



Global Partnership on Nutrient Management (GPNM) Proceedings of the 11th Steering Committee – GNC Project Close- out meeting

April 26, 2019

Overview

The **Global Partnership on Nutrient Management (GPNM)** was launched in 2009 to address the global challenges faced by the mismanagement of nutrients and nutrient over-enrichment. It is a global partnership of governments, scientists, policy makers, private sector, NGOs and international organizations. It responds to the 'nutrient challenge' – how to reduce the amount of excess nutrients in the global environment consistent with global development. The GPNM reflects a need for strategic, global advocacy to trigger governments and stakeholders in moving towards more efficient and effective nitrogen and phosphorous use and lower losses associated with human activities. It provides a platform for governments, UN agencies, scientists and the private sector to forge a common agenda, mainstreaming best practices and integrated assessments, so that policy and investment responses/options are effectively 'nutrient proofed'. The GPNM also provides a space where countries and other stakeholders can forge more co-operative work across the variety of international and regional fora and agencies dealing with nutrients, including the importance of impact assessment work. The work of the GPNM is advanced by a Steering Committee, a sub-set of the Partnership members and is supported by the GPA Unit of the Marine and Coastal Ecosystems Branch of the Division of Environmental Policy Implementation of UNEP, which serves as the Secretariat to the Steering Committee.

Meeting Participants:

| | |
|----------------------------|---|
| 1. Ramesh Ramachandran | Director of the National Centre for Sustainable Coastal Management in the Ministry of Environment, Forest & Climate Change, India |
| 2. Mark Sutton | Centre for Ecology & Hydrology |
| 3. Patrick Heffer | International Fertilizer Industry Association |
| 4. N. Raghuram | GGs Indraprastha University |
| 5. Yuelai Lu | UK-China Sustainable Agricultural Innovation Network |
| 6. Sara Walker | World Resources Institute |
| 7. Albert Bleeker | PBL Netherlands Environmental Assessment Agency |
| 8. Ludwig Hermann | European Sustainable Phosphorus Platform (ESPP); Proman Consulting |
| 9. Mihai Constantinescu | Ministry of Waters and Forests, Romania |
| 10. David Kanter | New York University |
| 11. Thomas Bruulsema | International Plant Nutrition Institute |
| 12. Muhammad Islam | National Fertilizer Development Centre, Pakistan |
| 13. Abdul Jalil Marwat | National Fertilizer Development Centre, Pakistan |
| 14. Miles Macmillan-Lawler | GRID Arendal |
| 15. Mahesh Pradhan | UN Environment Programme |
| 16. Isabelle Vanderbeck | UN Environment Programme |
| 17. Kaisa Uusimaa | UN Environment Programme |
| 18. Wanjiku Njuguna | UN Environment Programme |
| 19. Monika MacDevette | UN Environment Programme |
| 20. Habib El-Habr | UN Environment Programme |
| 21. Christopher Cox | GPNM Secretariat, UN Environment Programme |

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|----------------------|--|
| 22. Birguy Lamizana | GWl Secretariat, UN Environment Programme |
| 23. Riccardo Zennaro | GWl Secretariat, UN Environment Programme |
| 24. Milcah Ndegwa | GPNM Secretariat, UN Environment Programme |

Welcome remarks and agenda review

❖ **Monika MacDevette, Ecosystems Division, Deputy Director, UN Environment Programme**

Notably, the Losses of reactive forms of nitrogen and phosphorus to the environment causes massive human and environmental and health impairment – a major challenge! It is estimated that about US\$200 billion worth of reactive nitrogen is now lost into the environment – comes from fertilizers, manures, wastewater, combustion emissions. The main issue with nutrients is their inefficiency of use; there is not a closed-loop on this resource use that also represents massive losses to the economy.

UN Environment Programme which serves as the Secretariat of the Global Programme of Action for the Protection of the Marine Environment from Land Based Activities (GPA); and under the Global Partnership on Nutrient Management (GPNM) has been committed to tackle the nutrients problem both Nitrogen and Phosphorus at a global scale under the GEF-funded project on **Global foundations for reducing nutrient enrichment and oxygen depletion from land based pollution, in support of Global Nutrient Cycle (GNC)**. One of the successful activity is the countries adoption of '[Sustainable Nitrogen Management](#)' during the Fourth Session of United Nations Environment Assembly (UNEA-4). It is expected that the main outputs from GNC project will be incorporated to the **Toward an International Nitrogen Management System (INMS) Project** which is executed by the Centre for Ecology & Hydrology (CEH); and implemented by the UN Environment Programme.

❖ **Ramesh Ramachandran, Director, National Centre for Sustainable Coastal Management, Ministry of Environment, Forest & Climate Change, India and GPNM Chair**

The GEF-funded project on Global foundations for reducing nutrient enrichment and oxygen depletion from land based pollution, in support of Global Nutrient Cycle (GNC) has delivered incredibly outputs, thanks to all the committed partners. Among them is the 'Ecosystem Health Report Card' in [India](#) and [Philippines](#). The ecosystem health report card has proven to be a very effective tool based on application in other parts of the world, to assemble environmental quality data and integrate into a coherent communication package that non-technical audiences can relate to, and provide the basis for assessment and feedback on results of efforts to combat pollution. In addition, the GNC project graduated to the **Toward an International Nitrogen Management System (INMS) Project** which is keen to address Nitrogen issues globally.

Recently during the Fourth Session of United Nations Environment Assembly (UNEA-4), the Government of India led the adoption of the '[Sustainable Nitrogen Management](#)' Resolution.

❖ **Habib El-Habr, Coordinator, Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA)**

It was tremendous to see the GNC project achieve many outputs during the project timeline. We would wish to appreciate all the partners that contributed towards the success of this project. Also, to note the **Toward an International Nitrogen Management System (INMS) Project** that will continue to explore the Nitrogen issues at global scale. We further wish to see the ‘sustainable nutrients issue discussed in political fora’.

A pictorial overview of GNC Project

Isabelle Vanderbeck – Task Manager, GEF-International Waters, UN Environment Programme

The GEF-funded project on Global foundations for reducing nutrient enrichment and oxygen depletion from land based pollution, in support of Global Nutrient Cycle (GNC) inception was in March 2012, Philippines with intentions to complete after four (4) years. However, it the project has run up-to April 2019.

The GNC project was funded by the Global Environment Facility (GEF) at a cost of USD 1,718,182. This project is executed by the Global Programme of Action for the Protection of the Marine Environment from Land Based Activities (GPA); under the Global Partnership on Nutrient Management (GPNM); and implemented by the Corporate Services Division in UN Environment Programme.

During the inception, the project manager was Dr. Anjan Datta who saw the developed of project proposals to funding by GEF. Later after retirement of Dr. Datta, Dr. Cox took up the role as the project manager until its completion.

Over the project duration, the Global Partnership on Nutrient Management (GPNM) steering committee became by default the GNC project steering committee and was tasked to closely monitor the implementation of the GNC project among other GPNM activities. The steering committee members were from government, academia, Intergovernmental organization, non-governmental organization sectors among others. The first Chair of the GPNM and GNC Steering Committee was Mr. Kaj Sanders until 2012, after which Dr. Greg Crosby took up as the second chair until from 2013 to 2016. Thereafter, D. Ramesh Ramachandran became the third chair from mid-2016 and currently serving.

During the project implementation, several partners were contracted, these are the: Chilika Development Authority (CDA), Energy Research Centre (ECN), Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), Intergovernmental Oceanographic Commission of UNESCO, Global Environment & Technology Foundation (GETF), World Resources Institute (WRI), Centre for Ecology & Hydrology (CEH), South Asia Co-operative Environment Programme (SACEP), and GRID-Arendal.

GNC Project Achievement Overview

Christopher Cox – Project Manager, Global Partnership on Nutrient Management (GPNM), UN Environment Programme

The first GNC project Steering Committee was held at Crowne Plaza Hotel, Manila, Philippines from 27 to 29 March 2012 co-organized by the UN Environment Programme and the PEMSEA Resource Facility (PRF). The Department of Environment and Natural Resource (DENR) of the Philippines hosted the meeting. The meeting was attended by 13 international participants representing key international organizations and scientific and research institutions; and 29 participants from the Philippines representing various agencies and offices with projects and programs in Manila Bay, including the private sector and the academia.

During this first meeting, Dr. Datta provided details on the expected project outcomes and outputs for each of the 4 components, their linkages, the project budget, the source of co-financing, the various partners involved and the governance structure.

Over the project duration, UN Environment Programme has engaged different partners towards the project execution in each of the 4 components as follows:

Lead technical partners:

- Intergovernmental Oceanographic Commission of UNESCO – Comp B
- Global Environment and Technology Foundation (GETF) – Comp C
- Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) – Comp D
- Centre for Ecology & Hydrology (CEH) – Comp A (for global overview)

Associates:

- University of Utrecht, The Netherlands - Comps B, D
- Washington State University, United States - Comps B, D
- The Netherlands Energy Research Centre (ECN) - Comps A, C, D
- Marine Science Institute, University of Philippines (UP-MSI) – Comp D
- Chilika Development Authority (CDA), India – Comp D
- Laguna Lake Development Authority (LLDA), the Philippines – Comp D
- World Resources Institute (WRI) – Comp C, D
- GRID Arendal – Comp B

The people involved in each project components were as follows:

The people

Main technical partners

Component A



Mark Sutton



Albert Bleeker

Component B



Henrik Enevoldsen



Lex Bouwman



John Harrison



Arthur Beusen

Component C



Chuck Chaitovitz



Albert Bleeker



Sara Walker

Component D



Adrian Ross



Nancy Bermas



Gil Jacinto



Lara Sotto



Ajit Pattnaik



Lennie Santos-Borja

The Chair of the GNC Project Steering Committee and the UN Environment Programme played a key role in making sure the project is executed as agreed on the project agreement. See the team members below:

The people

Project management

GPNM



Kaj Sanders
Project Steering
Committee (GPNM)
Chair to 2013



Ramesh Ramachandran
Project Steering
Committee (GPNM)
Chair 2016-present



Greg Crosby
Project Steering
Committee (GPNM)
Chair to 2016

UN Environment



Christopher Cox
Project Manager
2014-present



Milcah Ndegwa
Project assistant

Anjan Datta
Project Manager
2012-2014



Isabelle Vanderbeck
Project Task Manager

Component A: Global Partnership on Nutrient Management addressing causes and impacts of coastal nutrient over-enrichment and hypoxia

Albert Bleeker – PBL Netherlands Environmental Assessment Agency

Component A was core led by Energy Research Centre (ECN) now called TNO - innovation for life. Main outputs of component A were:

- a. Development of GPNM website – currently hosted by the National Centre for Sustainable Coastal Management in the Ministry of Environment, Forest & Climate Change, India. See the link to the website: <http://www.nutrientchallenge.org/>
- b. Development of the Charter of the Global Partnership on Nutrient Management (GPNM) – link: http://www.nutrientchallenge.org/sites/default/files/GPNM%20operational%20frmwk_FINAL.pdf

At the moment, the Best Management Practices / Policy database and calculator are interactive through website; however, the Calculator is stand-alone (as Excel). There will be further need to develop an online version of the calculator; and collect additional information about efficiencies of Best Management Practices (BMP's) – which enhance the functionality of the calculations.

Points of concerns are:

- a. On how the technical and content management are arranged on the website.
- b. Active engagement of partners through sharing information.
- c. Promoting the visibility of the website through sharing in social platforms.
- d. Upgrading the website

Questions and comments:

Q: Do you have the analytical data of website visitors? **Resp:** The data is available and can be provided upon request.

C: There is need to integrate the website with global nutrients activities of other relevant organizations such as: United Nations Framework Convention on Climate Change (UNFCCC), Organisation for Economic Co-operation and Development (OECD), GRID Arendal etc

C: To promote visibility, we could launch the massive open online course (MOOC) via the GPNM website, which will attract more visitors.

Component B: Quantitative analysis of relationship between nutrient sources and impacts to guide decision making on policy and technological options

Christopher Cox – Project Manager, Global Partnership on Nutrient Management (GPNM), UN Environment Programme

Component B was core led by Intergovernmental Oceanographic Commission of UNESCO together with GRID-Arendal. Main outputs of component B were:

- a. Global data base on nutrient loading and occurrence of HABs, hypoxia, and effects on fish landings, abundance and populations
- b. Nutrient impact modeling for global and local to regional nutrient source impact analysis
- c. Nutrient impact modeling for global and local to regional nutrient source impact analysis
- d. Regional models of nutrient source-impact modeling for Manila Bay watershed demonstration area
- e. Regional and national scientists and policy experts trained in nutrients source-impact modeling
- f. Nutrient source-impact guidelines and user manuals

Towards the end of the project, GRIA-Arendal was contracted to simplify the scientific studies from Component B. They have developed Maps, story maps and Visual graphics that are easy to understand to non-technical personnel. Here is the link to the Laguna Bay Story Map: <http://arcg.is/15SrrH>

Further, UN Environment Programme and IOC/UNESCO are custodian for the SDG 14 indicator on **Marine pollution**. Under **Target 14.1: By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities; Indicator 14.1.1:** Index of coastal eutrophication and floating plastic debris (I) density (ICEP) offers predictability of potential coastal ecosystem degradation from land-based pollution through Influencing policy toward improved watershed management practice. Major challenges in implementation of Indicator 14.1.1 are:

- a. **Weak global harmonization** of work on SDG14.1 indicator
 - Numerous research nodes working independently
- b. **Disconnection between research communities** working on:
 - Nutrient pollution/eutrophication and plastics
 - Freshwater and marine water quality indicators
- c. **Poor level of understanding** on operationalization of the ICEP and the floating plastic density indicators among national stakeholders
- d. **Assessment difficulty at national levels** given nature of indicator – applies to transboundary spatial areas (multi-country)

- Challenge to attribute a 'national 'number' as required for SDG reporting
- e. **Weak national assessment and reporting;** challenge to regional and global reporting
- f. **Resource constraints for validation** of modelled approaches
 - Will require in-situ data with strong national support (rely on research community)

Good news is that there are many products already existing among service providers thus a **huge potential to incorporate earth observation/satellite data;** as well as applying Datasets for marine environmental assessments **for multiple indicators.**

Questions and comments:

C: Need for more facts on eutrophication on beaches. For example, why Red Sea does not experience eutrophication. Is it because of turbidity?

C: There is limited data on eutrophication. Since ICEP is on a global scale, it should provide more localized scientific data

Q. Could you have experienced challenges in data sharing? **Resp:** National data is mostly missing but global scale data is available, the [Global Environment Monitoring System for freshwater \(GEMS/Water\)](#) provides the world community with sound data on fresh water quality to support scientific assessments and decision-making on the subject.

C: There is a foreseen problem with data ownership; sufficient monitoring; and communication of the issue to policy makers.

Component C: Establishment of scientific, technological and policy options to improve coastal water quality policies in LMEs and national strategy development

Sara Walker – World Resources Institute (WRI)

Component C was core led by Global Environment & Technology Foundation (GETF) together with World Resource Institute (WRI), Energy Research Centre, and other partners. Main outputs of component C were:

- a. Global inventory of nutrient reduction best practices
- b. Global inventory of nutrient management policies
- c. Case studies - technology and policy options
- d. Nutrient management policy framework
- e. Lessons in replication and up-scaling of best practice
- f. Basin-Scale Nutrient Loading Calculation Tool
 - Including integration Component B source-impact modeling/analysis
- g. Training experts on application of Tool Box



The purpose of the GPNM Policy toolbox is to demonstrate policy and technological options for managing nutrients at the field scale to the national scale. It consists of several elements as shown on the figure on the right.

Four demonstrations and trainings have been conducted with farmers and technical experts in Chilika Lake, India in 2015; in Negombo, Sri Lanka during the eight International Water Congress (IWC8) in 2016; in Marrakesh, Morocco during the ninth International Water Congress (IWC9) in 2018; and recently in

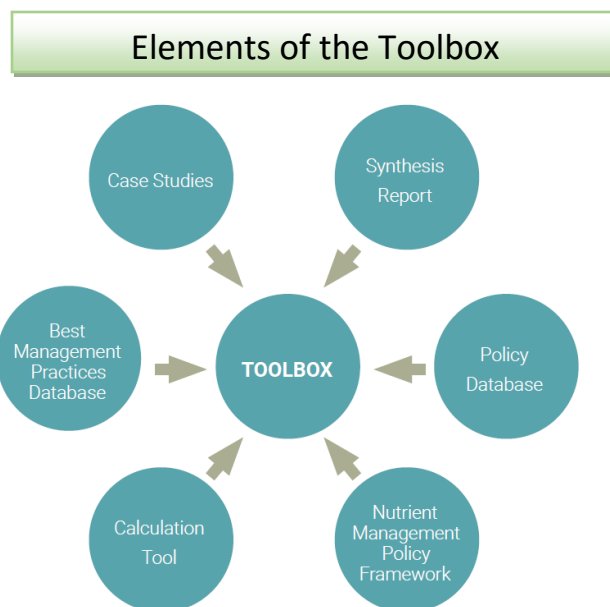
Maputo Mozambique during the GEF Western Indian Ocean from Land-based Sources and Activities (WIOSAP) Project meeting in 2018.

Suggested opportunities for future toolbox enhancements are to:

- Continue to update databases and case studies with new information
- Build an enhanced link between databases and Calculator
- Build optimization feature in Calculator
- Develop web interface for Calculator
- “Regionalize” / downscale the Toolbox

For long sustainability of the Toolbox, it will be useful to:

- Ensure Toolbox is an input to INMS implementation
- Continue to promote Toolbox with GEF community, development community, ministries, etc.
- Identify funding source for continued development and outreach



Questions and comments:

Q: Pakistan has data on fertilizer use, can it be uploaded on the Toolbox database? **Resp:** Indeed, this is possible and helpful to receive the data voluntary from Countries.

Q: Does the Toolbox has capacity to update and vet new Best Management Practices (BMPs)? **Resp:** We have already a BMPs template that can be shared. We are yet to consider vetting of the BMPs since the database consist of voluntary data from countries and Global News model.

C: Consideration of linking the Toolbox to relevant Sustainable Development Goals (SDGs).

C: GEF is spearheading some of global methodology project under IWLEARN and could consider benchmarking the data; as well as upgrading the Toolbox.

C: Consider reaching out to countries through UN Environment Programme for their buy-in and usability at national level. INMS may consider uptaking the Toolbox and upgrading.

C: Regional Seas Programmes are regional effective bodies in reaching out to wider countries buy-in and adoption as a living tool

C: Involve academia institution both to increase the Toolbox visibility and to contribute to its upgrade.

C: There is need for a champion country on Nitrogen Management, South Asia countries could be a region for consideration.

Component D: Development of nutrient reduction strategies through application of quantitative source-impact modeling and best practices in Manila Bay watershed

Albert Bleeker – PBL Netherlands Environmental Assessment Agency

Component D was core led by Partnerships in Environmental Management for the Seas of East Asia (PEMSEA). Main outputs of component D were:

- a. Strengthened information / reporting on nutrient issues in Manila Bay watershed
- b. Establishing foundations for nutrient reduction strategies in Manila Bay watershed based on source-impact modeling / best practices
- c. Development / application of final source-impact models for Manila Bay in developing nutrient reduction strategies
- d. Development and adoption of integrated nutrient reduction strategies
- e. Application in Lake Chilika and Laguna de Bay of ecosystem health report cards
- f. Replication and upscaling strategy

In conclusion, studies in Manila Bay watershed shows that:

1. Densely populated areas are nearer to the bay - High population density areas (Metro Manila area) almost directly feed into the Bay

2. Domestic sector is the major source of nutrient load
3. Manila Bay shows evidence of the detrimental effects of excessive nutrient loading – HYPOXIA.
4. Manila Bay has low dissolved oxygen in the water column - Rapidly declining dissolved oxygen

Lessons learned from project implementation

Sara Walker – World Resources Institute (WRI)

The GNC project has achievement three core elements:

1. Global nutrient management toolbox development

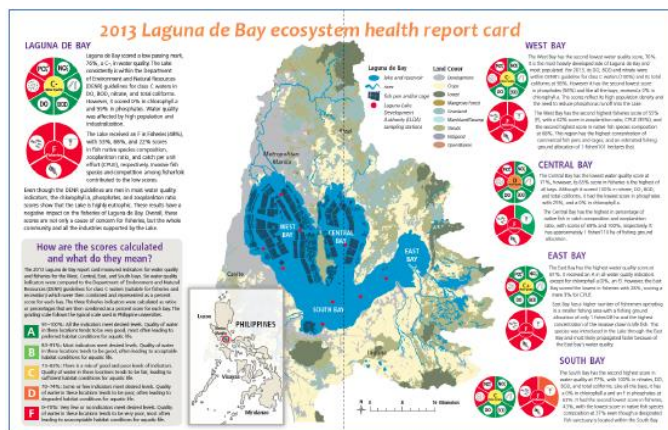
Toolbox demonstrate the importance of leveraging diverse partners towards nutrients management from field to national scale. The increase the effectiveness and impacts of the Toolbox, there is need to Develop sustainability plan for formal, long-term ownership and support; Put greater emphasis on outreach and obtaining stakeholder buy-in early on; Consider scale of application and users; and Translate materials and provide trainings in other languages

2. Nutrient flow modelling – application of the Global NEWS Model

Scaling down the global news model to manila bay will require first, ensuring participants have basic level of technical competency; Second, ensuring sufficient, high quality local data are available; Third, engaging government, private sector early in process to encourage cooperation and receptivity; and Fourth, having a committed group of partners to champion the issue to help advance solutions

3. Development and application of the Ecosystem Health Report Card

Two Ecosystems Health Report Cards were developed, in Chilika Lake, India and Laguna de Bay, Philippines. Recommendations are to: Find a local champion; Create a plan for ongoing assessments; Frequent monitoring and evaluation to help attribute water quality improvements to report cards; Develop a robust stakeholder engagement process and ensure local ownership of report card; and Leverage experiences from the report card community.



Financial management

Christopher Cox – Project Manager, Global Partnership on Nutrient Management (GPNM), UN Environment Programme

The GNC project was funded by the Global Environment Facility (GEF) at a cost of USD 1,718,182. At the inception of the project, four partners were contracted by UN Environment Programme as follows:

| Partners name | Identifier | Cost (USD) |
|--|--------------------------------------|-------------|
| 1. Energy Research Centre (ECN) | UNEP/SSFA/DEPI/2013/FMEB-GPA/075 AD5 | USD 150,500 |
| 2. Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) | UNEP/PCA/DEPI/2012/FMEB-GPA/004/AD4 | USD 235,000 |
| 3. Global Environment and Technology Foundation (GETF) | UNEP/PCA/DEPI/2012/FMEB-GPA/05/AD4 | USD 269,500 |
| 4. Intergovernmental Oceanographic Commission of United Nations Educational, Scientific and Cultural Organization (IOC/UNESCO) | UNEP/LOA/DEPI/2012/FMEB-GPA/003/AD 4 | USD 503,182 |

Further, four more partners were contracted as follows:

| Partners name | Identifier | Cost (USD) |
|--|--|------------|
| 1. UKRI Centre for Ecology and Hydrology (CEH) | SSFA/18/GPA/04 | USD 25,000 |
| 2. GRID-Arendal | SSFA/18/GPA/03 | USD 60,000 |
| 3. South Asia Co-operative Environment Programme (SACEP) | UNEP/SSFA/ECOSYSTEMS/2018/MCEB-GPA/001/AD2 | USD 89,700 |
| 4. World Resources Institute (WRI) | UNEP/SSFA/ECOSYSTEMS/2018/MCEB-GPA/002 | USD 59,572 |

The overall project expenditure was as follows:

| Description | Expenditure to date |
|------------------------------------|----------------------------|
| Staff Personnel | 156,056.48 |
| Contract service | 5,584.96 |
| Operating other costs | 45,891.50 |
| Transfer/Grant to Implementing par | 1,046,858.41 |
| Grants out | 12,957.87 |
| Travel | 400,483.18 |
| TOTAL | 1,667,832.40 |

Note:

- Figures under final verification by the Fund Management Office
- Partners will be requested to complete co-financing estimates

Termination Evaluation

Isabelle Vanderbeck – Task Manager, GEF-International Waters, UN Environment Programme

The GEF International Water will assign an independent evaluator to assess the GNC project. The evaluation cost is USD 35,000 which is part of the overall GNC project budget.

Meeting Summary and Closing Remarks

- **Habib El-Habr, Coordinator, Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA), UN Environment Programme**
- **Isabelle Vanderbeck – Task Manager, GEF-International Waters, UN Environment Programme**
- **Ramesh Ramachandran, Director, National Centre for Sustainable Coastal Management, Ministry of Environment, Forest & Climate Change, India and GPNM Chair**
- **Christopher Cox – Project Manager, Global Partnership on Nutrient Management (GPNM), UN Environment Programme**

We wish to extend our appreciation to all the partners engaged in the implementation of the GNC project. As a team, we have achieved success in delivering the outputs. The Toward an International Nitrogen Management System (INMS) Project provide an opportunity to continue working on nutrients management. We encourage your involvement in support in the implementation of the INMS project.

Notably, we will be calling up on all partners on the implementation of the 'Sustainable Nitrogen Management' Resolution led by the Government of India.

We also appreciate the GPNM Secretariat for organizing the meeting; and to all the Steering Committee members for their attendance and support.

Action items arising from the 11th Steering Committee meeting - GNC Project Close-out meeting

| | Action Items | Lead responsibility | Timeframe |
|----|---|---|---------------|
| 1. | Completion of project deliverables | All | ASAP |
| 2. | World Environment Day – Nutrients Side event | Secretariat, All Steering Committee members | 5 June 2019 |
| 3. | Implementation of the ' Sustainable Nitrogen Management ' Resolution | Secretariat | February 2021 |



Agenda

GEF Global Nutrient Cycle Project Project close-out/Final Steering Committee meeting

Date: 26 April 2019

Venue: UN headquarters, Nairobi, KENYA

| Time | Agenda item | Discussant/facilitator |
|---------------|---|---|
| 09:00 - 09:10 | Welcome remarks | Monika MacDevette, UNEP I. Vanderbeck, UNEP R. Ramachandran, GPNM Chair |
| 09:10 - 09:25 | Brief review of minutes of 9 th Project Steering Committee meeting | C. Cox, GNC-PMU, UNEP |
| | Component execution | |
| 09:25 – 09:45 | Component A: <i>Strengthening of the GPNM</i> <ul style="list-style-type: none"> GPNM website development and management Partnership strengthening, support, publications | C. Cox, GNC-PMU, UNEP A. Bleeker, PBL Netherlands Environmental Assessment Agency |
| 09:45 – 10:15 | Component B: <i>Quantitative analysis of relationship between nutrient sources and impacts</i> <ul style="list-style-type: none"> Overview of key research findings Transition from science to policy; SDG indicators | C. Cox, GNC-PMU, UNEP Lex Bouwman, PBL Netherlands Environmental Assessment Agency |
| 10:15 – 10:45 | Component C: <i>Scientific, technological and policy options</i> <ul style="list-style-type: none"> Global nutrient management toolbox; best practices; nutrient load calculator; building user flexibility Capacity building activities | C. Cox, GNC-PMU, UNEP C. Chaitovitz, GETF S. Walker, WRI |
| 10:45 – 11:00 | BREAK | |

| Time | Agenda item | Discussant/facilitator |
|---------------|---|---|
| 11:00 – 11:30 | Component D: <i>Application of quantitative source-impact modeling and best practices</i> <ul style="list-style-type: none"> Nutrient flow modelling – Manila bay Watershed management tools, state of coast reporting – Manila Bay Ecosystem health card development | C. Cox, GNC-PMU N. Bermas, PEMSEA G. Jacinto, MSI-UP |
| 11:30 – 12:30 | Questions and discussion | |
| 12:30 – 13:30 | LUNCH | |
| 13:30 – 14:15 | Lessons learned from project implementation: a review of three core elements of the project <ul style="list-style-type: none"> Global nutrient management toolbox development Nutrient flow modelling – application of the Global NEWS Model Development and application of the Ecosystem Health Report Card | M. Ndegwa, GNC-PMU S. Walker, WRI |
| 14:15 – 14:30 | Questions and discussion | |
| 14:30 – 15:15 | Challenges: <i>facilitated discussion</i> consideration of the main issues encountered during project implementation. Key considerations include: <ul style="list-style-type: none"> Project design and management Partner coordination Quantifying gender dimensions Uptake/ownership and onward application of tools | I. Vanderbeck, UNEP M. Sutton, GPNM Vice-chair |
| 15:15 – 15:30 | BREAK | |
| 15:30 – 16:00 | Financial management: overview of the total expenditures and estimated co-financing contributions <ul style="list-style-type: none"> Expenditure Co-financing contributions | C. Cox; M. Ndegwa, GNC-PMU |
| 16:00 – 16:30 | Terminal Evaluation | I. Vanderbeck, UNEP |
| 16:30 – 17:00 | Meeting summary and closing remarks | H. El-Habr, GPA, UNEP I. Vanderbeck, UNEP R. Ramachandran, GPNM Chair |