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Terminal Evaluation of the UNEP/GEF Project "Global Foundations for Reducing Nutrient Enrichment and Oxygen Depletion from Land-based Pollution in Support of Global Nutrient Cycle (GEF ID 4212)"



Evaluation Office of the
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Global Foundations for Reducing Nutrient Enrichment and Oxygen Depletion from Land-based Pollution in Support of Global Nutrient Cycle
GEF ID 4212
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The evaluation consultant hopes that the findings, conclusions, and recommendations will contribute to the successful finalisation of the current project, formulation of a next phase and to the continuous improvement of similar projects in other countries and regions.



Photo: Along the coast of Tanza, Manila Bay, Philippines, A. S. Cabanban

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About the Evaluation

Joint Evaluation: No

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Brief Description: This report is the Terminal Evaluation of the UNEP/GEF project on Global Foundations for Reducing Nutrient Enrichment and Oxygen Depletion from Land-based Pollution in Support of Global Nutrient Cycle (GEF ID 4212) implemented between 2012 and 2019. The objective of the project was to provide the foundations for governments and other stakeholders initiate comprehensive, effective and sustained programmes addressing nutrient over-enrichment and oxygen depletion from land-based pollution of coastal waters in large marine ecosystems (LMEs). The evaluation sought to assess the performance of the project (in terms of relevance, effectiveness, and efficiency) and determined outcomes and potential impacts stemming from the project, including their sustainability. The evaluation had two purposes: (i) to provide evidence of results to meet accountability requirements; and (ii) to promote learning, feedback, and knowledge-sharing through results and lessons learned among UNEP, and the relevance agencies of the participating countries.

Key words: nutrient pollution, marine pollution, Land-based sources of pollution (LbSP), Large Marine Ecosystems (LMEs), Strategic Action Plan for LMEs

Primary data collection period: 2021-2022

Field mission dates: No site visit was planned for this evaluation due to the COVID-19 travel restrictions.

Table of Contents

EXECUTIVE SUMMARY **11**

1 INTRODUCTION **22**

2 EVALUATION METHODS **25**

3 THE PROJECT **27**

3.1 Context 27
3.2 Results Framework 27
3.3 Stakeholders 28
3.4 Project implementation structure and partners 30
3.5 Changes in design during implementation 31
3.6 Project financing 32

4 THEORY OF CHANGE AT EVALUATION **34**

5 EVALUATION FINDINGS **38**

5.1 Strategic Relevance 38
5.2 Quality of Project Design 39
5.3 Nature of the External Context 40
5.4 Effectiveness 41
5.5 Financial Management 47
5.6 Efficiency 51
5.7 Monitoring and Reporting 53
5.8 Sustainability 54
5.9 Factors Affecting Performance and Cross-Cutting Issues 58
5.10 Responses to the strategic questions in the evaluation 61

6 CONCLUSIONS AND RECOMMENDATIONS **65**

6.1 Conclusions 65
6.2 Lessons Learned 68
6.3 Recommendations 69

ANNEX I. RESPONSE TO STAKEHOLDER COMMENTS **73**

ANNEX II. PEOPLE CONSULTED DURING THE EVALUATION **76**

ANNEX III. KEY DOCUMENTS CONSULTED **77**

ANNEX IV. BRIEF CV OF THE EVALUATOR **79**

ANNEX V. EVALUATION TORS (WITHOUT ANNEXES) **80**

ANNEX VI. GEF PORTAL INPUTS **122**

ANNEX VII. QUALITY ASSESSMENT OF THE EVALUATION REPORT **127**

ANNEX VIII. RECOMMENDATIONS BY THE EVALUATOR FOR THE USE OF UNSPENT FUNDS FROM THE GEF ID 4212 – GLOBAL FOUNDATIONS FOR REDUCING NUTRIENT ENRICHMENT AND OXYGEN DEPLETION FROM LAND-BASED POLLUTION IN SUPPORT OF GLOBAL NUTRIENT CYCLE **137**

ANNEX IX. PROJECT OPERATIONAL COMPLETION REPORT: POW PROJECT NO: 01923 ADDRESSING THE NUTRIENT CHALLENGE THROUGH AN EFFECTIVE GLOBAL PARTNERSHIP ON NUTRIENT MANAGEMENT (GPNM) **139**

List of Acronyms and Abbreviations

ASEAN	Association of Southeast Asian Nations
BoBLME	Bay of Bengal Large Marine Ecosystem
CDA	Chilika Development Authority
CEH	Center for Ecology and Hydrology
CoBSEA	Coordinating Body for the Seas of East Asia
DA	Department of Agriculture
DENR	Department of Environment and Natural Resources, Philippines
DILG	Department of Interior and Local Government, Philippines
EA	Expected Accomplishment
EAS	East Asian Seas
EHRC	Ecosystem Health Report Card
ERC	Energy Research Center
GEF	Global Environment Facility
GETF	Global Environment and Technology Foundation
GNC from	Global Foundations for Reducing Nutrient Enrichment and Oxygen Depletion Land-based Pollution in Support of Global Nutrient Cycle Project
GPA	Global Programme of Action for the Protection of the Marine Environment from Land-based Pollution
GPNM	Global Partnership on Nutrient Management (GPNM)
GRID-Arendal	Global Resources Information Database
IFA	International Fertilizer Association
INMS	International Nutrient Management System
IOC-UNESCO	Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific, and Cultural Organization
IW	International Waters
LbSP	Land-based Sources of Pollution
LGU	Local Government Unit
LLDA	Laguna Lake Development Authority
LME	Large Marine Ecosystem
LOICZ	Land-Ocean Interaction in the Coastal Zone
MBCO	Manila Bay Coordinating Office
MBSDMP	Manila Bay Sustainable Development Management Plan
MSI-UP	Marine Science Institute, University of the Philippines
MTS	Medium-Term Strategy (UNEP)
NEDA	National Economic Development Authority

PAPs	Program, Activities, and Projects
PCU	Project Coordination Unit
PEMSEA	Partnerships in Environmental Management is the Seas of East Asia
PROA	Pollution Reduction Opportunity Analysis
SACEP	South Asia Cooperative Environment Programme
SDG	Sustainable Development Goals
SAP	Strategic Action Plan
TDA	Transboundary Diagnostic Analysis
TWAP	Transboundary Water Assessment Programme
UNEP	United Nations Environment Programme
UPMSI	University of the Philippines Marine Science Institute
WIOLMO	Western Indian Ocean Large Marine Ecosystem
WIOSAP	Strategic Action Programme for the Protection of the Western Indian Ocean from Land-based Sources and Activities
WRI	World Resources Institute

Project Identification Table

Table 1. Project Identification Table

GEF Project ID:	4212		
Implementing Agency:	International Waters Unit, UNEP	**Executing Agency:**	GPA Coordination Office/Secretariat of Global Partnership on Nutrient Management, UNEP
Relevant SDG(s) and indicator(s):	SDG 2, Target 2.9; SDG 3, Target 3.9; SDG 14, Target 14.1; SDG 15, Target 15.3		
Sub-programme:	MTS 2010-2013 MTS 2014-2017 MTS 2018-2021 SP5: Chemical, Waste & Air Quality SP3: Healthy and Productive Ecosystems	**Expected Accomplishment(s):**	SP3 - EA(a) The health and productivity of marine, freshwater and terrestrial ecosystems are institutionalized in education, monitoring and cross-sector and transboundary collaboration frameworks at national and international levels – IV - increase in the number of education institutions that integrate the ecosystem approach in education frameworks SP5 – EA (b) - Policies and legal and institutional and fiscal strategies and mechanisms for waste prevention and sound management developed or implemented in countries within the framework of relevant multilateral environmental agreement**s**
UNEP approval date:	March 2011	**Programme of Work Output(s):**	Sub-programmes of work – POW 2018-19/2020-21 (see above)

			SP5: Chemical, Waste & Air Quality and – SP3: Healthy and Productive Ecosystems
GEF approval date:	August 4, 2011	**Project type:**	Full-size Project
GEF Operational Programme #:	GEF 4	**Focal Area(s):**	International Waters
		GEF Strategic Priority:	IW-SP2
***Expected* start date:**	28 March 2012	**Actual start date:**	28 March 2012
***Planned* completion date:**	30 June 2016	**Actual operational completion date:**	30 April 2019
***Planned* project budget at approval:**	USD 3,618,182	**Actual total expenditures reported as of [2021]:**	USD 1,597,832.09
GEF grant allocation:	USD 1,718,18	**GEF grant expenditures reported as of 05 May 2021:**	USD 1,675,729.17
Project Preparation Grant - GEF financing:	USD 86,000	**Project Preparation Grant - co-financing:**	USD 130,000
***Expected* Medium-Size Project/Full-Size Project co-financing:**	USD 1,900,000	**Secured Medium-Size Project/Full-Size Project co-financing:**	USD 2,398,165 (at start of Project) USD 2,477,648 (realized at end of Project)
First disbursement:	28 March 2012	**Planned date of financial closure:**	31 October 2019
No. of formal project revisions:	Three no-cost extensions (10 June 2016, 30 June 2018, September 2022)	**Date of last approved project revision:**	September 2022
No. of Steering Committee meetings:	11	**Date of last/next Steering Committee meeting:**	**Last:** 30 April 2019 **Next:** N/A
Mid-term Review/ Evaluation *(planned date):*	End of 2013	**Mid-term Review/ Evaluation (actual date):**	November 2014
Terminal Evaluation *(planned date):*	June 2021	**Terminal Evaluation (actual date):**	November 2023
Coverage - Country(ies):	Global	**Coverage - Region(s):**	Global (with testing in South and Southeast Asia)
Dates of previous project phases:	N/A	**Status of future project phases:**	N/A

Executive Summary

Background

1. Land-based Sources of Pollution (LbSP) to the marine environment, particularly nutrient enrichment, is one of the causes of coastal pollution and hypoxia in coastal waters. Coastal pollution has negative impacts on the sustenance and livelihoods (mariculture, coastal fisheries) of coastal villages. It is estimated that the global economic cost of nutrient pollution is in the billions of dollars.

2. The Global Programme of Action (GPA) for the Protection of the Marine Environment from Land-based Activities (GPA) was formulated in 1995 and adapted by 108 governments to tackle this environmental issue. The United Nations Environment Programme (UNEP) is the Secretariat of the GPA and as Secretariat, organizes meetings every two (2) years. Governments, that are the implementors of the GPA, present reports of progress in achieving the GPA at these meetings. The implementation of the GPA has been uneven among the categories of land-based sources of pollutants. Sewage, nutrients, marine litter, and habitat alteration and destruction have been worsening (UNEP GPA 2006, cited in vandeSwaag and Powers, 2008).

3. One of the reasons for the poor implementation of the GPA was the lack of capacity of developing countries to implement policies for nutrient-reduction. The UNEP/ GEF project "Global Foundations for Reducing Nutrient Enrichment and Oxygen Depletion from Land-based Pollution in Support of Global Nutrient Cycle" (GEF ID 4212), hereafter referred to as the Global Nutrient Cycle (GNC) Project, was designed and implemented to fill this gap. The expected outcome of the project was for governments and other stakeholders initiate comprehensive, effective, and sustained programmes addressing nutrient over-enrichment and oxygen depletion from land-based pollution of coastal waters in large marine ecosystems (LMEs).

4. The project had four components:

- Global Partnership on Nutrient Management addressing causes and impacts of coastal nutrient over-enrichment and hypoxia;
- B. Quantitative analysis of relationship between nutrient sources and impacts to guide decision making on policy and technological options;
- C. Establishment of scientific, technological and policy options to improve coastal water quality policies in LMEs and national strategy development; and
- D. Development of nutrient reduction strategies through application of quantitative source-impact modelling and best practices in Manila Bay watershed.

5. The GNC Project was a medium-sized project developed in the context of the International Waters (IW) Portfolio of the Global Environment Facility. The IW Programme assist governments in addressing transboundary environmental issues such as marine pollution in large marine ecosystems (LMEs).

6. The implementing agency (IA) was the International Waters Unit located in the Ecosystems Division (formerly Division of Environmental Policy Implementation) of UNEP. The executing agency (EA) was the GPA Coordination Office/Secretariat of the Global Partnership on Nutrient Management (GPNM) of same Division. This arrangement was to ensure the separation of the functions of the IA and EA.

7. A complementary UNEP programme of work project, "Addressing the Nutrient Challenge through an Effective Global Partnership on Nutrient Management" (PIMS 01923), referred to as the GPNM Project, was also implemented by the Office.[1] The UNEP/GEF GNC Project provided the foundation for nutrient management while the UNEP GPNM Project aimed to strengthen the Partnership and to advocate for nutrient-use efficiency through outreach and dissemination of tools to governments and stakeholders.

8. The duration of the GNC project was planned for 51 months from March 2012 to June 2016 but was extended by 24 months to April 2019. The total project cost was USD 4,116,347 of which the GEF grant was USD 1,718,182 and actual co-financing USD 2,477,648.

9. In line with the UNEP Evaluation Policy and the UNEP Programme and Project Management Manual, the Terminal Evaluation of the GNC Project, was undertaken after completion of the project with the purpose to assess project performance (in terms of relevance, effectiveness and efficiency), and determine outcomes and impacts (actual and potential) stemming from the project, including their sustainability.

10. The scope of the evaluation was the GNC Project. The evaluation had two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote operational improvement, learning and knowledge sharing through results and lessons learned among UNEP and the project's partners. The evaluation was also done to identify lessons of operational relevance for future project formulation and implementation.

11. A Theory of Change was reconstructed at the Inception Phase of the evaluation and was based on desk review of documents and consultation with project stakeholders.

12. The strategic questions set out for the evaluation in the Terms of Reference were:

1) To what extent did the project deepen joint efforts of UNEP and IOC-UNESCO and the research consortium?

2) To what extent did the applied science-policy model work at global and national level?

3) How did the project contribute to GEF and UNEP strategies on nutrient and nitrogen initiatives and discussions on emerging issues of priority?

Results Framework

13. The objective of the project was to "provide the foundations (including partnerships, information, tools and policy mechanisms) for governments and other stakeholders to initiate comprehensive, effective and sustained programmes addressing nutrient over-enrichment and oxygen depletion from land-based pollution of coastal waters in Large Marine Ecosystems".

14. The GNC Project provided funds (inputs) for the implementation of numerous activities that delivered 30 Outputs and resulted in nine (9) Outcomes. These nine outcomes were:

[1] The Project Operational Completion Report for the GPNM Project (in Annex IX) provides a detailed overview the project's performance in terms of results achieved, challenges encountered, best practices and lessons learned.

- Global Partnership of stakeholders actively involved in addressing nutrient over-enrichment in coastal waters;

- GEF Projects, countries, and relevant stakeholders better informed about the importance of over-enrichment, including environmental and economic costs;

- GEF Projects, countries, relevant stakeholders have access to continued guidance and support for development and implementation of nutrient reduction strategies;

- Relevant stakeholders and developing countries have the basis and tools available to (a) attribute sources of nitrogen (N), phosphorus (P), and silica (S) within watersheds; (b) quantify past, current, and potential future export of N, P. and Si to the coastal zone; and (c) develop estimates of the relative efficacy of increases/decreases in nutrient export on coastal water quality at regional to international scales;

- Decision makers have informed and interactive access to cost effective, replicable tools and approaches to develop and implement nutrient reduction strategies in LMEs;

- Strengthened decision support system on nutrient issues in Manila Bay watershed as part of integrated approach to overall water quality in the region;

- Agreement with government agencies and relevant stakeholders in Manila Bay watershed on nutrient reduction strategies to be pursued and implemented, including their effective insertion into integrated national water quality planning for the watershed area;

- Effective application of an Ecosystem Health Report Card for lakes, deltas, and estuaries, including as part of overall nutrient reduction strategies;

- Accessible up-scaling and replication strategy shared interactively with GEF projects, countries, and stakeholders for development and implementation of nutrient reduction strategies.

15. Project partners included the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific, and Cultural Organization (IOC-UNESCO) (Component B), Global Environment and Technology Foundation (Component C), Partnerships in Environmental Management for the Seas of East Asia (Component D) and Centre for Ecology & Hydrology (Component A). In addition to the partners involved in the implementation of the project components, key stakeholder groups included: governments, provincial governments and governmental agencies and ministries, international organisations, research institutes, academic institutions and scientists, and to a lesser extent, society groups, community groups, and private sector, and industry.

Methods of Evaluation

16. The evaluation applied a participatory approach throughout the evaluation by way of engagement with project management, partners, and stakeholders in collecting data and in the review of evaluation deliverables. The Theory of Change at Evaluation was used for assessing the performance of the GNC Project. The guidance for each criterion for assessment was followed (UNEP, 2010). The assessment was based on evidence collected from annual project reports, draft terminal report, and interviews with key partners, and project management. As an independent verification, reference was made to published articles on management of land-based sources of pollution of countries and tropical LMEs. Site visits were conducted on the central and northern sections of Manila Bay and Laguna Lake.

17. The evaluation was conducted over two years after the operational completion of the project and it meant that data collection was limited due to the unavailability of project implementers, which had changed assignments (e.g., such as local government officers, some of whom have ended their terms or had been replaced in local elections, focal points of Partners who had been reassigned, or retired (as in the case of the financial managers). Also, the Evaluator did not visit Chilika Lake in India.

Theory of Change at Evaluation

18. The Evaluator had to reconstruct a Theory of Change in lieu of its absence in the project document as this was not required at the time of the project approval. The reconstructed Theory of Change (ToC) was if national governments have knowledge, capacity, and tools to promote best practices in the use of fertilizers by the agro-industrial sector and best practices in urban development, then nutrient-enrichment of coastal waters would be reduced. The causal pathways of the reconstructed ToC identified six direct outcomes that led to two project outcomes in nutrient reduction benefits at the global and national levels, resulting in the intermediate state in reduced nutrient-load from land in coastal waters and eventually improved coastal and marine water quality of LMEs.

19. Analysis of the impact pathways was conducted in terms of the assumptions and drivers that would underpin the processes in the transformation of outputs and outcomes to intermediate states to impact.

20. The drivers that were identified for the change to be achieved were: agriculture (farmers); aquaculture (fish-pond operators); and urbanization (human settlements).

Key Evaluation Findings

Strategic relevance

21. The GNC project was strategically relevant to the UNEP Medium-Term Strategy (2010-2013, 2014-2017, 2018-2021) of the sub-programme (SP)5 (Chemical, Waste and Air Quality) and SP3 (Healthy and Productive Ecosystems) for the Programme of Work 2018-2019 and 2020-2021, Expected accomplishment (b) and Expected accomplishment (a), respectively. It was also aligned with the GEF IW-SP2. It was relevant to meeting Target 14.1 of Sustainable Development Goal # 14. It was consistent with the Global Plan of Action on Land-based Sources of Pollution and several GEF IW Projects in many LMEs.

22. The rating for strategic relevance was ***Highly Satisfactory***.

Quality of project design

23. The quality of project design of the GNC Project was assessed, using the Project Design Quality template, was ***Moderately Satisfactory (MS).*** The GNC Project had a logical framework with four component which were implemented in sequence. The logical framework was translated to a Theory of Change (ToC) for the evaluation. In the ToC, there were 6 Direct Outcomes (DOs); Direct Outcomes 1, 2, and 3 were toward achieving global benefits (Project Outcome 1) and DOs 4, 5, and 6 were toward achieving ecosystem-level benefits in Manila Bay and Chilika Lake watershed (Project Outcome 2). The GNC Project could have been designed with less outcomes and with specific outcome indicators for monitoring and reporting.

Nature of external content

24. The assessment for the nature of external content was ***favourable***. There was no political disruptions nor extreme events that had any major effect on the implementation of the Project.

Effectiveness

Availability of Outputs

25. The GNC Project was successful in producing the planned outputs as listed in the project document. The toolbox, reports, and other knowledge projects are available in the GPNM website – http://nutrientchallenge.org. The Global Partnership on Nutrient Management was established (Direct Outcome 1). The synthesis of available information on nutrient pollution and management was produced and case studies and best-practices were compiled and placed in the toolbox for policymakers and environmental managers to use (outputs of DOs 2, 3, and 4). The main output for DO 5 was the Environmental Health Score Card while the lessons-learned and experience notes were the main outputs for DO 6. The availability of the 30 outputs was ***Highly Satisfactory***.

Achievement of Project Outcomes

26. There were six (6) direct outcomes (DO; phrased according to the definition of UNEP in the reconstructed ToC at evaluation). These direct outcomes resulted to achieving the two project outcomes (PO), i.e., PO-1 -global nutrient reduction benefits and PO-2 - nutrient reduction benefits in Manila Bay and Chilika Lake with governments implementing nutrient-management areas.

27. *Project Outcome 1* was achieved at the end of the GNC Project. It has contributed to the Bay of Bengal LME SAP, preparation of the Wider Caribbean LME nutrient reduction strategy, and in the South China Sea and Gulf of Thailand Sea. It has laid the foundation for riparian governments to adapt nutrient-reduction policies and actions.

28. *Project Outcome 2* was achieved. Laguna Lake Development Authority and Chilika Development Authority use the ecosystem health report card in their integrated management of their respective lakes. Laguna Lake Development Authority and Chilika Development Authority used the environmental health score card to communicate issues with stakeholders and included this in their integrated approach to water quality management. (DO 4) The Marine Science Institute used data from national government agencies and local government units in the Water Quality Management Areas for modelling the nutrient flows in Manila Bay. (DO5) Relevant stakeholders used monitoring information collected on ecosystem heath of lakes, delta, and estuaries linked to Lake Chilika Lake and Manila Bay to inform nutrient reduction strategies – One regional stakeholder replicated the GNC Project in Cambodia. (DO)

29. The six Direct Outcomes were achieved as such this sub-criterion was assessed ***Satisfactory***.

Likelihood of impact

30. The GNC Project identified agriculture, aquaculture, and human settlements as drivers for nutrient-reduction in the coastal zone. The national agencies, with the mandates for these socio-economic activities, also had mandates to reduce water pollution. The aquaculture driver was partially and indirectly engaged through the Laguna Lake Development Authority (at the ecosystem scale). The assumptions were valid and should hold to support the transition from intermediate state to impact. The likelihood of achieving the impact was ***Likely***.

31. The overall rating for effectiveness of the GNC Project was assessed as ***Satisfactory.***

Financial management

32. The GNC Project adhered to the financial procedures of UNEP, the Implementing Agency. Annual financial reports were submitted as such this sub-criterion was rated ***Highly Satisfactory***. The financial information on the Project assessed by the Evaluator was nearly complete, missing the transaction of remittances but the financial statements from the Partners indicated that funds were received. The final financial statement was provided to the Evaluator (albeit late) but was useful in generating the financial tables in this report. The completeness of financial information was ***Satisfactory.*** There was communication between the financial management and project management. The overall rating for financial management is ***Satisfactory***.

Efficiency

33. The GNC Project had four components that were intended to be implemented in sequence. The Project took advantage of the opportunities to undertake activities in the context of GEF international conferences, regional meetings and collaborate with local organizations. The GNC Project was cost-effective as it used outputs of research made available by universities and organizations. The close association of the GNC project with the UNEP GPNM project also added efficiency to the UNEP/ GEF GNC Project. The rating for efficiency is ***Satisfactory***.

Monitoring and Reporting

34. The logframe of the project did not require outcome indicators, i.e., on behavioural changes of the beneficiaries of the Project. The monitoring design followed the GEF reporting schedule and format of the Project Implementation Report. The reporting on progress was on indicators and targets. The quality of indicators and outputs was high. Some outputs were published in international journals or cited in reports. There was no gap in the monitoring of outputs; output indicators were replicated for monitoring of outcomes (in PIRs). There was a gap in the design of the project in the monitoring information of achievement of outcomes. The funds for terminal evaluation were adequate as there was no travel to project sites. The rating for this sub-criterion is ***Moderately Satisfactory***.

35. The monitoring of project implementation was ***Satisfactory***. PIRs were submitted annually to the Task Managers. The reporting by Partners was complete and was rated ***Satisfactory***.

36. The overall rating for Monitoring and Reporting is ***Satisfactor****y*.

Sustainability

Socio-political sustainability

37. The GNC Project was implemented with national partners and in local organizations. Working with national organizations, such as the Department of Environment and Natural Resources and regional and local governments, was a strategic approach for sustainability. The awareness of the tools for nutrient-reduction by the staff and political leaders was a foundation for sustainability. The GNC also engaged with local authorities (CDA and LLDA) to pilot the assessment of water quality, using the environmental health scorecard as the basis for action and a reference point for monitoring and adaptive management. The

scorecard was also useful as tool to communicate to local stakeholders (fisher folks, according to LLDA). The socio-political sustainability is ***Likely***.

Financial sustainability

38. The financial sustainability was partly achieved by working with the government agency that have the mandate for environmental management and access to fiscal resources through the annual budgeting process. However, some management interventions will require high capitalization (e.g., wastewater treatment plants) or intensive training. Partnership with the private sector will lead to the sustainability of the outcomes. The engagement of the private sector was limited in the GNC Project and as such the financial sustainability is ***Moderately likely***.

Institutional sustainability

39. At the ecosystem-scale, institutional sustainability is assured in the Laguna Lake Development Authority and the Department of Environment and Natural Resources in the Philippines and in Chilika Development Authority and the Ministry of Environment, Forest, and Climate Change in India. At the LME scale, there is a need to share project information with the Coordinator of the Strategic Action Plan. The Regional Seas Programme require the information for monitoring and adaptive management of marine pollution from land-based sources. This sub-criterion was rated ***Likely***.

40. The rating for sustainability is ***Moderately likely***.

Factors affecting Performance

Preparation and readiness

41. The project was well-prepared. The stakeholders (governments) endorsed the project to the GEF Secretariat and at the GPA Annual Meeting in Manila. The rating for this sub-criterion was ***Satisfactory.***

Quality of project management and supervision

42. The quality of project management and supervision was good. The Project Coordinating Unit managed the project implementation through the lead Partners of the 4 technical components of the Project. The Project Steering Committee met regularly to address issues. The PIRs monitored the outputs towards the targets for each indicator. The rating for this sub-criterion was ***Satisfactory.***

Stakeholder participation and cooperation

43. There was stakeholder participation and cooperation at all levels – at demonstration sites (Laguna Lake/Manila Bay, Chilika Lake), national, and global in all Components of the Project. The participation was in consultations, meetings, data-sharing, trainings, and participation in regional and international conferences. The private sector was not engaged at the global/ ecosystem level. The rating for this sub-criterion was ***Satisfactory.***

Responsiveness to human right and gender equality

44. It is a human right to have a healthy environment. In the Philippines, this right is in the Constitution. The GNC Project was strategically relevant to several SDGs (SDG 2, Target 2.9, SDG 3, Target 3.9, SDG 15, Target 15.3) but the most relevant was SDG 14 on the conservation and sustainable use of the oceans, sea, and marine resources for sustainable development.

It was relevant to meeting Target 14.1 of Sustainable Development Goal # 14. It was consistent with the Global Plan of Action on Land-based Sources of Pollution and several GEF IW Projects in many LMEs. The relevant target of SDG 14 is Target 14.1 in that by 2025, governments shall have successfully prevented and significantly reduced marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.

45. The environmental and societal benefits from the GNC Project were for both men and women, however, these gender-based benefits were not further specified and incorporated in the design of the project. Vulnerable groups, such as the fish-farmers were involved in the development and use of the EHSC in Laguna Lake and Chilika Lake. The sub-criterion was ***Not Rated.***

Environmental and social safeguards

46. The GNC Project had low risks. It had a positive impact for the environment and communities. The improvement of water quality would be good for the livelihoods of coastal fisher-folk and mariculturists. The sub-criterion was ***Not Rated***.

Country ownership and driven-ness

47. The level of ownership was high among the local government officials (who provided data), the scientists in the universities, and the resource managers. At the demonstration site in the Philippines, the level of ownership lead to the adaption of measures in the toolbox. The rating for this sub-criterion was ***Highly Satisfactory.***

Communication and public awareness

48. The communication campaign to disseminate the Outputs and Outcomes of the Project and the role of DENR, DA, and DILG in the Philippines was conducted. The website (http://nutrientchalleng.org) is a vehicle to increase public awareness. The goal of the communication campaign is better understanding and adaption of the toolbox by governmental agencies and increased support by the public for nutrient-reduction policies and regulations. The rating for this sub-criterion is ***Satisfactory***.

49. The overall rating on factors affecting performance was ***Satisfactory***.

Findings on the strategic questions of the evaluation

Question 1: To what extent did the project deepen joint efforts of UNEP and IOC-UNESCO and the research consortium?

50. The joint effort of UNEP and IOC-UNESCO, and the research consortium has deepened. IOC-UNESCO is interested in working more with UNEP and the research consortium to replicate the project and apply the tools for nutrient-reduction.

Question 2: To what extent did the applied science-policy model work at global and national level?

51. The science-policy model applied worked at global and national level. The work under the GNC to address LbSP is integrative and transformative. It integrated natural sciences

(chemistry, hydrology, coastal oceanography) and with social sciences (e.g., economics, political science) into policy.

52. Policies are formulated and implemented at the national level as such to assess the effectiveness of science-policy linkage is to assess the replication of this linkage in the world. This linkage has been demonstrated in two countries albeit the global database was used in the Caribbean in the design of the Regional Nutrient Pollution Reduction Strategy and Action Plan for the Wider Caribbean Region (UNEP CEP 2021). There was not enough time to replicate the process in other countries (i.e., conduct stakeholder meetings and consultations, gather, compile, prepare data to input to the model or conduct a PROA, identify suitable management interventions from the toolbox, consult with stakeholders, especially the vulnerable groups, revise national policy, finance the acceptable intervention).

53. The GNC Project was successful in informing many governments to use the science-policy model and providing the foundation for policies and regulations to be put in place. The Evaluator found there was evidence of governments and stakeholders in the Bay of Bengal LME, Wider Caribbean LME, and South China Sea and Gulf of Thailand LME that have adapted nutrient-reduction policies in their Strategic Action Plans.

Question 3: How did the project contribute to GEF and UNEP strategies on nutrient and nitrogen initiatives and discussions on emerging issues of priority?

54. The GNC Project contributed directly to the GEF 4 International Waters Strategic Program 2 on reducing nutrient over-enrichment and oxygen depletion from land-based pollution of coastal waters in LMEs, which is consistent with the GPA. The GNC Project has built the capacity of governments to reduce over-enrichment and oxygen depletion by developing the toolbox of measures, regulations, policy cases, and nutrient-load calculator that policymakers can refer to. The Project has further trained stakeholders around the world on how to introduce the toolbox. The Project has laid a sustainable foundation for global action, especially in LMEs. The GNC Project is mentioned in the GPNM Charter: Operational Framework and Guidelines and its website (http://www.nutrientchallenge.org) is hosted by UNEP.

Conclusions

55. The Evaluator has concluded that the performance of the GNC Project was ***Satisfactory***. The six Direct Outcomes and two Project Outcomes were achieved.

56. Table 2 shows summarized evaluation ratings against key evaluation criteria.

Table 2. Summarized Rating Table

Criterion	Rating[2]
A. Strategic Relevance	HS
B. Quality of Project Design	MS
C. Nature of External Context	F Note: this rating is not included in the calculation of the overall project rating

[2] Most categories are rated according to the following scale: Highly Satisfactory (HS); Satisfactory (S); Moderately Satisfactory (MS); Moderately Unsatisfactory (MU); Unsatisfactory (U); Highly Unsatisfactory (HU). Nature of External Context is rated from Highly Favourable (HF) to Highly Unfavourable (HU). Likelihood of Impact and aspects related to Sustainability are rated from Highly Likely (HL) to Highly Unlikely (HU). The rating for 'Nature of External Environment' is not included in calculating the overall performance rating.

Criterion	Rating[2]
D. Effectiveness	S
E. Financial Management	S
F. Efficiency	S
G. Monitoring and Reporting	S
H. Sustainability	ML
I. Factors Affecting Performance	S
Overall Project Rating	**S**

Lessons Learned

57. The Evaluator has synthesized the following key lessons from the implementation of the project.

58. Lesson 1: Sequencing of project components was an important step in the design of the GNC project which was reinforced during the inception phase. The outputs of one component were prerequisites for another. The compilation of best management practices, case-studies, and modelling of source-impact were the foundation for building the toolbox of management interventions which was, in turn, the knowledge products for dissemination and trainings for replication and up-scaling at the LME scale.

59. Lesson 2: Taking opportunities to synergize with other existing national, regional, and global projects was strategic for replication and up-scaling of environmental management intervention. The GNC project delivered trainings in several regions and conferences (e.g., East Asian Seas Congress, West Indian Ocean (WIOSAP), International Waters Conference) have reached many policy and resource managers who were formulating or implementing SAP in their respective LMEs. At the national scale, linking with the Laguna Lake Development Authority and the Chilika Development Authority was strategic to mainstream nutrient management interventions and strengthening current monitoring efforts.

60. Lesson 3: The project had a duration of seven years but it was insufficient for governments and other stakeholders to initiate comprehensive, effective and sustained programmes addressing nutrient pollution in large marine ecosystems. The Manila Bay Sustainable Development Master Plan (MBSDMP) has recommended programmes, activities, and projects (PAPs) but these are yet to be developed or operationalized. The LLDA has continued using the Environment Health Score Card for monitoring and communication material.

Recommendations

61. The following recommendations were formulated in response to challenges identified by the Evaluator in the implementation of the GNC Project.

62. Recommendation 1: For responsible: Source to Sea Pollution-Free Unit, Regional Seas Convention and Action Plans Secretariat, Marine and International Waters Unit (All UNEP)

Project reporting of progress, results, outputs, and outcomes should be shared with the Regional Seas Conventions and Action Plans Secretariat (e.g., CoBSEA, SACEP) and other regional institutions (e.g., ASEAN, GPNM and informal GPNM Regional Platforms). In this manner, there is sustainability that is institutionalized and a systematic documentation of the actions from relevant UNEP/GEF projects to address pollution from land-based sources under the SAP.

63. Recommendation 2: For responsible: Source to Sea Pollution-Free Unit, Regional Seas Convention and Action Plans Secretariat, Marine and International Waters Unit (all UNEP)

A guided application of the source-impact model by governments and should be considered with the provision that the model is reviewed and updated, if needed. The application should be user-friendly so that the model can become a sustained practice for nutrient-reduction and management. The existing model is connected to the Indicator for Coastal Eutrophication Potential (ICEP[3]). This operationalizes the actions needed and reporting to achieve Target 14.1 (SDG #14), i.e., by 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution. Training with other partners could be considered e.g. the UNEP GEF IW Project "Targeted Research for Improving Understanding of the Global Nitrogen Cycle towards the Establishment of an International Nutrient Management System" (INMS), GEF ID 5400. INMS is built in part on the GNC model aiming to further develop its source impact models. The unspent project funds could be used for this purpose.

64. Recommendation 3: For responsible: UNEP Source to Sea Pollution-Free Unit

GPNM activities should be promoted at regional level. The envisaged regional GPNM platforms could be established and be operationalized to capture best practices and solutions on point and non-point source discharge mitigation and to develop nutrient-reduction projects with the private sector. Regional arrangements, programs, or protocols that function in addressing LbSP (such that is found in the Wider Caribbean Region) should be supported for sustainability. The research outputs and technical guidance through a platform with formal and informal regional institutions in riparian countries, could lead to ecological and societal benefits.

65. Recommendation 4: For responsible: UNEP

Reporting on outcomes with adequate outcome indicators that capture change in behaviours of beneficiaries and relevant stakeholders, including disadvantaged groups, should be included in the reporting on UNEP/ GEF projects in the International Waters Focal Area.

[3] ICEP – based on loads and ratios of nitrogen, phosphorus, and silica delivered by rivers to coastal waters; Garnier, J., A. Beusen, V. Thieu, G. Billen, and L. Bouwman (2010), N:P:Si nutrient export ratios and ecological consequences in coastal seas evaluated by the ICEP approach, Global Biogeochem. Cycles, 24, GB0A05, doi:10.1029/2009GB003583.

1 INTRODUCTION

66. The GNC Project was designed to address nutrient-enrichment in coastal waters resulting from socio-economic activities such as agriculture, aquaculture, and urbanization. The pollution of coastal waters affects the well-being and livelihoods of coastal communities. Pollution of coastal waters will double by 2050 if left to continue without management and governance intervention.

67. The GNC Project was a response by stakeholders to reduce nutrient-enrichment that result to the poor state of coastal waters. It had two (2) inter-linked actions at global and national scales. At the global level, stakeholders from international agencies and universities joined together to develop a systematic approach to nutrient-enrichment and hypoxia in coastal waters. At the national level, governments were provided with the tools to initiate projects with the private sector.

68. The Project was to build the capacity of the governments to reduce the nutrient-enrichment in the coastal waters and respond strategically with the drivers (agriculture, urbanization). The capacity-building in the Project increased the knowledge of governments in the causes-effects of nutrient pollution and provided its policymakers and environmental managers the tools and trainings for effective implementation of regulations that will in turn reduce the pressures on the coastal zone with integration in planning processes for the watershed areas such as Manila Bay, Bay of Bengal and Chilika Lake. The Project aimed also for a wider dissemination of knowledge and tools for more stakeholders to learn adapt best-management-practices that are applicable to the situation in their countries. The rationale was that, if governments are capacitated to take action, especially in the riparian countries of a large marine ecosystem (LME), the transboundary issue of organic pollution will be reduced, and the water quality of the LME will improve.

69. The Project was implemented by the International Waters Unit located in the Ecosystems Division (formerly Division of Environmental Policy Implementation) of UNEP and executed by the GPA Coordination Office/ Secretariat of the Global Partnership on Nutrient Management (GPNM) / Ecosystems Integration Branch, Ecosystems Division. The Project was global in scope with activities in Africa, Asia and the Caribbean. The Project Steering Committee Project (PSC), with representatives from UNEP and a subset of Partners in the GPNM, provided the oversight of the GNC Project. The PSC provided the guidance in the implementation and met to discuss issues and made decisions, subject for the approval of the Implementing Agency (UNEP), and co-ordinated closely with GPNM meetings. The PCU was the secretariat of the PSC and was responsible for the day-to-day implementation of the Project. The PCU was established within the GPA Office of UNEP and consisted of a Project Manager (to-date financed by UNEP) and supported by representatives of the co-executing agencies. The PCU coordinated the independent mid-term and terminal evaluations and provide necessary and appropriate reports – technical, administrative, financial, and periodic progress reports to the Project Steering Committee.

70. The technical work of the Project was executed by core partners and other partners (Table 3). Component A was led by the Centre for Ecology and Hydrology (CEH), Component B by the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific, and Cultural Organization (IOC-UNESCO), Component C by The Netherlands Energy Research Centre (ECN), and Component D by the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA). The core partners led the components and had the fiduciary responsibility on funds and outputs while partners were organizations or institutions with the expertise required to execute activities. The partners constituted the technical core intended to advance future support of countries and expected that there would be continued

collaboration and facilitated capacity building efforts over the course of the project, reaching out to national stakeholders across the Asia, Africa and the Caribbean regions through exposure to tools and methodologies.

71. The GNC project was related to the UNEP Medium-Term Strategy (2010-2013, 2014-2017, 2018-2021) of the sub-programme (SP)5 (Chemical, Waste and Air Quality) and SP3 (Healthy and Productive Ecosystems) for the Programme of Work 2012-2013, 2014-2015, 2016-2017, 2018-2019 and 2020-2021. It was included in the GEF IW-SP2 and referred to SDG 2, Target 2.9, SDG3, Target 3.9, SDG 14, Target 14.1, and SDG 15, Target 15.3.

72. The project was approved by UNEP in April 2011 and GEF in August 2011. The duration was planned for 51 months from March 2012 to June 2016 but was extended by 24 months to April 2019. The total project cost was USD 4,116,347 of which the GEF grant was USD 1,718,182 and USD 2,477,648 in co-financing was realized during implementation. The co-financing secured at the start of the Project was USD 2,398.165.

73. The project had a Mid-term Review, which was conducted in 2014. The recommendations of the Mid-term Review were shared with project partners and the Project Steering Committee for implementation.

74. This report is the Terminal Evaluation of the Global Foundations for Reducing Nutrient Enrichment and Oxygen Depletion from Land-based Pollution in Support of Global Nutrient Cycle" or for short the "GNC Project". The target audience of the terminal evaluation were the GEF Secretariat, UNEP GPA coordination office, regional offices, core and associated partners in the implementation of the project, important project stakeholders like the government representatives from national and local governments looking for approaches to nutrient reduction in LMEs. For the GPNM Project a detailed Project Operational Completion Report was submitted in lieu of a terminal evaluation report (see Annex IX).[4]

75. The purpose of the terminal evaluation of the GNC Project were: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote operational improvement, learning and knowledge sharing through results and lessons learned among UNEP and the partners of the Intergovernmental Oceanographic Commission of UNESCO (Component B), Global Environment and Technology Foundation (Component C), Partnerships in Environmental Management for the Seas of East Asia (Component D) and Centre for Ecology & Hydrology (Component A). The evaluation was also to identify lessons of operational relevance for future project formulation and implementation.

Table 3. Components of the GNC Project and Partners

Component	Work to be undertaken	Partners
A	Global Partnership on Nutrient Management addressing causes and impacts of coastal nutrient over-enrichment and hypoxia	**Centre for Ecology & Hydrology (CEH)** The Netherlands Energy Research Centre (ECN) World Resources Institute (WRI) GRID Arendal

[4] The GPNM Project Operational Completion Report is accepted by the Evaluation Office of UNEP to meet project performance assessment requirements in place of a terminal evaluation report due to the close association of the GNC and GPNM projects. Unavoidable circumstances further resulted in delays in the evaluation process beyond two years after the GPNM project's operational completion.

Component	Work to be undertaken	Partners
B	Quantitative analysis of relationship between nutrient sources and impacts to guide decision making on policy and technological options	**Intergovernmental Oceanographic Commission of UNESCO** PBL Netherlands Environmental Assessment Agency University of Utrecht, The Netherlands Washington State University, United States
C	Establishment of scientific, technological and policy options to improve coastal water quality policies in LMEs and national strategy development	**The Netherlands Energy Research Centre (ECN)** World Resources Institute (WRI) Intergovernmental Oceanographic Commission of UNESCO
D	Development of nutrient reduction strategies through application of quantitative source-impact modelling and best practices in Manila Bay watershed	**Partnerships in Environmental Management for the Seas of East Asia (PEMSEA)** World Resources Institute (WRI) GRID Arendal PBL Netherlands Environmental Assessment Agency University of Utrecht, The Netherlands Washington State University, United States Marine Science Institute, University of Philippines (UP-MSI) Laguna Lake Development Authority (LLDA), Philippines Chilika Development Authority (CDA), Indi
E	Monitoring and Evaluation (non-technical)	UNEP
F	Effective project management and oversight (non-technical)	Project Steering Committee Project Coordinating Unit

Note: The lead agency for the component is shown in bold.

2 EVALUATION METHODS

76. This Terminal Evaluation was carried out in line with the UNEP Evaluation Policy and the UNEP Programme and Project Management Manual. The Evaluation was undertaken over two years after completion of the project. The purpose of the evaluation was to assess project performance (in terms of relevance, effectiveness and efficiency), and determine the outcomes and impacts (actual and potential) stemming from the project, including their sustainability.

77. The evaluation applied a participatory approach throughout the evaluation through engagement with project management, partners, and stakeholders in collecting data and in the review of evaluation deliverables.

78. The evaluation methods were planned to be broad at inception but was limited due to the time that had elapsed after the end of the GNC Project in 2019 and the on-going mobility restrictions due to the COVID-19 pandemic. The core project partners had new assignments or retired such that a wider group of former participants was not consulted. Focus-group discussions with stakeholders at project sites were not conducted.

79. The GNC Project was evaluated following the Theory of Change (ToC). The ToC was reconstructed during the Inception Phase of the evaluation, as there was none developed during the project design, based on review of the project document and all other project documentations including initial interviews with the project management staff.

80. Data collection involved the review of project document, project implementation reports, and terminal evaluation. The outputs of the GNC project were verified through the links provided and interviews with key partners, UNEP officers, a government environmental manager. The independent evaluation consultant has experience in LMEs projects.

81. There were 13 interviews conducted by the Evaluator in 2021 virtually (by Zoom platform) with UNEP staff, key partners, academia and stakeholders in the Philippines.

82. Both men (7) and women (6) were interviewed in the evaluation.

83. Data were collected with respect for ethics and human rights issues. Information was gathered after prior consent from people, all discussions remained anonymous, and all information was collected according to the UN Standards of Conduct.

Limitations of the evaluation

84. The evaluation was conducted over two years after the operational completion of the project and it meant that data collection was limited due to the unavailability of project implementers, which had changed assignments, or retired (as in the case of the financial managers). By the time of the evaluation, the elected government officials, who were in office during the implementation phase, had been replaced by newly elected executives.

85. There was no travel to site projects (Manila Bay watershed, Philippines) and Chilika Lake, India). The Evaluator is based in Metro Manila and had the opportunity to see different parts of the coastal zone (Laguna Lake, central and northern parts of Manila Bay) but no face-to-face meetings were held with stakeholders due to the health restrictions during the COVID-19 pandemic).

86. The evaluation relied on the monitoring reports (Project Implementation Reports, Steering Committee Reports, and draft Terminal Report and Annexes) and a mid-term review

report (review conducted in 2014 by an independent consultant) for a data. The findings of the evaluation were triangulated by interviews with key officers, implementers, and experts. The data were also verified against published articles uploaded reports in the website (http://nutrientchallenge.org). Articles on land-based sources of pollution and strategic action plans for LMEs were also researched on-line for triangulation.

87. No audit reports were available as audit is not required when the entities of both the executing and implementing agency, while separate, are located in UNEP.

3 THE PROJECT

3.1 Context

88. The context of the GNC project at the global scale is the growing challenge to balance the need for production of crops from agriculture, including aquaculture, and urbanization, on the one hand, and the maintenance of good water quality of coastal waters, on the other hand. The deterioration of the status of coastal waters is happening in many LMEs which will increase with increasing need for food production. National governments have to act to mitigate the impacts of coastal pollution on the well-being and livelihoods of their citizens.

89. The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) was formulated by governments in 1995 to tackle this environment problem. Governments voluntarily act to reduce coastal pollution under this Programme of Action and report on these to the Secretariat. Despite this Programme, coastal pollution continues to increase in part due to the inadequate capacity of governments to regulate nutrient-enrichment.

90. The Global Environment Facility (GEF) supports the governments in attaining the goal of the GPA and attainment of Sustainable Development Goal 14. Under the GEF International Waters Focal Area, Large Marine Ecosystems Strategic Priority-2, coastal pollution which can be transboundary due to oceanographic processes, are supported with grants.

91. The United Nations Environment Programme (UNEP), through its Regional Seas Programme, facilitate the regional actions under the Strategic Action Plans (SAPs) of riparian countries around the LMEs.

3.2 Results Framework

92. The objective of the GNC Project was to "provide the foundations (including partnerships, information, tools and policy mechanisms) for governments and other stakeholders to initiate comprehensive, effective and sustained programmes addressing nutrient over-enrichment and oxygen depletion from land-based pollution of coastal waters in Large Marine Ecosystems".

93. There were nine (9) outcomes and thirty (30) outputs that were planned to achieve the objective. In the Theory of Change (ToC) constructed for the evaluation, the 9 outcomes were rephrased to 6 Direct Outcomes (DO, following the definition from UNEP; Figure 2). The outputs were consolidated to result to six (6) Direct Outcomes and two (2) Project Outcomes. Table 4: Justification for Reformulation of Results Statements lists the results framework as formulated in the project document and formulation for the ToC at Evaluation in section 4 of this report.

94. To achieve the objective, the GNC Project was designed with four (4) technical components. Component A was to establish a global partnership with international and national experts. The Global Partnership for Nutrient Management (GPNM) focused on the development of the modelling techniques, the development of the Policy Toolbox, and the integration of the tools with the modelling techniques (Component B and C). Component D was the application of tools and modelling techniques (developed in Components B and C) in the Manila Bay watershed to produce actual nutrient reduction strategies both for mainstream

adoption in that area, and as a model for the development and application of nutrient reduction strategies in other regions.



Manila Bay, near Tanza, Navotas (Photos: A. S. Cabanban)



3.3 Stakeholders

95. The main stakeholder groups of the GNC Project were:

i. Scientists and research institutions, in both international and national academic institutions – as the group of experts that prepared scientific overviews, reports, and source-impact model;

ii. National Governments, relevant agencies, and management authorities – as the primary beneficiary of GNC outputs (e.g., capacity-building, tools) and as implementers of policy and regulations to reduce nutrient pollution;

iii. United Nations agencies and the Regional Seas Programmes – as both the catalyst and contributor to project implementation and sustainability at the LME or regional scale;

iv. Farmers of fish, shrimp, rice, corn, and other crops and domestic – as the group that can comply with regulations and reduce excess nutrient flow into rivers and coastal waters;

v. Fish-farmers and gleaners in coastal waters, coastal fishers, and tourism sector – as the group that benefits from clean riverine and coastal waters (downstream from the watershed);

vi. Settlements, subdivision- and condominium-dwellers – as the group that can comply with regulations and reduce excess nutrient flow into rivers and coastal waters.

96. The private sector and the community groups were the farming and fishing cooperative (v), tourism sector, and property realty developers (vi).

97. Stakeholder analyses were conducted for global stakeholders and ecosystem-level stakeholders (Manila Bay and Chilika Lake), using the interest and influence grid (2 by 2 table), leading to the classification of stakeholders to *low interest, low influence* group (least important), *low interest, high influence* group (show consideration), *high interest, low influence* group (Meet their needs), and *high interest, high influence* group (Key Player). The focus of the analyses was on the ability of the project outputs and direct outcomes. The stakeholder analysis maps are presented as Figure 1-3.

Figure 1. Global stakeholder analysis

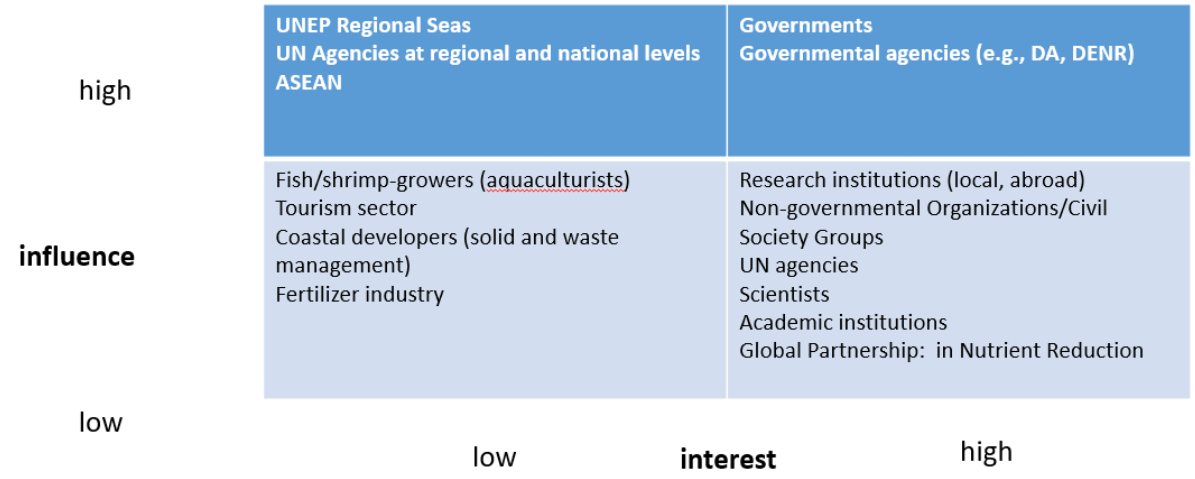


Figure 2. Stakeholder analysis – Manila Bay

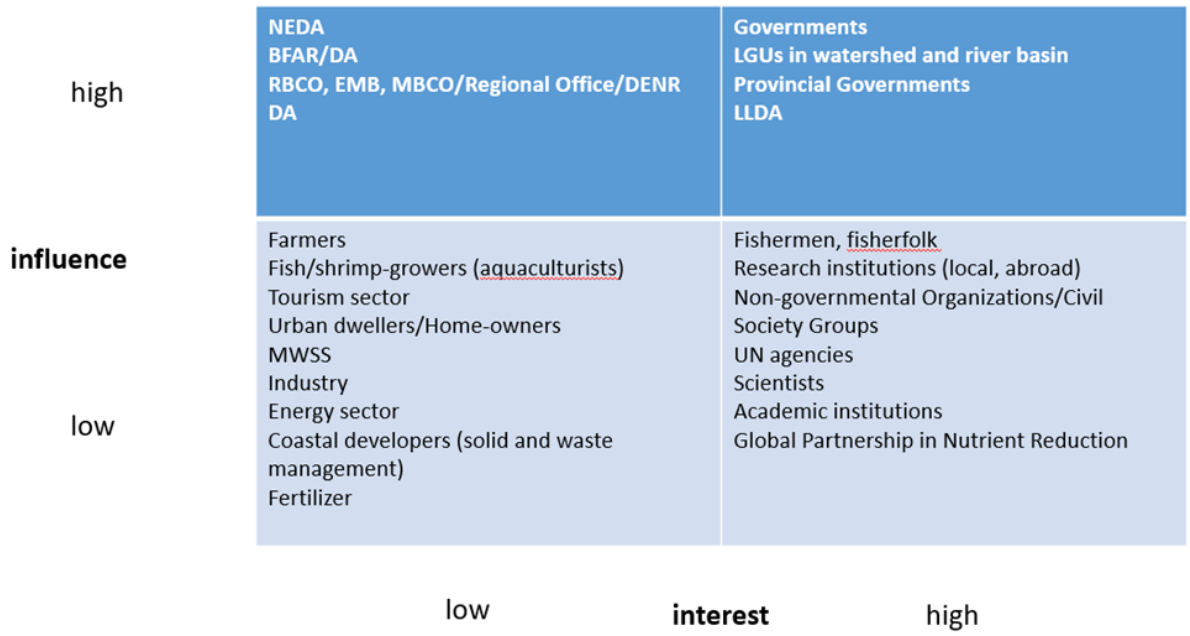
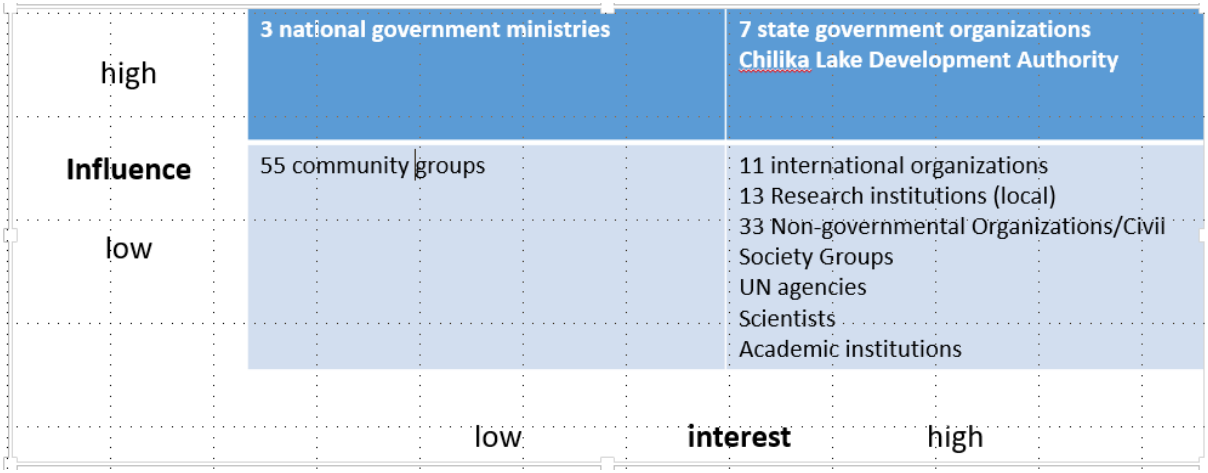


Figure 3. Stakeholder analysis - Chilika Lake



3.4 Project implementation structure and partners

98. The governance structure of the GNC Project had the International Waters Unit, UNEP, as the Implementing Agency and the UNEP GPA Coordination Office/ Global Partnership on Nutrient Management (GPNM) with involvement of core partners as executing agency. Figure 4 shows the institutional arrangements and key stakeholders.

99. The International Waters Unit, UNEP as the Implementing Agency of the GNC Project had the fiduciary responsibility to the GEF Secretariat. The agreement was signed between the Funding Division, GEF Coordinating Office and the Division of Environmental Policy Implementation (DEPI) now Ecosystems Division, UNEP. The Agreement was amended (Amendment 2, 2018) between the Corporate Services Division, GEF CO and the Ecosystems Division, UNEP due to the changes in the names of the offices.

100. UNEP GPA Coordination Office/Global Partnership on Nutrient Management (GPNM) – The GPA Coordination Office/GPNM as the Executing Agency coordinated the implementation of the activities of core Partners. The Project Steering Committee (PSC), represented by UNEP and a subset of Partners in the GPNM, provided the oversight of the

GNC Project. A Project Coordination Unit, located at the Ecosystems Division, was the Secretariat of the PSC. The PCU was led by the Project Manager and supported by the Coastal and Marine Unit, Ecosystems Division. The PCU was responsible for coordination of activities with the lead partners the components of the Project and as well as the monitoring and evaluation plan. The PCU submitted reports to the PSC for adaptive management in the implementation of the Project.

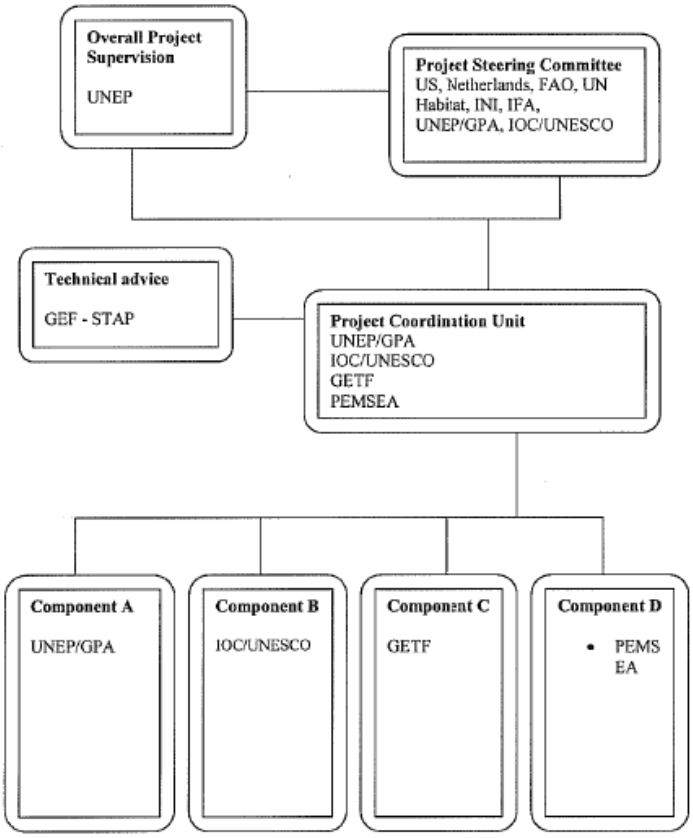


Figure 4. Organigram of the Project with key project key stakeholders

101. Core Partners – Core Partners implemented activities under Components A, B, C, and Table 3). Lead agencies would implement activities with other partners within the Component and coordinate with other lead agencies for inter-linked activities (e.g., inputs to toolbox).

3.5 Changes in design during implementation

102. There was a Mid-term Review (MTR) conducted in 2014. The MTR provided six recommendations, including: a) review of the log frame and indicators and make the latter SMART (for M & E tool and operational tool); b) undertake regular technical and financial reporting; c) revision of programme, workplan, and budget; d) provision of regular financial summaries; e) mainstreaming gender considerations; and f) developing an exit strategy. These were presented to the Project Steering Committee for approval.

103. The recommendations were circulated to project partners and the PSC. The GNC Project had begun incorporating the recommendations in 2015. The specific responses to the MTR recommendations were implemented:

a) A review of the logical framework was conducted (but the proposed changes were not articulated);

b) Partners were reminded to submit timely the 6-monthly reporting to the Project Management Unit (PMU) and submitted to the PSC and Task Manager; and on-going dissemination of reports, by extending of the ECN contract to add more information in the website and the by the generation of briefs by the PMU on various themes linked to project outputs;

c) The workplan and budget for 2015-2016 were revised and approved by the PSC and IA;

d) Access to financial information, which was exacerbated by the change in the financial system to Umoja[5], but was addressed;

f) Gender considerations were discussed with project partners, with gender specialists, as part of the discussion for sustainability and exit strategy;

g) An exit strategy was prepared for activities to continue or replication after the GNC project.

104. The Evaluator found that the MTR recommendations had been satisfactorily addressed, especially the dissemination of information through the website and a communication strategy. The communication strategy contributed to the sustainability of the interventions to address global nutrient pollution. The GNPM project as the exit strategy, was approved and funded for implementation.

105. There were no changes in the design of the GNC Project during implementation. There were however, two project revisions.

106. The first revision was in 2016 to extend the project duration and implementation due to changes of staff in the executing agency. The Project Manager retired and there was a gap in the management. The name of the funding division in UNEP was changed from the GEF Coordination Office to the UNEP Office of Operations. This amendment was in effect to June 2018.

107. The second revision was in 2018 to reflect the change in name of the Office of Operations to Corporate Services Division and Division of Environmental Policy Implementation to Ecosystems Division. The second amendment revised and extended the end of the project to April 2019.

3.6 Project financing

108. The GEF GNC Project was a medium-sized project with a GEF grant allocation amounting to one million seven hundred eighteen and one hundred eight two dollars (USD 1,718,182).

109. The co-financing secured at the start of the Project was two million three hundred ninety r eight thousand and three hundred sixty-five dollars (USD 2,398.365) from both cash and in-kind contributions in staff-time of the partners. Additional co-financing was realized during the implementation, bringing the total co-financing to two million four thousand seventy-seven six hundred forty-eight dollars (USD 2,477,648).

[5] Umoja – “ingle, global solution that is enabling efficient and transparent management of the United Nation’s financial, human and physical resources and improving programmatic delivery. As a catalyst for business transformation, Umoja is improving financial and administrative operations, and program delivery with a potential to improve the efficiency and the overall effectiveness of the Organization.” - https://umoja.un.org/

110. The grant from GEF was not completely expended. The Evaluator was not able to get clarification from the fund managers, who managed the GNC Project, as they were no longer in the Corporate Services Division. This evaluation has a recommendation (see section on Recommendations) for the use of these unused funds.

111. The co-financing was reported as committed in the Project Document. The co-financing in-kind was on the involvement of staff in the Partners. The accounting and reporting of time involvement in the Project was an administrative challenge. The Terminal Report and financial statement reported details of the co-financing by Partners.

4 THEORY OF CHANGE AT EVALUATION

112. The GNC project did not have a Theory of Change developed during its design phases (this was not a prerequisite during the development of the project). For the purpose of informing the evaluation, and particularly for deepening the understanding of the project's results pathways in the larger context of nutrient-reduction in LMEs, the Evaluator has developed a reconstructed Theory of Change (for justification for reformulation of results statements see Table 4 and for the ToC diagram see Figure 5 on the next page). The narrative below and Theory of Change were tested through consultations with key stakeholders and presented in the Inception Report for the Evaluation.

113. The Theory of Change was: if national governments have knowledge, capacity, and tools to promote best practices in the use of fertilizers by the agro-industrial sector and best practices in urban development, then nutrient-enrichment of coastal waters would be reduced. With the reduction of nutrients in coastal waters, the well-being (health) and livelihoods of the coastal communities would be improved.

114. The GNC Project was designed to meet the enabling condition for the improvement of national implementation of nutrient management.

115. The assumptions for governance to achieve the impact were: (1) that regional institutions and national governments promote outputs and outcomes; (2) that local governments along the waterway (rivers in the watershed and coastal zone) cooperate, (3) the use of the source-model; and (4) apply decision for regulations to reduce nutrient pollution. It was also assumed that private sector would cooperate with national agencies to apply nutrient-reduction and ecosystem scale and that farmers, fish-growers, and settlers comply, with consideration made for gender and vulnerable groups. In addition to the tools and information to enable governments, it was also assumed that the successful demonstration of the nutrient reduction using monitoring data and communication to stakeholders would contribute to the attainment of the project outcome.

116. The drivers for impact to be achieved were the farmers, fish-growers, and household owners who were the users and sources of nutrient inputs. Farmers used fertilizers for food production while fish-growers produced nutrient-rich wastewater for the culture of fishes or shrimps. Household owners, likewise, were the sources of nutrient pollution when not connected to sewerage and treatment plants.

117. To achieve the impact, the governments and other stakeholders would initiate comprehensive, effective and sustained programmes addressing nutrient over-enrichment and oxygen depletion from land-based pollution of coastal waters in large marine ecosystems (LMEs). The replication of the approach would result in global nutrient reduction benefits at global level (project outcome 1) and nutrient reduction benefits in Manila Bay and Chilika Lake watershed areas (project outcome 2) by providing the tools for the application of nutrient management to governments and stakeholders using the tools and monitoring data for analysis and the results to convince the stakeholders, especially the farmers, fish-farmers, and household owners, to comply with regulations – at the scale of the LME (project outcome 1 and project outcome 2) which would result to the improvement of coastal waters quality (intermediate state).

118. The objective of the project was rephrased (following UNEP definition of project outcome) to: governments initiate nutrient-reduction projects to initiate comprehensive,

effective and sustained programmes addressing nutrient over-enrichment and oxygen depletion from land-based pollution of coastal waters in Large Marine Ecosystems.[6]

119. The original nine outcomes in the Project Document were rephrased in the reconstructed Theory of Change to six Direct Outcomes (following the definition from UNEP)[7], which led to two project outcomes. Direct Outcomes 1-3 mainly led to Project Outcome 1 and Direct Outcomes 4-6 led to Project Outcome 2, however, the synergy and interdependency of the direct outcomes (and availability of outputs) would make the causal pathways more interlinked in practice and the project outcome at national level could also contribute to some lesser extent at achieving Project Outcome 2 at the global level.

120. The 30 outputs of the projects were aligned to the six (6) Direct Outcomes.

Table 4. Justification for Reformulation of Results Statements

Formulation in original project document(s)	Formulation for Reconstructed ToC at Evaluation (RTOC)	Justification for Reformulation
LONG-TERM IMPACT		
	Long-term impact: improved nutrient management globally and reduction of land-based sources of pollution, hypoxia, and dead zones in the marine environment. **Ecological Impact:** Coastal and marine water quality of the LME (e.g., South China Sea, Bay of Bengal) has improved.	For the preparation of the ToC
INTERMEDIATE STATE		
	Intermediate state: Coastal waters in the LME have reduced nutrient-load from land [e.g., Manila Bay, Bay of Bengal	For the preparation of the ToC
PROJECT OUTCOMES (MTR updated version)		
1 Global Partnership of stakeholders actively involved in addressing nutrient over-enrichment in coastal waters.	**Direct Outcome 1:** Stakeholders engage actively in a global partnership to address nutrient over-enrichment in coastal waters.	"A direct outcome is an outcome that is intended to be achieved from the uptake of outputs and occurring prior to the achievement of Project Outcome(s)." (UNEP Glossary) Stakeholders are brought together to actively work together through a global partnership.
2 GEF projects, countries and stakeholders: (are) better informed about the importance of eutrophication & hypoxia, including environmental and economic costs.	**Direct Outcome 2:** GEF projects, countries and stakeholders use the information, tools, guidance and support made available in the development and implementation of nutrient reduction strategies.	Outcomes 2, 3 and 4 and are reformulated as one direct outcome. The natural outcome of providing access to information, tools, guidance and support is the use of them by relevant stakeholders.
3 GEF projects, countries, relevant stakeholders have access to continued guidance and support for development and		

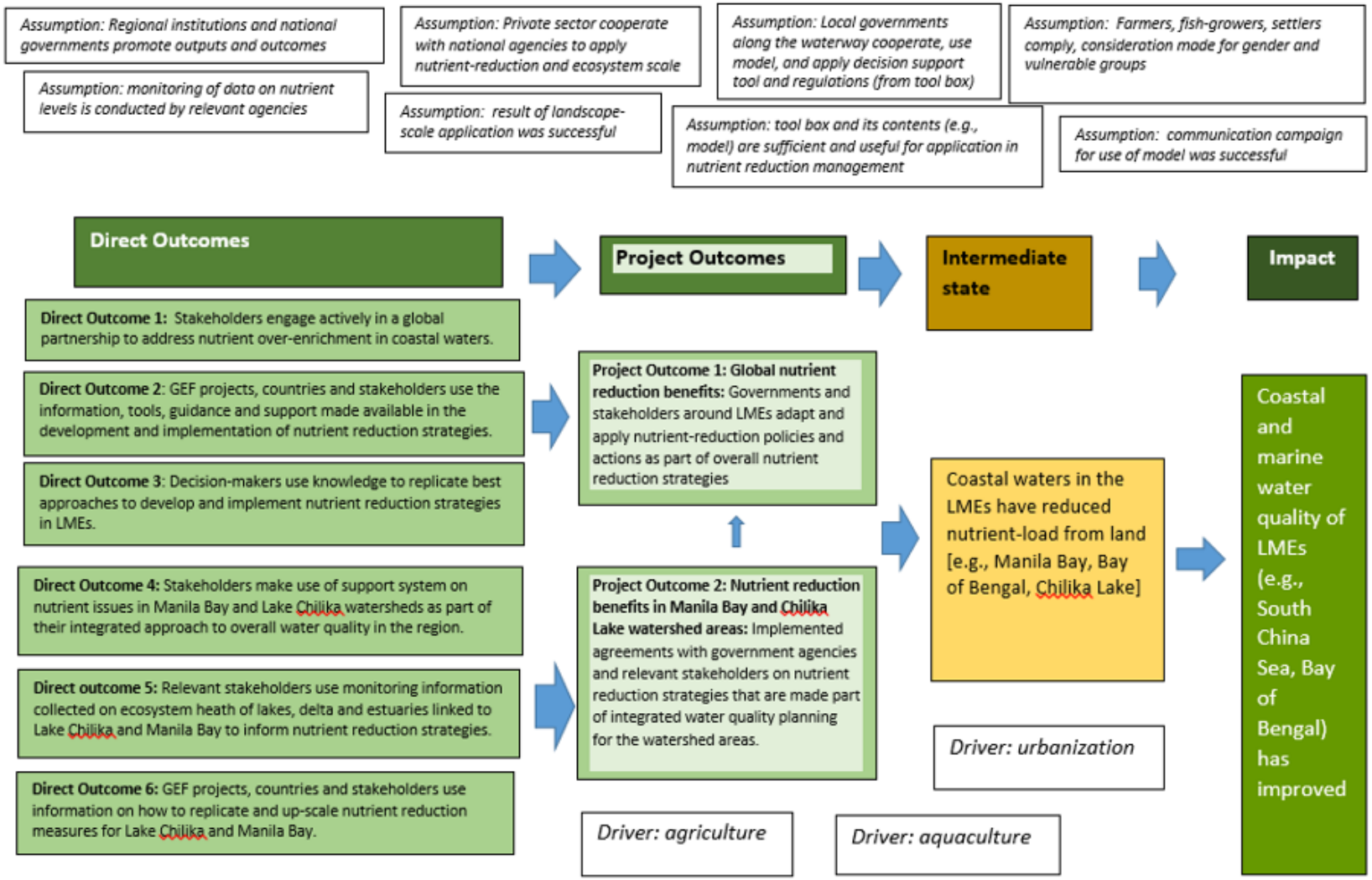
[6] Original project objective: "to provide the foundations (including partnerships, information, tools and policy mechanisms) for governments and other stakeholders to initiate comprehensive, effective and sustained programmes addressing nutrient over-enrichment and oxygen depletion from land based pollution of coastal waters in Large Marine Ecosystems." (ProDoc)

[7] Direct Outcome is an outcome that is intended to be achieved from the uptake of outputs and occurring prior to the achievement of Project Outcome(s). (UNEP, Glossary of Results Definitions (2021).

[2]Project Outcome(s) ia) are those intended to be achieved by the end of project timeframe/funding envelope (UNEP , Glossary of Results Definitions (2021).

Formulation in original project document(s)	Formulation for Reconstructed ToC at Evaluation (RTOC)	Justification for Reformulation
implementation of nutrient reduction strategies.		
4 Relevant stakeholders in developed and developing countries have basis and tools available.		
5 Decision-makers have informed and interactive access to cost effective, replicable tools and approaches to develop and implement nutrient reduction strategies in LMEs.	**Direct Outcome 3:** Decision-makers use knowledge to replicate best approaches to develop and implement nutrient reduction strategies in LMEs.	The natural outcome of informing and providing access to tools is the use and replication of the knowledge.
	Project Outcome 1: Global nutrient reduction benefits: Governments and stakeholders around LMEs update policies adapt and apply nutrient-reduction policies and actions as part of overall nutrient reduction strategies.	Direct outcomes 1, 2 and 3 (original outcomes 1, 2, 3, 4, and 5 covering Components A, B and C) feed into Project Outcome 1 "Project Outcome(s) are those outcomes that are intended to be achieved by the end of project timeframe/funding envelope" (UNEP Glossary).
6 Strengthened support system on nutrient issues in Manila Bay watershed as part of integrated approach to overall water quality in the region.	**Direct Outcome 4**: Stakeholders make use of support system on nutrient issues in Manila Bay and Lake Chilika watersheds as part of their integrated approach to overall water quality in the region.	The natural outcome is the use of information and support by relevant stakeholders of Manila Bay and Lake Chilika.
7 Agreement with government agencies and relevant stakeholders in the Manila Bay watershed on nutrient reduction strategies to be implemented, including their effective insertion into integrated water quality planning for the watershed area.	**Project Outcome 2: Nutrient reduction policies and strategies adapted in Manila Bay and Chilika Lake watershed areas: implemented agreements with government agencies and relevant stakeholders on nutrient reduction strategies that are made part of integrated water quality planning for the watershed areas.**	Direct outcomes 4, 5 and 6 (original outcomes 6,7,8 and 9 covering Component D) feed into Project Outcome 2 Reformulated as project outcome with focus on policies and strategies for implementation of nutrient reduction measures in the Manila Bay and Chilika Lake watersheds.
8 Effective application of an Ecosystem Health Report Card for lakes, deltas, and estuaries including as part of overall nutrient reduction strategies.	**Direct outcome 5:** Relevant stakeholders use the report card on ecosystem health of lakes, delta and estuaries linked to Lake Chilika and Manila Bay to inform nutrient reduction strategies.	The natural outcome is the use of monitoring information by relevant stakeholders of Manila Bay and Chilika Lake
9 Accessible up-scaling and replication strategy shared interactively with GEF projects, countries, and stakeholders for development and implementation of nutrient reduction strategies.	**Direct Outcome 6**: GEF projects, countries and stakeholders use information on how to replicate and up-scale nutrient reduction measures from Lake Chilika and Manila Bay.	The natural outcome is the use of information on how to replicate and upscale by relevant stakeholders of Manila Bay and Lake Chilika.

Figure 5. Reconstructed Theory of Change



5 EVALUATION FINDINGS

5.1 Strategic Relevance

5.1.1 Alignment to UNEP MTS, POW and Strategic Priorities

121. The project was aligned with the Medium-Term Strategy (MTS 2010-2013, 2014-2017, 2018-2021) on SP5: Chemical, Waste & Air Quality and SP3: Healthy and Productive Ecosystems, Programme of Work 2012-13, 2014-15, 2016-17, 2018-19, 2020-21. It was aligned with the Bali Strategic Plan for Technology Support and Capacity Building (initially adapted in 2005) in strengthening partnerships among governmental agencies with research institutions, and in addressing the drivers that impact on the socio-economic development and the conservation of ecosystem services.

5.1.2 Alignment to UNEP/GEF/Donor Strategic Priorities

122. The GNC Project was aligned to the GEF-4 International Waters - Strategic Program (SP) 2 on Reducing nutrient over-enrichment and oxygen depletion from land-based pollution of coastal waters in LMEs, and was consistent with the GPA.

123. It contributed to the regional priorities of the South China Sea and Gulf of Thailand Large Marine Ecosystem (SCS LME), Bay of Bengal Large Marine Ecosystem (BOBLME), Caribbean Large Marine Ecosystem (Greater LME), and West Indian Ocean Large Marine Ecosystem (WIO LME) contained in their respective Strategic Action Plans (SAPs). In the SCS LME, the project contributed to meeting two outcomes under Component 2 (Strengthening knowledge-based action planning for the management of coastal habitats and land-based pollution to reduce environmental degradation of the South China Sea and Gulf of Thailand) on enhancing information-base for coastal habitat management, monitoring, and action planning (Outcome 2.1), regionally appropriate tools and mechanisms to guide the development of sustainable management systems for coastal habitats, and land-based pollution (Outcome 2.5).

124. In the Bay of Bengal Large Marine Ecosystem (BOB LME), it contributed to the Theme 3 on Water Quality for controlling coastal and marine pollution to meet standards. In the Caribbean LME, it contributed to meeting the objectives of the SAP and the Cartagena Convention. In the Western Indian Ocean Large Marine Ecosystem (WIO LME), the GNC Project was relevant in developing stress-reduction policies for the private sector reduce its impact on water quality (particularly on freshwater resources) as part of the Strategic Action Programme Policy Harmonization and Institutional Reforms.

5.1.3 Relevance to Global, Regional, Sub-regional and National Priorities

125. The GNC Project was strategically relevant to several SDGs (SDG 2, Target 2.9, SDG 3, Target 3.9, SDG 15, Target 15.3) but the most relevant was SDG 14 on the conservation and sustainable use of the oceans, sea, and marine resources for sustainable development. The relevant target of SDG 14 was Target 14.1 in that by 2025, governments shall have successfully prevented and significantly reduced marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.

5.1.4 Complementarity with Existing Interventions/Coherence

126. The GNC Project was coherent with the Global Programme of Action to Address Land-based Sources of Pollution (GPA LbSP) at the global scale. It was complementary with existing and still on-going global or regional projects in 2022 of the IW Portfolio such as:

- Reducing Pollution and Preserving Environmental Flows (RPPEF) in the East Asian Seas through the Implementation of the River Basin Management (IRBM) in ASEAN countries (GEF 9654),
- Bizerte Lake Environmental Project Lagoon and Marine de Pollution (GEF 5787),
- Guandong Agricultural Pollution Control (GEF 5452),
- Targeted Research for Improving the Global Nitrogen Cycle towards the Establishment of an International Nutrient Management System (GEF ID 5400),
- Providing the Tools for Reducing Nutrient Enrichment and Oxygen Depletion from Land-based Pollution of Coastal Waters in LMEs (GEF 3918),
- Reducing and Preventing Land-based Pollution in the Rio de la Plata/Maritime Front through the Implementation of the FrePlata Strategic Action Program (GEF 3519),
- World Bank/GEF Investment Partnership Fund for Pollution Reduction in the LMEs of East Asia (Tranche 1, Second Instalment; GEF 3025),
- Promoting Accelerated Uptake of Environmental Technologies and Promotion of Best Practices for Improved Water, Chemicals, and Waste Management in the Black Sea Basin (GEF 9571),
- Strategic Partnership for a Land-based Pollution Reduction Fund for the LMEs of East Asia (Tranche 3, GEF 2576),
- Danube/Black Sea – Nutrient Reduction Investment Fund: Tranche 2 (GEF 1661), and
- Rostov Nutrient Discharge and Methane Reduction Project - under WB-GEF Strategic Partnership for Nutrient Reduction in the Danube River and the Black Sea (GEF 1202).

Rating for Strategic Relevance: ***Highly Satisfactory***

5.2 Quality of Project Design

127. The strengths of the project design were in the strategic relevance, governance and supervision arrangements, and risk identification and social safeguards.

128. The GNC Project Document had a logical framework (a Theory of Change was not required) and the narrative of the intervention logic, i.e., if the policymakers have the knowledge, tools, and expertise to reduce nutrient-reduction in their respective jurisdictions. The reconstructed Theory of Change was based on the logical framework in that if policymakers in governments have the capacity to reduce nutrient-enrichment, then coastal waters in the LMS will have reduced nutrient-load from land and the water quality of coastal waters in LMEs will improve. The actions planned at project design were under four (4) components with several outputs under each component, totalling to 30 technical outputs and nine (9) outcomes.

129. The technical outputs logically contribute to the nine (9) outcomes that were found complementary. In the ToC at Evaluation, these outcomes were streamlined into six (6) Direct Outcomes (DOs, Figure 4). All essential outputs and Direct Outcomes led to the two (2) Project Outcomes. These were 2 main causal pathways to impact, at national and global scale and another at ecosystem scale that interlinked (in the Theory of Change) although the Project Outcomes were interlinked. Results from the ecosystem-scale demonstration would be inputs to governmental understanding and while national actions could replicate and scale-up actions at ecosystem scale. The GNC Project could have designed with fewer outcomes along the two main pathways and avoid over-lapping outcomes. A project designed with numerous outcomes require many indicators and monitoring that will require resources to collect data.

130. The quality of the stakeholder analysis in the Project Document was very high. It had identified international agencies and national governments as key stakeholders in implementing the actions to improve the progress of the GPA implementation at regional and national levels. It had also identified at the ecosystem-scale the numerous stakeholders, both public and private sector, that can play a role in integrated watershed and coastal management for effective application of regulatory measures. The fish-farmer and fisher-folk were identified as stakeholders and are beneficiaries of measures in the watershed. These stakeholders have participated in activities in the pilot projects (Manila Bay/Laguna Lake and Chilika Lake). The drivers in the private sector were identified but were not engaged in the Project at this phase in the pathway to impact. The involvement of the private sector will be crucial with the application of the regulatory measures by governments at the ecosystem scale.

131. The weakest score among the project design criteria was on "intended results and causality" ***(Moderately Unsatisfactory)***. The outputs were robust, science-based, and practical for governments to control and reduce nutrient use. It has provided the Regional GPNM the materials for replicating and scaling-up the Project at the LME scale. The Outcomes/Direct Outcomes (in the Restructured ToC) were unrealistic with respect to the timeframe and scale of implementation and national adaptation would take longer.

Rating for Quality of Project Design: ***Moderately Satisfactory***

5.3 Nature of the External Context

132. The risks identified in the GNC Project were mostly at low levels; only two were at medium level. The willingness of governments and stakeholders to engage and take action was inherent and internal to the project. The limited private sector involvement was at medium risk level. There was little private sector involvement in the project although this was planned. The toolbox, containing best-management-practices, would be most useful to the private sector even after the project has concluded.

133. There was an election in the Philippines in the middle of the implementation period but this did not result in a political disruption. There were extreme weather events which resulted to increased precipitation in the watershed of Manila Bay [e.g., Typhoon Pedring (2011), Tropical Depression Ferdie (2012), Tropical Storm Mario (2014), and Tropical Storm Maring (2017)]. Increased rainfall resulted to more run-off of nutrients from agricultural farms but the modeling conducted by the University of the Philippines Marine Science Institute (UP MSI) study found out that domestic waste was the primary contributor to nutrient enrichment hence the input data in the calculator, developed in the toolbox for use by the local stakeholders, included population levels as a variable for the amount of nutrients that are discharged to the environment.

Rating for Nature of the external context:	*Favourable*

5.4 Effectiveness

5.4.1 Availability of Outputs

134. The GNC Project had 30 planned outputs across four Components: Component A had 9 outputs; Component B – 7; Component C – 7; and Component D – 7. The draft Terminal Report has reported all the outputs that were delivered by the Partners. These outputs were available as scientific papers, experience notes, brochures, or reports and could be downloaded from the website of the GPNM (http://nutrientchallenge.org).

135. The minimum outputs to achieve the Direct Outcome 1 were the: partnership at global and regional levels established; web-based partnership platform established; and partnership communication strategy formulated.

136. For Direct Outcome 2, the outputs were: the global overview on nutrient-enrichment eutrophication/hypoxia – cause, effects, etc. ; the synthesis report identifying issues and gaps was written; the web-based platform targeting GEF-related projects was designed as part of the IW:LEARN; the community of practice targeting GEF-related nutrient projects and incorporation of extension services on agriculture were done; participation and provision of inputs to the GEF International Waters and GPA Review; the overview and synthesis of policy, technical options, measures, and regulations were prepared; best practice options, measures, etc., replication and up-scaling were conducted; the integration of policy toolbox with source-impact modelling and analysis was conducted.

137. For Direct Outcome 3, the outputs were: the practices and lesson learned replicated and up-scaled; the overview of existing tools for source-impact analysis of nutrients in LMEs and their target audiences was prepared; the global database on nutrient loading and occurrence of HABs, effects on fish landings, abundance, and populations were developed; and the nutrient impact for global and local to regional nutrient source impact analysis was modelled.

138. For Direct Outcome 4, the outputs were: regional models for nutrient source-impact modelling for the Manila Bay watershed demonstration area to help guide cost-effective nutrient reduction planning for the watershed area were developed; component B modelling and analysis contributed to policy tool development under Component C; regional and national scientists and policy experts, particularly from developing countries were trained in using nutrient source-impact modelling analysis; nutrient source-impact guidelines and user manuals for integrated eutrophication assessment and nutrient criteria were developed.

139. For Direct Outcome 5, the outputs were: Experts on practical application of Policy Toolbox and source-impact modelling and analysis were engaged with and trained; strengthened information reporting on nutrient issues in Manila Bay was developed; foundations for nutrient reduction strategies in Manila Bay watershed based on source-impact modelling and best practices were established; final source-impact models for Manila Bay in developing nutrient reduction strategies were developed and applied.

140. For Direct Outcome 6, the outputs were: the development and application of: final integrated nutrient reduction strategies; the ecosystem health report for nutrient over-enrichment and hypoxia-containing stress reduction and environmental quality status indicators in Lake Chilika, Orissa; Ecosystem Health Report Card (EHRC) to Laguna Lake, Manila Bay; and the implementation of replication and upscaling strategy.

141. Some of the outputs were strongly linked with other outputs of another Component. For example, in producing the Toolbox and its contents, the outputs that were linked were the global overview on nutrient-enrichment eutrophication/hypoxia – causes, effects, etc., global database on nutrient loading and occurrence of HABs, effects on fish landings, abundance, and populations were developed; and nutrient impact for global and local to regional nutrient source impact analysis were modelled. In disseminating the use of the Toolbox and the source-impact model, the interlinked outputs were the trainings and the communication strategy. For replication and up-scaling, community of practice targeting GEF-related nutrient projects, incorporated extension services on agriculture; regional and national scientists and policy experts, particularly from developing countries, trained in using nutrient source-impact modelling analysis; nutrient source-impact guidelines and user manuals for integrated eutrophication assessment and nutrient criteria were developed.

142. The quality of the all the outputs of the GNC Project were very good based on the publication, citation, and utility of these products. The knowledge products were science-based and some were published in peer-reviewed academic journals or as books. The toolbox was comprehensive; it contained best management practices (334), case-studies, and source-impact model and calculator for application.

143. It is the opinion of the Evaluator that the persons in the partnerships are the initial members of the community of practice for nutrient-management who can work with trained trainers in the LMEs for wider application of best management practices. The toolbox has a variety of tools for policymakers and environmental managers alike. For policymakers, the case-studies written were brief and in a less technical language. For environmental managers, the source-impact model and calculator are important tools. The model was not easy to understand (according to one Partner), as such targeted trainings for its use are needed (see more on this in Recommendations).

144. Despite the delays in the delivery of project outputs due to changes in the PCU, the timing of the elections in the Philippines, and the preparation of data for modelling in the Manila Bay watershed, the availability of projects' outputs is rated ***Highly Satisfactory***.

5.4.2 Achievement of Project Outcomes

145. The sub-criterion on Achievement of Outcomes was assessed and rated based on the achievement of the two (2) Project Outcomes of the Project.

146. **Project Outcome 1** was Global nutrient reduction benefits: Governments and stakeholders around LMEs adapt and apply nutrient-reduction policies and actions as part of overall nutrient reduction strategies. The pathway to achieve this Outcome was through three (3) Direct Outcomes.

<u>Direct Outcome 1 – Direct Outcome 1: Stakeholders engaged actively in a global partnership to address nutrient over-enrichment in coastal waters</u>

147. Based on the logical framework, the indicators for achievement are the number of meetings of the partnerships, the PSC, and the communication strategy. The draft Terminal Report has shown that 6 regional and international meetings were held, and the communication strategy was published as part of the GPNM Charter: Operational Framework and Guidelines.

148. Based on the ToC at Evaluation (Figure 5), this outcome was achieved with the establishment of the GPNM and was formalized through the Charter of the Global Partnership

on Nutrient Management: Operational Framework and Guidelines. The website (http://nutrientchallenge.org) was also established that holds all the outputs of the GNC Project and partnership, and running to date. The communication strategy of the partnership is found in the Operational Framework and Guidelines of the Charter. The strategy identified the target audience and their respective interests.

149. Direct Outcome 1 was an important platform for governments and stakeholders to initiate programmes for addressing nutrient-pollution in coastal waters in LMEs. The partnership provided a framework for coordination in a regional context, especially within an LME, and linking it with global goals.

Direct Outcome 2 – GEF Projects, countries, and stakeholders used the information, tools, guidance, and support made available in the development and implementation of the nutrient reduction strategies.

150. Based on the logical framework, the indicators were: a functioning website and the commitment of governments to the Intergovernmental Review of the GPA implementation. The website is functional and accessible to all stakeholders. The governments have expressed agreement "to work, during the intersessional period leading up to the fourth session of the United Nations Environment Assembly on the function, form and implications (including legal, budgetary and organizational) of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities"[8].

151. Based on the ToC, the outputs in terms of overviews, synthesis report, and tools were delivered and are available on the website. The global database was used by the Caribbean in the regional workshop[9].

152. Direct Outcome 2 was an important outcome that led to the project outcome and the Intermediate Outcomes. The utility of the website and its contents are relevant for replication and up-scaling in an LME.

Direct Outcome 3 – Decision-makers used knowledge to replicate best approaches to develop and implement nutrient reduction

153. Based on the ToC, the outputs for this Direct Outcome were achieved and reported in the draft Terminal Report. The knowledge and information were shared with stakeholders of Lake Naivasha, Kenya (2018). The knowledge was also shared in scientific articles[10], Experience Notes (3), and nutrient-modelling, infographic, and maps[11].

154. In the Philippines, these outputs, particularly the source-impact model, was shared with the technical team of the Manila Bay Sustainable Development Master-planning under the National Economic Development Authority (NEDA). NEDA is the Authority that approves infrastructure developments in the country, including wastewater treatment facilities, to reduce pollution in Manila Bay.

[8] Bali Declaration on the Protection of the Marine Environment from Land Based Activities, Bali, Indonesia, 31 October–1 November 2018

[9] See Liana's report

[10] Bouwman et al. 2013; etc

[11] GRID-Arendal website – interactive map

155. Only one policymaker was interviewed. He was unaware of the GNC Project but was supportive of the application of the tools to reduce the pollution in Manila Bay. He acknowledged that the outputs contributed significantly to meeting the Supreme Court Order to improve the water quality of Manila Bay to be suitable for recreation and fish growth.

156. Although no government initiated a project at the end of the implementation of GNC Project, the foundation for governments to prepare one were achieved (Direct Outcomes 1 and 2). This Project Outcome was partly achieved.

157. **Project Outcome 2** was Nutrient reduction benefits in Manila Bay and Chilika Lake watershed areas: Implemented agreements with government agencies and relevant stakeholders on nutrient reduction strategies that are made part of integrated water quality planning for the watershed areas. The pathway to achieve this Outcome was through three (3) Direct Outcomes.

Direct Outcome 4 – Stakeholders made use of support system on nutrient issues in Manila Bay and Chilika Lake watersheds as part of their integrated approach to overall water quality in the region

158. Based on the ToC, the outputs, reported in the draft Terminal report, towards this outcome were the Global NEWS; nutrient export model for Manila Bay; validating model for Manila Bay; GPNM Toolbox User Guide[12]; index of Coastal Eutrophication Potential (a derivative of the Global NEWS model)[13].

159. In the Philippines, the ammonia, nitrate, and phosphate were added in the parameters for monitoring water quality [DENR Administrative Order (DAO 2016-08; levels were amended in DAO 2021-19]. Laguna Lake Development Authority had started monitoring these parameters since 2016 nonetheless LLDA used available data on nitrates and phosphates in the first Ecosystem Health Report Card (EHRC, 2013) prepared by the Authority. The EHRC process was repeated in 2016 but the results have not been uploaded on their website[14]. In addition, one of the two water concessionaires that provide water to Metro Manila have announced recently (2023) that they will be upgrading in the next 5 years the 17 sewage treatment plants[15].

160. In India, the Chilika Development Authority indirectly considered nutrient issues but reported on microalgal biomass (Ecosystem Health Report Cards 2012, 2016, 2017-2018).

161. Most of the stakeholders of Manila Bay who were interviewed, confirmed that nutrient issues have been addressed in Laguna Lake and Manila Bay. Only one stakeholder was unaware of the GNC Project and outputs.

[12] World Resources Institute

[13] GRID-Arendal

[14] The 2016 assessment was not uploaded in the website (llda.gov.ph) as accessed in October 2023. The Evaluator called the LLDA for more information on the use of the EHRC but was not successful.

[15] https://mb.com.ph/2023/9/12/maynilad-spends-p3-b-on-sewage-treatment-plant-upgrades. This is considered by one stakeholder as an outcome of the GNC Project despite occurring after the project. The Evaluator agree. This is a required infrastructure investment in direct response to the result of the assessment for Manila Bay (where nutrient inputs were higher from domestic inputs rather than agriculture).

Direct Outcome 5 – Relevant stakeholders used monitoring information collected on ecosystem health of lakes, deltas, and estuaries linked to Chilika Lake and Manila Bay to inform nutrient reduction strategies.

162. Based on the ToC, the outputs reported for this Direct Outcome were the 5 trainings conducted in India (2015), Sri Lanka (2016), Philippines (2017), Marrakesh (2018), and in Mozambigue (2018; for the West Indian Ocean Strategic Action Plan). In the Philippines, the Integrated Information Management System (IIMS) was strengthened, and the Manila Bay Atlas was revised (2015, 2nd edition). The State of the Coast Reports were published for Bataan and Cavite, and a review of Philippine policies and legislation were conducted. The available monitoring data on water quality from the LGUs were used in the source-impact model to study the pollutant-loading in Manila Bay[16]. An Experience Note on this activity was published by WRI in the IW:LEARN.

163. Partners confirmed that monitoring data collected by the LGUs were under the water quality monitoring area system. The data were not of uniform quality, and it took considerable time to get the data ready for the modelling. The data collected under the monitoring system of Laguna Lake was also used in the EHSC.

164. This Direct Outcome 5 was important to attain Project Outcome 2. Results of the monitoring data convinced stakeholders to apply management interventions even if illustrated from a model.

Direct Outcome 6 – GEF projects, countries, and stakeholders used information on how to replicate and upscale nutrient reduction measures for Chilika Lake and Manila Bay

165. Based on the ToC, the outputs that resulted to Direct Outcome 6 were the final, integrated nutrient reduction strategies developed and applied; development and application in Lake Chilika, Orissa of the ecosystem health report for nutrient over-enrichment and hypoxia, containing stress reduction and environmental quality status indicators; development and application of Ecosystem Health Report Card to Laguna Lake, Manila Bay; and replication and upscaling strategy implemented.

166. The final, integrated reduction strategies were developed; however, these were not applied due to lack of time. The Ecosystem Health Report Card was developed and applied in Chilika Lake and Laguna Lake. The replication and upscaling strategy were not also implemented. The GNC Project was regarded, by one of the implementers of the GNC Project, as a very good and timely project that its replication, particularly for lakes that are connected to the sea, can be financed in the near future.

167. However, the Manila Bay Nutrient Load Model and the Pollution Reduction Opportunity Analysis approach for Cavite and Pampanga was a useful product that can be applied by governments. This was written as Experience Note which is useful for replication. Training for use of this model and approach were not conducted due to lack of time in the GNC Project. The training for the use of the model is necessary as it was difficult to understand according to one expert who was interviewed.

168. Trainings were also conducted by PEMSEA and Partners on the use of the toolbox. These were conducted in Viet Nam, Mozambique, and other locations.

[16] Sotto et al. 2015.

169. PEMSEA is developing a project with the governments of Indonesia, Malaysia, Myanmar, Philippines, and Viet Nam to reduce nutrient reduction in river basins. This is considered by the Evaluator as a replication of the work done in Manila Bay.

170. Direct Outcome 6 was an important pathway to achieving Project Outcome 2. Governments and stakeholders, in general, are more likely to adapt a policy or tool that is explained in a language or format that is understandable.

171. **Project Outcome 1** was achieved, however, it will need more time for decision-makers to use knowledge and replicate best approaches (Direct Outcome 3). Stakeholders actively engaged in the global partnership (DO 1) and GEF Projects use the knowledge products for nutrient-reduction strategies (DO 2).

172. **Project Outcome 2** was achieved by the adaption of LLDA and CLDA of the scorecard as part of the integrated water quality monitoring in the ecosystem. The three (3) DOs leading to the Project Outcome 2 were achieved.

Rating for Achievement of Project Outcomes: *Satisfactory*

5.4.3 Likelihood of Impact

173. The impact of the GNC Project will likely be achieved through the pathways assessed in the Theory of the Change in the GNC Project. There was a likelihood for the GNC Project to attain impact at the LME level. The toolbox and source-impact model for nutrient-reduction was introduced to key stakeholders in many countries. In the South China Sea Large Marine Ecosystem, most of the countries were in the training sessions (except Malaysia) for the use of the toolbox.

174. While the assumptions made appear to hold, the drivers were needed for the result to be achieved in the agricultural and aquaculture sectors, and the human settlements (both formal and informal). The human settlements (in urban areas) have contributed more to the inputs of nutrients to coastal waters; but the GNC project was not able to put arrangements with this sector for interventions to be implemented. The GNC Project, however, was able to coordinate with governors and local government leaders and the DENR regarding reduction nutrient-loading for water quality. Each of this body could play a role in formulating policies and planning for infrastructure development. The governors and mayors can apply for government grants for the construction of sewerage treatment plants and enforce the Clean Water Act 2004 (of the Philippines). In the Metro Manila region, the concessionaires[17] of the water provider can be encouraged to connect, as planned, the consumers' effluents to the sewerage treatment facilities.

175. The aquaculture sector participated through the LLDA. With the monitoring of the water quality, the use of scorecard, and the interaction with the aquaculture sector, the likelihood of impact is likely (L).

176. At the national level, the drivers were in established agencies (e.g., Department of Agriculture, Department of Human Settlements, Ministry of Forestry and Environment) that have mandates to reduce pollution. The availability of policy option in the toolbox is for

[17] https://mb.com.ph/2023/9/12/maynilad-spends-p3-b-on-sewage-treatment-plant-upgrades - One of the concessionaires has already made plans for upgrading 17 sewage treatment plants in Metro Manila.

governments to regulate nutrient enrichment and make it moderately likely to likely achieve the impact.

177. The outputs, such as the toolbox, will be useful for the next 10 years. The nature-based solutions in the case-studies will remain useful for a long time. This cache of case studies can grow with more applications of nutrient-reduction solutions and learnings. The model (source-impact) can be revised with new data and improved as well with applications in riparian countries (see Recommendations below).

178. While the model was viewed as not easy to understand, there will be no need to engage foreign experts for the use of the model. Governmental agencies can link up with local universities that have expertise in modelling (just like the UP-MSI arrangement with the LGUs and DENR). Another demonstration of the process and use of the model will be useful to make the practice (model to regulation to practice) inculcated in the regulatory agencies.

179. The GNC Project is a Project that will redound for the improvement of the environment and the well-being of society, especially the vulnerable groups that depend on the harvest of fishes and or that depend on good water quality of coastal waters for the culture of shellfish. There may be conflicts between farmers and fisherfolks if nutrient-reduction regulations (e.g., use of moats with local vegetation around a farm to absorb or use the organic inputs in the water before it is discharged to the river; reduce inputs of organic fertilizer/use of organic fertilizer, etc.) will not be explained clearly and understood by farmers to be beneficial to them as well as to those downstream. This will be avoided with a comprehensive extension work by the governmental agencies that are responsible for agriculture and water quality. As nutrient enhancement was linked to population sizes (in the case of Manila Bay), improvement of sewerage infrastructure will have to be built. New locations for the treatment plants will cause rejection ("not in my backyard" attitude) or increase in water and sanitation fees may cause objections from consumers.

Rating for Likelihood of Impact: ***Likely***

Rating for Effectiveness: ***Satisfactory***

5.5 Financial Management

5.5.1 Adherence to Financial Policies and Procedures of UNEP

180. The total cost of the GNC Project was USD 4,116,347 with the co-financing, both in-cash and in-kind by Partners, in the amount of USD 2,398,165 or 58 % of the total cost (Table 5.1). The grant portion of the Project (GEF Trust Fund) of USD 1,718,182 was allocated to the 4 technical and 2 administrative Components of the Project (Table 5.2).

181. The co-financing report was provided by the Partners in the draft Terminal Report (TR Table 2.3). There was a challenge in reporting the realistic in-kind contribution by a Partner as this involved accounting of time used by staff for the implementation of the project. (This in-kind contribution is required in all GEF-funded projects.) Nonetheless, the Partner reported the monetary equivalent of the expected in-kind contribution, and it did not affect the accounting of funds disbursed in the implementation of the Project.

182. There was a variance between planned and actual co-financing (Table 5.1), amounting to USD 79,483. There was additional co-financing from 3 sources, amounting to USD 203,271 (Table 5.1). PEMSEA reported additional in-kind contribution from LLDA and UP MSI. The

CEH and IFA contributed USD 56,670 and USD 29,000, respectively. There was however lesser co-financing realized from other organizations in the amount of USD 123,788.

183. There was low risk on the management and the accounting of the funds as reported in the PIRs. Funds appear to have been timely approved and disbursed. The Financial Policies and Procedures of UNEP were adhered to. The rating for this sub-criterion is ***Satisfactory***.

5.5.2 Completeness of Financial Information

184. The financial reports of the GNC Project were provided to the Evaluator but the Fund Management Officers were not interviewed because they had retired or had been transferred to a new assignment at the time of the evaluation.

185. The funds were adequate at the design stage from grant from the GEF TF and co-financing from governments, institutions, and partners. Any amendment of the fund allocation was for extension of implementation of activities but not for increase funds. The GEF grant was used at 84 % of the overall budget (Table 5.1).

186. There was adherence to the financial procedures of UNEP based on the low risk reported in the PIRs, Final Terminal Report, and the Final Financial Report. The Contracts and Financial Statements from the Partners supported the disbursement of funds.

187. The overall ratio of actual and planned expenditures difference between actual and planned was high at 84 % (see Table 5.1). The ratio for expenditures in Components B, C, and D were all above 80% except for Component A which was at 47% (see Table 5.1), however, if the cost of operations, expended by UNEP GPA, was added here (USD 346,219.72; data from Final Financial Report), the ratio would be over 100%.

188. The GNC budget from the GEF Trust Fund was USD 1,718,182 but the actual expenditure at the end of the Project was only USD 1,631,573, resulting to some unspent amount of USD 86,524 in the GNC Project (Final Financial Report). There was less expenditure against the allocations for technical Components B and C and non-technical Component E while there were more expenditures reported for Components A (including Component E - Operations) and D (Recommendation for the use of these remaining funds is in Annex VIII).

189. The explanation for the excess funds was clarified from the financial reports. There were sufficient funds for the activities as shown by ratio of the expenditures and the number of outputs produced. The organizations and Partners provided the expected co-financing, and no additional funds were required.

190. While the proofs of fund transfers over the years were not available to the Evaluator, there were signed final statements of accounts signed by UNEP and Partners, a summary of expenditures by budget lines (and allocations to Partners), and a summary of co-financing amounts by Partners (Table 5.2).

191. The rating for the completeness of the financial information ***Highly Satisfactory.***

Table 5.1. GEF financing by Component/USD

Component/sub-component/output ***All figures as USD***	**Estimated cost at design**	**Actual Cost/ expenditure**	**Expenditure ratio (actual/planned)**
Component A	316,000	149,836	0.474

Component/sub-component/output *All figures as USD*	Estimated cost at design	Actual Cost/ expenditure	Expenditure ratio (actual/planned)
Component B	488,682	407,995.59	0.835
Component C	329,500	291,009	0.883
Component D	330,000	386,000	1.171
Total	1,464,182	1,235,289.49	0.834

Table 5.2. Co-financing provided by Partners/ USD

Organization	Co-financing		
	Planned (ProDoc)	Final GNC Report	Variance (remarks)
UN Agencies			
UNEP		754,045	7,720 (less than planned)
IOC-UNESCO	380,000	362,664	17,33 (less than planned)
GETF	141,800	129,567	12,233 (less than planned)
Governments			
US (USDA)	320,000	320,000	0
Netherlands	57,600	57,600	0
CDA		20,000	0
Partners			
PEMSEA (including LLDA and UP MSI)	305,000	422,601	117,601 (more than planned)
INI	180,000	93,500	86,500 (less than planned)
University of Utrecht	123,000	123,000	0
Washington State University	79,000	79,000	0
Inst. Ocean Management	30,000	30,000	0

CEH		56,670	56,670 (additional co-financing)
IFA		29,000	29,000 (additional co-financing)
Total	**2,398,165**	**2,477,648**	

Table 5.3. Rating for GNC as a GEF Project

NON-GEF AND GEF PROJECTS			
Financial management components:		**Rating**	**Evidence/ Comments**
1. Adherence to UNEP's/GEF's policies and procedures:		**S**	
Any evidence that indicates shortcomings in the project's adherence[18] to UNEP or donor policies, procedures or rules		No	
2. Completeness of project financial information[19]:			
Provision of key documents to the Evaluator (based on the responses to A-H below)		**HS**	
A.	Co-financing and Project Cost's tables at design (by budget lines)	Yes	
B.	Revisions to the budget	Yes	
C.	All relevant project legal agreements (e.g. SSFA, PCA, ICA)	Yes	
D.	Proof of fund transfers	Yes	Financial statements indicate funds received from UNEP
E.	Proof of co-financing (cash and in-kind)	Yes	From terminal report (draft); and from interviews
F.	A summary report on the project's expenditures during the life of the project (by budget lines, project components and/or annual level)	Yes	Annual financial statement from Partners included budgets and contributions by Tasks; UNEP Final Financial Report provided data by budget lines and Projects that allowed the accounting of budget expenditure by Components.
G.	Copies of any completed audits and management responses *(where applicable)*	N/A	

[18] If the evaluation raises concerns over adherence with policies or standard procedures, a recommendation maybe given to cover the topic in an upcoming audit, or similar financial oversight exercise.

[19] See also document 'Criterion Rating Description' for reference

NON-GEF AND GEF PROJECTS			
Financial management components:		**Rating**	**Evidence/ Comments**
H.	Any other financial information that was required for this project (list):	Yes	Amendments of grants to Partners, as necessary
3. Communication between finance and project management staff		**S**	
Project Manager and/or Task Manager's level of awareness of the project's financial status.		HS	
Fund Management Officer's knowledge of project progress/status when disbursements are done.		N/A	Not able to interview Fund Management Officer
Level of addressing and resolving financial management issues among Fund Management Officer and Project Manager/Task Manager.		S	Up to date financial reporting was raised during the mid-term review. This delay was eventually addressed by the Fund Management Officer.
Contact/communication between by Fund Management Officer, Project Manager/Task Manager during the preparation of financial and progress reports.		N/A	Not able to interview Fund Management Officer
Project Manager, Task Manager and Fund Management Officer responsiveness to financial requests during the evaluation process		S	Project Manager and Task Manager responsive; Fund Management Officer no longer in the same office
Overall rating		**S**	

5.5.3 Communication between Finance and Project Management Staff

192. Based on the low risk in financial management reported during the implementation of the Project, the Evaluator is of the view that there is good communication between the Finance and Project Management Staff at UNEP. In view of the absence of the final report and the inability to interview the Fund Manager Officer assigned during the implementation stage, the rating for this sub-criterion is ***Satisfactory.***

Rating for Financial Management: ***Satisfactory***

5.6 Efficiency

193. The GNC Project was designed with four (4) inter-linked components. The Project Document (ProDoc) also outlined the sequencing of implementation activities under 3 main activities: the establishment of the GPNM (Component A); the source-impact modelling (Components B and C); and the practical application of the modelling, analysis, and best-practices (Component D).

194. The implementation of most of the activities under all Components were in parallel or simultaneously done (see PIRs from 2012-2013 to 2018-2019). The GPNM partnership was being established (Component A) while the global database for modelling was being prepared (Component B), case-studies and best-management practices were compiled (Component C), and workshops and stakeholder consultations were undertaken (Component D).

195. Activities were undertaken simultaneously, and outputs were interlinked to the achievement of six inter-related Direct Outcomes Stakeholders engage in the global partnership (DO 1) in GEF Projects and use the information, tools, and guidance for the development and implementation of nutrient-reduction strategies (DO 2). Decision-makers use knowledge to replicate best approaches to develop and implement nutrient reduction strategies in LMEs (DO 3) which may GEF Projects (DO 2). Direct Outcomes 1, 2, and 3 lead to the achievement of Project Outcome 1. The data and information gathered by stakeholders on ecosystem health (DO 5) were useful in the development of integrated approach for water quality in the coastal zone (DO 4). The outputs for DO 4 were also useful for DO 6 for replication and up-scaling in Chilika Lake and Manila Bay. Direct outcomes 4, 5, and 6 led to integrated management of Chilika Lake and Laguna Lake (which will reduce the nutrient-loading in Manila Bay).

196. The sequencing of activities was key to achieving a successful project outcome. For example, the model for Manila Bay had to be completed by the technical team before PEMSEA and WRI could produce materials (knowledge products) for its communication plan. There was a delay in the formulation of the model brought about by the time-consuming data-gathering and preparation (harmonizing the variables and units from secondary data) that was needed prior to the actual modelling process. This resulted in the delay in the implementation of some of the activities of Component D (communication) with many stakeholders in Manila Bay and regional offices (e.g., GRID-Arendal, EAS Regional Seas, and ASEAN). The World Resources Institute began the Pollution Reduction Opportunity Analysis (PROA) for Manila Bay, rather than wait for the results of the source-impact analysis for Manila Bay. The results of the source-impact model analysis for Manila Bay were eventually added to the PROA analysis.

197. The GNC Project at the design and implementation phase was in collaboration with UN agencies, universities, national agencies, local partners (LLDA, CLDA) and took opportunities to synergize with GEF international conferences to form the GPNM and conduct trainings. This was efficient to involve key stakeholders for replication and scaling-up at the LME level.

198. In terms of value for money, the GNC Project was efficient. The total amount of the Project was USD 4,116,347 of which 58.26 % was co-financing (USD 2,398,165, secured at the start of the Project while USD 2,477,648 was realized at the end of the Project; see Table 1) from contributions from Partners. The GNC Project produced more than the planned 30 high quality outputs in four (4) years with the investments from GEF TF, governments, and Partners. There were supplemental outputs in addition to the expected outputs which are stored and accessible in the website (http://www.nutrientchallenge.org). Above all, the Project had achieved the expected Outcome 2 at the national and local levels and had initiated the achievement of Outcome 1 at the global level.

199. The GNC Project was efficient based on the extent that it made use of, or built upon, pre-existing institutions and partnerships and utilised synergies and complementarities with other initiatives, programmes, projects, and others during project implementation.

200. The close association of the GNC project with the **UNEP GPNM project** added efficiency to the UNEP/ GEF GNC Project, for example, through the engagement of the same key partners and experts in the Project Steering Committee.

201. International and national experts provided extensive knowledge on science and best management practices, which were based on wide and extensive previous research of the academic institutions.

202. The GNC Project also built on the outputs of previous Projects (such as the Manila Bay Coastal Zone Strategy and the Land Ocean Interaction in the Coastal Zone). (The costs of the primary research and applied research projects cannot be accounted for in this evaluation.) It availed of the data on water quality monitoring the LGUs in Manila Bay, under the Water Quality Monitoring Area program of DENR, and the environmental monitoring programs LLDA and of CLDA. For the communication campaign, the GNC Project used the IW:LEARN Platform and international conferences of the IW Focal Area.

203. There were three no-cost extensions of the GNC Project. This was partly attributed the changes in the management at the PCU and to accommodate a delay in the evaluation process.

204. The rating for Efficiency was ***Satisfactory***.

5.7 Monitoring and Reporting

5.7.1 Monitoring Design and Budgeting

205. The GNC Project followed the monitoring and reporting requirements of the GEF. Project Implementation Reports were submitted yearly (PIR 2013 to PIR 2020) using the required template by the GEF. A Mid-term Review was conducted, and the recommendations were tackled by the Steering Committee. The draft terminal report detailed the outputs for each of the components.

206. The PIRs had no explicit column on indicators but these can be extracted from the descriptors of the indicators (column 2 or B, under 3.1 of PIRs). These output indicators are of high quality as they were measurable and quantified (e.g., at least one global partnership meeting annually, at least 2 regional partnerships in year 1 or 2 of the Project, maps and supporting documentation published and disseminated on web-based platform). In those cases where the indicators were not readily measurable, the achievements were described in greater detail and in the temporal milestones. For example, for a fully-functioning website, three milestones were listed: year 1 – (website) containing access to all relevant GEF nutrient projects; year 1-3 – (website) able to provide interactive exchange among stakeholders; year 4 – (website) culminating availability of final lessons learned, replication, etc.

207. The method for tracking progress was using the annual PIR template that was filled by the Task Managers of the Components. The Project monitors the progress against the workplan and reports to the Project Steering Committee. For this Project that basically establishes a process for nutrient-reduction, output and process indicators are appropriate indicators.

208. The monitoring system (PIRs) was intended for progress of implementation of actions and outputs. It is not intended for monitoring outcomes, which are behavioural changes that are desired of beneficiaries. There was gap in the monitoring of outcomes, which were planned to be achieved at the end of a project while recognizing that behavioural change at outcome level may take time.

209. The funds for the terminal evaluation were adequate given that there were no travel costs.

210. The rating for the sub-criterion is ***Moderately Satisfactory***.

5.7.2 Monitoring of Project Implementation

211. The information gathered by the monitoring system (i.e., the Project Implementation Reports) were compared to the causal pathways (see achievement of direct outcomes). The information gathered in the monitoring of progress in the PIR were for the indicators and targets or outputs. There was a gap in the monitoring of indicators for outcomes or behavioural change along the causal pathways.

212. The Terminal Report was not finalized at the time of the evaluation. The Evaluator was informed that one of the Core Partners had not seen the Final Report. The draft Terminal Report has listed the following as Annexes but were not attached to the body of the Report: 1 – PIRS; 2 – Overall Expenditure Statement; 3 – Annual Expenditure Statements from 2011-2012 to 2018-2019; 4 – Overall Report of Planned and Actual Co-finance; 5 – Mid-term Report; 6 – Partner Legal Agreements; 7 – Final Reports from Partners; and 8 – Project Steering Committee Meeting Reports. These were supposed to be linked but the links did not work. Nonetheless, the PIRs; Annual Expenditure Reports (from 2013-2017); Planned and Actual Co-finance Report; Mid-term Report; Partner Legal Agreements; and Project Steering Reports were provided to the Evaluator. The Planned and Actual Co-financing Report by Partners was provided in the beginning of the evaluation (as Appendix 14). The legal agreements, financial statements, and PSC reports were provided early this year.

213. The rating for this sub-criterion is ***Satisfactory***.

5.7.3 Project Reporting

214. The reporting by partners was complete based on the PIRs and the draft Terminal Report. The outputs were found uploaded to the website and from publications. Individual final reports were also submitted to the PCU were found with detailed information. Interviews with representatives of Partners provided a third source of validation for the Evaluator.

215. The rating for this sub-criterion is ***Satisfactory.***

Rating for Monitoring and Reporting:	***Satisfactory***

5.8 Sustainability

The necessary conditions for the continuation of the benefits from the GNC project was built in the logical framework and the endurance of the achieved project outcomes based on the built-in assumptions and drivers as shown in the reconstructed Theory of Change. The association with the UNEP GPMN Project also allowed to create more favourable conditions to continue the partnership and contribute to the sustainability of the UNEP/GEF GNC Project.

5.8.1 Socio-political Sustainability

216. The GNC Project was implemented in a climate of socio-political sustainability in India and the Philippines. The relevant government agencies were engaged in the activities of the project.

217. The political factors in the Philippines, to a large extent, will support the continuation and further development of the two Project Outcomes. The DENR Administrative Order 2016-08 (DAO 2016-08 – Water Quality Guidelines and General Effluent Standards) is relevant and

important for regulating nutrient pollutants. DAO 26016-08 specifies that the effluent parameters that will be monitored for each industry, together with the new effluent standards that the industry must comply with at all times regardless of the volume of the wastewater produced. It is more stringent and has 16 additional parameters, including nutrient requirements. A grace period for a maximum of 5 years can be granted by DENR if a Compliance Action Plan and periodic reports of implementation of the plan within the grace period are submitted. The Administrative Order No. 16 (AO 16, 2019) created the Manila Bay Task Force to ensure "the complete rehabilitation, restoration, and conservation of the Manila Bay". This AO is complementary to the Continuing Supreme Court Order for the Rehabilitation of Manila Bay (since 2008) to water quality that is suitable for recreation and coastal fisheries. In addition, the Manila Bay Sustainable Development Master Plan, completed in 2021 by the National Economic and Development Authority remains pending for approval by the Philippine Government. These policies and executive orders are enabling conditions that will compel local executives to adapt the nutrient-reduction regulations.

218. The LLDA has jurisdiction on the coastline of Manila, particularly at the section where the Lake is connected to the sea [under its mandate in the Republic Act 4850 (1966), amended by Presidential Decree 813 (1975)]. It is a member of the Manila Bay Task Force and a participating agency in the Battle for Manila Bay – a clean-up program launched by the DENR to operationalize the implementation of AO 16. Under its mandate and as a member of the Manila Bay Task Force, LLDA enforced the regulations on wastewater discharge by restaurants and other establishments with the participation of DENR, on the direct discharge of wastewater by restaurants and other establishments long the central part of Manila Bay. This action had resulted to reported improvement of the water quality along Manila Bay. DENR had constructed a beach along Roxas Boulevard (in the same section of the Bay which had become widely popular among the residents for recreation (but not yet suitable for swimming). This collaboration of the governmental agencies and the social desire for accessible beach will encourage local residents to advocate for clean beaches and coastal waters.

219. In the Philippines, the officers of the LGUs and the DENR were involved in providing data for the model and in the stakeholder consultations. This engagement builds capacity and institutional knowledge of the process that the officers can draw upon for replication and scaling-up. The model formulated by the technical team, based on secondary data, showed that domestic sources contributed more to nutrient-enrichment than from agriculture (Sara Walker, World Resources Institute and Christopher Cox, UN Environment, Experience Note: Toward a Comprehensive Watershed Management Strategy for Manila Bay: The International Experience and Lessons Learned).

220. The assumptions for the causal change were that national governments promote outputs and outcomes; local governments along the waterway cooperate, use model, and apply decision support tool and regulations (from toolbox); and farmers, fish-growers, settlers comply with wastewater regulations, consideration made for gender and vulnerable groups in discussions and decision-making. Participation of governors, mayors (of LGUs), and local environmental offices had begun, and Laguna Lake Development Authority undertook stakeholder consultations with fish-growers.

221. For sustainability to be ensured at regional or LME scale, it was the view of UNEP officers that there is better coordination in future projects so that environmental accounting, for one, of achievements toward dealing with coastal pollution by LMEs. It was explained that sustainability could be achieved at the design phase when the Regional Seas Programmes were informed by the sharing of reports. In addition, the role of the Regional GPNM may have to be clarified or expanded to include the mobilization of financial resources for regional projects (according to one of the UNEP officials).

222. The rating for this sub-criterion is ***Likely.***

5.8.2 Financial Sustainability

223. The financial sustainability of the GNC project was linked to its socio-political sustainability. In the Philippines, the LGUs and DENR were involved in the implementation of the GNC project. The DENR has the right, under its mandate, to apply for fiscal resources and can allocate from its annual budget towards the monitoring of water quality management areas (WaQMA) and report the data to the International Nitrogen Management System. Water-quality monitoring had been devolved from the DENR to the LGUs thus the LGUs have a just share of the national taxes collected by the LGUs. Under the Mandanas-Garcia Ruling (2022), the just share for the LGU is 40 % of the revenue collected (under the Local Government Code), and shall be released immediately. The amount could increase by 27.61 % (to 67.61 %)[20]. The allocation provides additional resources for the local government to perform its responsibility for the environment, particularly on nutrient-reduction.

224. In addition, the GNC project introduced the source-impact model to NEDA, the agency that approves large infrastructure projects in the country. NEDA facilitated the development of the Manila Bay Sustainable Development Plan (http://www.mbsd.com) that has identified priority measures to address coastal pollution from the coastal zone. In this Masterplan (albeit it still has to be approved by the Philippine Government), programs, activities, and projects (PAPs) were identified for investment by both public and private sector. The investment can be done through public-private-partnership (PPP). The financial investment for wastewater treatment facilities is necessary to achieve the immediate impact in Manila Bay (under the MBSDMP), based on the analysis conducted by UP MSI[21]. The introduction of the model as part of the toolbox, provides the knowledge for decision-making by NEDA on proposals for PAPs to meet the objectives of the Supreme Court of the Philippines to rehabilitate Manila Bay for fisheries and recreation.

225. One of the assumptions in the reconstructed ToC was for the private sector to cooperate with national agencies to apply nutrient-reduction and ecosystem level. The private sector, particularly in the agriculture, aquaculture, and residential-building developers, are crucial after the implementation of the Project and at the replication of implementation of nutrient-reduction regulations at landscape-scale that will result to the intermediate state. The private sector can participate in applying best management practices and in contributing to the costs of monitoring water quality of coastal waters for adaptive management. The engagement of the private sector was limited in the GNC Project, especially from the drivers (urbanization and agriculture) at the ecosystem scale.

226. Another option for financial support for nutrient-management regulation was the Payment for Ecosystem Services framework. This was proposed by World Resources Institute (WRI) in the Recommendations for the Manila Bay Management Strategy. The private sector, particularly the recreational businesses, as buyers (or payers) for BMBs that will contribute to the improvement of water quality in coastal waters. The sellers in this PES scheme are private sector upstream in the coastal zone. This framework can be pursued by the LGUs with civil society organizations.

[20] https://uplb.edu.ph/all-news/dilg-says-complete-devolution-under-mandanas-garcia-ruling-to-be-completed-in-2024/

[21] Sotto et al. 2015.

227. The role of the Regional GPNM can be clarified in the context of SAP implementation. A UNEP Officer interviewed for the Evaluation proposed that the Regional GPNM could take on role to develop projects and raise funds for the benefit of country/countries.

228. The rating for this sub-criterion is ***Moderately likely.***

5.8.3 Institutional Sustainability

229. The assumptions for the causal link of the project outcome to impact were at all levels and were built in the project implementation. It was assumed that regional institutions and national governments promote outputs and outcomes. The Regional Seas Programme (CoBSEA) and PEMSEA were involved in the implementation although the former was less involved than PEMSEA. Both have regional strategies that can pursue the benefits that are both national and LME scales. CoBSEA has the Strategic Action Plan for the South China Sea and the Gulf of Thailand while PEMSEA has the Sustainability Development Strategy for the Seas of East Asia. India and the Philippines have national policies and laws to address water pollution but need more actions (management interventions in the form of regulations, infrastructure, or trainings).

230. While the GNC Project was anchored in the Regional Seas Programme of UNEP, it was a challenge to monitor the results, both outputs and outcomes, and ensure accounting for cumulative and incremental outcome at the LME scale. Reporting of results of projects such as the GNC Project and those implemented by the regional GPNM would have had to be reported for adaptive management in the SAP. This is one area, which would be improved according to a UNEP coordinator by strengthening the reporting process.

231. At the national level, the participation of DENR, a national institution that is mandated to conserve biodiversity, regulate resource-use, and manage pollution, was strategic, resulting in the intermediate state and impact of the improvement of water quality in the SCS GT LME. The DENR has regional offices in the watershed of Manila Bay that can implement, together with the LGUs, the regulations for nutrient-reduction and monitor the water quality.

232. In addition, the GNC project worked with local authorities that were mandated to manage lakes for sustainable use. In India, it has worked with the CLDA and strengthened its management to include water pollution. The restoration of the connection of Chilika Lake with the sea did not only bring back the estuarine fishes inside the lake but also allowed hydrological processes to address aquatic pollution. The environmental scorecard was used for monitoring the water quality of the Lake. In the Philippines, the LLDA was also involved in demonstrating the use of the environmental health scorecard in the monitoring of water quality. The LLDA partners found the scorecard useful for monitoring, complementing their existing efforts, as well as for communication with the fisher folk and community.

233. The University of the Philippines Marine Science Institute (UPMSI) ensured that the participation of staff in the modelling was consistent throughout the process however staff changes in the DENR and changes in the local executives every three years (at the minimum) at the LGUs make stability in the institutions unsure. However, the institutional stability can be assayed with inclusion of the parameters for eutrophication in the water quality monitoring system of the DENR.

234. The rating for this sub-criterion is ***Likely.***

Rating for Sustainability:	***Moderately likely***

5.9 Factors Affecting Performance and Cross-Cutting Issues

5.9.1 Preparation and Readiness

235. Governments have endorsed the project to GEF Secretariat. This endorsement was reiterated in the GPA Annual Meeting in Manila (Manila Declaration). There was a comprehensive inception meeting with the first GNC Project Steering Committee meeting held in March 2012 in Manila, Philippines, with participation of international experts, research institutions and representatives from various agencies and offices with projects and programmes in Manila Bay, including the private sector and academia.

236. There was a comprehensive situation and stakeholder analyses. There was also stakeholder consultation albeit limited to governmental agencies and LGUs. There was stakeholder consultation with fish farmers with the LLDA but none with other fish farmers in the coastal zone (along the north coast of Manila Bay).

237. The Project did not raise concerns on human rights or gender-related issues however it has raised issues related to poverty. In Manila Bay, the fisherfolk and live in poor conditions along the coast and is one of the sources of nutrient-pollution (MBSDP). Poor water quality can reduce the viability of mariculture of mussels and other shellfish which impact the livelihood of fisherfolk. The crop farmers are also considered poor with the high cost of fertilizers, low market prices, and other factors (e.g., competition with imported goods). Thus, the success of the Project is linked to the attainment of Sustainable Development Goals.

238. The rating for this sub-criterion is ***Satisfactory***.

5.9.2 Quality of Project Management and Supervision

239. A results framework was prepared at the design stage of the Project (ProDoc; a ToC was not required. A Theory of Change (ToC) was prepared for the evaluation of the Project. The roles of the project management team and the partners to deliver the various results under the components were clear at the design stage. The drivers (agriculture, including aquaculture and mariculture, and urbanization) were identified to play a role in compliance to regulations on reducing nutrients in wastewater that was discharged to rivers and coastal waters, or transported as run-off from farms.

240. The governance structure and supervision model were comprehensive. There was a Project Steering Committee (PSC) and Project Coordination Unit (PCU). The GPNM Steering Committee became by default the GNC Project Steering Committee and it was tasked to closely monitor the implementation of the GNC Project among other GPNM activities. The roles and responsibilities of the Regional Seas Programme were also clearly defined.

241. The initial Project Manager retired in 2014 and a replacement was recruited at the end of the year. The quality of project management and supervision was not affected by the vacancy in position of the Project Manager. The outputs of the Project were delivered by the Partners.

242. The rating for this sub-criterion is ***Satisfactory.***

5.9.3 Stakeholders Participation and Cooperation

243. The stakeholder analysis was conducted at both global and ecosystem levels.

244. At the global level, the stakeholders that had high interest and influence on nutrient management were the governments around an LME and the governmental agencies with mandates on water quality management (e.g., DA, DENR, Ministry of Environment, Forest, and Climate Change). Their role was to enforce policies on water pollution. DENR was key stakeholder in the causal pathway to result to Direct Outcomes 1 to 3 and the Project Outcome 1.

245. At the ecosystem level, the regional and local institutions had high interest and influence in implementing regulations. In Chilika Bay, these stakeholders were the 7 state government organizations and CDA while in Manila Bay, these were the provincial and local governments and the LLDA. These stakeholders were key in the causal pathways leading to the Direct Outcomes 4, 5, and 6 and Project Outcome 2.

246. Sharing of information and enabling cooperation between and among partners were inherent in the project design. Several partners, both global and national, were engaged in the same Component and a few partners were involved in several Components. This arrangement facilitated the easy exchange of information and, more importantly, and the flow of information along the results pathway.

247. The source-impact model was shared with the technical team of the Manila Bay Sustainable Development Management Pan (MBSDMP), which was not part of the GNC Project, and it prepared a regional plan to tackle six objectives, including the reduction of water pollution in Manila Bay. This was a strategic action as the MBSDMP was expected to be approved by the government and implemented beyond the GNC Project. Moreover, the MBSDP attempted to have a multi-sectoral approach in achieving its objectives.

248. In Chilika Lake, there was participation and cooperation of the CLDA in the Project.

249. The rating for this sub-criterion is ***Satisfactory***.

5.9.4 Responsiveness to Human Rights and Gender Equality

250. The outcome desired under the GNC Project was the improvement of the water quality of coastal waters where gleaning, mariculture, and fishing were undertaken by both men and women. The socio-economic benefit from the perspective of these stakeholders was a clean and suitable environment for better productivity of the coastal waters. An improvement of the productivity will result in better well-being and income by the fisher folk and empower women. In India and the Philippines, women play a role in gathering shellfish and fish from the wild (gleaning), mariculture, and coastal fisheries by selling the harvest landed by the men.

251. One of the assumptions in the ToC at Evaluation was for farmers, fish-growers, and to settlers comply with regulation, and that gender and vulnerable groups be included in the deliberations on regulations and benefits. The GNC Project involved the fish-farmers in the development of the scorecard. More engagement with other groups was assumed as critical in achieving the causal link at the ecosystem/landscape level, resulting to the project outcome and intermediate state.

252. Gender equality was raised at the MTR to be mainstreamed. In the implementation of the demonstration site in Manila Bay, women played an important role in activities, e.g., gathering data, modelling, conducting stakeholder consultations, and participating in the consultations (organized by LLDA). The role of women and men will be equally important in implementing regulations at the landscape level (e.g., applying best-management-practices in the use of fertilizers, applying nature-based solutions in the farms and in the fishponds, connecting with the sewerage system, etc.) after the GNC Project.

253. This sub-criterion is ***Not Rated***[22]**.**

5.9.5 Environmental and Social Safeguards

254. The risks identified in the GNC Project were many, but most were assessed as 'low'; only the willingness of governments and stakeholders to engage and act (item no. 1 in the Risk Mitigation Table, ProDoc) were reported as 'low/medium' and limited to private sector engagement (item no. 3 in Risk Mitigation Table, ProDoc). The mitigation measures were implemented in the project (e.g., engaging stakeholders in developing toolbox, building support at the GEF IW Conference, among technical staff and policymakers, and at the GPA Intergovernmental Review) for the first risk. For the second risk, the mitigation measures were to engage the industrial and agricultural sectors, FAO, fisheries, and UN-Habitat, however, it was only the aquaculture sector that was clearly engaged in the project.

255. The rating for this sub-criterion is ***Not Rated***[23].

5.9.6 Country Ownership and Driven-ness

256. The GNC project initiated the sustainability model of UNEP for long-term impact on environmental management, which implies that stakeholders gain capacity and experience during implementation of the project to continue or replicate the project in the country. The GNC had involved at the outset and engaged in meetings the MBCO of DENR and NEDA in the Philippines. It strengthened linkages with the governors of the provinces in the Manila Bay watershed with PEMSEA. These linkages were responsible for achieving direct outcome 3. It also strengthened linkages among academics (UP MSI), LGUs, and PEMSEA through the modelling process. This was responsible for achieving direct outcome 5. The GNC Project also worked with existing projects (MBSDP) and authorities (LLDA in the Philippines, CDA in India) that are currently involved in improving water quality. In Chilika Lake, the GNC Project worked closely with the CDA.

257. Based on the ToC at evaluation, the critical elements for the exit strategy in India and the Philippines would be the training and exposure of decision-makers to the toolbox. These will lead to achieving Direct Outcome 3 and then to the Project Outcome 1. The DENR is able to do both replication at ecosystem-level, as well as nutrient reduction interventions at LME-level. The DENR, as a government agency, can propose projects for national or multinational funding.

258. The GNC Project was submitted to the GEF Secretariat for grants to advance the strategies and programs of governments to achieve SDG 14 and improve the well-being of its citizenry. To support the driven-ness of the relevant agencies and stakeholders, there was a communication campaign to disseminate the Outputs and Outcomes of the Project and the role of DENR, DA, and DILG was part of the design. It was envisioned that when capacity was built, the governments would take more leading role and UNEP (particularly the GPA Office) would have a less prominent role in facilitating national and regional (LME) projects.

259. The rating for this sub-criterion is ***Highly Satisfactory.***

5.9.7 Communication and Public Awareness

[22] The GNC Project was approved by UNEP prior to 2012 and responsiveness to human rights and gender equality are therefore 'Not Rated' in accordance with UNEP evaluation guidance.

[23] The GNC Project was approved by UNEP prior to 2013 and therefore safeguards are 'Not Rated' in accordance with UNEP evaluation guidance.

260. The GNC project had a dedicated component for dissemination of knowledge and lessons learned (Component D). It also had a website for the wider dissemination of knowledge products and linkage with IW:LEARN for the sharing of experience notes, which are no longer maintained. The experience notes are stored instead in the GPA website. A communication strategy was incorporated in the Operational Framework and Guidelines of the Charter of the GPNM for long-term impact. The inclusion of the communication strategy in the Charter is an instrument for the long-term adaptation of the nutrient regulation and management by governments around the world, which is the objective of the GNC Project.

261. Communication of project Outputs to stakeholders were constrained due to the lack of time to produce infographics and to disseminate it to a wider stakeholder group in the region. Global Resource Information Database-Arendal (GRID-Arendal) was not able to produce the needed training materials. IW: LEARN has not displayed anymore the experience notes produced by the World Resources Institute.

262. The website, http://www.nutrientchallenge.org, was institutionalized under UNEP GPA (http://www.unep-gpaction@un.org). The Evaluator finds that the website could be made more interactive and potentially be an avenue for building communities of practitioners.

Rating for Factors Affecting Performance and Cross-Cutting Issues:	***Satisfactory***

5.10 Responses to the strategic questions in the evaluation

263. The strategic questions addressed in this terminal evaluation are:

Q1: To what extent did the project deepen joint efforts of UNEP and IOC-UNESCO and the research consortium?

264. The joint effort of UNEP and IOC-UNESCO, and the research consortium has deepened. IOU-UNESCO is interested to work more with UNEP and the research consortium to replicate the project and apply the tools for nutrient-reduction.

Q2: To what extent did the applied science-policy model work at global and national level?

265. The science-policy model applied worked at global and national level. The work under the GPA to address LbSP is integrative and transformative. It integrated natural sciences (chemistry, hydrology, coastal oceanography) and with social sciences (e.g., economics, political science) into policy. The areas of work which reflect this science-policy model were: i) knowledge generation on policy experiences; extension and technical services for sustainable development; outreach and advocacy for strengthening community of practice; and governance, partnership, and network development for facilitate dialogue and support countries in development of fiscal incentives to enhance the ability to make and sustain investments in improved nutrient management and pollution control. Furthermore, the science-policy work areas imply the interaction of global and national actors for nutrient reduction.

266. The GNC Project has demonstrated this linkage in two countries albeit the global database was used in the Caribbean in the design of the Regional Nutrient Pollution Reduction Strategy and Action Plan for the Wider Caribbean Region (UNEP CEP 2021). There was not enough time to replicate the process in other countries (i.e., conduct stakeholder meetings and consultations, gather, compile, prepare data to input to the model or conduct a PROA, identify suitable management interventions from the toolbox, consult with stakeholders, especially the vulnerable groups, revise national policy, finance the acceptable intervention).

267. The GNC Project was successful in achieving Project Outcome 1. It was successful in informing many governments on how to use the science-policy model and providing the foundation for policies and regulations to be put in place. The GNC Project conducted trainings for stakeholders around the LMEs (e.g., South China Sea and the Gulf of Thailand, West Indian Ocean) and participated in international conferences of the International Waters Portfolio of GEF, that were attended by government representatives, managers, and scientist, and conducted side-events in these conferences to inform stakeholders. There was evidence of governments and stakeholders in the Bay of Bengal LME, Wider Caribbean LME, and South China Sea and Gulf of Thailand LME had adapted nutrient-reduction policies in their Strategic Action Plans.

268. There are several examples of successful application of the science-policy model for nutrient- reduction that were implemented at the LME scale and that had some inputs from the outputs of the GNC Project. These are briefly described below.

269. In the maritime countries surrounding the Bay of Bengal LME, the countries endorsed the Strategic Action Plan (SAP) in 2015 and its implementation started in 2017. The SAP was based on the Transboundary Diagnostic Analysis (TDA) that was based numerous studies by experts (http://boblme.org). The TDA was the scientific basis for development of the SAP, which includes actions by governments bordering the LME. The BOB LME SAP included the ecosystem objective of "Coastal and marine pollution and water quality are controlled to meet agreed standards for human and ecosystem health".

270. Two of the specific objectives will reduce nutrient pollution in coastal waters: (i) reduce or minimize the discharge of untreated sewage and wastewater into river, coastal and marine waters and (ii) reduce and control nutrient loading into coastal waters.

271. Some regional actions to meet these objectives were to "support coordinated activities of existing regional bodies with a mandate in pollution and water quality; establish a regional advisory group on pollution and water quality, e.g., a regular meeting of GPA focal points; and to implement regional protocols, guidelines, standards and indicators for managing pollution and water quality in accordance with BOBLME SAP ecosystem health indicators and in collaboration with international programmes and partnerships and use nutrient modelling for management purposes.

272. In the Wider Caribbean LME, the science-policy model was also implemented successfully. The global database, Nutrient Expert from Watersheds (NEWS), was used in the workshop to prepare the Regional Nutrient Pollution Reduction Strategy and Action Plan for the Wider Caribbean Region (UNEP(DEPI)/CAR WG.41/INF.10/Rev.1)[24]. The State of Marine Pollution and State of Marine Habitat Reports were produced that enable greater public awareness of the importance actions that were informed by scientific studies. The global projects by UNEP on Nutrients served as catalyst for: the Development and Adoption of the first Regional Nutrient Pollution Reduction Strategy in the Wider Caribbean Region; the implementation of the Regional Strategy by Jamaica and Barbados; and the Regional Workshop on Index of Coastal Eutrophication (ICEP) and Harmful Algal Blooms in Trinidad and Tobago[25].

[24] Regional Nutrient Pollution Reduction Strategy and Action Plan for the Wider Caribbean Region, Fifth Meeting of the Scientific and Technical Advisory Committee (STAC) of the Protocol Concerning Pollution from Land-Based Sources and Activities (LBS) in the Wider Caribbean, March 15 to 17, 2021 (virtual meeting). Lead authors: Liana Talaue McManus and Sherry Heileman.

[25] Information provided by Christopher Cox, Coordinator, Cartagena Convention Secretariat

273. In the South China Sea and Gulf of Thailand LME, as part of the implementation of the SAP, a compilation of knowledge, experience, and lessons learned was conducted for watershed management and managing coastal pollution. This was prepared to inform the government representatives for the first meeting of the inception phase of the UNEP GEF Project[26]. Component 2 of the SAP Implementation Project will include activities in developing tools and mechanisms to guide the development of sustainable management systems for coastal habitats and land-based pollution. The purpose of this Component is to give direction to the implementation of activities to support the integration of regional science with national-level policy making and planning for land-based pollution management. In this connection, key outcomes of component 2 include: effective integration of regional science in the management of land-based pollution; and strengthened and harmonized national policies and laws, and supporting financial mechanism, for the management of land-based sources of pollution.

274. At the national scale, the policies on nutrient management were imbedded in national policies on water quality or water pollution as early as the 1990s (e.g., Indonesia, Philippines). The GNC Project was successful in demonstrating the link between policy and science and for the application of science to underpin regulations. The pilot sites in Laguna Lake (Manila Bay watershed) and Chilika Lake led to the improvement of integrated water quality planning by Laguna Lake Development Authority and Chilika Development Authority (Project Outcome 2).

Q3: How did the project contribute to GEF and UNEP strategies on nutrient and nitrogen initiatives and discussions on emerging issues of priority?

275. The GNC Project contributed directly to the GEF 4 International Waters Strategic Program 2 on reducing nutrient over-enrichment and oxygen depletion from land-based pollution of coastal waters in LMEs, which is consistent with the GPA.

276. The GNC Project has built the capacity of governments to reduce over-enrichment and oxygen depletion by developing the toolbox of measures, regulations, policy cases, and nutrient-load calculator that policymakers can refer to. The Project has further trained stakeholders around the world to introduce the toolbox. The Project has laid the sustainable foundation for global action, especially in LMEs.

277. The GNC Project is mentioned in the GPNM Charter and operational guidelines, and its website (http://www.nutrientchallenge.org) is hosted by UNEP.[27]

278. Some of the projects under the IW Focal Area that support the SP2 are the Danube Basin, Romania Agricultural Pollution Control, and Manila 3rd Sewerage Project.

279. At the LME level, the GNC Project contributed to SAP implementation. The GNC Project was a much-needed project in many parts of the world where coastal pollution from land-based sources has been occurring and was worsening. For example, in the SCS LME, marine pollution is ranked third in the assessment of transboundary environment problems (Transboundary Diagnostic Analysis of the South China Sea, Talaue-McManus, 2000; TWAP,

[26] Good Practices on Habitat and Land-based Pollution Management. Implementing the Strategic Action Programme for the South China Sea and Gulf of Thailand (SCS SAP Project). First Meeting of the Regional Scientific and Technical Committee, 17-19 October 2022

[27] GPNM Charter: Operational Framework and Guidelines (2018): para. 20: "…The GPNM through its collaborative work with governments and other stakeholders have designed and implemented on-the-ground projects notably the project "Global Foundations for Reducing Nutrient Enrichment and Oxygen Depletion from Land-based Pollution in Support of Global Nutrient Cycle" (2012-2018) with support from the Global Environment Facility and various partners of GPNM"

Volume 4, 2016). Although countries were aware of the issues and causes of this problem and were committed to addressing it, a catalyst was needed to spur the countries to act, and in synergy. The GNC had begun this catalytic action.

280. The GNC Project was useful to advance the nutrient-management of coastal waters. It provided a causal link from national implementation of actions to the achievement ecological and socio-economic benefits. It was highly relevant to the objective of the Strategic Plan for Technology Support and Capacity Building for the coherent actions of governments to address land-based sources of pollution. The signatories to the GPA, in the fourth review of the GPA in 2008 (in Bali, Indonesia), have agreed to continue to mainstream the protection of the coastal and marine environment and enhance capacity-building, knowledge generation, and sharing through collaborations and partnerships. Furthermore, governments have declared the strengthening of the GPNM (Bali Declaration 2018).

281. The GNC Project demonstrated that it was also feasible to implement a project linking science to policy and practice. International and national scientists from the academe were able to share database and expertise in undertaking the modelling and scenario-building. Scientific and environmental organizations (e.g., IOC-UNESCO, UNEP, World Resources Institute) collaborated to assist countries, through this Project, to meet their international commitments.

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

282. The Evaluator concluded that the GNC Project was implemented satisfactorily. Most of the key criteria of performance were rated Satisfactory and Highly Satisfactory (Table 3 below; and Section on Evaluation findings).

283. The table below provides a summary of the ratings and finding discussed in Chapter 5. The calculated weighted score of the assessment was 4.84; overall, the project demonstrated a performance rating of ***'Satisfactory'.***

Table 6. Summary of project findings and ratings

Criterion	Summary assessment	Rating
Strategic Relevance		**HS**
1. Alignment to UNEP MTS, POW, and Strategic Priorities	Aligned with Midterm Strategy (MTS 2010-2013, 2014-2017, 2018-2021) on SP5: Chemical, Waste & Air Quality and SP3: Healthy and Productive Ecosystems, Program of Work 2018-19/2020-21, and Strategic Priorities and Bali Strategic Plan for Technology Support and Capacity Building[28] (BSP) and South-South Cooperation (S-SC).	**HS**
2. Alignment to UNEP Donor/GEF/Partner strategic priorities	Aligned with GEF-4 IW-SP2	**HS**
3. Relevance to global, regional, sub-regional and national environmental priorities	Relevant in meeting several SDGs but most relevant is SDG 14 on the conservation and sustainable use of the oceans, sea, and marine resources for sustainable development. The relevant target is Target 14.1 in that by 2025, governments have successfully prevented and significantly reduced marine pollution of all kinds, in particular from land-based activities. Relevant to regional Strategic Action Plans of the LMEs (South China, Bay of Bengal, Caribbean, West Indian Ocean), and national priorities (e.g., *Ambisyon Natin* 2040/Midterm Development Plan of the Philippines).	**HS**
4. Complementarity with existing interventions/Coherence	Consistent with the Global Plan of Action for Land-based Sources of Pollution Complementary with many GEF projects around the world under the IW Portfolio (e.g., GEF ID 1202, 1661, 2576, 3025, 3918, 1519, 5400, 5452, 5757, 9571, 9654)	**HS**

[28] *http://www.unep.fr/ozonaction/about/bsp.htm*

Criterion	Summary assessment	Rating
Quality of Project Design	The GNC Project had a logical framework towards achieving the objective, i.e., to lay the foundation for addressing nutrient-enrichment and oxygen depletion from LbSP. There were planned9 outcomes under the 4 technical components of the project. These were more description of the outputs rather than outcomes (as defined by UNEP). A ToC at evaluation was prepared to express the ambition of the Project. The GNC could have been designed with 2 Project Outcomes at LME and ecosystem levels. There were six (6) Direct Outcomes to achieve Project Outcomes. The monitoring system for the Project emphasised outputs and output indicators.	**MS**
Nature of External Context	Favourable; no disruptions due to political or extreme events	**Favourable**
Effectiveness		**S**
1. Availability of outputs	Quality outputs were delivered and made available from the GPNM website - http://nutrientcallenge.org	**HS**
2. Achievement of project outcomes	The six Direct Outcomes resulted in the achievement of the two Project Outcomes. The foundation for countries to initiate nutrient-reduction projects has been achieved. Project Outcome 1 was achieved, however, it will need an investment of 10 years with 2 phases. The GNC Project can be considered phase 1. The GNC Project has achieved the Direct Outcomes. The GNC Project has contributed to the preparation of SAPs in the BoBLME, Wider Caribbean LME, and South China Sea and Gulf of Thailand LME. Project Outcome 2 was achieved by the adaption of the LLDA of the EHSC as part of the integrated water quality monitoring and management. Chilika Development Authority has used the EHSC in their monitoring of the Lake. To achieve the impact, the assumptions need to be fully realized to achieve the intermediate state to impact.	**S**
3. Likelihood of impact	The likelihood to achieving impact, with other stakeholders, is likely but will need time for replication and up-scaling in an LME.	**Likely**
Financial Management		**S**
1. Adherence to UNEP's financial policies and procedures	Annual financial reports were submitted: 2011-2012; 2012-2013; 2013-2014; 2014-2015; 2015-2016; 2016-2017; 2017-2018; 2018-2019	**S**
2. Completeness of project financial information	Almost complete (albeit the final financial statement was provided late to the Evaluator). The missing information are the copies of remittances to Partners.	**S**
3. Communication between finance and project management staff	Revision of project has been successfully undertaken.	**S**

Criterion	Summary assessment	Rating
Efficiency	The sequencing of project activities was done at the outset (ProDoc). The project took opportunities to synergize with GEF international conferences, international and regional meetings, and with local organizations. The close association of the GNC project with the UNEP GPNM project added efficiency to the UNEP/ GEF GNC Project.	**S**
Monitoring and Reporting		**S**
1. Monitoring design and budgeting	Monitoring design was according to the logical framework. The delivery of outputs of the Project were monitored very well in the PIRs. Indicators and monitoring of outcomes (as defined by UNEP) were not done. (Please see Recommendation # 4.)	**MS**
2. Monitoring of project implementation	The information gathered in the monitoring of progress in the Project Implementation Review (PIR) are for the indicators and targets; there is no gap in the monitoring of outputs along the causal pathways. However, indicators or project outcomes (i.e., planned or expected positive change on the beneficiary as the result of the intervention) were not monitored. It was a challenge for the Evaluator to find evidence.	**S**
3. Project reporting	The reporting by the Partners was complete.	**S**
Sustainability		**Moderately Likely**
1. Socio-political sustainability	The condition for the socio-political sustainability of the project was achieved by working with the DENR, LLDA, CLDA and LGUs.	**Likely**
2. Financial sustainability	The conditions for financial sustainability were partly achieved by working with the governmental agencies that can apply for annual budgets and investments for infrastructure to reduce nutrient pollution.	**Moderately Likely**
3. Institutional sustainability	At the ecosystem scale, institutional sustainability was assured with the LLDA and CLDA. At the LME scale, there is a need for GEF projects to report to the Regional Seas to ensure accounting and sustainability of actions under the SAP.	**Likely**
Factors Affecting Performance		**S**
1. Preparation and readiness	The project was well-prepared. The stakeholders (governments) endorsed the project to GEF Secretariat and at the GPA Annual Meeting in Manila.	**S**
2. Quality of project management and supervision	The governance structure and supervision model were comprehensive. There was a Project Steering Committee and Project Coordination Unit. The roles of the project management team and the partners to deliver the various results under the components were clear at the design stage.	**S**
3. Stakeholders' participation and cooperation	There was participation and cooperation of stakeholders at global, national, and demonstration site (Manila Bay, Chilika Lake) in all Components and activities, e.g., consultations, trainings, data provision, participating in international conferences.	**S**
4. Responsiveness to human rights and gender equality	The GNC Project is responsive to human rights and gender equality. Good water quality in coastal waters benefit both men and women.	**NR (Not Rated)**

Criterion	Summary assessment	Rating
5. Environmental and social safeguards	The GNC Project had no environmental and social risks to provide safeguards; the GNC Project is needed to improve environmental health and to protect livelihoods (fish-farming, fisheries).	**NR (Not Rated)**
6. Country ownership and driven-ness	The GNC Project involved governmental agencies at national and local levels and local academic institutions. The Philippines and other governments in the East Asian Seas are pursuing projects for nutrient reduction.	**HS**
7. Communication and public awareness	A wide communication was institutionalized by the inclusion of the communication strategy in the GPNM Charter: Operational Framework and Guidelines and the website (the http://nutrientchallenge.org) which is available to the public, being hosted by UNEP (unepgpacttion.org)	**S**
Overall Project Performance Rating		**S**

6.2 Lessons Learned

284. The Partners reported many lessons in the implementation of each Project component (Terminal Report, Experience Notes). They are comprehensive and should be referenced when replicating and scaling-up a multidisciplinary project in other LMEs. Stakeholder engagement and partnerships were highlighted as important bulwark for producing outputs.

285. In addition, this evaluation has identified the following lessons from the overall implementation of the project.

Lesson Learned #1:	Project design with sequencing of project components need sufficient time for inception and preparatory steps. The sequencing of project components was an important element in the design of the GNC project which was reinforced during the inception phase and meant that outputs of one component were prerequisites for another (outputs of Components A and B and inputs to Components C and D).
Context/comment:	There were delays in project implementation of the source-impact model due to the time that was needed to gather secondary data on water quality indicators that the local government units in the Manila Water Quality Monitoring Area (WaQMA). The data were not of uniform quality (in units, for one) that required more processing time for the data to be used in modelling. This delayed some of the dissemination of the project outputs to many stakeholders. A project partner expressed that more time was needed in the inception phase of the project to set-up the project and have time for the dissemination of knowledge products. It is the view of the Evaluator that the assessment of secondary data should be part of the inception phase in order to further refine the sequencing of activities.

Lesson Learned #2:	Adaptive management is important for environmental interventions, especially if all technical data are not available. This is crucial when the environmental issue cannot be addressed by only from a scientific or technical point of view and when the factors that lead to the cause of nutrient pollution are from socio-economic activities.

	Another lesson worthy to mention is the need for appropriate flexibility in the implementation of project components. WRI began developing the PROA process when the source-impact model was not quite ready for use in the planned training sessions. However, the outputs of the source-impact model were eventually included in the PROA.
Context/comment:	The overview of the coastal water pollution in Manila Bay from land showed that there were many issues on hand and required a lot of data and information that were not available at the onset. The management intervention could only be based on the best available data and information by the policymakers and resource managers. An adaptive management framework would allow for improving the intervention as more data and information would become available from monitoring of indicators.

Lesson Learned #3:	Sufficient time needs to be allocated for stakeholders to initiate actions based on knowledge and awareness generation activities. The project duration was insufficient to achieve the desired outcome of the GNC project, i.e., governments and other stakeholders should initiate comprehensive, effective and sustained programmes addressing nutrient over-enrichment and oxygen depletion from land-based pollution of coastal waters in large marine ecosystems (LMEs).
Context/comment:	The partners provided capacity and impetus towards the preparation of comprehensive, effective, and sustained programmes to participating governments (India and Philippines). The Manila Bay Sustainable Development Planning technical committee has received technical advice from the Project while the Chilika Development Authority was able to address eutrophication not previously addressed by the Authority (Experience Notes). The MBSP has recommended programmes, activities, and projects (PAPs), and these have yet to be developed or operationalized. The LLDA has continued using the Ecosystem Health Report Card for monitoring and communication material (but has not yet uploaded the 2016 report). Training in the use of the toolbox and source-impact model need to be replicated and up-scaled to the states around an LME. The model was not easily understandable, according to a partner who was interviewed. For the South China Sea and Gulf of Thailand LME, this will include members of the CoBSEA. For the Bay of Bengal LME, Bangladesh, India, Myanmar, Pakistan, and Thailand will require training to likewise address the SAP.

6.3 Recommendations

286. This evaluation prescribes four recommendations. There are many other recommendations presented by the GNC Project (in the Terminal Report and Experience Notes) that are commendable. It is highly recommended that replication of the GNC Project in other LMEs also refers to these recommendations while developing concept notes (Project Identification Form in GEF) and project documents.

Recommendation #1:	Project reporting of progress, results, outputs, and outcomes should be shared with the Regional Seas Conventions and Action Plans Secretariat (e.g., CoBSEA, SACEP) and other regional institutions (e.g., ASEAN, GPNM and informal GPNM Regional Platforms). In this manner, there is sustainability that is institutionalized and a systematic documentation of the actions from relevant UNEP/GEF projects to address pollution from land-based sources under the SAP.
Challenge/problem to be addressed by the recommendation:	It is a challenge to monitor the projects and the outputs and outcomes of projects that contribute to the achievement of the objective of the Strategic Action Plans in LMEs. The Offices of the Regional Seas Programmes rely on the reporting of governments and project managers. Sharing reporting on relevant UNEP/GEF projects would help to ensure that timely information on results is available to the coordinators of SAP implementation. This recommendation will help alleviate challenges in addressing marine pollution of LMEs. Marine pollution is a transboundary problem that needs to be addressed in the strategic action planning by the governments in the riparian countries. To be able monitor outcomes of projects to the impact level, governments in LMEs report progress to the regional offices. There is a need to strengthen the monitoring of outcomes, particularly the changes in governmental agencies in the adaption of policies and regulations for nutrient-reduction in the agriculture, aquaculture, and housing infrastructure (urbanization) with increasing population. The Regional Sea Convention and Action Plans Secretariat and other MEA organisations, in their capacity as coordinator and executing institutions for SAPs, where relevant, should be informed of the outputs and outcomes of projects for monitoring and adaptive management (see paragraphs 274-276 for linkage of science and policy at LME scale). This will ensure the institutional sustainability of the direct outcomes of projects that will lead to the impact in the LME (please see Section 5.8.3).
Priority Level:	Critical
Type of Recommendation	Project level
Responsibility:	UNEP Source to Sea Pollution-Free Unit, Regional Seas Convention and Action Plans Secretariat, Marine and International Waters Unit
Proposed implementation time-frame:	12 months (within GEF Replenishment)

Recommendation #2:	A guided application of the source-impact model by governments should be considered with the provision that the model is reviewed and updated if needed. The application should be user-friendly so that the model can become a sustained practice for nutrient-reduction and management. The existing model is connected to the Indicator for Coastal Eutrophication Potential (ICEP[29]). This operationalizes the actions needed and reporting to achieve Target 14.1 (SDG #14), i.e., by 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution. Training with other partners could be considered e.g. the UNEP GEF IW Project "Targeted Research for Improving Understanding of the Global Nitrogen Cycle towards the Establishment of an International Nutrient Management System" (INMS), GEF ID 5400. INMS is built in part on the GNC model aiming to further develop its source impact models. The unspent funds of about eighty-six thousand dollars (USD 86,000) could be used for this purpose (See Annex VIII).

[29] ICEP – based on loads and ratios of nitrogen, phosphorus, and silica delivered by rivers to coastal waters; Garnier, J., A. Beusen, V. Thieu, G. Billen, and L. Bouwman (2010), N:P:Si nutrient export ratios and ecological consequences in coastal seas evaluated by the ICEP approach, Global Biogeochem. Cycles, 24, GB0A05, doi:10.1029/2009GB003583.

Challenge/problem to be addressed by the recommendation:	The source-impact model, as part of the toolbox for nutrient-reduction, was difficult to understand (according to one expert). This is one of the useful tools that can calculate for nutrient inputs with data from the LGUs. The training was not done due to the lack of time. The model took some time to prepare because the data from the LGUs were not ready to be plugged into the model. The units in the data were not the same throughout the available database and so some time was spent to prepare the data for the model. This resulted to some time for data-preparation which could have been used for training. The source-impact model may be difficult for some officers in the government to understand (according to one expert who was interviewed). There was insufficient time during the GNC Project implementation to conduct a training of the model with data from national officers (see Section 5.4.2).
Priority Level:	Critical
Type of Recommendation	Project level
Responsibility:	UNEP Source to Sea Pollution-Free Unit, Regional Seas Convention and Action Plans Secretariat, Marine and International Waters Unit
Proposed implementation time-frame:	12 months

Recommendation #3:	GPNM activities should be promoted at regional level. The envisaged regional GPNM platforms could be established and operationalized to capture best practices and solutions on point and non-point source discharge mitigation and to develop nutrient-reduction projects with the private sector. Regional arrangements, programs, or protocols that function in addressing LbSP (such that is found in the Wider Caribbean Region) should be supported for sustainability. The research outputs and technical guidance through a platform with formal and informal regional institutions in riparian countries, could lead to ecological and societal benefits.
Challenge/problem to be addressed by the recommendation:	The sustainability of the GNC Project was assessed as "*Moderately Likely"*. The socio-political and institutional sustainability of the GNC Project was assessed *"Likely"*. The financial sustainability was assessed as *"Moderately Likely*". While governments have national policies to address coastal pollution with government appropriations, this is not enough if it requires high investments and integrated and coordinated approach among stakeholders and drivers. For example, in the Manila Bay Watershed, the source-impact model showed that the inputs of nutrients from human settlements was higher than from agriculture and aquaculture. Investments in wastewater treatment plants will be needed (as well social programs to manage population growth). Investments for this type of infrastructure is high and will need additional investments from the private sector. For the other drivers, financial investments will be needed to support the replication of ecosystem-level projects such as nature-based solutions (in watersheds that are linked to coastal waters) by the governmental agencies in a PPP arrangement. The financial investment for the application of interventions from the toolbox will need investment from the private sector, especially from the drivers of coastal nutrient pollution (see Financial Sustainability section). Regional GPNM platforms, if established and operationalized, could work with governmental agencies and other stakeholders to develop projects for replication and up-scaling in the region (see Section 5.8.2).
Priority Level:	Critical
Type of Recommendation	Project level
Responsibility:	Source to Sea Pollution-Free Unit
Proposed implementation time-frame:	12 months

Recommendation #4:	Adequate indicators at outcome level should be included in the results framework of projects. Outcome level change, often identified as behavioural

	change in beneficiaries and relevant stakeholders, including disadvantaged groups, takes time and are to be realized at the end of the Project and change could be incremental. Process indicators could be used for this purpose. For example, for Project Outcome 1, the indicators could be: • Governments and partners send key stakeholders to trainings and workshops for nutrient reduction; • Governments review and revise policies based on policy briefs and consultation with relevant stakeholders and groups; • Governments develop projects using tools for nutrient-reduction.
Challenge/problem to be addressed by the recommendation:	The challenge was that the GNC Project was designed to deliver the foundation for nutrient-reduction and the project's monitoring framework was focused on outputs rather than Outcomes (as defined by UNEP) as such the change in the behaviour of the beneficiaries and key stakeholders were not monitored. Evaluations of projects, however, emphasise the achievement of outcomes in order to assess change and impact. The use of the ToC for designing projects will require the assessment of outcomes which are behavioural changes or actions that are aspired for at the end of a project (Restructured Theory of Change). There is a gap in the monitoring of the progress of implementation, particularly at outcome level, as these are responses of beneficiaries of the project. More often than not, the behavioural change or uptake of a good practice takes some time (see Section 5.7).
Priority Level:	Important
Type of Recommendation	UNEP-wide
Responsibility:	UNEP
Proposed implementation time-frame:	12 months

ANNEX I. RESPONSE TO STAKEHOLDER COMMENTS

Response to stakeholder comments received but not (fully) accepted by the reviewers, where appropriate

Page Ref	Stakeholder comment	Evaluator's Response	UNEP Evaluation Office Response
Executive Summary, Financial Sustainability, para. 38, p. 16	This was a global research and governance project on nutrient management. It was not one looking at wastewater treatment and infrastructure hence I am not sure to understand this statement	The second pathway to achieve intermediate state toward the impact is through adaption of research outputs and tools in the toolbox by governments. These will include nature-based solutions to engineering solutions (infrastructure for wastewater treatment). Construction or up-grading of Infrastructure to current population levels and science for capture of nutrient is relevant in the coastal zone of Manila Bay, where the source of nutrient pollution is from domestic sources, and other metropolises in Asia.	
Executive Summary, Institutional Sustainability, para. 39, p. 17	…in terms of sustainability perhaps one should review how the tools developed by this project were generally used and will continue to be shared with relevant stakeholders including also checking if the science is still relevant today or needs an update hence a mechanism to do so.	The Evaluator agrees with the comment and suggestion. The utility of the tools was reviewed through interviews, on-line research on the programs of the governments and Regional Seas Programs, and published research. The outputs of the GNC Project were used by the Wider Caribbean Region in a workshop and catalysed key developments: adoption of the First Regional Nutrient Pollution Reduction Strategy in the Wider Caribbean Region; first implementation of the Strategy by Jamaica and Barbados; and the conduct of the workshop on ICEP and Harmful Algal Blooms. Chilika Development Authority still uses the EHRC but LLDA has not completed the second assessment in 2016 and was not in the work program for 2023. There is a further need to share the results of the GNC Project by the GPNM, GPA Unit, UNEP through the Regional Seas Programme and other platforms. The science on nutrient pollution remains the same but the on nutrient recovery methodology has advanced in the 2010-2020[30]. There were more studies on chemical-based than biological-based methods. More studies biological-based methods are expected which may be because of their huge research scope, cost-	

[30] • Tuhin Kamilya, Rajneesh Kumar Gautam, Shobha Muthukumaran, Dimuth Navaratna & Sandip Mondal. Environmental Science and Pollution Research volume 29, pages49632–49650 (2022)

Page Ref	Stakeholder comment	Evaluator's Response	UNEP Evaluation Office Response
		effectiveness, and easy operation methods. With this finding, the toolbox of best management practices and policies, nutrient management efforts, and Calculator remain relevant and useful for implementing actions that are appropriate for the economy of the country.	
Recommen-dation 1, pp. 69-70	Not sure if there has been further evolution of regional 'nodes/platforms' of the GPNM to date and the statement here seems to imply that these exist. There have been dialogues at the regional level regarding the regionalization of the GPNM as a technical and policy mechanism. There should be a suggestion to further support developed/enhanced this mechanism in parallel with the project-specific recommendations.	I have revised the statement to make it explicit that two informal regional platforms exist. I agree that there have been meetings and agreements in the past. From the https://sdgs.un.org/partnerships/global-partnership-nutrient-management-under-gpa: "The GPNM Asia Platform was launched in June 2010 in Delhi, India in partnership with the International Nitrogen Initiative (INI) South Asia chapter. Follow-up meetings were held November 2011 in Beijing, China, co-hosted with the China Agricultural University of Beijing and in November 2015 at the East Asia Seas Congress in partnership with the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA). The GPNM Caribbean Platform was launched in May 2013 in Trinidad and Tobago in partnership with the Institute for Marine Affairs of Trinidad and Tobago and the Secretariat of Cartagena Convention, Caribbean Environment Program Regional Coordination Unit. A follow-on meeting was held in February 2016 with the same partners." The arrangement between the Greater Caribbean Region Regional Seas and the Regional GPNM Platform (launched in 2013) could be a model for other regions where the former provides support to the latter. The Caribbean platform, if made fully operational, together with the Protocols on Pollution from Land-Based Sources and Activities (LBS Protocol) could be a major regional platform for harmonized nutrient management in the WCR (UNEP/CEP 2021. Regional Nutrient Pollution Reduction Strategy and Action Plan for the Wider Caribbean Region. Authors: L.Talaue McManus, S. Heileman, C. Corbin, D. Banjoo.). A regional workshop was held where the outputs of the GNC Project informed the discussion and the Secretariat, through the LBS Protocol together with the Marine Pollution Regional Activity Centres and Network were identified as the informal regional platform for future work on nutrient management (Medium-Term Strategy 2023-2030).	

Page Ref	Stakeholder comment	Evaluator's Response	UNEP Evaluation Office Response
Recommen-dation 3, p. 71	Recommendation No. 3 could be only the responsibility of the GPNM Regional Platforms rather than include Regional Seas (that were not part of the Project).	The two existing regional GPNM platforms are informal in nature. The UNEP Source to Sea Pollution-Free Unit is responsible for the recommendation in view of its responsibility for GPNM.	
Recommen-dation 3, p. 71	Further, where Regional Seas have protocols to address Land-based Sources of Pollution, these are used rather than create additional regional platforms.	I accept the comment and revised Recommendation No. 3. The Regional GPNM Platforms could play a complementary role to the implementation of the SAP, particularly on nutrient enrichment.	

ANNEX II. PEOPLE CONSULTED DURING THE EVALUATION

Organisation	Name	Position	Gender
UNEP	Isabelle Vanderbeck	Acting GEF IW Portfolio Manager and Task Manager	Female
UNEP	Christopher Cox	Task Manager for the Caribbean portfolio of GEF-funded Biodiversity and Land Degradation projects (former Project Manager)	Male
UNEP	Christopher Corbin	Senior Coordination Officer, Caribbean Regional Seas	Male
UNEP	Takehiro Nakamura	Head, International Environmental Technology Centre, Industry and Economy Division (formerly Head, Marine and Coastal Unit)	Male
UNEP CoBSEA	Jerker Tamelander	Coordinator, Regional Coordinating Unit, East Asian Seas (former position); Director, Science and Policy Secretariat of the Convention on Wetlands (present position)	Male
IOC-UNESCO	Hendrik Oksfeldt Enevoldsen	Head of Centre, Programme manager at IOC UNESCO	Male
PEMSEA	Nancy Bermas	Chief Technical Adviser and Project Manager, UNDP/GEF SDS-SEA Scaling-up Project	Female
LLDA	Jocelyn Sta. Ana	Division Chief Environmental Laboratory and Research Division	Female
LLDA	Adelina Santos-Borja	Management Consultant Laguna Lake Development Authority Vice Chairperson, Scientific Committee, International Lake Environment Committee Foundation (ILEC) Chairperson Southeast Asian Limnological Network (SEALNet)	Female
MSi-UP	Lara Patricia Sotto	Ph. D. Candidate	Female
MSI-UP	Gil Jacinto	Professor (retired)	Male
MBCO, DENR	Jacob F. Meimban	Executive Director	Male
	Liana T. McManus	Independent Marine Science & Policy Consultant	Female

ANNEX III. KEY DOCUMENTS CONSULTED

Project planning and reporting documents

- Project Document,
- Project Implementation Report (PIR), 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020
- Draft Terminal Report

Project outputs – Overall

- Draft Terminal Report
- PEMSEA : Terminal Report on Development of Nutrient Reduction Strategies through Application of Quantitative Source-Impact Modelling and Best Practices in the Manila Bay Watershed

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

- GPNM website – http:/www.nutrientchallenge.org
- GPNM Charter: Operational Framework and Guidelines (February 2018)
- Communication strategy - par. 69-75 in the GPNM Charter: Operational Framework and Guidelines

Project outputs Component B: quantitative analysis of relationship between nutrient sources and impacts to guide decision makers on policy and technological options.

- One Phosphorus Future: the challenge to produce more food with less pollution (uploaded to: http://www.nutrientchallenge.org)
- Best management practices (334, uploaded to http://www.nutrientchallenge.org
- Policy toolbox

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

- 334 Best Management Practices database - BMP from 60 countries
- 136 policy best practices database - for improved nutrient management from across the globe included in GPNM toolbox
- Overview and synthesis of policy, technological options, measures and regulations Report - considers eight standard and priority Best Environmental Practices (BEPs), including: (i) Nutrient Management, (ii) Manure Management, (iii) Wetland Restoration/Creation, (iv) Riparian Buffers, (v) Conservation Tillage/Erosion Control, (vi) Cover Crops, (vii) Grazing Management, (viii) Ecological/Organic Production Systems.

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

- Source-impact model –
- World Resources Institute. 2018. Lessons Learned - Core Project Components GEF International Waters Experience Notes focused on the activity of developing:

(1) a Global Nutrient Management ("Toolbox"); (2) developing ecosystem health report cards in Chilika Lake, India and Laguna de Bay, Philippines; and (3) a local adaptation of the Global NEWS Model for Manila Bay to better simulate site-specific conditions.

- Jones, C. and PEMSEA.2015. Toward a Comprehensive Watershed Management Strategy for Manila Bay — The International Experience and Lessons Learned. Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), Quezon City, Philippines. 50 p
- PROA
- Trainings conducted: Training-of-trainers, March 2017, Manila; Bangladesh, China, Colombia, Namibia, Philippines, Senegal, Sri Lanka, Trinidad & Tobago

Previous evaluation

- Midterm Review, November 2014

Reference documents

- Powers, A. and D. VanderZwaag, 2008. The Protection of the Marine Environment from Land-Based Pollution and Activities: Gauging the Tides of Global and Regional Governance, 23 Int'l J. Marine & Coastal L. 423 (2008), http://digitalcommons.pace.edu/lawfaculty/515/.
- Sotto, P. A., Arthur H. W. Beusen, Cesar L. Villanoy, Lex F. Bouwman,, and Gil S. Jacinto. 2015. Nutrient Load Estimates for Manila Bay, Philippines using Population Data. Ocean Sci. J. 50(2):1-8.
- Sutton, M.A., Bleeker A., Howard C.M., Bekunda M., Grizzetti B., de Vries W., van Grinsven H.J.M., Abrol Y.P., Adhya T.K., Billen G.,. Davidson E.A, Datta A., Diaz R., Erisman J.W., Liu X.J., Oenema O., Palm C., Raghuram N., Reis S., Scholz R.W., Sims T., Westhoek H. & Zhang F.S., with contributions from Ayyappan S., Bouwman A.F., Bustamante M., Fowler D., Galloway J.N., Gavito M.E., Garnier J., Greenwood S., Hellums D.T., Holland M., Hoysall C., Jaramillo V.J., Klimont Z., Ometto J.P., Pathak H., Plocq Fichelet V., Powlson D., Ramakrishna K., Roy A., Sanders K., Sharma C., Singh B., Singh U., Yan X.Y. & Zhang Y. (2013) Our Nutrient World: The challenge to produce more food and energy with less pollution. Global Overview of Nutrient Management. Centre for Ecology and Hydrology, Edinburgh on behalf of the Global Partnership on Nutrient Management and the International Nitrogen Initiative.

ANNEX IV. BRIEF CV OF THE EVALUATOR

Name	Annadel Salvio Cabanban
Profession	Independent Consultant
Nationality	Filipino
Country experience	• Asia: Brunei, Cambodia, China, Indonesia, Malaysia, Singapore, Timor-Leste, Thailand, Viet Nam • Oceania: Australia, Fiji
Education	• Ph. D., James Cook University, Townsville, Australia • M. Sc. Marine Biology, University of the Philippines, Diliman, Quezon City, Philippines • B. Sc. (Biology), Silliman University, Dumaguete City, Philippines

Short biography

Annadel Salvio Cabanban is a trained marine biologist who was in the academe for over 20 years and have experienced working in national and regional conservation programs. She has experiences in all the steps of the project cycle of projects funded by the Global Environment Facility. Some of the projects she was involved in were the Sulu-Sulawesi Transboundary Diagnostic Analysis (TDA), South China Sea TDA, Reversing the Environmental Degradation Trends in the South China Sea, Sulu-Celebes Sea Sustainable Development, Coral Triangle Initiative – Southeast Asia, Coral Triangle Initiative – Asia-Pacific, and Impact Assessment of GEF Projects in the South China Sea. She has coordinated the implementation of the EAS 35 on the Impacts of Watershed Activities to Coastal and Marine Ecosystems; mangroves, seagrass beds, coral reefs.

Key specialties and capabilities cover:

- Integrated Coastal Management, Ecosystem Approach to Fisheries Management

Selected assignments and experiences:

- GEF projects – participation in the South China Sea TDA, Sulu-Sulawesi Seas TDA
- GEF project implementation – South China Sea – Reversing the Environment Degradation Trends in the South China Sea (as Community Development Expert; less than 1 year – April to December 2002)
- GEF project development and implementation – Sulu-Celebes Sea Sustainable Fisheries Management (as Project Development Consultant in the preparation of the Project Document; as Senior Fisheries Expert in the implementation)
- GEF
- GEF project evaluation: South China Sea Impact Evaluation; Demonstration of Community-based Management of Seagrass Habitats in Trikora Beach, East Bintan, Riau Archipelago Province, Indonesia; Coastal Resilience to Climate Change: Developing a Generalizable Method for Assessing Vulnerability and Adaptation of Mangroves and Associated Ecosystems.

ANNEX V. EVALUATION TORS (WITHOUT ANNEXES)

DRAFT TERMS OF REFERENCE

Terminal Evaluation of the UNEP/GEF project

"Global Foundations for Reducing Nutrient Enrichment and Oxygen Depletion from Land-based Pollution in Support of Global Nutrient Cycle" (GEF ID 4212)

and

UNEP project "Addressing the Nutrient Challenge through an Effective Global Partnership on Nutrient Management (PIMS 01923)

Introduction

These Terms of Reference (TOR) cover the terminal evaluations of two projects: UNEP/GEF project "Global Foundations for Reducing Nutrient Enrichment and Oxygen Depletion from Land-based Pollution in Support of Global Nutrient Cycle", hereafter referred to as *"GNC project"* and UNEP project "Addressing the Nutrient Challenge through an Effective Global Partnership on Nutrient Management", hereafter referred to as "*GPNM project"*. The projects were closely related and complementary in their implementation of activities contributing towards sustainable management of nutrients. The terminal evaluations of the projects will therefore be conducted as one joint evaluation process by one experienced Evaluator producing two evaluation reports in compliance with UNEP and GEF evaluation requirements.

Section 1: PROJECT BACKGROUND AND OVERVIEW

1. Project General Information

1.1 GNC Project Information

Table 1. GNC project summary

GEF Project ID:	4212		
Implementing Agency:	UNEP	**Executing Agency:**	GPA Coordination Office/Global Partnership on Nutrient Management (GPNM)
Relevant SDG(s) and indicator(s):	SDG 2, Target 2.9; SDG 3, Target 3.9; SDG 14, Target 14.1; SDG 15, Target 15.3		
GEF Core Indicator Targets (identify these for projects approved prior to GEF-7)	N/A this is a GEF 4 project		

Sub-programme:	MTS 2010-2013 MTS 2014-2017 MTS 2018-2021 SP5: Chemical, Waste & Air Quality SP3: Healthy and Productive Ecosystems	**Expected Accomplishment(s):**	SP3 - EA(a) The health and productivity of marine, freshwater and terrestrial ecosystems are institutionalized in education, monitoring and cross-sector and transboundary collaboration frameworks at national and international levels – IV - increase in the number of education institutions that integrate the ecosystem approach in education frameworks SP5 – EA (b) - Policies and legal and institutional and fiscal strategies and mechanisms for waste prevention and sound management developed or implemented in countries within the framework of relevant multilateral environmental agreements
UNEP approval date:	March 2011	**Programme of Work Output(s):**	Programme of work – POW 2018-19/2020-21
GEF approval date:	04 August 2011	**Project type:**	Medium-Size Project
GEF Operational Programme #:	GEF-4	**Focal Area(s):**	International Waters
		GEF Strategic Priority:	IW-SP2
***Expected* start date:**	28 March 2012	**Actual start date:**	23 March 2012
***Planned* completion date:**	30 June 2016	**Actual operational completion date:**	30 April 2019
***Planned* project budget at approval:**	USD 3,618,182	**Actual total expenditures reported as of 30 June 2020:**	USD 1,597,832.09
GEF grant allocation:	USD 1,718,182	**GEF grant expenditures reported as of 05 May 2021:**	USD 1,675,729.17
Project Preparation Grant - GEF financing:	USD 86,000	**Project Preparation Grant - co-financing:**	USD 130,000

***Expected* Medium-Size Project co-financing:**	USD 1,900,000	**Secured Medium-Size Project co-financing:**	USD 2,398,165
Date of first disbursement:	28 March 2012	**Planned date of financial closure:**	31 October 2019
No. of formal project revisions:	Two no-cost extensions (10 June 2016 & 30 June 2018)	**Date of last approved project revision:**	30 June 2018
No. of Steering Committee meetings:	11	**Date of last/next Steering Committee meeting:**	Last: 30 April 2019 / Next: N/A
Mid-term Review/ Evaluation *(planned date):*	End of 2013	**Mid-term Review/ Evaluation (actual date):**	November 2014
Terminal Evaluation *(planned date):*	December 2020	**Terminal Evaluation (actual date):**	June 2021
Coverage - Country(ies):	Global	**Coverage - Region(s):**	Asia, Africa and the Caribbean
Dates of previous project phases:	N/A	**Status of future project phases:**	N/A

1.2 GPNM Project Information

Table 2. GPNM project summary

UNEP PIMS ID:	01923		
Implementing Partners	Ecosystem Division (formerly DEPI), UNEP/ GPA []		
Relevant SDG(s) and indicator(s):	Methodology development on the SDG14.1 sub-indicator on nutrient pollution in collaboration with the Science Division and IOC UNESCO		
Sub-programme:	MTS 2014-2017: 5. Chemicals, waste and air quality MTS 2018-2021: 5. Chemicals, waste and air quality	Expected Accomplishment(s):	2014-2017 EA B: Countries, including Major Groups and stakeholders, increasingly use the scientific and technical knowledge and tools needed to implement sound chemicals management and the related MEAs. 2018-2021 EA A: Policies and legal, institutional and fiscal strategies and mechanisms for sound chemicals management developed or implemented in countries within the frameworks of

UNEP PIMS ID:	01923		
			relevant MEAs and SAICM.
UNEP approval date:	19 March 2015	Programme of Work Output(s):	2018/19-532: Technical guidance and support services for the establishment and enforcement of laws, regulations and fiscal policies to reduce air pollution 2018/19-518: Outreach products and services provided to Governments, private companies and civil society organizations to increase awareness of sound chemicals management 2018/19-517: Support to global, regional and subregional strategic partnerships and integrated approaches to promote the sound management of chemicals 2016/17-525: Actions catalysed through the multi-stakeholder Global Partnership on Nutrient Management to reduce and, where possible, eliminate threats to aquatic environments from land derived nutrients. 2014/15-525: Actions catalyzed through the multi-stakeholder Global Partnership on Nutrient Management to reduce and, where possible, eliminate threats to aquatic

UNEP PIMS ID:	01923		
			environments from land-derived nutrients
Expected start date:	01 September 2015	Actual start date:	08 September 2015
Planned completion date:	31 December 2018 (after extension) Originally December 2017	Actual operational completion date:	31 December 2018
Planned project budget at approval:	USD 1,897,000 (Cash budget) USD 2,568,970 (Cash+in-kind)	Actual total expenditures reported as of 15 May 2018:	USD 1,314,341
Planned Environment Fund allocation:	N/A	Actual Environment Fund expenditures reported as of [date]:	N/A
Planned Extra-Budgetary Financing:	USD 1,897,000	Secured Extra-Budgetary Financing:	USD 852,870 (USD 245,000 (US cancelled))
		Actual Extra-Budgetary Financing expenditures reported as of 15 May 2018:	USD 852,870
First disbursement:	September 2015	Planned date of financial closure:	31 December 2018
No. of formal project revisions:	1	Date of last approved project revision:	16 May 2018
No. of Steering Committee meetings:	9	Date of last/next Steering Committee meeting:	Last: 8 November 2018 Next N/A
Mid-term Review/ Evaluation *(planned date):*	October 2016	Mid-term Review/ Evaluation (actual date):	N/A
Terminal Evaluation *(planned date):*	December 2017	Terminal Evaluation (actual date):	May 2021
Coverage - Country(ies):	Azerbaijan Barbados Belize Dominican Republic Ecuador Eritrea Ethiopia Gambia Ghana Grenada India Indonesia Jamaica	Coverage - Region(s):	Africa, Asia and the Pacific, Latin America and the Caribbean

UNEP PIMS ID:	01923		
	Kazakhstan Mali Niger Nigeria Philippines Saint Lucia Saint Vincent and the Grenadines Trinidad and Tobago		
Dates of previous project phases:	N/A	Status of future project phases:	N/A

2. Project Rationale

2.1 GNC Project Rationale

1. Nutrient over-enrichment of coastal waters in Large Marine Ecosystems (LMEs) is an increasing problem worldwide. In coastal waters, increased nutrients such as nitrogen and phosphorus can cause phytoplankton and macro algae blooms, a process known as eutrophication. Eutrophication can lead to the occurrence of harmful algal blooms, and oxygen depletion (hypoxia) or 'dead' zones. Additional effects of eutrophication include loss of subaquatic vegetation, nuisance or toxic algae that can lead to fish kills and shellfish poisoning in humans, coral reef degradation, and loss of species diversity among others, reducing the resilience of coastal systems to climate change.

2. Globally, harmful algae blooms are considerably more widespread and frequent than they were a decade ago, a situation that was expected to further deteriorate by 2020. While the effects of eutrophication have been documented in many areas around the world, there are many more areas for which data have not been compiled or do not exist. In particular, there is a need for additional information in Asia, Africa, Latin America and the Caribbean.

3. Land-based activities are the dominant source of nutrients and these can enter coastal ecosystems through different pathways including air, surface water and groundwater. Key sources of anthropogenic nutrients include agriculture - in particular through fertilizer leaching from agricultural fields, manure from concentrated livestock operations and aquaculture -, wastewater discharge from sewage and industry, fossil fuel emissions and atmospheric deposition from landbased sources. Biological N2-fixation (both natural and from agriculture) is also an important nitrogen source.

4. The nitrogen cycle is changing faster than that of any other element. The scale of reactive nitrogen is significant with annual inputs of reactive nitrogen from agricultural, industrial and transportation sources increasing by more than a factor ten in the last 150 years and now exceeding the annual rate of production from natural sources. In addition, the effects of reactive nitrogen are not limited to a single medium such as coastal waters. Known as the 'nitrogen cascade', a single molecule of reactive nitrogen may transition through many forms - ammonia, nitrogen oxide, nitric acid, nitrate and organic nitrogen – and may successively lead to a number of environmental, health and social impacts, including contributing to higher levels of ozone in the lower atmosphere. The economic cost of these impacts is great, although assessments are limited.

5. Over the last decade a number of global, regional and national initiatives have identified and addressed the issue of nutrient enrichment to the coastal zone. These include

global assessments such as the Global International Waters Assessment (GIWA), TDA/SAP processes of GEF projects and work done by the IGBP core project on Land-Ocean Interactions in the Coastal Zone (LOICZ). Additionally, the availability of environmental data is rapidly escalating through global databases such as the Global Ocean Observing System (GOOS). This suite of observations is developing to provide a vast resource of the physical, environmental and biological data.

6. Global, spatially explicit models of nutrient loading from watersheds are now available along with a better understanding (and better observation methods) of coastal dynamics and the expansion of global data bases on coastal biomass. Building on regional and other initiatives, e.g. the Danube, OSPAR and HELCOM, we are moving to a position where we can better link patterns of eutrophication with coastal effects from around the world in a more rigorous and quantitative way. Notwithstanding advances made in modeling approaches, there remains a lack of knowledge on the quantitative relationships between nutrient sources and controlling factors in watersheds and effects on coastal ecosystems.

7. The GNC project aimed to provide the foundations for local, national, regional and global approaches to nutrient management and the prevention of nutrient over-enrichment. These foundations were planned to assist in the run up to the 3rd GPA meeting to inform government on nutrient issues. The project planned to produce a globally relevant policy and toolbox made available in modular form, for use in the light of particular needs and circumstances. How the models needed to be tailored, etc. was planned through a pilot testing approach, so refining the overall package of measures to help integrated management.

8. Within the framework of the UNEP supported Global Partnership on Nutrient Management launched in April 2009, the project commenced by building a partnership for, inter alia, GEF nutrient projects and clearly identifying and addressing information gaps with the aim to avoid harmful run-off effects into watersheds and marine areas, and facilitating investments in nutrient management (component A).

9. The project aimed to assist GEF projects, countries and relevant stakeholders to ensure that global, regional and national policy, legislative and institutional reforms are developed and implemented in the most cost-effective manner for the sustainable reduction of nutrient over-enrichment and oxygen depletion in LMEs. The GPNM inter alia was to host the web-based platform for the project, facilitating the exchange of information, best practices and lessons learned with non-GEF partners.

10. The next stage (component B), after establishing an information and policy baseline focuses on developing the more quantitative integrated approaches that are needed to develop effective and economically wise nutrient reduction policies to control coastal eutrophication. These quantitative approaches were to be used to evaluate the potential effect on coastal ecosystems of future human impacts resulting from different development strategies on different scales ranging from local to global. Training packages for stakeholders and further dissemination were planned for instigation under component C as a Policy Toolbox was developed. Full testing and piloting of the Policy Toolbox, in the context of the development of countries' nutrient reduction strategies, was planned to take place in a demonstration region (component D). The analysis and results of the testing, including potential for upscaling of the various tools and approaches, was to be made available outside the region. Linkage of the various components in this way to capture the benefit of strong information, policy development and implementation feedback as the project was taken forward.

11. In summary, this project aimed to organize a global partnership of stakeholders for the coordination and cooperation in the field of nutrient reduction. Through the partnership and project activities, GEF projects, decision makers and other stakeholders would be provided with the tools to analyze the complex relationship between sources of nutrients and their impact on the marine and coastal environment. Taking into account the complex nature of

different nutrient sources and their pathways in the environment, the project aimed to provide countries with the information, tools and policy options necessary to integrate nutrient strategies into national and sector policies.

2.2 GPNM Project Rationale

12. The GPNM project was designed to promote sustainable management of nutrients through the Global Partnership on Nutrient Management (GPNM) by using the Global Programme of Action for the Protection of the Marine Environment from Land based Activities (GPA) and the Regional Seas Programme as platforms for dialogues, policy making and actions at national, regional and global levels. The project continued the work initiated through the "Managing Harmful Substance and Hazardous Waste through the Global Programme of Action in support of Regional Seas Agreements" project, previous under the Harmful Substances and Hazardous Waste Sub-Programme, between 2010 and 2014. The project also intended to contribute to scale up the use of ecosystem-based management practices in an enabling policy framework such that land-based sources of pollution reaching coastal waters and open seas leading to eutrophication and the creation of dead zones, were effectively monitored, assessed and ultimately reduced.

13. The project aimed to strengthen the capacities and capabilities of the GPNM, a partnership of governments, industry, science community, UN agencies, NGOs and regional intergovernmental organizations that has been endorsed by the governments through the Manila Declaration adopted during the 3rd Inter-governmental Review Meeting of the GPA (GPA/IGR-3) in January 2012. It was envisaged that a strengthened GPNM would build the necessary momentum to catalyse a global network of policymakers, private sector bodies, NGOs and international organizations with the common goal to raise awareness and facilitate the exchange of good practices to promote sustainable nutrient management and nutrient use efficiency to ensure food security and maintaining the integrity of our natural environment, including the most productive areas of the marine environment, in estuaries and near-shore coastal waters. The project was to contribute to expansion of the body of knowledge and experiences to assist uptake of best practice primarily through the policy toolkit that was developed under the UNEP/GEF "Global Foundations for Reducing Nutrient Enrichment and Oxygen Depletion from land-based pollution in support of Global Nutrient Cycle" (UNEP/GEF-GNC).

14. The project would draw attention to the impact of current practices of inefficient and unsustainable nutrient uses on the marine environment through the publication of scientific reports and using them for targeted outreach and campaigns and mobilize actions to promote nutrient use efficiency. It was anticipated that targeted advocacy would stimulate a public discourse on run-off and atmospheric deposition of nutrients from various sources into the coastal and marine environment, which is the root cause of harmful algal blooms leading to eutrophication and dead zones worldwide with consequent economic and social costs.

15. Specifically, the project focused on four key areas that were consistent with the work areas of the GPNM:

(a) Contribution to development of knowledge (policy & technical) products to inform decision making amongst policymakers, professionals, farmers, private sector,
(b) Provision of support for piloting and replication of appropriate pilot solutions and BMPs for sustainable nutrient management and pollution reduction with focus on developing countries, sharing lessons from developed countries,
(c) Generation of awareness resources and social marketing tools and facilitating easy dissemination (via the GPNM platform and other ICT tools) to influence farmers,

extensionists, policymakers and other stakeholders to drive change in behaviours and practice and

(d) Contribution to continued strengthening of the GPNM to facilitate expanded global and regional partnership, particularly through Regional-level Nutrient Management Platforms.

3. Project Results Framework

3.1 GNC Project Results Framework

16. The GNC project objective was to provide the foundations (including partnerships, information tools and policy mechanisms) for governments and other stakeholders to initiate comprehensive, effective and sustained programmes addressing nutrient over-enrichment and oxygen depletion from land-based pollution of coastal waters in Large Marine Ecosystems. The project had four components as listed in Table 3 below with associated expected outcomes and outputs.

Table 3. GNC Project Results Framework

Project components	Expected Outcomes	Expected Outputs
A. Fully established Global Partnership for Nutrient Management, addressing nutrient over-enrichment of coastal zones, its causes and resulting eutrophication and dead zones in LMEs. Outputs (i)-(v) and (vii) and (viii) developed in context of GPNM (and its use as catalyst) over first year of project. Output (vi): guidelines to be developed in context of PPG and first 3 months of project to provide umbrella and impetus for more specific tools and analysis under other components. These tools and analysis developed over first 12-18 months of project (see below). Output (ix) global partnership will facilitate opportunities for replication and upscaling of good practice from current GEF projects over first year of project.	Global partnership of stakeholders involved in addressing nutrient over-enrichment in coastal waters. GEF projects, countries and relevant stakeholders have access to continued guidance and support for development and implementation of nutrient reduction strategies. Community of Practice on nutrient management targeting GEF-funded and other projects. GEF projects, countries and relevant stakeholders are better informed about the importance of land-based and sea-based causes and impacts of nutrient over-enrichment and resulting eutrophication and dead zones in LMEs, including their environmental and economic costs. Support of outcomes of the 3rd Intergovernmental Review of GPA.	(i) Stakeholder involvement and establishment of a Global Partnership for Nutrient Management reducing nutrient enrichment aimed at addressing global nitrogen cycle disruption. (ii) Web-based platform targeting GEF nutrient-related projects, countries and other stakeholders to facilitate the continued learning, exchange and guidance for the reduction of nutrient over-enrichment and oxygen depletion in LMEs. (iii) Website as part of the IW:LEARN workspace with tools & guidelines in order to facilitate mutual learning and information exchange amongst GEF International Waters (IW) projects. (iv) Global overview of nutrient over enrichment of coastal zones, its causes sources and resulting eutrophication and dead zones in LMEs.

Project components	Expected Outcomes	Expected Outputs
Replication and upscaling of tools and analysis deriving from project under components B and C will be developed during second 18 months of the project.		(v) Synthesis report identifying emerging issues and knowledge gaps, with particular focus on environmental and economic costs. (vi) Guidelines, tools and data for nutrient source-impact analysis developed under components B, as well as the policy toolbox developed under component C, shared with GEF projects and other potential users in follow-up to GEF 2009 'Dead Zone' work. (vii)The establishment of a fully functioning Community of Practice targeting GEF nutrient-related projects with catalytic links to UNEP GPA and Regional Seas Programmes (viii)Active participation in portfolio learning for GEF projects, including contributions to the innovation marketplace exhibition, experience notes and at least one workshop organized at the biennial international water conferences (allocation of 1% of the GEF budget). (ix) Replication and up-scaling of good practices and lessons learnt
B. Quantitative analysis of relationships between nutrient sources and impacts, as basis and tool to guide decision-making on policy and technological options. Outputs (i) overview and (ii) global data base development to take place during first year of project as part of baseline	Relevant stakeholders in developed and developing countries have a basis and tools available to: attribute sources of nitrogen (N), phosphorus (P) and silica (Si) within watersheds; quantify past, current and potential future export of N, P and Si to the coastal zone; and develop estimates of the relative effectiveness of increases or decreases in	(i) Overview of existing tools for source-impact analysis of nutrients in LMEs and their target audiences (ii) Global database development with documentation of data on nutrient loading and occurrence of harmful algal

Project components	Expected Outcomes	Expected Outputs
development and strengthening. Outputs (iv) and (v) actual modeling, predictive capacity, development of regional models and training to take place in second and third years of project. Output (vi) initial guidelines developed as umbrella during PPG and first 3 months of project. Fully developed user manuals for integrated assessment and use developed after (iv) and in tandem with policy toolbox and testing.	nutrient export on coastal water quality at regional to international scales.	blooms, hypoxia, and effects on fish landings, fish abundance, and composition of fish populations (iii) Global database development with data on coastal conditions, land based and sea based nutrient sources, as well as coastal effects collected from existing sources (iv) Nutrient impact modeling for global and local to regional nutrient source impact analysis, which enables improved: - predictive capability of nutrient sources and loads - assessment of effects of nutrient loading in coastal marine ecosystems - analysis of past, current and future contributions of different nutrient sources, forms and ratios in watersheds to coastal effects, and - development of regional models and maps of coastal effects and nutrient assimilative capacity

Project components	Expected Outcomes	Expected Outputs
		under different physical regimes using regional data. (v) Regional and national scientists and policy experts, particularly from developing countries, trained in using nutrient source-impact modeling and analysis. (vi) Nutrient source-impact guidelines and user manuals for integrated eutrophication assessment and nutrient criteria development.
C. Scientific, technological and policy options to improve coastal water quality policies in LMEs and national strategy development. Outputs (i)-(iii) to be conducted over first 12 months of project as part of establishing policy options etc., baseline on which more refined and integrated toolbox will be developed. Output (iv) developmental over first 18months of project to reflect currently available options, second phase at output (v). Output (v) to be carried out in years two and three of project as outputs from components A and B emerge and testing is carried out under D. Outputs (vi) and (vii) timing in part contingent on output (v) above, and will be coordinated with work under D.	Decision-makers have access to tools to develop cost-effective policy, and use market-based instruments and financial mechanisms to effectively reduce nutrient over-enrichment in LMEs. Web-based forum for the broad exchange and continual updating of the data, analysis, guidelines, case studies, scientific, technological and policy options to facilitate upscaling of good practices Multi-stakeholder dialogue on appropriate regional and/or global frameworks – including input to the 3r Intergovernmental Review of the GPA.	(i) Global overview of technological and policy options and tools (including multilateral instruments) to reduce nutrient over-enrichment in large marine ecosystems (ii) In-depth case studies of selected technology and policy options, including an analysis of factors of cost effectiveness, success and/or failure to reduce nutrients and their effects. (iii) Synthesis report providing a review of regulations, policies and specific measures to decrease nutrient inputs to, or cycling in, watersheds. (iv) Policy Toolbox containing detailed summaries of policy options and technology measures to decrease nutrient inputs and their specific characteristics (achievements, costs, socio-economic impacts, infrastructure required, etc.) (v) Integration of outputs of source impact analyses, including guidelines (from component B) into the Policy Toolbox to support cost- and

Project components	Expected Outcomes	Expected Outputs
		environmentally-sound decision making. (vi) Training materials on the use of the Policy Toolbox in developing strategies and implementation plans for nutrient reduction. (vii) Regional and national scientists and policy experts, particularly from developing countries, trained in using the nutrient Policy Toolbox.
D. Pilot testing of the use of the Policy Toolbox in the development of nutrient reduction strategies. Outputs (i)-(iii) to be carried out in first 18 months of project to establish baseline for region and build regional partnership linked to global one at A. Outputs (iv) –(vi): Timing dependent on development of database (likely 18-24 months of project) at (vi) Outputs (vii) and (viii) culmination of project and will be completed in last 6 months of project.	Strengthened partnership and information for decision making on cost effective nutrient reduction measures to improve coastal water quality and monitor their effectiveness over time. National, local and regional institutional and regulatory reform plans to reduce nutrient loading from land-based pollution of coastal waters. Agreements with different stakeholders on nutrient reduction strategies to be implemented. Potential for up-scaling of guidelines and tools assessed.	i) Stakeholder analysis and needs assessment of the target audience conducted in the selected demonstration region (ii) Nutrient reduction partnership established for the demonstration region with virtual representation in the IW Learn / communities of practice for GEF projects. (iii) Establishment of a database with baseline data and indicators on nutrient sources and impacts in associated coastal ecosystems, nutrient status, policies and regulations for the demonstration region. (iv) Hands-on training workshops for GEF project partners, scientists and policy specialists from demonstration region. (v) Pilot testing of the information tools and mechanisms developing a nutrient reduction plan or strategy in the demonstration region. (vi) Databases covering different levels of spatial and temporal resolution, and more detailed local data on

Project components	Expected Outcomes	Expected Outputs
		sources for the demonstration region. (vii) Nutrient reduction plan for demonstration region based on national priorities, source-impact analysis and application of the Policy Toolbox in strategy development and partnership building. (viii) Evaluation of lessons learned during the pilot testing of the policy toolbox, and recommendations for further up-scaling of tools and approaches.

3.2 GPNM Project Results Framework

17. The GPNM project objective was to strengthen and expand the capability and capacity of the GPA in its support of the GPNM to broaden the dissemination of scientific and technical knowledge on nutrient use management and pollution abatement, and facilitate the emergence of national, sub-regional and global commitments within the scope of the Sustainable Development Goals and related MEAs toward implementation of sustainable gender-sensitive solutions to safeguard fresh and marine water quality, moderate the greenhouse balance, and safeguard ecosystems quality and soil quality, through active engagement across all stakeholder levels, inclusive of private- public sector partnerships and the wider civil society.

18. The delivery of outputs towards knowledge generation, piloting solutions and best management practice replication, awareness raising and advocacy, and partnership and network development were expected to result in the achievement of one overall outcome that governments and their stakeholders in developing countries would increasingly use resources made available by GPNM to reduce discharge of nutrients into the environment. The project's planned outputs by component are listed in Table 4.

Table 4. GPNM Project components and outputs

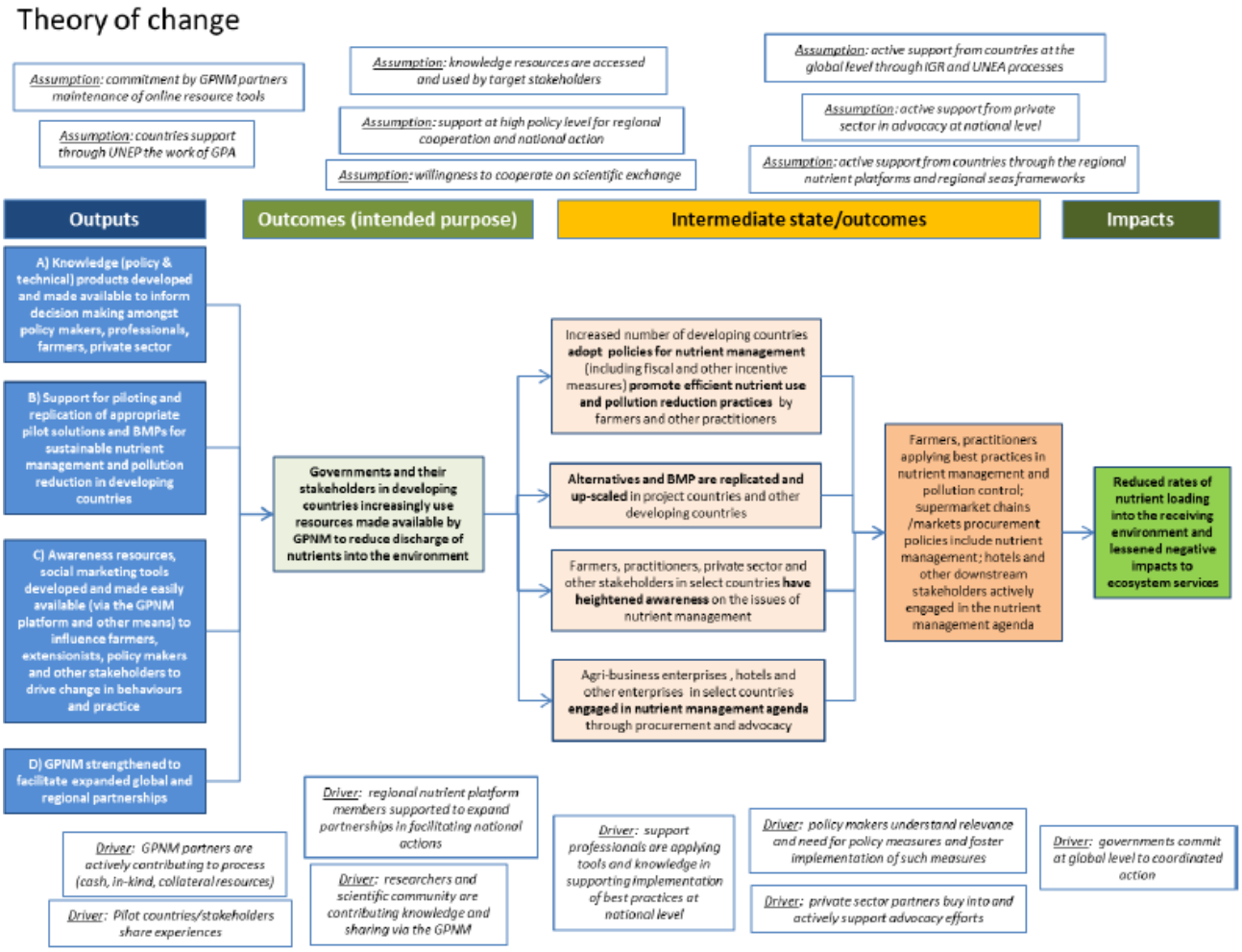
Components	Outputs
A. Knowledge generation	A1. Develop and publish at least 12 additional field best management practice (BMP) guidelines to be contributed to the GPNM Nutrient Management Toolbox (developed under the GEF-GNC Project). A2. Conduct a nutrient management indicators study and accompanying region-specific monitoring and assessment guideline to support the establishment of global assessment process for nitrogen, phosphorus and other nutrient interactions, development of targets and develop consensus on operational indicators (links to requirements under the SDG target assessment, CBD Aichi Target 8). This work will build on the nutrient use efficiency (NUE) indicator approach published by the GPNM. Contributions from the GEF-Transboundary Waters Assessment Programme (GEF-TWAP) and UNEP's GEMS Water Programme will be incorporated.

Components	Outputs
	A3. Conduct a region-specific economic valuation study on environmental costs and benefits associated with nutrient use efficiency and impacts on the environment. This study is intended to contribute to development of appropriate national policy and economic instruments to support sustainable nutrient management. A4. Develop and publish at least 6 region-specific policy briefs that will be contributed to the nutrient management toolbox initiated under the GEF-GNC Project. These policies will cover a range of thematic areas/sectors that will support governments in development of national regulation and incentive instruments that will encourage adoption of best practices. A5. Conduct applied research on the nutrient cycling and nutrient management at global, regional and country levels: This will build on the existing knowledge-base on nutrient management through the full cycle from use, and application of nutrients in the field under agricultural systems (both crop and livestock), to wastewater management and discharge. At least 6 articles focusing on priority themes will published.
B. Piloting solutions and best management practice replication	B1. Develop at least 2 targeted cost-effective targeted proposals for on-the-ground interventions, one for each of the focus regions within which the regional nutrient platforms will be strengthened. These proposals will be developed in consultation with the countries (farmers, extensionists and practitioners) at the national level, the GPNM partners, the UNEP Regional Offices and Regional Seas Secretariats as relevant. The focus of these interventions will be within the Africa, Asia and the Caribbean regions. Implementation will be supported within the limits of resource mobilization. B2. Support execution of on-site training workshops for at least 200 farmers, technical professionals, industry stakeholders (build Community of Practice), continuing efforts from the GEF-GNC Project demonstration sites (in India and the Philippines) on key elements associated with on-ground practices and policy creation and/or reform. The nutrient management toolbox will form the basis for capacity building. B3. Support access and participation of at least 1,000 technical professionals in massive open online courses (build Community of Practice) building from the contributions of the GEF-GNC Project in the use of ICT solutions to reach out to global audiences. The GPNM website the 'Nutrientchallenge.org' will be the common platform to receive contributions from GPNM partners to disseminate knowledge, and for stakeholders to access information. The project will enhance collaboration with the Global Wastewater Initiative (GW2I).
C. Awareness-raising and advocacy	C1. Develop and publish at least 20 specific information products in electronic and printed formats. These e-resources will include short videos such as the Two Minutes with Jim Toomey feature, video and audio messages from stakeholders, practitioners and GPNM partners. C2. Publish at least 8 experience notes highlighting successful practices and lessons learnt in nutrient management across various sectors and contribute to the global knowledge-base on policy experiences and ways to adapt such experiences to specific national circumstances. These experience notes will cover as many diverse case examples as available, contributing to a Community of Practice. C3. Conduct at least 4 awareness seminars within the regional nutrient platforms of Asia, Africa and the Caribbean. The target stakeholders of interest will include farmer groups/associations, wastewater managers, private sector (various commercial interests and the hospitality sector) and relevant non-governmental and community-based organizations.

Components	Outputs
	C4. Facilitate participation of GPNM stakeholders within at least 6 major conferences/meetings to deliver technical presentations and create awareness. These events may either be those of GPNM partners or other fora associated with regional and international conventions and frameworks. Creation of awareness at such events will serve to broaden the GPNM partnership, offer opportunities to develop networks and strengthen communities of practice.
D. Partnership and network development	D1. Support participation in at least 4 inter-regional technical exchanges for farmers, other industry practitioners and professionals to strengthen communities of practice. These country visits will facilitate direct expertise and experience sharing supported through the regional platforms, coordinated by the GPNM and Secretariat. D2. Convene at least 4 work planning meetings of the GPNM Steering Committee to facilitate planning and implementation of the workplan of the partnership. Critical areas of work will include resource mobilization and advancing positions on sustainable nutria+nt management at the global level through frameworks such as the United Nations Environment Assembly (UNEA) and the Regional Seas conventions/frameworks. D3. Convene at least 4 work planning meetings of the regional nutrient platforms to design workplans and support their implementation. The regional platforms will be instrumental in building partnerships that are rooted within national implementation mechanisms. These planning meetings will be attended and/or facilitated by UNEP Regional Offices and Regional Seas Secretariats as relevant. D4. Develop and facilitate endorsement of at least 3 workplans for the Asia, Africa and Caribbean regional nutrient platforms and support implementation. These action plans will feed into the overall GPNM workplan to foster common technical and policy approaches/solutions across the platforms, harmonize implementation and widen resource mobilization efforts.

19. In the longer term, farmers, practitioners would be applying best practices in nutrient management and pollution control; supermarkets chains/ markets procurement policies would include nutrient management; hotels and other downstream stakeholders would be actively engaged in the nutrient management agenda, which would lead to the intended impact of reduced rates of nutrient loading into the receiving environment and lessened negative impacts to ecosystem services. The initial theory of change and causal pathways are outlined in Figure 1.

Figure 1. Theory of change



4. GNC Project Executing Arrangements

4.1 GNC Project Executing Arrangements

20. UN Environment was the GEF Implementing Agency for this project and the UNEP GPA Coordination Office/Global Partnership on Nutrient Management (GPNM) located within the Ecosystems Division were the executing agencies. Given the leadership of UNEP and GPA, this project was to capitalize on the experience and existing networks of UNEP Divisions, and Regional Seas.

21. The project was to be implemented with a number of technical partners and associates making use of GPA Action Plans as well as the expertise from other UN Agencies and initiatives such as UNESCO, FAO, UNIDO, UN Task Force on the International Year of Sanitation, GPA Review Meeting, (INI Paris), UN-Water and UN-Oceans. The project partnership technical leads included:

- Intergovernmental Oceanographic Commission of UNESCO – Component B on global assessment and modelling
- Global Environment and Technology Foundation – Component C on development of decision support tools
- Partnerships in Environmental Management for the Seas of East Asia– Component D on enhancing national decision making in the Philippines
- Centre for Ecology & Hydrology – Component A on global overview of nutrient management

22.. The lead partners collaborated with the following associate agencies:

- University of Utrecht, The Netherlands - Components B,D
- Washington State University, United States - Components B,D
- The Netherlands Energy Research Centre - Components A,C,D
- Marine Science Institute, University of Philippines – Component D
- Chilika Development Authority, India – Component D
- Laguna Lake Development Authority, the Philippines – Component D
- World Resources Institute – Components C,D
- GRID Arendal – Component B

23. The partners constituted the technical core to the GPNM intended to advance future support of countries and expected that there would be continued collaboration and facilitated capacity building efforts over the course of the project, reaching out to national stakeholders across the Asia, Africa and the Caribbean regions through exposure to tools and methodologies.

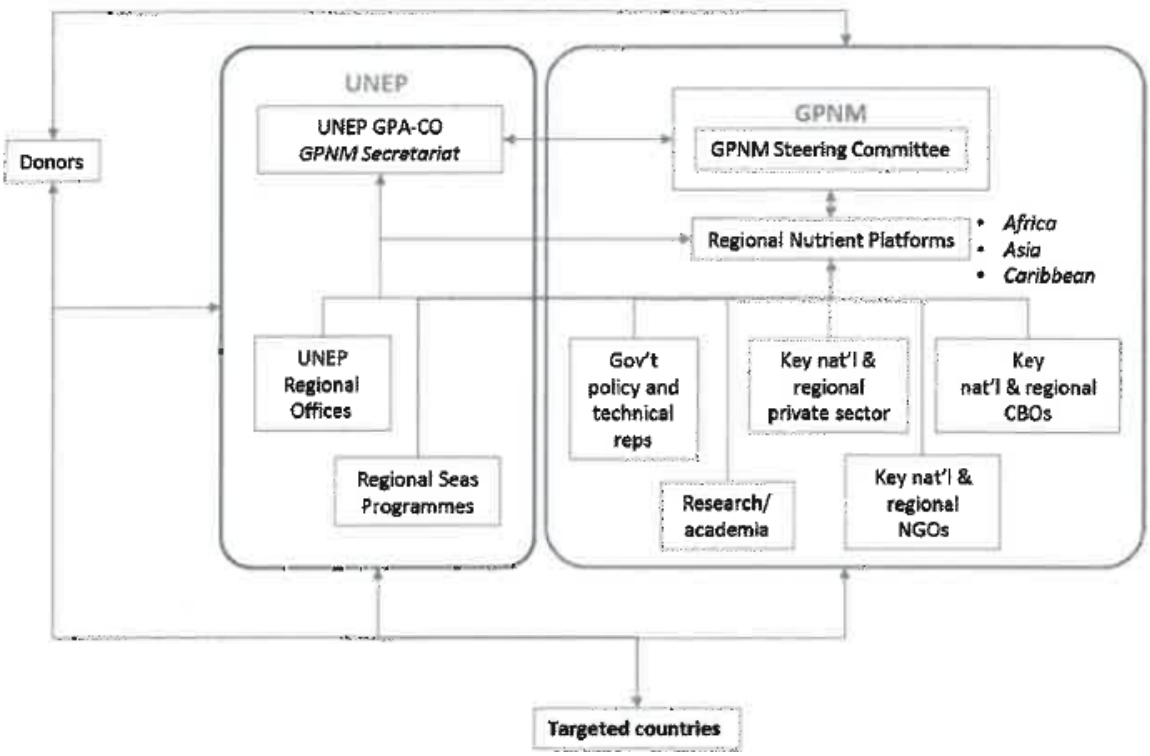
24. The Project Steering Committee (PSC) guided the overall project (subject to final IA approval) and co-ordinates closely with GPNM meetings. The secretariat to the PSC is provided by the PCU. The PCU was established within the GPA secretariat of UNEP and consisted of a Project Manager (to-date financed by UNEP) and supported by representatives of the co-executing agencies.

25. UNEP, as the GEF Implementing Agency, had the final decision on budgets, ToRs and oversight of the execution of the project, including the quality of the outputs and the agreed technical and financial periodic reports.

4.2 GPNM Project Executing Arrangements

26. The GPA Coordinating Office, as the Secretariat for the GPNM, coordinated the day-to-day execution of the project. Figure 2 provides an organigram of the project implementation.

Figure 2. Project implementation organigram



27. The GPNM Steering Committee served as the Steering Committee for the project. The GPNM Steering Committee was comprised of sixteen members representing key UN organizations such as the FAO and UNDP, academic and applied institutions, government agencies and the private sector, specifically the fertilizer industry.

28. The core partners of the GPNM included the Ministry of Infrastructure and Environment, Government of the Netherlands; Chilika Development Authority, India; National Centre for Sustainable Coastal Management, India; US Department of Agriculture; US Environment Protection Agency; China Agricultural University; International Plant Nutrition Institute; International Fertilizer Development Centre; International Fertilizer Industry Association; Centre for Ecology and Hydrology; Indian Nitrogen Group; UK-China Sustainable Agricultural Innovation Network; UNDP; UN-Habitat and FAO.

29. Involvement of UNEP Regional Offices and Regional Seas Programmes was envisaged as well as technical support from other UNEP divisions, specifically the Economy Division formerly the Division of Technology, Industry and Economics (DTIE) that had responsibility for the Chemicals and Waste Sub-programme, the Science Division formerly the Division of Early Warning and Assessment (DEWA) for guidance in assessment methods and protocols, the Law Division formerly the Division of Environmental Law and Conventions (DELC) for assistance in development of policy and regulation for nutrients management and the formulation of global pronouncements such as UNEA resolutions, and the Communication Division formerly the Division of Communications and Public Information (DCPI) for cooperation in the development of communications and outreach resources.

5. Project Cost and Financing

5.1 GNC Project Cost and Financing

30. The total cost of the GNC project planned at $4,116,347 with co-financing of $2,398,165 and cost to the GEF Trust Fund of $1,718,182. The first disbursement was made on 28 March 2012 and as of 30 June 2020 there had been total disbursement of US$ 1,597,832.09. Table 5 provides an overview of sources of co-financing and Table 6 of cost per project component.

Table 5. GNC Project Budget Sources of Co-financing

Sources of Co-financing	Type of Co-financing $	Amount $	%
Governments: 1. US 2. Netherlands 3. India (Lake Chilika Development Authority)	In-kind	320,000 57,600 20,000	16.57
UNEP	Cash 250,000 In-kind 511,765	761,765	31.76
IOC/ UNESCO	Cash 192,000 In-kind 188,000	380,000	15.84
PEMSEA	In-kind	305,000	12.71
Global Environment Technology Foundation	In-kind	141,800	5.91
International Nitrogen Initiative	In-kind	180,000	7.54
University of Utrecht Washington State University Institute of Ocean Management, Chennai	In-kind	123,000 79,000 30,000	9.67
Total Co-Financing		2,398,165	100.00

Table 6. GNC Planned Budget by Component

Component	GEF grant $	Co-financing $	Total Resources $
Component A: Global Partnership on Nutrient Management addressing causes and impacts of coastal nutrient over-enrichment and hypoxia	316,000	450,500	766,500
Component B: quantitative analysis of relationship between nutrient sources and impacts to guide decision making on policy and technological options	488,682	704,165	1,192,847
Component C: Establishment of scientific, technological and policy options to improve coastal water	329,500	441,500	771,000

quality policies in LMEs and national strategy development			
Component D: Development of nutrient reduction strategies through application of quantitative source-impact modeling and best practices in Manila Bay watershed	330,000	562,000	892,000
Total	1,464,182	2,158,165	3,622,347

5.2 GPNM Project Cost and Financing

31. The GPNM project had an overall budget of $ 1,314,341 over a three-year period from 2015 to 2017. The project was funded through extra budgetary funding from Norway and Swedish International Development Agency (SIDA) of total $ 461,471, and with in-kind contributions from UNEP Environment Fund post costs and partners of $ 852,870. Table 7 provides an overview of funding sources.

Table 7. GPNM Project Funding Sources

Type of funding	**Source of funding**		**2015**	**2016**	**2017**	**2018**	**Total**
Cash budget	Environment Fund		0	0	0	0	0
	Extra-budgetary funding	GPA Trust Fund	0	0	0	0	0
		Norway 2014, 2017	61,000	0	48,144	271,858	381,100
		Sida 2016		40,121		40,250	80,371
	Total project cash budget		*61,000*	*40,121*	*48,144*	*312,106*	***461,471***
In-kind contribution	Total UNEP in-kind contribution (UN Environment Fund cost posts		86,638	216,596	149,536	150,000	602,770
	Total partners in-kind contribution		32,220	64,440	64,440	89,000	250,100
	Total project in-kind contribution		*118,858*	*261,036*	*213,976*	*239,000*	*852,870*
Grand total			**179,958**	**443,657**	**139,620**	**551,106**	**1,314,341**

32. Estimated project costs broken down by component for 2018 accounting for 68 % of the project's cash budget are shown in table 8.

Table 8. GPNM Cost per Component in 2018

ID	Project Outputs & Activities	Responsible Division	Partners	Budget by component
A) Knowledge (policy & technical) products developed and made available to inform decision making amongst policymakers, professionals, farmers, private sector				**83,040**
A1	Develop and publish field BMP guidelines to the nutrient management toolbox *(initiatives in Brazil and Sri Lanka)*	Ecosystems Division/GPA-CO	Comms Div; Coral Reef Unit (Ecosystems Div); **Key external partners:** SACEP; U of Matto Grasso, Brazil; National Institute for Space Research, Brazil; Netherlands PBL; IFDC, IFA, IPNI	22,600
A2 & A3	Conduct and publish a definitive nutrient management indicators study *(collaboration with IOC-UNESCO in ICEP methodology development)* and accompanying region-specific monitoring and assessment guideline and conduct a region-specific economic valuation/NUE impacts study *(Brazil study)*	Ecosystems Division/GPA-CO	Science Division, Economy Division; **Key external partners:** IOC-UNESCO; SACEP; U of Matto Grasso, Brazil; National Institute for Space Research, Brazil; Netherlands PBL; INI, IPNI, CEH	26,470
A4	Develop and publish region-specific policy briefs to be contributed to the nutrient management toolbox *(initiatives in Brazil and Sri Lanka and Our P Future)*	Ecosystems Division/GPA-CO	Economy Division; Coral Reef Unit; Key external partners: SACEP; U of Matto Grasso, Brazil; National Institute for Space Research, Brazil; Netherlands PBL; INI, IPNI, CEH	33,970
B) Support for piloting and replication of appropriate pilot solutions and BMPs for sustainable nutrient management and pollution reduction in developing countries				**30,760**
B2	Support the implementation of demonstrable actions (policy and on-ground) within developing countries that employ BMPs for nutrient management (include the Ecosystems-based Health Card approach) *(initiatives in Brazil and Sri Lanka)*	Ecosystems Division/GPA-CO	Economy Div; Coral Reef Unit (Ecosystems Div); **Key external partners:** SACEP; U of Matto Grasso, Brazil; National Institute for Space Research, Brazil; Netherlands PBL; INI, IPNI, CEH	21,790
B3	Support execution of on-site training workshops for farmers, technical professionals, industry stakeholders (build Community of Practice) *(initiatives in Brazil and Sri Lanka)*	Ecosystems Division/GPA-CO	Economy Div; Coral Reef Unit (Ecosystems Div); **Key external partners:** SACEP; U of Matto Grasso, Brazil; National Institute for Space Research, Brazil; Netherlands PBL; INI, IPNI, CEH	8,970
B4	Support access and participation of technical professionals in massive open online courses (build Community of Practice)	Ecosystems Division/GPA-CO	EETU (Ecosystems Div); **Key external partner:** Concordia University; KnowledgeOne	
C) Awareness resources, social marketing tools developed and made easily available (via the GPNM platform and other means) to influence farmers and other stakeholders to drive change in behaviours and practice				**87,830**

ID	Project Outputs & Activities	Responsible Division	Partners	Budget by component
C1	Develop and publish a complete suite of awareness materials for online dissemination via upgraded website, also available in printed format (incl Our P Future)	Ecosystems Division/GPA-CO	Comms Div; **Key external partners:** Select GPNM partners	22,600
C2	Publish a series of experience notes based on successful practices and lessons learnt in nutrient management across various sectors *(initiatives in Brazil and Sri Lanka)*	Ecosystems Division/GPA-CO	Economy Div; Coral Reef Unit (Ecosystems Div); **Key external partners:** SACEP; U of Matto Grasso, Brazil; National Institute for Space Research, Brazil; Netherlands PBL; INI, IPNI, CEH	22,600
C4	Facilitate participation of GPNM stakeholders within major conferences/meetings to deliver technical presentations and create awareness *(Global Soils Pollution Symposium; Phosphorus Summit; GPA Intergovernmental Review)*	Ecosystems Division/GPA-CO	FAO; GPNM partners	42,630
D) Project Output: *Support GPNM to expand global and regional partnerships*				**83,450**
D1	Support inter-regional technical exchanges for farmers, other industry practitioners, professionals disaggregated by gender to strengthen communities of practice *(initiatives in Brazil and Sri Lanka)*	Ecosystems Division/GPA-CO	Economy Div; Coral Reef Unit (Ecosystems Div); **Key external partners:** SACEP; U of Matto Grasso, Brazil; National Institute for Space Research, Brazil; Netherlands PBL; INI, IPNI, CEH	35,630
D2	Convene work planning meetings of the GPNM Steering Committee	Ecosystems Division/GPA-CO	All members of the GPNM SC, incl gender expert	6,820
D3	Convene work planning meetings of the regional nutrient platforms *(African platform in joint collaboration with the Global Wastewater Initiative and the associated Regional Seas Programmes; in association with SACEP and the Sri Lanka initiative)*	Ecosystems Division/GPA-CO	UNEP-Africa Regional Office, Nairobi Convention Sec.; Abidjan Convention. Sec.; Barcelona Convention Sec., SACEP.	26,100
D4	Develop and facilitate endorsement of a workplan for the Africa regional nutrient platform and support implementation	Ecosystems Division/GPA-CO	UNEP-Africa Regional Office, Nairobi Convention Sec.; Abidjan Convention. Sec.; Barcelona Convention Sec.	14,900
Project Evaluation				
	Facilitate conduct of the Project Terminal Evaluation	Ecosystems Division/GPA-CO	Corporate Services Division	27,000
				312,106

ID	Project Outputs & Activities	Responsible Division	Partners	Budget by component

6. Project Implementation Issues

6.1 GNC Project Implementation Issues

33. The GNC project implementation span went beyond the original 4-year duration. Delays in completion of interlinked outputs across components resulted in delays in gaining progress in follow-on activities. Notwithstanding the delays, the bulk of the main deliverables were completed within the original four years. In addition, there was a period in 2014 when there was project manager due to the retirement of the assigned UNEP staff member. A replacement was recruited at the end of 2014.

34. The mid-term review of the project conducted in 2014 recommended that the existing logframe and particularly the indicators/targets should be revised to better assess performance; internal reporting should be improved within the roles and responsibilities of the IA and EA; reporting of actual costs be improved; an exit strategy should be developed to identify means to sustain and enhance the project's achievements; a communication strategy should be developed and the project's website as a dissemination / awareness raising tool be revitalized; gender considerations should be reflected more in the composition of the project team and the work undertaken and finally summaries of work should be prepared as the project progressed in the form of 'Experience Notes' or 'Results Notes'.

35. In terms of impact outlook, the project document identified the science-policy linkages as 'low' risk. The Global Partnership on Nutrient Management had been established to bring stakeholders together. The International Nitrogen Initiative has played a full role in project development and leading governments also consulted. Scientists and policymakers were part of the GPNM steering committee and would also form part of the project steering committee. The planned communications strategy and web-based platform with links to IW Learn were also expected to mitigate risks. Project development was geared to ongoing strong involvement with scientists through INI and IOC/UNESCO and with governments through the GPA review.

36. Lack of effective replication, upscaling, mainstreaming, and sustainability was considered 'low' risk too. Replication was a key expected outcome, reflecting testing in a carefully chosen and highly policy relevant (to other regions) demonstration region. The GPNM and associated partnerships were to continue after project completion to provide a platform for project results. The recommendations of the mid-term review were integrated in the design of the UNEP project "Addressing the Nutrient Challenge through an effective Global Partnership on Nutrient Management" (GPNM).

6.2 GPNM Project Implementation Issues

37. The GPNM project was closely intertwined with and designed in response to recommendations of the mid-term review of the UNEP/GEF project "Global Foundations for Reducing Nutrient Enrichment and Oxygen Depletion from land-based pollution in support of Global Nutrient Cycle" (UNEP/GEF-GNC) in particular towards identifying means to sustain and enhance the GNC project's achievements and strengthening capacity building, outreach and communication.

38. The project was ambitious compared to budget allocations. Efforts were made at resource mobilization, but the project did not manage to raise non earmarked funding. The funding shortage was addressed to some extent as the UNEP/GEF-GNC Project was still under implementation and complemented the delivery of the work under the agency. There was a scale-back of the activities in a project revision that was approved to extend the project to the end of 2018, specifically to facilitate the use of Norway 2017 funding.

39. The nexus between the work under wastewater management and nutrient pollution was close and efforts were made over the course of implementation to bring the two work streams together. The preparations for the Intergovernmental Review Meeting on the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (IGR) in October 2017 demanded significant work and compromised attention paid to the PoW [GPNM] project.

40. The project had relatively little influence over the extent to which partners actively contributed to the anticipated outputs. Some partners were more engaged than others, determined largely by time availability and perhaps perceived benefit from engagement. The need for long time investments in mobilizing partners and working through recruitment process for consultants also affected the project delivery timeframe.

Section 2. OBJECTIVE AND SCOPE OF THE EVALUATION

7. Objective of the Evaluation

41. In line with the UNEP Evaluation Policy[31] and the UNEP Programme Manual[32], the Terminal Evaluation is undertaken at completion of the project to assess project performance (in terms of relevance, effectiveness and efficiency), and determine outcomes and impacts (actual and potential) stemming from the project, including their sustainability. The evaluation has two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote operational improvement, learning and knowledge sharing through results and lessons learned among UNEP and the Intergovernmental Oceanographic Commission of UNESCO (Component B), Global Environment and Technology Foundation (Component C), Partnerships in Environmental Management for the Seas of East Asia (Component D) and Centre for Ecology & Hydrology (Component A). Therefore, the evaluation will identify lessons of operational relevance for future project formulation and implementation, especially where a second phase of the project is being considered.

8. Key Evaluation Principles

42. Evaluation findings and judgements will be based on sound evidence and analysis, clearly documented in the evaluation report. Information will be triangulated (i.e. verified from different sources) as far as possible, and when verification is not possible, the single source will be mentioned (whilst anonymity is still protected). Analysis leading to evaluative judgements should always be clearly spelled out.

43. The "Why?" Question. As this is a terminal evaluation and a follow-up project is likely [or similar interventions are envisaged for the future], particular attention will be given to learning from the experience. Therefore, the "*Why?*" question should be at the front of the consultants' minds all through the evaluation exercise and is supported by the use of a theory of change approach. This means that the consultant(s) needs to go beyond the assessment of "*what*" the project performance was and make a serious effort to provide a deeper

31 https://www.unenvironment.org/about-un-environment/evaluation-office/policies-and-strategies
32 https://wecollaborate.unep.org

understanding of "*why*" the performance was as it was. This should provide the basis for the lessons that can be drawn from the project.

44. Attribution, Contribution and Credible Association: In order to *attribute* any outcomes and impacts to a project intervention, one needs to consider the difference between what has happened with, and what would have happened without, the project (i.e. take account of changes over time and between contexts in order to isolate the effects of an intervention). This requires appropriate baseline data and the identification of a relevant counterfactual, both of which are frequently not available for evaluations. Establishing the *contribution* made by a project in a complex change process relies heavily on prior intentionality (e.g. approved project design documentation, logical framework) and the articulation of causality (e.g. narrative and/or illustration of the Theory of Change). Robust evidence that a project was delivered as designed and that the expected causal pathways developed supports claims of contribution and this is strengthened where an alternative theory of change can be excluded. A *credible association* between the implementation of a project and observed positive effects can be made where a strong causal narrative, although not explicitly articulated, can be inferred by the chronological sequence of events, active involvement of key actors and engagement in critical processes.

45. Communicating evaluation results. A key aim of the evaluation is to encourage reflection and learning by UNEP staff and key project stakeholders. The consultant(s) should consider how reflection and learning can be promoted, both through the evaluation process and in the communication of evaluation findings and key lessons. Clear and concise writing is required on all evaluation deliverables. Draft and final versions of the main evaluation report will be shared with key stakeholders by the Evaluation Manager. There may, however, be several intended audiences, each with different interests and needs regarding the report. The consultant will plan with the Evaluation Manager which audiences to target and the easiest and clearest way to communicate the key evaluation findings and lessons to them. This may include some, or all, of the following; a webinar, conference calls with relevant stakeholders, the preparation of an evaluation brief or interactive presentation.

9. Key Strategic Questions

46. In addition to the evaluation criteria outlined in Section 10 below, the evaluations of the two projects will address key strategic questions. The evaluation of the GNC project will address the strategic questions listed below. These are questions of interest to UNEP and to which the project is believed to be able to make a substantive contribution. Also included are three questions that are required when reporting in the GEF Portal and these must be addressed in the TE

Q1: To what extent did the project deepen joint efforts of UNEP and IOC-UNESCO and the research consortium?

Q2: To what extent did the science-policy model applied work at global and national level?

Q3: How did the project contribute to GEF and UNEP strategies on nutrient and nitrogen initiatives and discussions on emerging issues of priority?

47. Address the questions required for the GEF Portal in the appropriate parts of the report and provide a summary of the findings in the Conclusions section of the report:

Under Monitoring and Reporting/Monitoring of Project Implementation:

What was the performance at the project's completion against Core Indicator Targets? (For projects approved prior to GEF-7, these indicators will be identified retrospectively and comments on performance provided).

Under Factors Affecting Performance/Stakeholder Participation and Cooperation:

What were the progress, challenges and outcomes regarding engagement of stakeholders in the project/program as evolved from the time of the MTR? *(This should be based on the description included in the Stakeholder Engagement Plan or equivalent documentation submitted at CEO Endorsement/Approval)*

Under Factors Affecting Performance/Responsiveness to Human Rights and Gender Equality:

What were the completed gender-responsive measures and, if applicable, actual gender result areas? (This should be based on the documentation at CEO Endorsement/Approval, including gender-sensitive indicators contained in the project results framework or gender action plan or equivalent)

Under Factors Affecting Performance/Environmental and Social Safeguards:

What was the progress made in the implementation of the management measures against the Safeguards Plan submitted at CEO Approval? The risk classifications reported in the latest PIR report should be verified and the findings of the effectiveness of any measures or lessons learned taken to address identified risks assessed. *(Any supporting documents gathered by the Consultant during this review should be shared with the Task Manager for uploading in the GEF Portal)*

Under Factors Affecting Performance/Communication and Public Awareness:

What were the challenges and outcomes regarding the project's completed Knowledge Management Approach, including: Knowledge and Learning Deliverables (e.g. website/platform development); Knowledge Products/Events; Communication Strategy; Lessons Learned and Good Practice; Adaptive Management Actions? *(This should be based on the documentation approved at CEO Endorsement/Approval)*

48. The GPNM project evaluation will address the following set of strategic questions listed below. These are questions of interest to UNEP and to which the project is believed to be able to make a substantive contribution:

Q1: To what extent the applied science-policy model worked at global and national level?

Q2: To what extent the use of digital tools enhanced partnership and active engagement of partners?

Q3: How did the project contribute to UNEP and non-UNEP [GEF] strategies on nutrient and nitrogen initiatives and discussions on emerging issues of priority?

Q4: To what extent did the project contribute to high-level governmental commitments and global coordination efforts through intergovernmental mechanisms such as UNEA?

10. Evaluation Criteria

49. All evaluation criteria will be rated on a six-point scale. Sections A-I below, outline the scope of the criteria and a link to a table for recording the ratings is provided in Annex 1). A weightings table will be provided in excel format (link provided in Annex 1) to support the determination of an overall project rating. The set of evaluation criteria are grouped in nine categories: (A) Strategic Relevance; (B) Quality of Project Design; (C) Nature of External Context; (D) Effectiveness, which comprises assessments of the availability of outputs, achievement of outcomes and likelihood of impact; (E) Financial Management; (F) Efficiency; (G) Monitoring and Reporting; (H) Sustainability; and (I) Factors Affecting Project Performance. The evaluation consultant(s) can propose other evaluation criteria as deemed appropriate.

A. Strategic Relevance

50. The evaluations will assess the extent to which the activity is suited to the priorities and policies of the donors, implementing regions/countries and the target beneficiaries. The

evaluations will include an assessment of the project's relevance in relation to UNEP's mandate and its alignment with UNEP's policies and strategies at the time of project approval. Under strategic relevance an assessment of the complementarity of the projects with other interventions addressing the needs of the same target groups will be made. This criterion comprises four elements:

i. Alignment to the UNEP Medium Term Strategy[33] (MTS), Programme of Work (POW) and Strategic Priorities

51. The evaluations should assess the project's alignment with the MTS and POW under which the project was approved and include, in its narrative, reflections on the scale and scope of any contributions made to the planned results reflected in the relevant MTS and POW. UNEP strategic priorities include the Bali Strategic Plan for Technology Support and Capacity Building[34] (BSP) and South-South Cooperation (S-SC). The BSP relates to the capacity of governments to: comply with international agreements and obligations at the national level; promote, facilitate and finance environmentally sound technologies and to strengthen frameworks for developing coherent international environmental policies. S-SC is regarded as the exchange of resources, technology and knowledge between developing countries.

ii. Alignment to Donor/GEF/Partner Strategic Priorities

52. Donor, including GEF, strategic priorities will vary across interventions. GEF priorities are specified in published programming priorities and focal area strategies for the GNC project. The Evaluations will assess the extent to which the project is suited to, or responding to, donor priorities. In some cases, alignment with donor priorities may be a fundamental part of project design and grant approval processes while in others, for example, instances of 'softly-earmarked' funding, such alignment may be more of an assumption that should be assessed.

iii. Relevance to Global, Regional, Sub-regional and National Environmental Priorities

53. The evaluations will assess the alignment of the project with global priorities such as the SDGs and Agenda 2030. The extent to which the intervention is suited, or responding to, the stated environmental concerns and needs of the countries, sub-regions or regions where it is being implemented will be considered. Examples may include: national or sub-national development plans, poverty reduction strategies or Nationally Appropriate Mitigation Action (NAMA) plans or regional agreements etc. Within this section consideration will be given to whether the needs of all beneficiary groups are being met and reflects the current policy priority to leave no one behind. The evaluations also may assess relevant UNDAF documents over the project period, as appropriate.

iv. Complementarity with Existing Interventions/Coherence[35]

54. An assessment will be made of how well each project, either at design stage or during the project inception or mobilization[36], took account of ongoing and planned initiatives (under the same sub-programme, other UNEP sub-programmes, or being implemented by other agencies within the same country, sector or institution) that address similar needs of the same target groups. The evaluations will consider if the project teams, in collaboration with Regional Offices and Sub-Programme Coordinators, made efforts to ensure their own intervention was complementary to other interventions, optimized any synergies and avoided duplication of

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[33] UNEP's Medium Term Strategy (MTS) is a document that guides UNEP's programme planning over a four-year period. It identifies UNEP's thematic priorities, known as Sub-programmes (SP), and sets out the desired outcomes, known as Expected Accomplishments (EAs), of the Sub-programmes. https://www.unenvironment.org/about-un-environment/evaluation-office/our-evaluation-approach/un-environment-documents

[34] http://www.unep.fr/ozonaction/about/bsp.htm

[35] This sub-category is consistent with the new criterion of 'Coherence' introduced by the OECD-DAC in 2019.

[36] A project's inception or mobilization period is understood as the time between project approval and first disbursement. Complementarity during project implementation is considered under Efficiency, see below.

effort. Examples may include UN Development Assistance Frameworks or One UN programming. Linkages with other interventions should be described and instances where UNEP's comparative advantage has been particularly well applied should be highlighted.

Factors affecting this criterion may include:

- Stakeholders' participation and cooperation
- Responsiveness to human rights and gender equity
- Country ownership and driven-ness

B. Quality of Project Design

55. The quality of project design is assessed using an agreed template during the evaluation inception phase, ratings are attributed to identified criteria and an overall Project Design Quality rating is established (www.unenvironemnt.org/about-un-environment/our-evaluation-approach/templates-and-tools). This overall Project Design Quality rating is entered in the final evaluation ratings table as item B. In the Main Evaluation Report a summary of the project's strengths and weaknesses at design stage is included, while the complete Project Design Quality template is annexed in the Inception Report.

Factors affecting this criterion may include (at the design stage):

- Stakeholders participation and cooperation
- Responsiveness to human rights and gender equity

C. Nature of External Context

56. At evaluation inception stage a rating is established for the projects' external operating context (considering the prevalence of conflict, natural disasters and political upheaval[37]). This rating is entered in the final evaluation ratings table as item C. Where a project has been rated as facing either an Unfavourable or Highly Unfavourable external operating context, and/or a negative external event has occurred during project implementation, the ratings for Effectiveness, Efficiency and/or Sustainability may be increased at the discretion of the evaluation consultant and Evaluation Manager together. A justification for such an increase must be given.

D. Effectiveness

i. Availability of Outputs[38]

57. The evaluations will assess each project's success in producing the programmed outputs and achieving milestones as per the project design document (ProDoc). Any *formal* modifications/revisions made during project implementation will be considered part of the project design. Where the project outputs are inappropriately or inaccurately stated in the ProDoc, reformulations may be necessary in the reconstruction of the TOC, and in this case one TOC combining the two nutrient projects. A table should be provided showing the original and the reformulation of the outputs for transparency. The availability of outputs will be assessed in terms of both quantity and quality, and the assessment will consider their ownership by, and usefulness to, intended beneficiaries and the timeliness of their provision. It is noted that emphasis is placed on the performance of those outputs that are most important to achieve outcomes. The evaluations will briefly explain the reasons behind the success or shortcomings of the projects in delivering its programmed outputs and meeting expected quality standards.

Factors affecting this criterion may include:

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[37] Note that 'political upheaval' does not include regular national election cycles, but unanticipated unrest or prolonged disruption. The potential delays or changes in political support that are often associated with the regular national election cycle should be part of the project's design and addressed through adaptive management by the project team.

[38] Outputs are the availability (for intended beneficiaries/users) of new products and services and/or gains in knowledge, abilities and awareness of individuals or within institutions (UNEP, 2019)

- Preparation and readiness
- Quality of project management and supervision[39]

ii. Achievement of Project Outcomes[40]

58. The achievement of project outcomes is assessed as performance against the two projects' outcomes as defined in the reconstructed[41] Theory of Change. These are outcomes that are intended to be achieved by the end of the project timeframe and within the project's resource envelope. Emphasis is placed on the achievement of project outcomes that are most important for attaining intermediate states. As with outputs, a table can be used where substantive amendments to the formulation of project outcomes is necessary. The evaluations should report evidence of attribution between UNEP's intervention and the project outcomes. In cases of normative work or where several actors are collaborating to achieve common outcomes, evidence of the nature and magnitude of UNEP's 'substantive contribution' should be included and/or 'credible association' established between project efforts and the project outcomes realised.

Factors affecting this criterion may include:

- Quality of project management and supervision
- Stakeholders' participation and cooperation
- Responsiveness to human rights and gender equity
- Communication and public awareness

iii. Likelihood of Impact

59. Based on the articulation of long-lasting effects in the reconstructed TOC *(i.e. from project outcomes, via intermediate states, to impact),* the evaluations will assess the likelihood of the intended, positive impacts becoming a reality. Project objectives or goals should be incorporated in the TOC, possibly as intermediate states or long-lasting impacts. The Evaluation Office's approach to the use of TOC in project evaluations is outlined in a guidance note available on the Evaluation Office website, https://www.unenvironment.org/about-un-environment/evaluation and is supported by an excel-based flow chart, 'Likelihood of Impact Assessment Decision Tree' and also available to the consultant through Sharepoint. Essentially the approach follows a 'likelihood tree' from project outcomes to impacts, taking account of whether the assumptions and drivers identified in the reconstructed TOC held. Any unintended positive effects should also be identified and their causal linkages to the intended impact described.

60. The evaluations will also consider the likelihood that the intervention may lead, or contribute to, unintended negative effects (e.g. will vulnerable groups such as those living with disabilities and/or women and children, be disproportionally affected by the project?). Some of these potential negative effects may have been identified in the project design as risks or as part of the analysis of Environmental and Social Safeguards.

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[39] In some cases 'project management and supervision' will refer to the supervision and guidance provided by UNEP to implementing partners and national governments while in others, specifically for GEF funded projects, it will refer to the project management performance of the executing agency and the technical backstopping provided by UNEP.

[40] Outcomes are the use (i.e. uptake, adoption, application) of an output by intended beneficiaries, observed as changes in institutions or behavior, attitude or condition (UNEP, 2019)

[41] All submitted UNEP project documents are required to present a Theory of Change with all submitted project designs. The level of 'reconstruction' needed during an evaluation will depend on the quality of this initial TOC, the time that has lapsed between project design and implementation (which may be related to securing and disbursing funds) and the level of any formal changes made to the project design.

61. The evaluations will consider the extent to which the project has played a catalytic[42] role or has promoted scaling up and/or replication as part of its Theory of Change and as factors that are likely to contribute to longer term impact.

62. Ultimately UNEP and all its partners aim to bring about benefits to the environment and human well-being. Few projects are likely to have impact statements that reflect such long-term or broad-based changes. However, the evaluation will assess the likelihood of the project to make a substantive contribution to the long-lasting changes represented by the Sustainable Development Goals and/or the intermediate-level results reflected in UNEP's Expected Accomplishments and the strategic priorities of funding partners.

Factors affecting this criterion may include:

- Quality of Project Management and Supervision (including adaptive management)
- Stakeholders participation and cooperation
- Responsiveness to human rights and gender equity
- Country ownership and driven-ness
- Communication and public awareness

E. Financial Management

63. Financial management will be assessed under three themes: *adherence* to UNEP's financial policies and procedures, *completeness* of financial information and *communication* between financial and project management staff. The evaluation will establish the actual spend across the life of the project of funds secured from all donors. This expenditure will be reported, where possible, at output level and will be compared with the approved budget. The evaluation will verify the application of proper financial management standards and adherence to UNEP's financial management policies. Any financial management issues that have affected the timely delivery of the project or the quality of its performance will be highlighted. The evaluations will record where standard financial documentation is missing, inaccurate, incomplete or unavailable in a timely manner. The evaluations will assess the level of communication between the Project/Task Manager and the Fund Management Officer as it relates to the effective delivery of the planned project and the needs of a responsive, adaptive management approach.

Factors affecting this criterion may include:

- Preparation and readiness
- Quality of project management and supervision

F. Efficiency

64. The evaluations will assess the extent to which the project delivered maximum results from the given resources. This will include an assessment of the cost-effectiveness and timeliness of project execution. Focusing on the translation of inputs into outputs, cost-effectiveness is the extent to which an intervention has achieved, or is expected to achieve, its results at the lowest possible cost. Timeliness refers to whether planned activities were delivered according to expected timeframes as well as whether events were sequenced efficiently. The evaluation will also assess to what extent any project extension could have been avoided through stronger project management and identify any negative impacts caused by project delays or extensions. The evaluation will describe any cost or time-saving measures

[42] *A catalytic effect is one in which desired changes take place beyond the initial scope of a project (i.e. the take up of change is faster than initially expected or change is taken up in areas/sectors or by groups, outside the project's initial design). Scaling up refers to an initiative, or one of its components, being adopted on a much larger scale, but in a very similar context (e.g a small scale, localized, pilot being adopted at a larger, perhaps national, scale). Replication refers more to approaches being repeated or lessons being explicitly applied in new/different contexts e.g. other geographic areas, different target groups etc. Effective replication typically requires some form of revision or adaptation to the new context. It is possible to replicate at either the same or a different scale.*

put in place to maximise results within the secured budget and agreed project timeframe and consider whether the project was implemented in the most efficient way compared to alternative interventions or approaches.

65. The evaluations will give special attention to efforts made by the project teams during project implementation to make use of/build upon pre-existing institutions, agreements and partnerships, data sources, synergies and complementarities[43] with other initiatives, programmes and projects etc. to increase project efficiency.

66. The factors underpinning the need for any project extensions will also be explored and discussed. As management or project support costs cannot be increased in cases of 'no cost extensions', such extensions represent an increase in unstated costs to implementing parties.

Factors affecting this criterion may include:

- Preparation and readiness (e.g. timeliness)
- Quality of project management and supervision
- Stakeholders participation and cooperation

G. Monitoring and Reporting

49. The evaluation will assess monitoring and reporting across three sub-categories: monitoring design and budgeting, monitoring implementation and project reporting.

i. Monitoring Design and Budgeting

50. Each project should be supported by a sound monitoring plan that is designed to track progress against SMART[44] results towards the provision of the project's outputs and achievement of project outcomes, including at a level disaggregated by gender, marginalisation or vulnerability, including those living with disabilities.. In particular, the evaluation will assess the relevance and appropriateness of the project indicators as well as the methods used for tracking progress against them as part of conscious results-based management. The evaluation will assess the quality of the design of the monitoring plan as well as the funds allocated for its implementation. The adequacy of resources for mid-term and terminal evaluation/review should be discussed.

ii. Monitoring of Project Implementation

51. The evaluations will assess whether the monitoring system was operational and facilitated the timely tracking of results and progress towards projects objectives throughout the project implementation period. This assessment will include consideration of whether the project gathered relevant and good quality baseline data that is accurately and appropriately documented. This should include monitoring the representation and participation of disaggregated groups (including gendered, marginalised or vulnerable groups, such as those living with disabilities) in project activities. It will also consider the quality of the information generated by the monitoring system during project implementation and how it was used to adapt and improve project execution, achievement of outcomes and ensure sustainability. The evaluation should confirm that funds allocated for monitoring were used to support this activity.

52. The performance of the GNC project at project completion against Core Indicator Targets should be reviewed. For projects approved prior to GEF-7, these indicators will be identified retrospectively and comments on performance provided.

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[43] Complementarity with other interventions during project design, inception or mobilization is considered under Strategic Relevance above.

[44] SMART refers to results that are specific, measurable, achievable, relevant and time-oriented. Indicators help to make results measurable.

iii. Project Reporting

53. UNEP has a centralised project information management system (Anubis) in which project managers upload six-monthly progress reports against agreed project milestones. For non-GEF projects, UNEP uses the Project Information Management System (PIMS) for six-monthly progress reporting against agreed project milestones. The information will be provided to the Evaluation Consultant by the Evaluation Manager. Some projects have additional requirements to report regularly to funding partners, which will be supplied by the project team (e.g. the Project Implementation Reviews and Tracking Tool for GEF-funded projects). The evaluation will assess the extent to which both UNEP and donor reporting commitments have been fulfilled. Consideration will be given as to whether reporting has been carried out with respect to the effects of the initiative on disaggregated groups.

Factors affecting this criterion may include:

- Quality of project management and supervision
- Responsiveness to human rights and gender equity (e.g. disaggregated indicators and data)

H. Sustainability

54. Sustainability[45] is understood as the probability of project outcomes being maintained and developed after the close of the intervention. The evaluation will identify and assess the key conditions or factors that are likely to undermine or contribute to the endurance of achieved project outcomes (i.e. 'assumptions' and 'drivers'). Some factors of sustainability may be embedded in the project design and implementation approaches while others may be contextual circumstances or conditions that evolve over the life of the intervention. Where applicable an assessment of bio-physical factors that may affect the sustainability of project outcomes may also be included.

i. Socio-political Sustainability

55. The evaluation will assess the extent to which social or political factors support the continuation and further development of project outcomes. It will consider the level of ownership, interest and commitment among government and other stakeholders to take the project achievements forwards. In particular the evaluation will consider whether individual capacity development efforts are likely to be sustained.

ii. Financial Sustainability

56. Some project outcomes, once achieved, do not require further financial inputs, e.g. the adoption of a revised policy. However, in order to derive a benefit from this outcome further management action may still be needed e.g. to undertake actions to enforce the policy. Other project outcomes may be dependent on a continuous flow of action that needs to be resourced for them to be maintained, e.g. continuation of a new resource management approach. The evaluation will assess the extent to which project outcomes are dependent on future funding for the benefits they bring to be sustained. Secured future funding is only relevant to financial sustainability where the project's outcomes have been extended into a future project phase. Even where future funding has been secured, the question still remains as to whether the project outcomes are financially sustainable.

[45] *As used here, 'sustainability' means the long-term maintenance of outcomes and consequent impacts, whether environmental or not. This is distinct from the concept of sustainability in the terms 'environmental sustainability' or 'sustainable development', which imply 'not living beyond our means' or 'not diminishing global environmental benefits' (GEF STAP Paper, 2019, Achieving More Enduring Outcomes from GEF Investment)*

iii. Institutional Sustainability

57. The evaluation will assess the extent to which the sustainability of project outcomes (especially those relating to policies and laws) is dependent on issues relating to institutional frameworks and governance. It will consider whether institutional achievements such as governance structures and processes, policies, sub-regional agreements, legal and accountability frameworks etc. are robust enough to continue delivering the benefits associated with the project outcomes after project closure. In particular, the evaluation will consider whether institutional capacity development efforts are likely to be sustained.

Factors affecting this criterion may include:

- Stakeholders participation and cooperation
- Responsiveness to human rights and gender equity (e.g. where interventions are not inclusive, their sustainability may be undermined)
- Communication and public awareness
- Country ownership and driven-ness

I. Factors Affecting Project Performance and Cross-Cutting Issues

(These factors are rated in the ratings table but are discussed within the Main Evaluation Report as cross-cutting themes as appropriate under the other evaluation criteria, above. Where the issues have not been addressed under other evaluation criteria, the consultant will provide summary sections under the following headings.)

i. Preparation and Readiness

58. This criterion focuses on the inception or mobilisation stage of the project (i.e. the time between project approval and first disbursement). The evaluation will assess whether appropriate measures were taken to either address weaknesses in the project designs or respond to changes that took place between project approval, the securing of funds and project mobilisation. In particular, the evaluations will consider the nature and quality of engagement with stakeholder groups by the project teams, the confirmation of partner capacity and development of partnership agreements as well as initial staffing and financing arrangements. *(Project preparation is included in the template for the assessment of Project Design Quality)*.

ii. Quality of Project Management and Supervision

59. In some cases 'project management and supervision' will refer to the supervision and guidance provided by UNEP to implementing partners and national governments while in others, specifically for GEF funded projects, it will refer to the project management performance of the executing agency and the technical backstopping and supervision provided by UNEP.

60. The evaluations will assess the effectiveness of project management with regard to: providing leadership towards achieving the planned outcomes; managing team structures; maintaining productive partner relationships (including Steering Groups etc.); maintaining project relevance within changing external and strategic contexts; communication and collaboration with UNEP colleagues; risk management; use of problem-solving; project adaptation and overall project execution. Evidence of adaptive management should be highlighted.

iii. Stakeholder Participation and Cooperation

61. Here the term 'stakeholder' should be considered in a broad sense, encompassing all project partners, duty bearers with a role in delivering project outputs and target users of project outputs and any other collaborating agents external to UNEP and the Executing Agency. The assessments will consider the quality and effectiveness of all forms of

communication and consultation with stakeholders throughout the project life and the support given to maximise collaboration and coherence between various stakeholders, including sharing plans, pooling resources and exchanging learning and expertise. The inclusion and participation of all differentiated groups, including gender groups should be considered.

62. The progress, challenges and outcomes regarding engagement of stakeholders in the project/program occurring since the MTR of the GNC project should be reviewed. *(This should be based on the description included in the Stakeholder Engagement Plan or equivalent documentation submitted at CEO Endorsement/Approval).*

iv. Responsiveness to Human Rights and Gender Equity

63. The evaluations will ascertain to what extent the project has applied the UN Common Understanding on the human rights-based approach (HRBA) and the UN Declaration on the Rights of Indigenous People. Within this human rights context the evaluation will assess to what extent the intervention adheres to UNEP's Policy and Strategy for Gender Equality and the Environment[46].

64. In particular, the evaluations will consider to what extent project implementation and monitoring have taken into consideration: (i) possible inequalities (especially those related to gender) in access to, and the control over, natural resources; (ii) specific vulnerabilities of disadvantaged groups (especially women, youth and children and those living with disabilities) to environmental degradation or disasters; and (iii) the role of disadvantaged groups (especially those related to gender) in mitigating or adapting to environmental changes and engaging in environmental protection and rehabilitation.

65. The completed gender-responsive measures and, if applicable, actual gender result areas should be reviewed. (For the GNC project, this should be based on the documentation at GEF CEO Endorsement/Approval, including gender-sensitive indicators contained in the project results framework or gender action plan or equivalent).

v. Environmental and Social Safeguards

66. UNEP projects address environmental and social safeguards primarily through the process of environmental and social screening at the project approval stage, risk assessment and management (avoidance, minimization, mitigation or, in exceptional cases, offsetting) of potential environmental and social risks and impacts associated with project and programme activities. The evaluation will confirm whether UNEP requirements[47] were met to: *review* risk ratings on a regular basis; *monitor* project implementation for possible safeguard issues; *respond* (where relevant) to safeguard issues through risk avoidance, minimization, mitigation or offsetting and r*eport* on the implementation of safeguard management measures taken. UNEP requirements for proposed projects to be screened for any safeguarding issues; for sound environmental and social risk assessments to be conducted and initial risk ratings to be assigned are evaluated above under Quality of Project Design).

67. The evaluations will also consider the extent to which the management of the project minimized UNEP's environmental footprint.

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[46] The Evaluation Office notes that Gender Equality was first introduced in the UNEP Project Review Committee Checklist in 2010 and, therefore, provides a criterion rating on gender for projects approved from 2010 onwards. Equally, it is noted that policy documents, operational guidelines and other capacity building efforts have only been developed since then and have evolved over time. https://wedocs.unep.org/bitstream/handle/20.500.11822/7655/-Gender_equality_and_the_environment_Policy_and_strategy-2015Gender_equality_and_the_environment_policy_and_strategy.pdf?sequence=3&isAllowed=y

[47] For the review of project concepts and proposals, the Safeguard Risk Identification Form (SRIF) was introduced in 2019 and replaced the Environmental, Social and Economic Review note (ESERN), which had been in place since 2016. In GEF projects safeguards have been considered in project designs since 2011.

68. Implementation of the management measures against the Safeguards Plan submitted at GEF CEO Approval should be reviewed, the risk classifications verified and the findings of the effectiveness of any measures or lessons learned taken to address identified risks assessed. Any supporting documents gathered by the Consultant should be shared with the Task Manager.

vi. Country Ownership and Driven-ness

69. The evaluations will assess the quality and degree of engagement of government / public sector agencies in the project. While there is some overlap between Country Ownership and Institutional Sustainability, this criterion focuses primarily on the forward momentum of the intended projects results, i.e. either a) moving forwards from outputs to project outcomes or b) moving forward from project outcomes towards intermediate states. The evaluations will consider the involvement not only of those directly involved in project execution and those participating in technical or leadership groups, but also those official representatives whose cooperation is needed for change to be embedded in their respective institutions and offices (e.g. representatives from multiple sectors or relevant ministries beyond Ministry of Environment). This factor is concerned with the level of ownership generated by the project over outputs and outcomes and that is necessary for long term impact to be realised. Ownership should extend to all gendered and marginalised groups.

vii. Communication and Public Awareness

70. The evaluations will assess the effectiveness of: a) communication of learning and experience sharing between project partners and interested groups arising from the project during its life and b) public awareness activities that were undertaken during the implementation of the project to influence attitudes or shape behaviour among wider communities and civil society at large. The evaluations should consider whether existing communication channels and networks were used effectively, including meeting the differentiated needs of gendered or marginalised groups, and whether any feedback channels were established. Where knowledge sharing platforms have been established under a project the evaluation will comment on the sustainability of the communication channel under either socio-political, institutional or financial sustainability, as appropriate.

71. For the GNC project, its completed Knowledge Management Approach, including: Knowledge and Learning Deliverables (e.g. website/platform development); Knowledge Products/Events; Communication Strategy; Lessons Learned and Good Practice; Adaptive Management Actions should be reviewed. This should be based on the documentation approved at GEF CEO Endorsement/Approval.

Section 3. EVALUATION APPROACH, METHODS AND DELIVERABLES

72. The Terminal Evaluations of the GNC and GPNM projects will be in-depth evaluations using a participatory approach whereby key stakeholders are kept informed and consulted throughout the evaluation process. Both quantitative and qualitative evaluation methods will be used as appropriate to determine project achievements against the expected outputs, outcomes and impacts of the two projects. It is highly recommended that the consultant maintains close communication with the project teams and promotes information exchange throughout the evaluation implementation phase in order to increase their (and other stakeholder) ownership of the evaluation findings. Where applicable, the consultant will provide a geo-referenced map that demarcates the area covered by the projects and, where possible, provide geo-reference photographs of key intervention sites (e.g. sites of habitat rehabilitation and protection, pollution treatment infrastructure, etc.)

73. The findings of the evaluation will be based on the following:

`A desk review of:

- Relevant background documentation

- Project design documents (including minutes of the project design review meetings at approval); Annual Work Plans and Budgets or equivalent, revisions to the projects (Project Document Supplement), the logical framework and its budget;
- Project reports such as six-monthly progress and financial reports, progress reports from collaborating partners, meeting minutes, relevant correspondence and including the Project Implementation Reviews and Tracking Tool etc.;
- GNC Project outputs: Key publications, including *Our Nutrient World*, and *Building the Foundations for Sustainable Nutrient Management;* a toolbox of 334 best practices from 60 countries in policy, technological options, measures and regulations on sustainable nutrient management as well as a watershed-based nutrient flux calculator; national-level decision support knowledge products in the Philippines and India; and accounts of engagement and capacity building activities Documents are archived at: http://www.nutrientchallenge.org/gef-global-nutrient-cycling-gnc-project
- GPNM Project outputs, including Reports, Briefs, Factsheets, GPNM Newsletters, www.nutrientchallenge.org, Massive Online Open Course (MOOC) on sustainable nutrient management;
- Mid-Term Review of the GNC project;
- Evaluations/reviews of similar projects.

Interviews (individual or in group) with:

- Current and previous UNEP Task Managers (TM);
- Portfolio Manager and Sub-Programme Coordinator, where appropriate;
- GNC Project partners, including IOC UNESCO, Partnerships in Environmental Management for the Seas of East Asia
- Relevant resource persons
  Representative from civil society and specialist groups (such as participants in various engagements and capacity building activities of the project, etc.).

A survey was planned but was not feasible as coordinators of components were no longer in the same position. Field visits were e not deemed likely due to COVID-19 related travel restrictions.

Other data collection tools.

74. An Evaluation Reference Group (ERG) is good practice for TEs of larger programmes or large 'flagship' projects. The ERG will provide strategic direction to the evaluations based on their own experiences and contextual knowledge- and boost buy-in to, and the credibility and legitimacy of, the evaluation process across the range of evaluation stakeholders) as well as enhance learning. An ERG will be composed for the evaluations of the two projects.

75. The ERG will be comprised of TM and PM, FMOs, Portfolio Manager and Sub-Programme Coordinator and 2-3 partners.

76. The ERG will discuss and provide comments on:

- the demand for the evaluations – to ensure the evaluation will meet the needs of its intended users (through a review of evaluation terms of reference);
- the overall evaluation approach and the reconstructed Theory of Change of the projects to help shape the evaluations;
- the preliminary findings and recommendations of the evaluations; and
- the draft evaluation reports, including the evaluation lessons learned and recommendations.

77. The ERG will appoint one of their members as the Chair. The Evaluation Office of UNEP will provide the secretariat to the ERG. ERG feedback and comments at different stages of the evaluation processes will be collated by the Evaluation Manager during planned discussion meetings. The Evaluation Manager will, in consultation with the Chair and other ERG members, set the agenda for the discussion meetings and support these meetings logistically. It is

expected that two such meetings will be held during the evaluation process, as shown in Table 8.

Table 8. Evaluation Reference Group meetings

Meeting	Purpose	Location	Tentative date
1st	Introduce the ERG members and Evaluator Elect the Chair Discuss the TORs Discuss the Theory of Change of the projects Discuss the evaluation framework and ERG members engagement in the evaluation process	Virtual	June 2021
2nd	Discuss the preliminary findings of the evaluations	Virtual	October-November 2021

11. Evaluation Deliverables and Review Procedures

73. The Evaluator will prepare:

- **Inception Reports:** (see Annex 1 for links to all templates, tables and guidance notes) containing an assessment of project design quality, a draft reconstructed Theory of Change of the project, project stakeholder analysis, evaluation framework and a tentative evaluation schedule.
- **Preliminary Findings Notes:** typically in the form of a PowerPoint presentation, the sharing of preliminary findings is intended to support the participation of the project team, act as a means to ensure all information sources have been accessed and provide an opportunity to verify emerging findings. In the case of highly strategic project/portfolio evaluations or evaluations with an Evaluation Reference Group, the preliminary findings may be presented as a word document for review and comment.
- **Draft and Final Evaluation Reports:** (see links in Annex 1) containing an executive summary that can act as a stand-alone document; detailed analysis of the evaluation findings organised by evaluation criteria and supported with evidence; lessons learned and recommendations and an annotated ratings table.

74. An Evaluation Brief, (a 2-page overview of the evaluand and key evaluation findings) for wider dissemination through the UNEP website may be required. This will be discussed with the Evaluation Manager no later than during the finalization of the two Inception Reports.

75. Review of the GNC and GPNM draft evaluation reports. The Evaluator will submit two draft reports to the Evaluation Manager and revise the draft in response to their comments and suggestions. Once a draft of adequate quality has been peer-reviewed and accepted, the Evaluation Manager will share the cleared draft reports with the Task Manager and Project Manager, who will alert the Evaluation Manager in case the report contains any blatant factual errors. The Evaluation Manager will then forward revised draft reports (corrected by the evaluation consultant(s) where necessary) to other project stakeholders, for their review and comments. Stakeholders may provide feedback on any errors of fact and may highlight the significance of such errors in any conclusions as well as providing feedback on the proposed recommendations and lessons. Any comments or responses to draft reports will be sent to the Evaluation Manager for consolidation. The Evaluation Manager will provide all comments to the evaluation consultant for consideration in preparing the final reports, along with guidance on areas of contradiction or issues requiring an institutional response.

76. Based on a careful review of the evidence collated by the evaluation consultant and the internal consistency of the report, the Evaluation Manager will provide separate assessment of the ratings in each of the final evaluation reports. Where there are differences of opinion between the Evaluator and the Evaluation Manager on project ratings, both viewpoints will be clearly presented in the final reports. The Evaluation Office ratings will be considered the final ratings for the two projects.

77. The Evaluation Manager will prepare quality assessments of the first drafts of the two main evaluation reports, which act as a tool for providing structured feedback to the evaluation consultants. The quality of the final reports will be assessed and rated against the criteria specified in template listed in Annex 1 and this assessment will be appended to the Final Evaluation Reports.

78. At the end of the evaluation process, the Evaluation Office will prepare Recommendations Implementation Plans for the GNC and GPNM projects in the format of two tables, to be completed and updated at regular intervals by the Task/ Project Manager. The Evaluation Office will track compliance against the plans on a six-monthly basis for a maximum of 18 months.

12. The Evaluation Consultant

79. For the evaluation of the GNC and GPNM projects, the evaluation be conducted by an Evaluation Specialist who will work under the overall responsibility of the Evaluation Office represented by an Evaluation Manager (Susanne Bech), in consultation for the GNC project with the UNEP Task Manager (Isabelle Vanderbeck), Fund Management Officer (Pooja Bhimjiani) and for the GPNM project with UNEP Project Manager (Mahesh Pradhan), Fund Management Officer (Lydia Eibl-Kamolleh) and the Sub-programme Coordinators of the UNEP Sub-programme on Chemicals, Waste and Air pollution (Tessa Goverse) and the UNEP Sub-programme on Health and Productive Ecosystems (Marieta Sakalian). The consultant will liaise with the Evaluation Manager on any procedural and methodological matters related to the evaluation. It is, however, each consultant's individual responsibility to arrange for their visas and immunizations as well as to plan meetings with stakeholders, organize online surveys, obtain documentary evidence and any other logistical matters related to the assignment. The UNEP Task/ Project Managers and project teams will, where possible, provide logistical support (introductions, meetings, etc.) allowing the consultant to conduct the evaluations as efficiently and independently as possible.

80. The Evaluation Consultant will be hired over a period of 8 months (01 June 2021 to 31 January 2022) and should have the following: a university degree in environmental sciences, international development or other relevant political or social sciences area is required and an advanced degree in the same areas is desirable; a minimum of 7 years of technical / evaluation experience is required, preferably including evaluating large, regional or global research programmes and using a Theory of Change approach; and a good/broad understanding of marine ecosystems management is desired. English and French are the working languages of the United Nations Secretariat. For this consultancy, fluency in oral and written English is a requirement. Working knowledge of the UN system and specifically the work of UNEP is an added advantage. The work will be home-based.

81. The Evaluation Consultant will be responsible, in close consultation with the Evaluation Office of UNEP for overall management of the evaluation and timely provision of its outputs, described above in Section 11 Evaluation Deliverables, above. The consultant will ensure that all evaluation criteria and questions are adequately covered.

82. In close consultation with the Evaluation Manager, the evaluation consultant will be responsible for the overall management of the evaluation and timely provision of its outputs, data collection and analysis and report-writing. More specifically:

Inception phase of the evaluations, including:

- preliminary desk review and introductory interviews with project staff;
- draft the reconstructed Theory of Change of the project;
- prepare the evaluation framework;
- develop the desk review and interview protocols;
- draft the survey protocols (if relevant);
- develop and present criteria for country and/or site selection for in-depth study;
- plan the evaluation schedule;
- prepare the Inception Report, incorporating comments until approved by the Evaluation Manager

Data collection and analysis phase of the evaluations, including:

- conduct further desk review and in-depth interviews with project implementing and executing agencies, project partners and project stakeholders;
- (where appropriate and agreed) conduct an evaluation mission(s) to selected countries, visit the project locations, interview project partners and stakeholders, including a good representation of local communities. Ensure independence of the evaluation and confidentiality of evaluation interviews.
- regularly report back to the Evaluation Manager on progress and inform of any possible problems or issues encountered and;
- keep the Project/Task Manager informed of the evaluation progress.

Reporting phase, including:

- draft the Main Evaluation Reports, ensuring that the evaluation reports are complete, coherent and consistent with the Evaluation Manager guidelines both in substance and style;
- liaise with the Evaluation Manager on comments received and finalize the Main Evaluation Reports, ensuring that comments are taken into account until approved by the Evaluation Manager
- prepare a Response to Comments annex for the main reports, listing those comments not accepted by the evaluation consultant and indicating the reason for the rejection; and
- (where agreed with the Evaluation Manager) prepare an Evaluation Brief (2-page summary of the evaluand and the key evaluation findings and lessons)

Managing relations, including:

- maintain a positive relationship with evaluation stakeholders, ensuring that the evaluation process is as participatory as possible but at the same time maintains its independence;
- communicate in a timely manner with the Evaluation Manager on any issues requiring its attention and intervention.

13. Schedule of the evaluation

83. The table below presents the tentative schedule for the evaluations.

Table 9. Tentative schedule for the evaluations

Milestone	Tentative Dates
Evaluation Initiation Meeting	June 2021
Inception Reports	June 2021
E-based interviews, surveys etc.	July-September 2021

Milestone	Tentative Dates
PowerPoint/presentation on preliminary findings and recommendations	
Draft reports to Evaluation Manager (and Peer Reviewer)	
Draft Reports shared with UNEP Project Manager and team	
Draft Reports shared with Evaluation Reference Group	
Draft Reports shared with wider group of stakeholders	
Final Reports	
Final Reports shared with all respondents	

14. Contractual Arrangements

84. The Evaluation consultant will be selected and recruited by the Evaluation Office of UNEP under an individual Special Service Agreement (SSA) on a "fees only" basis (see below). By signing the service contract with UNEP /UNON, the consultant certify that he/she has not been associated with the design and implementation of the GNC and GPNM projects in any way which may jeopardize his or her independence and impartiality towards project achievements and project partner performance. In addition, the consultant will not have any future interests (within six months after completion of the contract) with the projects' executing or implementing units. The consultant is required to sign the Code of Conduct Agreement Form.

85. Fees will be paid on an instalment basis, paid on acceptance by the Evaluation Manager of expected key deliverables. The schedule of payment is as follows:

Schedule of Payment for the Evaluation Consultant:

Deliverable	Percentage Payment
Approved GNC Inception Report (as per annex document 7)	15%
Approved GPNM Inception Report (as per annex document 7)	15%
Approved GNC Draft Main Evaluation Report (as per annex document 13)	15%
Approved GPNM Draft Main Evaluation Report (as per annex document 13)	15%
Approved GNC Final Main Evaluation Report	20%
Approved GPNM Final Main Evaluation Report	20%

86. Fees only contracts: Air tickets will be purchased by UNEP and 75% of the Daily Subsistence Allowance for each authorised travel mission will be paid up front. Local in-country travel will only be reimbursed where agreed in advance with the Evaluation Manager and on the production of acceptable receipts. Terminal expenses and residual DSA entitlements (25%) will be paid after mission completion. In of the COVD-19 pandemic and related travel restrictions, travel for this consultancy is not foreseen.

87. The consultant may be provided with access to UNEP's Anubis information management system and if such access is granted, the consultant agrees not to disclose information from that system to third parties beyond information required for, and included in, the evaluation report.

88. In case the consultant is not able to provide the deliverables in accordance with these guidelines, and in line with the expected quality standards by the UNEP Evaluation Office, payment may be withheld at the discretion of the Director of the Evaluation Office until the consultant has improved the deliverables to meet UNEP's quality standards.

89. If the consultant fails to submit a satisfactory final product to UNEP in a timely manner, i.e., before the end date of his/her contract, the Evaluation Office reserves the right to employ additional human resources to finalize the reports, and to reduce the consultant's fee by an amount equal to the additional costs borne by the Evaluation Office to bring the reports up to standard.

ANNEX VI. GEF PORTAL INPUTS

The following table contains text to be uploaded to the GEF Portal. **It will be drawn from the Evaluation Report, either as copied or summarised text.** In each case, references should be provided for the paragraphs and pages of the report from which the responses have been copied or summarised.

Table II: GEF portal inputs

Question: What was the performance at the project's completion against Core Indicator Targets? (For projects approved prior to GEF-7[48], these indicators will be identified retrospectively and comments on performance provided[49]).
Response: (Might be drawn from Monitoring and Reporting section) The Global Foundations for Reducing Nutrient Enrichment and Oxygen Depletion from Land-based Pollution in Support of Global Nutrient Cycle (GEF ID 4212) is a GEF-4 Project. The GEF-7 Core Indicator Targets that the GEF 1412 is contributing to are, in retrospect: 4. Area of landscapes under improved practices (hectares, excluding protected areas). *Contextual sub-indicators* 4.3. Area of landscapes under sustainable land management in production systems, and 5. Area of marine habitat under improved practices to benefit biodiversity (hectares, excluding protected areas) *Contextual sub-indicators* 5.2 Number of Large Marine Ecosystems with reduced pollution and hypoxia: Performance at the Project's completion against Core Indicator Targets as follows: The Project is global but it has a component to develop nutrient reduction strategies through application of quantitative source-impact modelling and best practices in the Manila Bay watershed. 4.3 Manila Bay watershed: Watershed area – approximately 1,700,000 hectares. The catchment area is as huge at 1,926,800 hectares and within the catchment is Laguna Lake at 90,000 hectares. 5.2. Number of Large Marine Ecosystems with reduced pollution and hypoxia: The performance was rated *Satisfactory*. A source-impact modeling was developed. In addition, the Pollution Reduction Opportunity Analysis (PROA) for Manila Bay (Sara Walker, World Resources Institute and Christopher Cox, UN Environment, Experience Note: Toward a Comprehensive Watershed Management Strategy for Manila Bay: The International Experience and Lessons Learned). A scientific paper on Nutrient Load Estimates for Manila Bay, Philippines using Population Data was published (by Lara Patricia A. Sotto, Arthur H. W. Beusen, Cesar L. Villanoy, Lex F. Bouwman, and Gil S. Jacinto in Ocean Science Journal 2015, 50(2):1-8). The source-impact model, opportunities for nutrient reduction, and the tool-box of approaches and case studies are outputs that that potentially will contribute to the reduction of pollution and hypoxia in Manila Bay, one of the

[48] The GEF is currently operating under the seventh replenishment period of the GEF Trust Fund covering the period July 1, 2018 to June 30, 2022. The GEF Portal Reporting Guide for FY20 Reporting Process indicates that GEF-6 projects that have yet to map existing indicators to GEF-7 Core Indicators need to do so at MTR stage or (if already there) at the time of the TE. .(i.e. not GEF projects approved before GEF-6)

[49] This is not applicable for Enabling Activities

hotspots of pollution in the South China Sea Large Marine Ecosystem. The impact at the LME level is *Likely.*

[TE: Paragraphs: 135-145, pages 38-40; 215, p. 51; 151-157, pp. 40-41; par. 174-180, pp. 43-44]

Question: What were the progress, challenges and outcomes regarding engagement of stakeholders in the project/program as evolved from the time of the MTR? *(This should be based on the description included in the Stakeholder Engagement Plan or equivalent documentation submitted at CEO Endorsement/Approval)*

Response: (Might be drawn from Factors Affecting Performance section)

Progress – The stakeholder engagement was approached through the establishment of the Global Partnership for Nutrient Management (GPNM). This was established through meetings held at the international conferences of the International Waters Portfolio, GEF. The GPNM has a website for on-line access the tool box for nutrient reduction (http://www.nutrientchallenge,org). It was planned to set in motion the establishment of regional GPNM platforms. The GPNM Asia Platform and the Caribbean Asia Platform were established. The Global or Regional GPNM are platforms for stakeholder engagement.

Challenges – At the time of the Mid-term Review (MTR), there was a challenge on the lack of an effective website that has rendered the GNC project invisible to many potential stakeholders, including other GEF IW projects. The website (http://nutrientchallenge.org) was created after the MTR that holds all the outputs of the GNC Project and partnership, and running to date. The communication strategy of the partnership, found in the Charter, further addressed the challenge. The community strategy identified the target audience and their respective interests.

Furthermore, at MTR, it was reported the project that there is an ongoing need to build stakeholder engagement through partnerships at different levels. This challenge was met by having consultations with stakeholders of the Manila Bay watershed, Laguna Lake, and Chilika Lake. Preparing the tool box for managers and policy-makers involved engagement of key stakeholders.

Outcome – The stakeholders were able to engage in the Partnership which has provided experience and interest to further initiate programs for addressing nutrient-pollution in coastal waters in LMEs (in Southeast Asia). The partnership provided a framework for coordination in a regional context, especially within an LME, and linking it with global goals.

[TE Paragraphs (par.) 149, p. 40; 158-170, 173, pp. 41-43; par. 245-250, p. 55 and 56]

Question: What were the completed gender-responsive measures and, if applicable, actual gender result areas? *(This should be based on the documentation at CEO Endorsement/Approval, including gender-sensitive indicators contained in the project results framework or gender action plan or equivalent)*

Response: (Might be drawn from Factors Affecting Performance section)

None. The outputs and outcomes of the GEF 4212 Project benefit both genders.

The outcome desired under the GNC Project was the improvement of the water quality of coastal waters where gleaning, mariculture, and fishing were undertaken by both men and women. The socio-economic benefit from the perspective of these stakeholders was a clean and suitable environment for better productivity of the coastal waters. An improvement of the productivity will result in better well-being and income by the fisher folk and empower women. In India and the Philippines, women play a role in gathering shellfish and fish from the wild (gleaning), mariculture, and coastal fisheries by selling the harvest landed by the men. One of the assumptions in the ToC at Evaluation was for farmers, fish-growers, and to settlers comply with regulation, and that gender

and vulnerable groups be included in the deliberations on regulations and benefits. The GNC Project involved the fish-farmers in the development of the scorecard. More engagement with other groups was assumed as critical in achieving the causal link at the ecosystem/landscape level, resulting to the project outcome and intermediate state. Gender equality was raised at the MTR to be mainstreamed. In the implementation of the demonstration site in Manila Bay, women played an important role in activities, e.g., gathering data, modelling, conducting stakeholder consultations, and participating in the consultations (organized by LLDA). The role of women and men will be equally important in implementing regulations at the landscape level (e.g., applying best-management-practices in the use of fertilizers, applying nature-based solutions in the farms and in the fishponds, connecting with the sewerage system, etc.) after the GNC Project.

[TE: Paragraphs 251-253, p. 56]

Question: What was the progress made in the implementation of the management measures against the Safeguards Plan submitted at CEO Approval? The risk classifications reported in the latest PIR report should be verified and the findings of the effectiveness of any measures or lessons learned taken to address identified risks assessed. *(Any supporting documents gathered by the Consultant during this review should be shared with the Task Manager for uploading in the GEF Portal)*

Response: (Might be drawn from Factors Affecting Performance section)

There is a low risk for environmental and social safeguards in the GEF 4212 GNC Project. On the contrary, the project will improve the coastal water quality that is the natural capital for mariculture and coastal fisheries. There were no specific safeguards were required during the implementation of the project. Nonetheless, the management measures were: acknowledging the "potential trade-offs between long-term ecosystem well-being and perceived more immediate economic and social needs"; site-based application in Manila Bay watershed and Chilika Lake for inclusion in the planning and investment regimes of regional or national agencies; and availing of the strong stakeholder engagement of farmers and fishers in the Manila Bay watershed and Chilika Lake.

The risks identified in the GNC Project were many, but most were assessed as 'low'; only the willingness of governments and stakeholders to engage and act (item no. 1 in the Risk Mitigation Table, ProDoc) were reported as 'low/medium' and limited to private sector engagement (item no. 3 in Risk Mitigation Table, ProDoc). The mitigation measures were implemented in the project (e.g., engaging stakeholders in developing tool box, building support at the GEF IW Conference, among technical staff and policy-makers, and at the GPA Intergovernmental Review) for the first risk. For the second risk, the mitigation measures were to engage the industrial and agricultural sectors, FAO, fisheries, and UN-Habitat, however, it was only the aquaculture sector that was clearly engaged in the project.

[TE: Paragraph 255, p. 56]

Question: What were the challenges and outcomes regarding the project's completed Knowledge Management Approach, including: Knowledge and Learning Deliverables (e.g. website/platform development); Knowledge Products/Events; Communication Strategy; Lessons Learned and Good Practice; Adaptive Management Actions? *(This should be based on the documentation approved at CEO Endorsement/Approval)*

Response: (Might be drawn from Factors Affecting Performance section)

Knowledge Management Approach

2The GNC Project was successful in producing the planned outputs as listed in the project document. The tool box, reports, and other knowledge projects are available in the GPNM website

– http://nutrientchallenge.org. The Global Partnership on Nutrient Management was established (Direct Outcome 1). The synthesis of available information on nutrient pollution and management was produced and case studies and best-practices were compiled and placed in the tool box for policy-makers and environmental managers to use (outputs of DOs 2, 3, and 4). The main output for DO 5 was the Environmental Health Score Card while the lessons-learned and experience notes were the main outputs for DO 6. The availability of the 30 outputs was *Highly Satisfactory*.

[TE: Paragraph 25, page 14; par. 135-145, pp. 38-40]

Question: What are the main findings of the evaluation?

Response:

The Evaluator concludes that the GNC Project was implemented satisfactorily. Most of the key criteria of performance were rated "Satisfactory" and "Highly Satisfactory".

The GNC Project had 30 planned outputs across four Components: Component A had 9 outputs; Component B – 7; Component C – 7; and Component D – 7. The draft Terminal Report has reported all the outputs that were delivered by the Partners. These outputs were available as scientific papers, experience notes, brochures, or reports and could be downloaded from the website of the GPNM (http://nutrientchallenge.org).

The six Direct Outcomes resulted in the achievement of the two Project Outcomes. The foundation for countries to initiate nutrient-reduction projects has been achieved.

Project Outcome 1 on global nutrient reduction benefits was achieved, however, it will need an investment of 10 years with 2 phases. The GNC Project can be considered phase 1. The GNC Project has achieved the Direct Outcomes. The GNC Project has contributed to the preparation of SAPs in the BoBLME, Wider Caribbean LME, and South China Sea and Gulf of Thailand LME.

Project Outcome 2 on nutrient reduction benefits in Manila Bay and Chilika Lake watershed areas was achieved by the adaption of the LLDA of the EHSC as part of the integrated water quality monitoring and management. Chilika Development Authority has used the EHSC in their monitoring of the Lake.

The impact of the GNC Project will likely be achieved through the pathways assessed in the Theory of the Change in the GNC Project. There was a likelihood for the GNC Project to attain impact at the LME level. The toolbox and source-impact model for nutrient-reduction was introduced to key stakeholders in many countries. In the South China Sea Large Marine Ecosystem, most of the countries were in the training sessions (except Malaysia) for the use of the toolbox.

The outputs, such as the toolbox, will be useful for the next 10 years. The nature-based solutions in the case-studies will remain useful for a long time. This cache of case studies can grow with more applications of nutrient-reduction solutions and learnings. The model (source-impact) can be revised with new data and improved as well with applications in riparian countries.

In terms of sustainability, the condition for the socio-political sustainability of the project was achieved by working with the DENR, LLDA, CLDA and LGUs. The conditions for financial sustainability were partly achieved by working with the governmental agencies that can apply for annual budgets and investments for infrastructure to reduce nutrient pollution. At the ecosystem scale, institutional sustainability was assured with the LLDA and CLDA. At the LME scale, there is a

need for GEF projects to report to the Regional Seas to ensure accounting and sustainability of actions under the SAP.

[TE: Paragraphs 135, 172-173, 174, 178, 283 and Table 6. Summary of project findings and ratings]

ANNEX VII. QUALITY ASSESSMENT OF THE EVALUATION REPORT

Quality Assessment of the Evaluation Report

Evaluand Title:

Terminal Evaluation of UNEP/GEF "Global Foundations for Reducing Nutrient Enrichment and Oxygen Depletion from Land-based Pollution in Support of Global Nutrient Cycle" (GNC), GEF ID 4212

All UNEP evaluations are subject to a quality assessment by the Evaluation Office. This is an assessment of the quality of the evaluation product (i.e. evaluation report) and is dependent on more than just the consultant's efforts and skills.

	UNEP Evaluation Office Comments	Final Report Rating
Substantive Report Quality Criteria		
Quality of the Executive Summary: The Summary should be able to stand alone as an accurate summary of the main evaluation product. It should include a concise overview of the evaluation object; clear summary of the evaluation objectives and scope; overall evaluation rating of the project and key features of performance (strengths and weaknesses) against exceptional criteria (plus reference to where the evaluation ratings table can be found within the report); summary of the main findings of the exercise, including a synthesis of main conclusions (which include a summary response to key strategic evaluation questions), lessons learned and recommendations.	Final report: Executive Summary provides a satisfactory standalone summary of background, results framework, methods of evaluation, theory of change at evaluation, key evaluation findings, including findings on the strategic questions of the evaluation, conclusions, lessons learned and recommendations.	4.5
I. Introduction A brief introduction should be given identifying, where possible and relevant, the following: institutional context of the project (sub-programme, Division, regions/countries where implemented) and coverage of the evaluation; date of PRC approval and project document signature); results frameworks to which it contributes (e.g. Expected Accomplishment in POW); project duration and start/end dates; number of project phases (where appropriate); implementing partners; total secured budget and whether the project has been evaluated in the past (e.g. mid-term, part of a synthesis evaluation, evaluated by another agency etc.) Consider the extent to which the introduction includes a concise statement of the purpose of the evaluation and the key intended audience for the findings?	Final report: Concise introduction of the project, institutional context, project approval and mid-term review and terminal evaluation, including purpose of the terminal evaluation and its users.	4.5
II. Evaluation Methods A data collection section should include: a description of evaluation methods and information sources used, including the number and type of respondents; justification for methods used (e.g. qualitative/ quantitative; electronic/face-to-face); any selection criteria used to identify respondents, case studies or sites/countries visited; strategies used to increase stakeholder engagement and consultation; details of	Final report: Short description of evaluation approach and methods used, data collected, including use of Theory of Change, and consideration of ethics and	4.5

	UNEP Evaluation Office Comments	Final Report Rating
Substantive Report Quality Criteria		
how data were verified (e.g. triangulation, review by stakeholders etc.). Efforts to include the voices of different groups, e.g. vulnerable, gender, marginalised etc) should be described. Methods to ensure that potentially excluded groups (excluded by gender, vulnerability or marginalisation) are reached and their experiences captured effectively, should be made explicit in this section. The methods used to analyse data (e.g. scoring; coding; thematic analysis etc.) should be described. It should also address evaluation limitations such as: low or imbalanced response rates across different groups; gaps in documentation; extent to which findings can be either generalised to wider evaluation questions or constraints on aggregation/disaggregation; any potential or apparent biases; language barriers and ways they were overcome. Ethics and human rights issues should be highlighted including: how anonymity and confidentiality were protected, and strategies used to include the views of marginalised or potentially disadvantaged groups and/or divergent views. Is there an ethics statement? E.g. *'Throughout the evaluation process and in the compilation of the Final Evaluation Report efforts have been made to represent the views of both mainstream and more marginalised groups. All efforts to provide respondents with anonymity have been made.*	human rights, as well as a description of the limitations of the evaluation of the evaluation.	
III. The Project This section should include: • *Context:* Overview of the main issue that the project is trying to address, its root causes and consequences on the environment and human well-being (i.e. synopsis of the problem and situational analyses). • *Results framework*: Summary of the project's results hierarchy as stated in the ProDoc (or as officially revised) • *Stakeholders:* Description of groups of targeted stakeholders organised according to relevant common characteristics • *Project implementation structure and partners:* A description of the implementation structure with diagram and a list of key project partners • *Changes in design during implementation:* Any key events that affected the project's scope or parameters should be described in brief in chronological order • *Project financing:* Completed tables of: (a) budget at design and expenditure by components (b) planned and actual sources of funding/co-financing	Final report: Section provides a concise overview of context, results framework, stakeholders, implementation structure and partners, changes in design during implementation and project financing. Descriptive figures included and photos of site (Manila Bay).	4.5

	UNEP Evaluation Office Comments	Final Report Rating
Substantive Report Quality Criteria		
IV. Theory of Change The *TOC at Evaluation* should be presented clearly in both diagrammatic and narrative forms. Clear articulation of each major causal pathway is expected, (starting from outputs to long term impact), including explanations of all drivers and assumptions as well as the expected roles of key actors. This section should include a description of how the *TOC at Evaluation*[50] was designed (who was involved etc.) and applied to the context of the project? Where the project results as stated in the project design documents (or formal revisions of the project design) are not an accurate reflection of the project's intentions or do not follow UNEP's definitions of different results levels, project results may need to be re-phrased or reformulated. In such cases, a summary of the project's results hierarchy should be presented for: a) the results as stated in the approved/revised Prodoc logframe/TOC and b) as formulated in the *TOC at Evaluation*. *The two results hierarchies should be presented as a two-column table to show clearly that, although wording and placement may have changed, the results 'goal posts' have not been 'moved'.* This table may have initially been presented in the Inception Report and should appear somewhere in the Main Review report.	Final report: Satisfactory presentation of ToC and description of major pathways, assumptions and drivers, and the reconstructed ToC with use of table for justification for reformulation and graphic illustration (figure).	5
V. Key Findings <u>Findings Statements:</u> The frame of reference for a finding should be an individual evaluation criterion or a strategic question from the TOR. **A finding should go beyond description and uses analysis to provide insights that aid learning specific to the evaluand.** In some cases a findings statement may articulate a key element that has determined the performance rating of a criterion. Findings will frequently provide insight into 'how' and/or 'why' questions.	Final report: Findings for each sub-criteria provided with evidence and accompanying ratings.	4.5
A. Strategic relevance: This section should include an assessment of the project's relevance in relation to UNEP's mandate and its alignment with UNEP's policies and strategies at the time of project approval. An assessment of the complementarity of the project at design (or during inception/mobilisation[51]), with other interventions addressing the needs of the same target groups should be included. Consider the extent to which all four elements have been addressed:	Final report: Well-summarized analysis of alignment to MTS, POW and strategic priorities, UNEP/GEF/ Donor strategic priorities; global, regional, sub-regional and national priorities. The assessment of complementarity	4.5

[50] During the Inception Phase of the evaluation process a *TOC at Evaluation Inception* is created based on the information contained in the approved project documents (these may include either logical framework or a TOC or narrative descriptions), formal revisions and annual reports etc. During the evaluation process this TOC is revised based on changes made during project intervention and becomes the *TOC at Evaluation*.

[51] A project's inception or mobilization period is understood as the time between project approval and first disbursement. Complementarity during project <u>implementation</u> is considered under Efficiency, see below.

	UNEP Evaluation Office Comments	Final Report Rating
Substantive Report Quality Criteria		
i. Alignment to the UNEP Medium Term Strategy (MTS), Programme of Work (POW) and Strategic Priorities ii. Alignment to Donor/GEF/Partners Strategic Priorities iii. Relevance to Regional, Sub-regional and National Environmental Priorities iv. Complementarity with Existing Interventions	with existing interventions/ coherence provides useful list of other global and regional projects.	
B. Quality of Project Design To what extent are the strength and weaknesses of the project design effectively summarized?	Final report: Well-summarized analysis of key strengths and weaknesses in project design.	4.5
C. Nature of the External Context For projects where this is appropriate, key external features of the project's implementing context that limited the project's performance (e.g. conflict, natural disaster, political upheaval[52]), and how they affected performance, should be described.	Final report: Relevant risks and external factors addressed, including weather events, and election in the Philippines.	4.5
D. Effectiveness **(i) Outputs and Project Outcomes:** How well does the report present a well-reasoned, complete and evidence-based assessment of the a) availability of outputs, and b) achievement of project outcomes? How convincing is the discussion of attribution and contribution, as well as the constraints to attributing effects to the intervention? The effects of the intervention on differentiated groups, including those with specific needs due to gender, vulnerability or marginalisation, should be discussed explicitly.	Final report: Concise description of availability of outputs by direct outcome, achievement of the two project outcomes (incorporating direct outcomes) as per the reconstructed Theory of Change.	4.5
(ii) Likelihood of Impact: How well does the report present an integrated analysis, guided by the causal pathways represented by the TOC, of all evidence relating to likelihood of impact? How well are change processes explained and the roles of key actors, as well as drivers and assumptions, explicitly discussed? Any unintended negative effects of the project should be discussed under Effectiveness, especially negative effects on disadvantaged groups.	Final report: Satisfactory assessment made of likelihood of impact incorporating ToC's assumptions and drivers.	5

[52] Note that 'political upheaval' does not include regular national election cycles, but unanticipated unrest or prolonged disruption. The potential delays or changes in political support that are often associated with the regular national election cycle should be part of the project's design and addressed through adaptive management of the project team.

	UNEP Evaluation Office Comments	Final Report Rating
Substantive Report Quality Criteria		
E. Financial Management This section should contain an integrated analysis of all dimensions evaluated under financial management and include a completed 'financial management' table. Consider how well the report addresses the following: • *Adherence* to UNEP's financial policies and procedures • *completeness* of financial information, including the actual project costs (total and per activity) and actual co-financing used • *communication* between financial and project management staff	Final report: Assessment made of adherence to financial policies and procedures, completeness of financial information as it was made available to the Evaluator, and brief assessment of communication between finance and project management staff (in view of documentation made available).	4.5
F. Efficiency To what extent, and how well, does the report present a well-reasoned, complete and evidence-based assessment of efficiency under the primary categories of cost-effectiveness and timeliness including: • Implications of delays and no cost extensions • Time-saving measures put in place to maximise results within the secured budget and agreed project timeframe • Discussion of making use during project implementation of/building on pre-existing institutions, agreements and partnerships, data sources, synergies and complementarities with other initiatives, programmes and projects etc. • The extent to which the management of the project minimised UNEP's environmental footprint.	Final report: Concise efficiency analysis of implementation of activities, sequencing of activities and value for money as well as association of the GNC Project with the GPNM Project.	4.5
G. Monitoring and Reporting How well does the report assess: • Monitoring design and budgeting *(including SMART results with measurable indicators, resources for MTE/R etc.)* • Monitoring of project implementation *(including use of monitoring data for adaptive management)* • Project reporting *(e.g. PIMS and donor reports)*	Final report: Assessment of monitoring and reporting based on format of project reporting in PIRs, and availability of reports at the time of the evaluation.	4.5
H. Sustainability How well does the evaluation identify and assess the key conditions or factors that are likely to undermine or contribute to the persistence of achieved project outcomes including: • Socio-political Sustainability • Financial Sustainability • Institutional Sustainability	Final report: Satisfactory assessment of socio-political sustainability, financial sustainability and institutional sustainability.	5

	UNEP Evaluation Office Comments	Final Report Rating
Substantive Report Quality Criteria		
I. Factors Affecting Performance These factors are not discussed in stand-alone sections but are **integrated in criteria A-H as appropriate**. Note that these are described in the Evaluation Criteria Ratings Matrix. To what extent, and how well, does the evaluation report cover the following cross-cutting themes: • Preparation and readiness • Quality of project management and supervision[53] • Stakeholder participation and co-operation • Responsiveness to human rights and gender equality • Environmental and social safeguards • Country ownership and driven-ness • Communication and public awareness	Final report: Satisfactory section with findings and ratings provided for each of the factors.	5
VI. Conclusions and Recommendations **i) Quality of the conclusions:** Conclusions should be summative statements reflecting on prominent aspects of the performance of the evaluand as a whole, they should be derived from the synthesized analysis of evidence gathered during an evaluation process. It is expected that the conclusions will highlight the main strengths and weaknesses of the project and connect them in a compelling story line. The key strategic questions should be clearly and succinctly addressed within the conclusions section. This includes providing the answers to the questions on Core Indicator Targets, stakeholder engagement, gender responsiveness, safeguards and knowledge management, required for the GEF portal. Human rights and gender dimensions of the intervention (e.g. how these dimensions were considered, addressed or impacted on) should be discussed explicitly. Conclusions, as well as lessons and	Final report: Section provides conclusions, summary table of project findings and ratings. Separate section provides response to strategic questions.	4.5

[53] In some cases 'project management and supervision' will refer to the supervision and guidance provided by UNEP to implementing partners and national governments while in others, specifically for GEF funded projects, it will refer to the project management performance of the executing agency and the technical backstopping provided by UNEP. This includes providing the answers to the questions on Core Indicator Targets, stakeholder engagement, gender responsiveness, safeguards and knowledge management, required for the GEF portal.

	UNEP Evaluation Office Comments	Final Report Rating
Substantive Report Quality Criteria		
recommendations, should be consistent with the evidence presented in the main body of the report.		
ii) Quality and utility of the lessons: Both positive and negative lessons are expected and duplication with recommendations should be avoided. Based on explicit evaluation findings, lessons should be rooted in real project experiences or derived from problems encountered and mistakes made that should be avoided in the future. Lessons are intended to be adopted any time they are deemed to be relevant in the future and must have the potential for wider application (replication and generalization) and use and should briefly describe the context from which they are derived and those contexts in which they may be useful.	Final report: Three lessons building on the findings of the evaluation and best practice that are relevant future initiatives.	5
iii) Quality and utility of the recommendations: To what extent are the recommendations proposals for specific action to be taken by identified people/position-holders to resolve concrete problems affecting the project or the sustainability of its results? They should be feasible to implement within the timeframe and resources available (including local capacities) and specific in terms of who would do what and when. At least one recommendation relating to strengthening the human rights and gender dimensions of UNEP interventions, should be given. Recommendations should represent a measurable performance target in order that the Evaluation Office can monitor and assess compliance with the recommendations. In cases where the recommendation is addressed to a third party, compliance can only be monitored and assessed where a contractual/legal agreement remains in place. Without such an agreement, the recommendation should be formulated to say that UNEP project staff should pass on the recommendation to the relevant third party in an effective or substantive manner. The effective transmission by UNEP of the recommendation will then be monitored for compliance. Where a new project phase is already under discussion or in preparation with the same third party, a recommendation can be made to address the issue in the next phase.	Final report: Four concise recommendations, short description of challenge/ problems.	4.5
VII. Report Structure and Presentation Quality		
i) Structure and completeness of the report: To what extent does the report follow the Evaluation Office guidelines? Are all requested Annexes included and complete?	Final report: Overall report structure in line with Evaluation Office guidance.	5

	UNEP Evaluation Office Comments	Final Report Rating
Substantive Report Quality Criteria		
ii) **Quality of writing and formatting:** Consider whether the report is well written (clear English language and grammar) with language that is adequate in quality and tone for an official document? Do visual aids, such as maps and graphs convey key information? Does the report follow Evaluation Office formatting guidelines?	Final report: Concise assessment and report. Good selection and use of table. figures and photos.	5
OVERALL REPORT QUALITY RATING		**4.7**

A number rating 1-6 is used for each criterion: Highly Satisfactory = 6, Satisfactory = 5, Moderately Satisfactory = 4, Moderately Unsatisfactory = 3, Unsatisfactory = 2, Highly Unsatisfactory = 1. The overall quality of the evaluation report is calculated by taking the mean score of all rated quality criteria.

At the end of the evaluation, compliance of the evaluation process against the agreed standard procedures is assessed, based on the table below. *All questions with negative compliance must be explained further in the table below.*

Evaluation Process Quality Criteria	**Compliance**	
	Yes	**No**
Independence:		
1. Were the Terms of Reference drafted and finalised by the Evaluation Office?	**x**	
2. Were possible conflicts of interest of proposed Evaluation Consultant(s) appraised and addressed in the final selection?	**x**	
3. Was the final selection of the Evaluation Consultant(s) made by the Evaluation Office?	**x**	
4. Was the Evaluator contracted directly by the Evaluation Office?	**x**	
5. Was the Evaluation Consultant given direct access to identified external stakeholders in order to adequately present and discuss the findings, as appropriate?	**x**	
6. Did the Evaluation Consultant raise any concerns about being unable to work freely and without interference or undue pressure from project staff or the Evaluation Office?		**x**
7. If Yes to Q6: Were these concerns resolved to the mutual satisfaction of both the Evaluation Consultant and the Evaluation Manager?		
Financial Management:		
8. Was the evaluation budget approved at project design available for the evaluation?	**x**	
9. Was the final evaluation budget agreed and approved by the Evaluation Office?	**x**	
10. Were the agreed evaluation funds readily available to support the payment of the evaluation contract throughout the payment process?	**x**	
Timeliness:		
11. If a Terminal Evaluation: Was the evaluation initiated within the period of six months before or after project operational completion? Or, if a Mid Term Evaluation: Was the evaluation initiated within a six-month period prior to the project's mid-point?		**x**
12. Were all deadlines set in the Terms of Reference respected, as far as unforeseen circumstances allowed?		**x**
13. Was the inception report delivered and reviewed/approved prior to commencing any travel?	**x**	
Project's engagement and support:		
14. Did the project team, Sub-Programme Coordinator and identified project stakeholders provide comments on the evaluation Terms of Reference?	**x**	
15. Did the project make available all required/requested documents?	**x**	
16. Did the project make all financial information (and audit reports if applicable) available in a timely manner and to an acceptable level of completeness?	**x**	
17. Was adequate support provided by the project to the evaluator in planning and conducting evaluation missions?	**x**	
18. Was close communication between the Evaluation Consultant, Evaluation Office and project team maintained throughout the evaluation?	**x**	
19. Were evaluation findings, lessons and recommendations adequately discussed with the project team for ownership to be established?	x	
20. Did the project team, Sub-Programme Coordinator and any identified project stakeholders provide comments on the draft evaluation report?	**x**	
Quality assurance:		

21. Were the evaluation Terms of Reference, including the key evaluation questions, peer-reviewed?	**x**	
22. Was the TOC in the inception report peer-reviewed?	**x**	
23. Was the quality of the draft/cleared report checked by the Evaluation Manager and Peer Reviewer prior to dissemination to stakeholders for comments?	**x**	
24. Did the Evaluation Office complete an assessment of the quality of both the draft and final reports?	**x**	
Transparency:		
25. Was the draft evaluation report sent directly by the Evaluation Consultant to the Evaluation Office?	**x**	
26. Did the Evaluation Manager disseminate (or authorize dissemination) of the cleared draft report to the project team, Sub-Programme Coordinator and other key internal personnel (including the Reference Group where appropriate) to solicit formal comments?	**x**	
27. Did the Evaluation Manager disseminate (or authorize dissemination) appropriate drafts of the report to identified external stakeholders, including key partners and funders, to solicit formal comments?	**x**	
28. Were all stakeholder comments to the draft evaluation report sent directly to the Evaluation Office	**x**	
29. Did the Evaluation Consultant(s) respond adequately to all factual corrections and comments?	**x**	
30. Did the Evaluation Office share substantive comments and Evaluation Consultant responses with those who commented, as appropriate?	**x**	

Provide comments / explanations / mitigating circumstances below for any non-compliant process issues.

Process Criterion Number	**Evaluation Office Comments**
11	Lack of human resources in the Evaluation Office meant that the evaluation was launched over 2 years after project completion.
12	Unforeseen circumstances of the consultant meant that the drafting of the report was delayed.

ANNEX VIII. RECOMMENDATIONS BY THE EVALUATOR FOR THE USE OF UNSPENT FUNDS FROM THE GEF ID 4212 – GLOBAL FOUNDATIONS FOR REDUCING NUTRIENT ENRICHMENT AND OXYGEN DEPLETION FROM LAND-BASED POLLUTION IN SUPPORT OF GLOBAL NUTRIENT CYCLE

Rationale

The Global Foundations for Reducing Nutrient Enrichment and Oxygen Depletion from Land-based Pollution in Support of Global Nutrient Cycle (GEF ID 4212, in short, the GNC Project) has produced the toolbox for policymakers and resource-managers for the reduction of nutrient-enrichment of the coastal waters from land-based sources such as agriculture, aquaculture, and settlements. These outputs are fundamental in strengthening the capacity of the national as well as local governments within the coastal zone to implement existing laws (e.g., Republic Act No. 9275 – An Act Providing for a Comprehensive Water Quality Management and for other Purposes or the Philippine Clean Water Act of 2004; Water (Prevention and Control of Pollution) Act, 1974 (the "Water Act"), amended in 1988, India) and regulations on water pollution. The evaluation of the project found out from the written reports and interviews with key partners that there was insufficient time to disseminate the toolbox widely and to conduct training for the use of the source-impact model. Stakeholders around an LME (e.g., South China Sea LME[54], Bay of Bengal LME) were not trained to use the toolbox). For example, in the case of the SCS LME, only the Philippine participating in the training. Infographics of knowledge products for wider dissemination in the region were not prepared.

Recommendations

In view of this, the following recommendations are submitted by the Evaluator for consideration. They are listed below from the highly to the least recommended project.

1. A training on the use of the toolbox and the application of the nutrient-load model be conducted in coordination with the East Asian Seas, Regional Coordinating Unit and South Asia Cooperative Environment Programme for at least 1 policymaker and 1 resource-manager (from the governmental agency that is responsible for implementing laws and regulations in reducing water pollution and in monitoring water quality) per country from 12 countries in the region. In this training, participants will be required to bring their data; preparation of the data should be done prior to the actual training session. The estimated cost of this recommendation is eighty-three thousand and four hundred and eighty two dollars (USD 83,482), covering travel, accommodation and meals for four nights, coordination, materials.

2. Build a community of practice among officers of non-governmental agencies for the implementation of nutrient-reduction policies (environment, agriculture, aquaculture), monitoring of water quality (e.g., local governments, water quality monitoring groups), in coordination with IW:LEARN, Global Partnership on Nutrient Management Partnership, and Regional Seas Programmes by promoting the toolbox, training on use of the source-impact model, exchange of lessons and experiences (over 2 years). This will involve an introductory training for 1 policymaker and 1 technical person per country for 12 countries (as above) and one regional technical conference (on the 3rd year). The estimate cost of this

[54] Countries around the South China Sea LME: Brunei, Cambodia, China, Indonesia, Malaysia, Singapore, Thailand, Viet Nm

recommendation eighty-four thousand and three hundred and four dollars (USD 84,304), covering travel, accommodation for three nights, coordination, materials.

3. Production of knowledge products for dissemination to the relevant countries around the South China Sea (e.g., Brunei, Cambodia, China, Indonesia, Malaysia, Myanmar, Philippines, Singapore, Viet Nam) and the Bay of Bengal (Bangladesh, India, Sri Lanka) in coordination with the Regional Seas and other regional organizations (e.g., Association of Southeast Asian Nations or ASEAN) – The idea is to actively disseminate in meetings and other events by these organizations, not only through the website of the Global Partnership on Nutrient Management, IW:LEARN, UNEP, to increase awareness and adoption of the science-based approach. The ASEAN Working Group on Coastal and Marine Environment (AWGCME) and ASEAN Working Group on Chemicals and Waste (AWGCW) meets regularly to oversee these priority areas for environmental cooperation. The Regional Seas Coordination Units meet annually while PEMSEA meets every 3 years. The estimated cost of this recommendation is eleven thousand four hundred sixty (USD 11,460) which will be mainly for the revision of the model, preparation of materials (infographics), attendance of coordinator to 2 regional meetings.

It is assumed that the recommendations above will be implemented by GPNM Partners. It is possible to combine the first or second recommendation with the third recommendation and stay or make adjustments to stay within the unspent funds amounting to eighty-five thousand dollars (USD 85,000).

End Note

These recommendations would support decision-makers to use knowledge to replicate best approaches to develop and implement nutrient reduction. This is still necessary as pollution of coastal waters continues with increasing population (Sotto et. al., 2015 in the Philippines; Jadeja et al., 2022 in India) and expansion of socio-economic drivers. It will contribute to meeting Sustainable Development Goal (SDG) # 6, Target 6.3 and SDG # 14, Target 14.1, and the goal of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA).

Literature Cited:

Jadeja, N. B., T. Banerji , A. Kapley, and R. Kumar. 2022. Water pollution in India – Current scenario. Water Security Volume 16, August 2022, 100119; https://doi.org/10.1016/j.wasec.2022.100119

Sotto, L. P. A., A. H. W. Beusen, C. L. Villanoy, L. F. Bouwman, and G. S. Jacinto. 2015. Nutrient Load Estimates for Manila Bay, Philippines using Population Data. Ocean Sci. J. (2015) 50(2):1-8 http://dx.doi.org/10.1007/s12601-015-

ANNEX IX. PROJECT OPERATIONAL COMPLETION REPORT: POW PROJECT NO: 01923 ADDRESSING THE NUTRIENT CHALLENGE THROUGH AN EFFECTIVE GLOBAL PARTNERSHIP ON NUTRIENT MANAGEMENT (GPNM)

This Project Operational Completion Report was prepared by Project Management in relevant substantive offices responsible for the implementation of the project, and with information from relevant stakeholders. The Operational Completion Report summarizes the project's performance in terms of results achieved, challenges encountered, best practices and lessons learned.

The GPNM Project Operational Completion Report is available from the Evaluation Office on request.