitating the design of a training module and associated curriculum to disseminate the key contents of the “policy toolbox”, targeting resource managers and policy makers;
- Supporting the development and facilitation of eXtension (electronic extension) training programmes for farmers;
- Facilitating the design of cost-effective on-the-ground interventions, reflecting the interests of the partners
- Facilitating the exchange of scientific data, methodologies and research applications among various stakeholders to support national/country-level research and extending the BMPs to farmers through eXtension, outreach and technology transfer; and
- Promoting activities that raise awareness and disseminating of information for enhancing capabilities of partners.

### 3. Outreach and advocacy

Improving NUE is one of the most cost-effective strategies for reducing nutrient losses to the environment from agricultural sources and raising farm income. However, it is important to recognise that there are large variations in farm types and sizes, climatic conditions, soils and other factors. The project, through the network of partners, aims to develop adequate and appropriate guidelines, educational programmes, independent extension services and dedicated outreach and advocacy services throughout the world, with activities such as:

- Offering opportunities to develop networks among the members to establish and strengthen communities of practice;
- Identifying, reviewing and compiling nutrient BMPs (covering cost-effective and sustainable technology and policy options) under different socio-political settings and disseminating them through web and face-to-face meetings/workshops;
- Producing policy briefs, information documents and case studies to inform relevant stakeholders of the rationale and benefits of improving NUE and galvanize concerted actions to promote sustainable nutrient management; and
- Holding of special sessions/side events on nutrient related issues at global and regional meetings of relevance.

### 4. Partnership and network development

Our knowledge of the nutrient challenge has improved in the last decade, along with our ability to quantify the sources, fate and impacts of nitrogen in the environment (see Our Nutrient World).

However, because of the complexity of the nutrient challenge and the different scales involved (from local to global), there is an urgent need to develop joined-up approaches that take into account the multiple impacts of current nutrient management practices, for example, the production and consumption of food and energy, as well as the risks to ecosystems, biodiversity, the climate and human health. The GPNM therefore proposes to focus its activities to improve scientific understanding and use the science to define technological and management measures which will improve nutrient use efficiency and reduce nutrients losses into the environment. Activities envisaged are:

- Holding of periodic meetings of partners at global and regional levels to share experiences and developing the agenda for action;
- Facilitation of dialogues and exchange of experiences among policy makers and other relevant stakeholders for policy reform in support of technological and management innovation to promote nutrient use efficiency.

Development and implementation of projects with support from GEF and other partners will also form part of the Action Plan as follows:

1. Support implementation of the current UNEP/GEF Global Nutrient Cycle project. This would entail:
  - Finalization of the quantitative modeling to estimate and map present day contributions of different watershed based nutrient sources to coastal nutrient loading and their effects; to indicate when nutrient over-enrichment problem areas are likely to occur; and to estimate the magnitude of expected effects of further nutrient loading on coastal systems under a range of scenarios;
  - Synthesizing available scientific, technological and policy options for managing nutrient over-enrichment impacts in the coastal zone from key nutrient source sectors such as agriculture, wastewater and aquaculture, and their bringing together in an overall Policy Tool Box;
  - Testing and application of the model and tool box in the Manila Bay watershed with a view to development of stakeholder owned, cost-effective and policy relevant nutrient reduction strategies (containing relevant stress reduction and environmental quality indicators), which can be mainstreamed into broader planning;
  - Replication of the 'Ecosystem Health Report Card' approach in the Laguna de Bay, the Philippines, drawing from the experience gained in the Chilika Lake of India;
  - Training of regional and national scientists/policy experts in source impact modeling and use of the policy tool box;
  - Production of briefing notes summarizing the model's results, analyses and training outcomes tailored to assist policy making;
  - Continuation of support to GPNM in order to provide a necessary stimulus and framework for the effective development, replication, up-scaling and sharing of these key outcomes; and

- Facilitation of the Final Evaluation of the project.

2. Assist the development of a full project document “**Targeted Research for improving understanding of the Global Nitrogen Cycle and demonstration of an International Nitrogen Management System**” with inputs from various stakeholders for submission to GEF Secretariat in order to initiate project execution. The project is expected to receive USD 6 million from the GEF. This project has been prepared under the lead of the International Nitrogen Initiative, a key partner of the GPNM. Through the efforts to date, the project concept has received expressions of interest from over 50 agencies and institutions to support this project with co-financing over USD 35 million (details to be finalized during the PPG phase). Activities during the PPG phase will include:

- Working with partners to refine the project time-line and help secure partners’ commitment;
- Finalizing the institutional arrangements for project implementation;
- Finalizing and signing of the cooperative agreement with the project Execution Agency;
- Working with the partners including meeting to refine the scope, objectives and key activities of the project, as well as budget allocation;
- Working with the partners who will draft the final project document for submission to the GEF Secretariat;
- Meeting with partners to validate the project document, detailed budget, commitment for co-financing, institutional arrangement for project implementation etc.;
- Securing of UNEP’s approval of the final project document for submission to the GEF Secretariat.

3. Support to SACEP/SAS to implement the regional collaborative project “Controlling Nutrient Loading and Eutrophication of Coastal Waters of the South Asian Seas Region”. The inter-governmental meeting of South Asia Cooperative Environment Programme (SACEP)/ South Asian Seas (SAS) held in December 2013 endorsed this project. SACEP has mobilized initial core funding to carry out an overview study in order to identify the sources of nutrients that end up in the coastal waters and for development of a regional action plan as well as establishment of a regional policy forum to monitor progress in the implementation of the action plan. Several of the GPNM Asia Platform members are involved in the execution of this project, while the GPNM Secretariat will continue to provide advisory services to SACEP/SAS with regards to this project as well as its other relevant programmes.

4. Addressing nutrient loading into the Caribbean Sea. In cooperation with the Caribbean Environment Programme, Regional Coordinating Unit (CAR/RCU) and the Caribbean Regional Fund for Wastewater Management (CRew) project, the GPNM Secretariat plans to design a project to address nutrient loading into coastal waters due to poor agricultural practices, nutrient loads due to discharge of untreated wastewater and nutrient run-off from tourist facilities, especially golf courses. The details of this project will be worked out in consultation with CAR/RCU, in order to align the project activities with the activities that are implemented in compliance with the Land-Based Sources of Marine Pollution (LBS) Protocol to the Cartagena Convention and the work plan of the GPNM Caribbean Platform. It may be noted that CAR/RCU has put in place a robust monitoring programme and is collecting data on nitrogen and phosphorous discharge into the marine environment from industrial and domestic sources. The GPNM Secretariat, through its network, will assist CAR/RCU in analyzing the data to draft information

and policy briefs as inputs for developing region-specific tools and guidelines for sustainable nutrient management, as well as recovery of nutrients from wastewater. The project will be implemented through the GPNM Caribbean Regional Platform.

These regional actions will allow stronger development of the GPNM as a multi-stakeholder partnership to raise awareness on the links between fertilizer, manure and pesticide use, and the varied impacts of nutrients on human health, and environment including creation of harmful algal blooms and hypoxic 'dead zones'. They will also strengthen the basis to secure commitments of regional partners in devising policy options and practical solutions for sustainable management of nutrients.

The GPNM Secretariat, with support from the GPA's Wastewater Management project will also support the promotion of recovery of phosphorous from wastewater (sewage), which is essential for agriculture in the light of long term risks for future phosphate reserves and resources. Wastewater treatment offers one of the best opportunities to recycle this nutrient. By promoting recovery of nutrients from wastewater, the GPNM Secretariat will be able to make a contribution to broader UN efforts on achieving sustainable sanitation goals.