Validated Terminal Review of GEMS/Water

(Contributing to the UNEP Projects: "*Water Quality: Strengthening the normative basis for planning, monitoring, and managing water quality for aquatic ecosystems*" (2015-2018, PIMS ID 01845) and "*Capacity building for national and regional environmental information and knowledge management*" (2018-2022, PIMS ID 02020))

Science Division
August/2022

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Front cover: Ruisseau côtier dans le Department du Sud-Est, Haiti

This report has been prepared by an external consultant as part of a Terminal Review, which is a management-led process to assess performance at the project's operational completion. The UNEP Evaluation Office provides templates and tools to support the review process and provides a formal assessment of the quality of the Review report, which is provided within this report's annexed material. In addition, the Evaluation Office formally validates the report by ensuring that the performance judgments made are consistent with evidence presented in the in the Review report and in-line with the performance standards set out for independent evaluations. As such the project performance ratings presented in the Review report may be adjusted by the Evaluation Office. The findings and conclusions expressed herein do not necessarily reflect the views of Member States or the UN Environment Programme Senior Management.

For further information on this report, please contact:

GEMS/Water
Science Division | UNEP | P.O. Box 30552 | Nairobi 00100 | Kenya
kilian.christ@un.org

(Water Quality: Strengthening the normative basis for planning, monitoring, and managing water quality for aquatic ecosystems)
(PIMS ID 2020)
June 2022

ACKNOWLEDGEMENTS

This Terminal Review was prepared for Science Division by José Antonio CABO BUJÁN.

The reviewer would like to express his gratitude to all persons met and who contributed to this review, as listed in Annex II.

The reviewer would like to thank the project team and in particular, Mr. Kilian Christ and Mr. Melchior Elsler, of the GPCU, Dr. Deborah Chapman and Timothy Sullivan, from the GEMS/Water Capacity Development Centre and Philipp Saile, from the GEMS/Water Data Center for their contribution and collaboration throughout the review process.

The review consultant hopes that the findings, conclusions, and recommendations will contribute to the future implementation of GEMS/Water and the formulation of a next phase and to the continuous improvement of similar projects in other countries and regions.

BRIEF EXTERNAL CONSULTANT BIOGRAPHY

José Antonio Cabo Buján, Pontevedra, Spain, 1974, is a natural scientist with an academic background in oceanography and environmental economics and over 20 years of experience in designing, implementing, and evaluating climate change adaptation, ecosystem management, and biodiversity conservation projects.

From 2012 till present, the reviewer has evaluated seventeen UN-implemented projects in twelve countries in Africa, Latin America, Asia, and the Pacific, on topics ranging from the adaptation of the water sector to climate change in Cabo Verde to improving the environmental management capacities of local government in Thailand. In the meantime, Antonio also successfully graduated with an MSc. in Environmental Economics from the School of Oriental and African Studies of the University of London and collaborated with UNICEF in Nepal and Haiti and UNDP in Mozambique, authoring reports on climate change vulnerability, and developing project documents.

ABOUT THE REVIEW

Joint Review: No
Report Language: English.
Review Type: Terminal Review
Brief Description: This report is a management-led Terminal Review of a UNEP project implemented between 2015 and 2022. The project's overall development goal was to improve water resource management and use at a global level. The review sought 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 review has two primary 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, the GEF and the relevant agencies of the project participating countries.
Key words: Water, water quality, water quality monitoring, SDG 6, SDG indicator 6.3.2

Primary data collection period: March-June 2022

Field mission dates: No field mission, all interviews online

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LIST OF ACRONYMS

ANA	Agência Nacional de Águas e Saneamento Básico
BMUB	German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
BMUV	German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection
BfG	German Federal Institute of Hydrology
CDC	Capacity Development Center
DECLG	Department of Environment, Community and Local Government
DEWA	Division of Early Warning and Assessment of UNEP
DHLGH	Department of Housing, Local Government and Heritage
DHPCLG	Department of Housing, Planning, Community and Local Government
EA	Expected Accomplishment (of UNEP's PoW)
FAO	United Nations Food and Agriculture Organizations
GEMS	Global Environment Monitoring System for Freshwater
GPCU	Global Programme Coordination Unit
Irish Aid	Government of Ireland's International Development Aid Programme
MoU	Memorandum of Understanding
MTR	Midterm Review
MTS	Midterm Strategy
OECD	Organization for Economic Co-operation and Development
PoW	Program of Work
ProDoc	Project Document
ROLAC	(UNEP's) Regional Office for Latin America and the Caribbean
SDG	Sustainable Development Goals
SP	Sub-program of UNEP's MTS
ToC	Theory of Change
ToR	Terms of Reference
UCC	University College Cork
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
USD	United States Dollars
WWAP	UNESCO's World Water Assessment Programme
WWQA	World Water Quality Alliance

Project identification table

UNEP PIMS ID:	01843 and 02020[1] **(Output D, funded by Irish Aid and DHPCLG)**		
Implementing Partners	University College Cork – National University of Ireland (UCC) The German Federal Institute of Hydrology (BfG)		
Relevant SDG(s):	SDG 6, Targets 6.3, Indicator 6.3.2.		
Sub-programme:	SP 7	Expected Accomplishment(s):	SP7 EA(a): Governments and other stakeholders use quality open environmental data, analyses and participatory processes that strengthen the science-policy interface to generate evidence- based environmental assessments, identify emerging issues and foster policy action
UNEP approval date:	04 July 2018 (UNEP ProDoc 716.1)	Programme of Work Output(s):	6: National and regional reporting systems based on shared environmental information system principles generating open access to information
Expected start date:	11/2014 (donor agreements)	Actual start date:	01/2015
Planned operational completion date:	12/2019	Actual operational completion date:	12/2020
Planned project budget at approval:	USD 10,269,003	Actual total expenditures reported as of [30/06/2022]:	USD 11,752,778
Planned Environment Fund allocation:	USD 1,600,000	Actual Environment Fund expenditures reported as of [31/12/2021]:	USD 1,500,000
Planned Extra-Budgetary Financing:	USD 8,945,103	Secured Extra-Budgetary Financing:	USD 12,896,334
		Actual Extra-Budgetary Financing expenditures reported as of [date]:	USD 10,252,778.09
First disbursement:	17/12/2014	Planned date of financial closure:	12/2023
No. of formal project revisions:	1	Date of last approved project revision:	04 July 2018

[1] The full time period of the work considered in this Review (2015 – 2023) extends across two projects approved by the UNEP Project Review Committee: *Water Quality: Strengthening the normative basis for planning, monitoring, and managing water quality for aquatic ecosystems* (2015-2018, PIMS ID 01845) and *Capacity building for national and regional environmental information and knowledge management* (2018-2022, PIMS ID 02020).

No. of Steering Committee meetings:	5	Date of last/next Steering Committee meeting:	Last: 11/02/2021 (postponed from 11/2020 due to COVID-19)	Next: 11/12-2021(under Phase II)
Mid-term Review/ Evaluation[2] *(planned date):*	Not applicable	Mid-term Review/ Evaluation (actual date):	Not applicable	
Terminal Review *(planned date):*	January 2021	Terminal Review (actual date):	March 2022	
Coverage - Country(ies):	Global	Coverage - Region(s):	Global	
Dates of previous project phases:	Programme initially established in 1978. Previous phases: 10/2010-03/2014 01/2015-12/2020	Status of future project phases: Approved until 12/2023	Phase II of the project has been confirmed through the new MoUs with the donors running from 2021 until 2023	

[2] *UNEP policies require projects with planned implementation periods of 4 or more years to have a mid-point assessment of performance. For projects under 4 years, this should be marked as N/A.*

EXECUTIVE SUMMARY

Project background

1. The United Nations Environment Assembly (UNEA) adopted resolution 1/9 during its first meeting in June 2014, calling for the improvement of the global coverage and consistency of water quality data and the expansion of the Global Environment Monitoring System for Freshwater (GEMS/Water) network, building up a reliable global freshwater monitoring and information system.

2. GEMS/Water's renewed UNEA mandate coincided with the end of the support of the Canadian government, which had hosted the program at the Ontario National Water Research Institute since its inception in 1978.

3. Memoranda of Understanding (MoU) between UNEP and the Irish and German governments[3] ensured continued funding and support for GEMS/Water. Two MoU were signed in November 2014 between UNEP and the then Department of Environment, Community and Local Government (DECLG)[4] and Irish Aid, that included a Euro 3 million financial commitment implemented between 2014 and 2019. In June 2015, an MoU signed with the German Federal Ministry for The Environment, Nature Conservation, Building and Nuclear Safety (BMUB) hosted the GEMS/Water global water quality database GEMStat at the International Center for Water Resources and Global Change (ICWRGC) of the German Federal Institute for Hydrology (BfG) for the 2015-2024 period. In 2018, GEMS/Water secured a no-cost extension of the MoU with the Irish government until the end of 2020, and an additional funding under a new MoU, enabling implementation until the end of 2023.

4. This combined funding, and its associated scope of work, is known as the *'GEMS/Water Project'* (hereinafter GEMS/Water)and was administered by UNEP as Output D of an approved UNEP project called *'Capacity building for national and regional environmental information and knowledge management'* (ID 02020).

This Review

5. The terminal review follows UNEP's evaluation guidelines, and it is based on a contribution analysis that uses an explicit Theory of Change (ToC), testing the theory against the evidence, assessing assumptions, logical links, and drivers to determine the project's contribution to its expected outcome, and progress towards the intended impact.

Key findings

6. GEMS/Water is highly relevant and demanded by national stakeholders as the UN's primary program supporting global water quality monitoring networks.

7. The project has achieved important advances in developing capacity for water quality monitoring, especially in English speaking African countries and has significantly contributed to consolidating water quality data sharing, having also

[3] MoU with the BMU 2015-2024, MoUs (2) with the irish government 2014-2018, no-cost extension until 2020 and new MoU (funded) unitl 2023

[4] The DECLG has changed names between 2014 and 2022. In 2018 it was renamed Department of Housing, Planning, Community and Local Government (DHPCLG), and, in 2020, Department of Housing, Local Government and Heritage (DHLGH)

developed the methodology and data collection for Sustainable Development Goal (SDG) indicator 6.3.2.

8. The project main weaknesses were limited staffing that restricted its reach, especially regarding maintenance of global water quality networks, which are key elements of data sharing. However, the program has been apt at engaging multiple organizations and crafting alliances, facilitating the launching, and hosting, of the World Water Quality Alliance.

Conclusions

9. GEMS/Water is the custodian unit of SDG indicator 6.3.2, and the UN's main program supporting ambient water quality goals and implementing UNEA's 1/9 and 3/10 resolutions.

10. GEMS/Water maintained and expanded the national focal point network inherited from the previous implementation phase, but engagement of national focal points has been uneven across countries. The role of UNEP's regional offices has been less than anticipated in the project document, only achieving relevance in the case of the Regional Office of Latin America and the Caribbean (ROLAC), for SDG indicator 6.3.2 and the Regional Office for East Asia and the Pacific (ROAP) in organizing the East Asia and Pacific scoping workshop. Limited support by UNEP's regional offices, compounded by the loss of the LAC regional hub and the delay in establishing new regional hubs, affected the project, which nonetheless managed to reach its targets in networking and facilitate access to capacity development.

11. GEMS/Water is the only UN project supporting countries' efforts to report on SDG indicator 6.3.2, by developing its methodology in collaboration with national water quality focal points. This review finds that reporting on the indicator has helped countries improve their water quality data management. The GEMS/Water data platform GEMStat has made significant advances but needs further consolidation to realize its full potential as a global water quality data gateway.

12. The capacity development courses developed and delivered by the GEMS/Water Capacity Development Center (CDC) have been successful in significantly raising capacities at national water agencies, especially in Sub-Saharan Africa. In some cases (Liberia, Sierra Leone), the courses were a watershed event in the development of the national water quality monitoring networks.

13. GEMS/Water adapted rapidly and successfully to the COVID-19 pandemic by shifting to online meetings and courses. Online courses have been deemed as effective as, or even better than, in-person courses by terminal review respondents.

14. However, GEMS/Water could not replace or expand regional hubs after the agreement with the Brazilian water agency (ANA) was terminated. Despite repeated attempts and contacts with relevant regional and national organizations in all regions, GEMS/Water could only recently conclude an agreement with the European Commission's Joint Research Center to act as a regional hub for Europe and the Mediterranean.

15. National stakeholders are convinced of the necessity of the continuation of the technical and capacity development support provided by GEMS/Water through current and expanded channels (e.g., Memoranda of Understanding with national academic institutions). Maintaining 16. GEMS/ Water would need urgently securing funding on a magnitude of at least US 1.7 million per year (estimated yearly costs for the last seven years) for a period of five years. 90% of the program's funds come from extrabudgetary sources that will expire in December 2023.

Lessons Learned

16. Lesson 1: Complex management arrangements, involving several divisions and regional offices rarely work in the absence of formal mechanisms (MoU, ICA or similar).

17. Lesson 2: The transaction and administrative costs of maintaining global networks should be assumed in the project design by assigning sufficient staff time and enabling flexible contract modalities to bypass rigid contractual procedures and high labor costs.

Recommendations

18. The management of UNEP should engage current and potential bilateral donors to secure and mobilize funding, including by activating the GEMS/Water Trust Fund to secure at least USD 1.6 million yearly financing for GEMS/Water to at least maintain the current level of operations beyond 2024, as GEMS/ Water is UNEP's custodian unit for indicator 6.3.2.

19. Maintain the blended online and in-person format for capacity development and workshops, taking advantage of the proven efficiency and general acceptance of such channels in the aftermath of the COVID-19 pandemic.

20. Consolidate the GEMStat platform hosted at the German Federal Institute of Hydrology to become the primary gateway for global ambient water quality data, including the SDG indicator 6.3.2.

21. Ensure the continuation of the University College Cork as GEMS/Water CDC but explore agreements with relevant academic institutions, especially in Latin America, the Caribbean, and Africa, to facilitate access and expand the scope of GEMS/Water capacity development activities.

22. In cooperation with UNEP regional offices and other UN agencies with regional and country presence, GEMS/Water should consider participation in regional events to make the economic case for investment in water quality.

NOTE: The report has been subject to an independent validation exercise performed by UNEP's Evaluation Office. The performance ratings for the GEMS initiative, set out in the Conclusions and Recommendations section (p59), have been adjusted as a result.

INTRODUCTION

23. In line with the UNEP Evaluation Policy, the Global Program Coordination Unit (GPCU) of the project: *Water Quality, Strengthening the normative basis for planning, monitoring, and managing water quality for aquatic ecosystems* commissioned the project's Terminal Review (TR) in March 2022 to assess the project design, implementation, and results against the criteria of strategic relevance, quality of project design, nature of external context, effectiveness, (availability of outputs, achievement of outcomes and likelihood of impact), financial management, efficiency, monitoring and reporting, sustainability, and factors affecting project performance.

24. The TR 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 project's core partners: the International Center for Water Resources and Global Change hosted at the Federal Institute of Hydrology (BfG) in Koblenz, Germany, and the Environmental Research Institute of the University College Cork (UCC) of Cork, Ireland. Therefore, the TR will identify lessons of operational relevance for future project formulation and implementation.

25. The review focused on the activities funded through the memorandum of understanding (MoU) with the Irish Department of Environment, Community and Local Government (DECLG) between 2015 and 2023 (i.e., Capacity Development and overall project coordination). However, it will also consider other work packages of the program (data), which fall under the agreement between UNEP and the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV).

26. The project's intended outcomes contributed to UNEP's Sub-Program 3 (SP-3) Expected Accomplishments (EA), and, as water quality affects the health of a range of ecosystems, to UNEP's SP 7 EAs. Described in section Strategic Relevance, under Review Findings.

REVIEW METHODS

27. The TR complied with the norms of United Nations Evaluation Group (UNEG) Norms and Standards and Standards for Evaluation and the Organization for Economic Co-operation and Development (OECD), including the UNEG Ethical guidelines, and guidance on integrating human rights and gender equality in evaluation, and in accordance with the UNEP evaluation guidelines.

28. The TR used a theory-based contribution analysis to assess the project results and a case study design to evaluate the project's governance modality. The review used qualitative and quantitative methods with the instruments listed in Annex IX (Review Framework) to collect data for the 12 evaluation questions.

29. Contribution analysis uses an explicit Theory of Change (ToC) for each project outcome nested within an overall ToC, testing the theory against the evidence, assessing assumptions, logical links, and drivers to determine the project's contribution to its expected outcomes and progress towards impact. The TR draws on an evidence-based causal theory of change as a diagram model, contrasting it with the original ToC of the project design.

30. The terminal review used triangulation to ensure the validity of its findings, collecting data from project documentary sources, peer organizations, and stakeholders at the global, regional, and national levels.

31. The review was based on a desk review of at least the following documents:

- Project document, project reports, including financial reports, audits, and project publications
- UNEA resolutions, UNEP strategy papers, peer organizations strategy papers
- Peer reviewed publication on water quality and water quality monitoring
- Relevant publication by national government and non-government organization related to water quality and water quality monitoring

32. Individual and/ or group interviews with:

- Global Project Coordination Unit staff
- International Center for Water Resources and Global Change staff
- Environmental Research Institute of the University College Cork staff
- Representatives from the project’s donors
- Representatives from other implementing partners, the United Nations Educational Scientific and Cultural Organization (UNESCO),
- Representative from water quality monitoring agencies in countries in Africa, Latin America and the Caribbean, and Asia and the Pacific

34. Respondent response rates were uneven (table 1), in some cases needing over three requests. The consultant located individuals involved with the project based on a list of national focal points facilitated by the project, and, in some cases, directly contacting the focal point organization, in cases where the contact was updated. For UCC alumni, the Capacity Development Centre contacted students to secure their consent for interviews.

35. The interviews were of a qualitative nature, and the information provided was extracted by the consultant and aggregated to triangulate report data. No

questionnaires were administered as quantitative data on project perception was retrieved from a project survey conducted in 2021.

36. The TR rates the project using UNEP's Likert-like 6-point scale (from highly satisfactory to highly unsatisfactory[5]) for the evaluation criteria of strategic relevance, quality of project design, nature of external content, effectiveness (outputs, outcomes, likelihood of impact), financial management, monitoring and reporting and sustainability.

Table 1 Respondents' table

		# People involved (M/F)	# People contacted (M/F)	# Respondent (M/F)	% Respondent
Project team	Implementing agency	5 (4/1)	4 (4/0)	4	100
	# Entities involved	# Entities contacted	# People contacted (M/F)	# Respondent (M/F)	% Respondent
Project (implementing/ executing) partners	2	2	3 (2/1)	3 (2/1)	100
Project (collaborating/contributing[6]) partners	2	2	2 (2/0)	2 (2/0)	100
Beneficiaries:	161	161	53 (37/16)	28 (18/10)	17

[5] The sub-category of likelihood of impact and the criterion for sustainability are assessed against scales of likelihood (from highly likely to highly unlikely) and nature of external context is assessed against a similar scale of highly favourable to highly unfavourable.

[6] Contributing partners may be providing resources as either cash or in-kind inputs (e.g. staff time, office space etc.).

THE PROJECT

Context

37. The United Nations Environment Assembly (UNEA) adopted resolution 1/9 during its first meeting in June 2014, calling for the improvement of the global coverage and consistency of water quality data and the expansion of the Global Environment Monitoring System for Freshwater (GEMS/Water) network, building up a reliable global freshwater monitoring and information system.

38. By 2014 the status of global water quality did not vary significantly from the situation depicted in the 2007 Water Quality Outlook (GEMS/Water publication): intensive agriculture, urbanization, and industrialization, primarily in middle-income countries, untreated wastewater and water development schemes was driving the deterioration of freshwater quality, compounded by climate change, while the fine-scale situation at the basin level remained largely unknown due to the vast limitations of water quality monitoring networks in lower and middle-income countries.

39. GEMS/Water's renewed UNEA mandate coincided with the end of the support of the Canadian government, which had hosted the program at the Ontario National Water Research Institute since its inception in 1978. An agreement between UNEP and the Irish and German governments ensured continued funding and support for GEMS/Water. The agreement with the Government of Ireland included two memoranda of understanding (MoU) signed in November 2014 with the then Department of Environment, Community and Local Government[7] (DECLG) and Irish Aid, including a Euro 3 million financial commitment from the Irish Government to be implemented between 2014 and 2019. In June 2015, an MoU signed with the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB)[8] hosted the GEMS/Water global water quality database GEMStat at the International Center for Water Resources and Global Change (ICWRGC) of the German Federal Institute for Hydrology (BfG).

40. Under the new agreements, a project document (ProDoc 313.1), "Water Quality: Strengthening the normative basis for planning, monitoring, and managing water quality for aquatic ecosystems" (PIMS ID 01845) under UNEP's Sub-Programme 3, Healthy Ecosystems, implemented by the Division of Environmental Policy Implementation (DEPI[9]), was approved for the 2015-2018 period, less than the timeframes for the MoUs with the Irish Government (2014-2019), and the German Government (2015-2024).

41. The ProDoc 313.1 included basing the programme's global coordination unit (GPCU) at UNEP's headquarters in Nairobi. At the same time, GEMS/ Water hosted the capacity development component at the University College Cork (UCC) in Ireland under a Project Cooperation Agreement (PCA) with UNEP signed in September 2015, which included a financial commitment amounting to 1,826,500.

42. In 2018, a new ProDoc was developed to replace the Original ProDoc 3,3,1. Under the new Prodoc 716.1 “Capacity building for national and regional environmental

[7] The DECLG has changed names between 2014 and 2022. In 2018 it was renamed Department of Housing, Planning, Community and Local Government (DHPCLG), and, in 2020, Department of Housing, Local Government and Heritage (DHLGH)

[8] Since December 2021 Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV)

[9] The UNEP Division of Environmental Policy Implementation (DEPI) is now called the Ecosystems Division.

information and knowledge management" (2018-2022, PIMS ID 02020), GEMS/ Water transferred from DEPI to the Division of Early Warning and Assessment (DEWA[10]) from DEPI, to enable more efficient management of GEMS/ Water resources, given the alignment between the Sub-programme Environment under Review (SP-7) implemented by DEWA and GEMS/ Water.

43. The new ProDoc 716.1 did not affect the project's management arrangements GPCU, UCC, and BfG). Also, it enabled GEMS/Water to secure a no-cost extension (12 months, 2019-2020) and additional funding until the end of 2023.

Objectives and components

44. GEMS/Water is a global program not fitting the project framework to which the terminal review typically applies. Here, the implementation period 2014-2019 (original MoU with the Irish government) and extensions until 2023 is considered a project with a logical framework as defined in the UNEP project documents: *Water Quality: Strengthening the normative basis for planning, monitoring, and managing water quality for aquatic ecosystems* (2015-2018, PIMS ID 01845) and *Capacity building for national and regional environmental information and knowledge management* (2018-2022, PIMS ID 02020).

45. The original 313.1 ProDoc's objective was to prevent and address the degradation of water resources through raising awareness, building national capacity, and providing tools and advisory services to catalyze action by delivering four outputs (Table 1):

- International water quality guidelines
- Capacity development for national and regional Water Quality monitoring, including supporting the development of national, regional, and global water governance policies
- Global data on Water Quality
- Outreach on Water Quality (to increase awareness)

46. The 716.1 ProDoc's logic was based on (lack of) national capacities needed to report to different MEAs and to the SDG indicator framework. Thus, the project's intended outcome was: *Strengthened capacity of countries for making evidence-based decisions due to increased knowledge on the state of the environment at the regional, sub-regional and national level as a result of the use and management of quality environmental information*. The 2018 ProDoc incorporates the 2015 GEMS/Water project document as a single output (D) in a much wider strategy to enhance national capacities to generate, share and report environmental data, with focus on MEA and SDG reporting (Table 2).

47. The specific expected effect or outcome of GEMS/Water in the 2018 ProDoc, the use of the acquired capacity, is reflected in its first indicator: *Number of countries/regional entities that are submitting quality assured data to the relaunched GEMStat database, including SDG indicator 6.3.2 reporting.* The other two indicators in

[10] Now Science Division

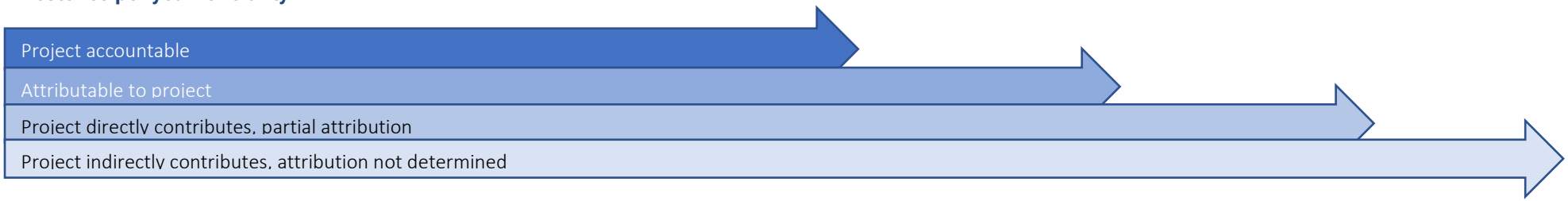
the 2018 results framework: number of trainees and number of collaborating centers established are output indicators.

48. The main difference with the 2015 results framework is the lack of the explicit output on international water quality guidelines. This dimension was reformulated as a framework for freshwater ecosystems, launched at the third UNEA In 2017 and incorporated in the development of the methodology of indicator 6.3.2. and subsequent discussions. The project governing structures in the 2018 document changed the position of GEMS/Water within the UNEP organigram (figure 1 and 2), but did not change the GEMS/Water funding nor its implementation team composed of the Global Programme Coordination Unit (GPCU) and three implementing partners: the University College Cork (GEMS/Water Capacity Development Center), the German Federal Institute for Hydrology (GEMS/Water Data Center) and the Brazilian Water and Sanitation Agency (GEMS/Water Latin America Regional Hub).

Table 2. Project logical framework at project's inception in 2015 according to the ProDoc 313.1. Shades of blue representing attribution

Activities				Outputs	Outcome	Impact
Year 1	Year 2	Year 3	Year 4			
Compilation of global compendium on existing water quality guidelines	Extensive international and regional consultation process of the guidelines	Endorsement of the guidelines by UNEA		International Guidelines for Water Quality Developed	International Water Quality Guidelines are incorporated in water quality management and data made available, and accessible being used by governments, for developing water management plans, including monitoring and reporting	Improved management of water quality by governments
Development of draft guidelines on water quality for ecosystems						
Capacity development workshops in GEMS/Water				Capacity Development delivered		
Training modules covering water quality monitoring programme design, skills training in field sampling and water quality analysis. data processing, interpretation, and reporting and data dissemination						
Establishment of GEMStat and networks	Linking and enhancing related national SOE reporting to the GEMStat Database			Environmental Data and Information on Water Quality developed		
Compilation of a world water quality assessment report						
Development of a communications strategy	Development and implementation of a communications strategy			Outreach on Water Quality delivered		
Participation in global water events						

Table 3. Project logical framework at project's inception in 2018 according to the ProDoc 716.1. Activities taken from the ProDoc narrative without the milestones per year for clarity



Activity	Output	Outcome	Impact
Data sharing, networking, MEA and SDG reporting needs and gaps assessment	Needs, readiness, and gaps assessments available for targeted regions and countries to support improvements in data sharing practices, reporting, and assessment processes	Strengthened capacity of countries for making evidence-based decisions due to increased knowledge on the state of the environment because of the use and management of quality environmental information	(SP 7 Expected Accomplishment) Governments and other stakeholders use quality open environmental data, analyses and participatory processes that strengthen the science-policy interface to generate evidence-based environmental assessments, identify emerging issues and foster policy action
Develop or improve national environmental data portals			
Provide access to Environment Live (https://environmentlive.unep.org/)			
Technical support by to targeted countries to collect, manage and share data and information	Institutional and technical support in environmental information management and data sharing provided to countries for the generation and strategic use in assessments, decision-making and policy action		
Technical support and training to countries on the production of environmental statistics for national reporting on the environmental dimension of the Sustainable Development Goals			
Identification of core data producers, the development of institutional arrangements and guidelines for setting up national networks	Establishment /strengthening of regional and sub-regional networking on environmental information, reporting and assessments		
Technical support to countries in meeting existing commitments and goals for sharing and using data in support of reporting and assessments			
Update GEMS/Water Global Monitoring Network	GEMS/Water Networks with strengthened water quality monitoring, data management and assessment capacity providing quality assured data to GEMS/Stat		
Collect and share data on ambient water quality through GEMS/Water data center			
Provide capacity development on all aspects of water quality monitoring including reporting of SDG indicator 6.3.2			
Deliver outreach on water quality			

Stakeholders

49. The project's main stakeholders were national water agencies, primary beneficiaries of the project's capacity development activities. Other agencies and programs supported the implementation of the project as implementing partners or collaborating in activities under MoUs, PCAs, and other legal instruments. Besides the main implementing partners at the University College Cork, the German Federal Institute for Hydrology, and the Brazilian National Water and Sanitation Agency (ANA), these partners included the Helmholtz Center for Environmental Research, UNESCO, and the World Meteorological Organization (WMO). Although UNESCO and WMO were the GEMS/Water main partners since its inception, after 2014, their role was limited to representation in the project's steering committee.

50. GEMS/Water incorporated other "minor" partners after 2020 to implement strategic components of the project. Conversations and collaboration with the European Commission, which started in 2014, culminated in 2021 in the signature of an agreement in 2021 (letter of exchange) to support data collection and analysis and establishing a regional hub for Europe and the Mediterranean. Stakeholders are described in Table 3.

Project implementation structure and partners

51. The 2015 ProDoc foresaw a project team composed of 7 staff: 1 project manager (PM) and six project officers (PO), under the leadership of the Division of Environmental Policy Implementation (DEPI), supported by the Division of Early Warning and Assessment (DEWA), the Division of Communication and Public Information (DCPI), and all of UNEP regional offices (RO), with explicit output responsibilities (Figure 1).

52. The 2018 ProDoc's governing structure included a project team composed of three program officers at a Global Programme Coordination Unit (GPCU) under UNEP's Science Division (former DEWA), with the support of all regional offices. The effort was to be supported by several other independently managed units, loosely coordinated by the GPCU from Nairobi:

- The GEMS/Water Capacity Development Center, hosted at the University College Cork (UCC) to design and implement the capacity development strategy
- The GEMS/Water Data Center, hosted at the German Federal Institute of Hydrology (BfG) to collect, process, and share national data
- The GEMS/Water regional hubs, coordinating and supporting activities in each region. In 2018, only the National Water and Sanitation Agency (ANA) of Brazil, by its initiative, was acting as a regional hub for Latin America and the Caribbean (LAC)

53. In contrast to the 2015 ProDoc, in the 2018 version, regional offices and UNEP divisions had no specific output responsibilities. (Figure 2). The actual project organigram and implementing structure followed the 2018 ProDoc. However, the real involvement of regional offices was below expectations, except for the case of the Regional Office for Latin America and the Caribbean (ROLAC) and the Regional Office for Asia and the Pacific (ROAP), limiting the project's capabilities to reach out to national and regional stakeholders.

Table 4. Stakeholders

Stakeholders	Power over the project results/ implementation	Participation in the project design, and how	Roles and responsibilities in project implementation	Changes in their behavior through implementation
Type A: *High power / high interest = Key player*				
German Federal Institute for Hydrology	Implementing partner	It defined the project's data management strategy	Data collection and data quality, and training on processing, interpretation, and reporting	Focused on SDG 632
University College Cork	Implementing partner	It shaped the design and delivery of capacity development	Delivery of capacity development activities and design of courses	Focused on SDG 632
Brazilian National Water and Sanitation Agency (ANA)	Regional hub for Latin America and the Caribbean (LAC)	It participated in discussions and agreed to constitute regional hub	Organized capacity development activities and coordinated data collection until 2018	It abandoned role as regional hub because of changing political priorities
Regional Office for LAC	Co-organizer of activities for LAC	Involved in design, shaping concept of regional hubs	Organized capacity development activities and promoted data collection	Contributed to SDG 632 method development and monitoring in LAC
Type B: *High power/ low interest over the project =Meet their needs*				
UNESCO	Steering committee member	Consulted in project design	Steering committee member	Cooperation in international water quality guidelines and capacity building not materialized
WMO	Steering committee member	Consulted in project design	Steering committee member	Cooperation in capacity building activities not materialized
European Commission-Joint Research Center	Collaborator	No participation	2021 MoU to support data collection and capacity development activities	Increasing collaboration culminating in the 2021 MoU
Type C: *Low power/ high interest over the project= Show consideration*				
Helmholtz Center for Environmental Research	Minor implementing partner	Consulted in project design	Compilation of a world water quality assessment report	No changes, part of the World Water Quality Alliance promoted by the project
UNEP-DHI Center on Water and Environment	Minor implementing partner	No participation	Implementation of small funding agreement pursuing to GEMS/Water objectives in Africa	No changes
Earthwatch (Conservation Education & Research Trust)	Minor implementing partner	No participation	Implementation of small funding agreement on citizen science	No changes
Type D: *Low power /low interest over the project= Least important*				
River basin organizations	Expected to cooperate in data collection and definition of guidelines	No participation	Cooperation in capacity building activities	Cooperation with Mekong River Commission for capacity

				development and Lake Victoria Basin Org. for data sharing

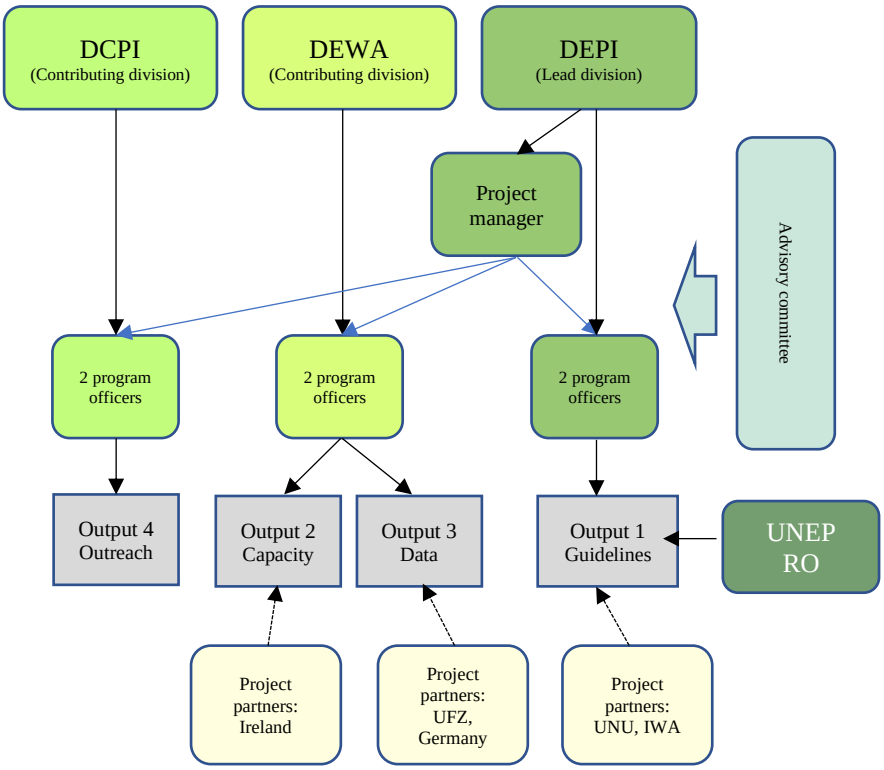


Figure 1. 313.1 ProDoc (2015) project organigram

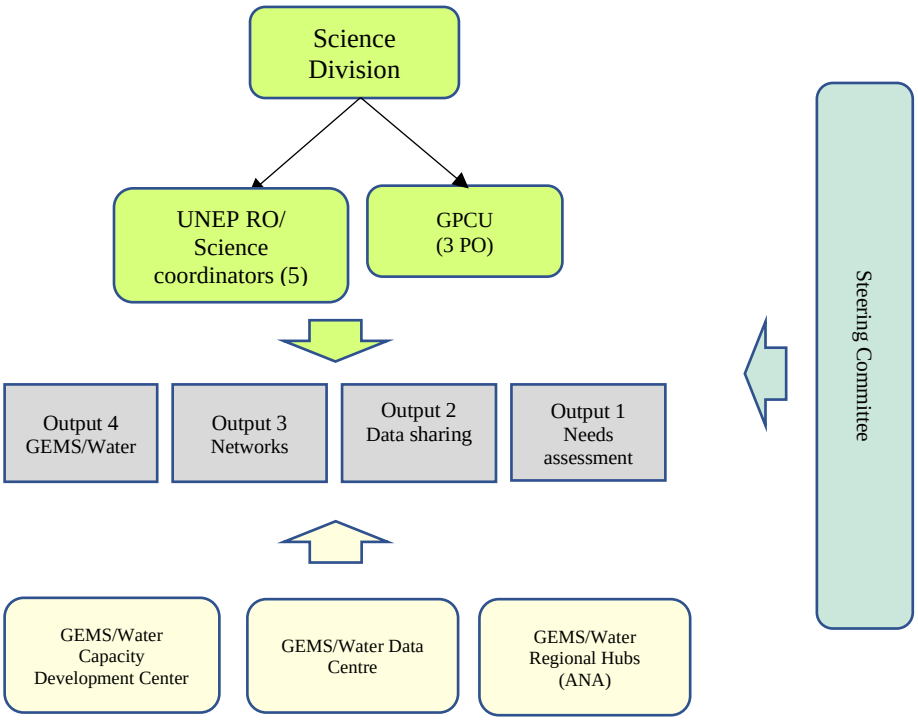


Figure 2. Figure 2. 761.1 ProDoc (2018) project organigram

Changes in design during implementation

54. In September 2015, the UN General Assembly adopted the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDG), including target 6.3 on water quality. Target 6.3 comprises two indicators, 6.3.1 on wastewater treatment and 6.3.2: Proportion of water with good ambient water quality. As UNEP is the custodian agency for, among others, SDG indicator 6.3.2, it was only natural to assign GEMS/Water to the task of developing and disseminating the indicator methodology and facilitating data collection and reporting. To support reporting progress on SDG 6, UN-Water (UN-coordination body for water action) started in 2016 the Integrated Monitoring Initiative for SDG 6 (IMI6), engaging all SDG 6 custodian agencies. Since 2017 GEMS/Water secured an additional IMI fund[11] from the Integrated Monitoring of Water and Sanitation related SDG targets project through an internal Cooperation Agreement with UNEP's Ecosystem Division[12]. This fund was executed through small-scale funding agreements (SSFA) between UNEP and UCC and ensured GEMS/Water's prominent role in developing and supporting the Sustainable Development Goal for water indicator 6.3.2.

55. In 2018 UNEP approved a new project document that included wider efforts to ensure availability and utilization for SDG monitoring and policy making of relevant environmental data that incorporated GEMS/Water as an output (Output D).

56. The new ProDoc was motivated by the following factors:

- 2017 UNEA resolution 3/10 addressing water pollution to protect and restore water-related ecosystems
- UNEP's Ecosystem Subprogram project portfolio streamlining[13],
- Framing GEMS/Water within UNEP's new 2018-21 midterm strategy (MTS),

57. To account for the renewed effort on SDG 6.3.2, and changes in the external context, including UNEA 3/10, the expiration of the MoU with ANA (LAC water quality hub), and the 2019 launching of the World Water Quality Alliance, the three implementing units (GPCU, UCC and BfG) developed a new GEMS/Water strategy incorporating SDG 6.3.2 activities and a modified ToC (see Figure 4).

Table 5. Project events and changes

Year	Event/ Change
2014	United Nations Environment Assembly (UNEA) adopted resolution 1/9 Signature of MoUs with the Irish Government for the 2014-2019 period
2015	Signature of MoU with the German Government for the 2015-2024 period Approval of ProDoc 313.1 "Water Quality: Strengthening the normative basis for planning, monitoring, and managing water quality for aquatic ecosystems" (2015-2018, PIMS ID 01845) implemented by DEPI under SP-3

[11] Funded by the governments of Germany, Switzerland and the Netherlands
[12] GEMS/Water is implemented under the Science Division
[13] UNEP Policy and Programme Division, 2017, Project Portfolio for Healthy and Productive Ecosystems Subprogramme 3 Medium Term Strategy 2018-21

2017	Access to IMI fund from the Integrated Monitoring of Water and Sanitation related SDG targets project through an internal Cooperation Agreement with UNEP's Ecosystem Division
2018	Approval of ProDoc 716.1 "Capacity building for national and regional environmental information and knowledge management" (2018-2022, PIMS ID 02020), implemented by DEWA under SP-7 12-month "no-cost" extension of MoUs with the Irish Government until end of 2020 executed with remaining MoU funds Braziilian Water Agency (ANA) stops being a regional hub
2019	GEMS/Water strategy incorporating SDG 6.3.2 activities GEMS/ Water secures additional funds from the government of Norway (USD 176,600), and UN-Water (USD 839,633,024).
2020	New MoUs and funding from the Irish government for 2021-2023 COVID-19 Pandemic

Project financing

58. The original project design included a budget[14] of **USD 9,892,407** including USD 4,392,785 (cash), USD 1,700,000 to be mobilized, a USD 3,779,620 in-kind contribution (UNEP: USD 1,323,900; German government: USD 2,455,720), and a primary funding contribution from the Irish government[15] of EUR 3,000,000, estimated at USD 2,897,700.00 (29% of the total) in the budget summary. The Irish Euro contribution is estimated at USD 3,274,296 in a different section of the ProDoc[16]. The USD estimation is sensitive to variations in the exchange rate. Using the actual amount received under the original 2014-2019 MoUs with the Irish Government[17], (USD 3,437,017.26)[18] and the information provided in the 2015 ProDoc, the terminal review estimates the project's original budget at **USD 10,269,003** (See financial tables) for a four-year implementation period.

59. The original MoUs with the Irish government were extended until December 2020 without additional funding. Then, in 2020, the Irish government committed an additional Euro 1,000,000 (USD 1,143,528 committed[19], USD 862,687 received until June 2022[20]) to be disbursed and executed until December 2023. In 2019, GEMS/ Water secured additional funds from the government of Norway (USD 176,600), and UN-Water (USD 839,633,024). Adding the actual in-kind contributions received from the implementing partners (German government, UCC, ANA), the total budget for the 2014-2023 period amounts to **USD 14,496,334**. While the funds available for the implementation period 2015-2023 are more than the initially planned budget, the

[14] Project Budget Summary, 2015 ProDoc, page 9

[15] Under two MoUs signed in 2014 with the then Department of Environment, Housing, Community and Local Government (2014-2019) and Irish Aid (2014-2018), committing Euro 1,500,000 in annual amounts of Euro 300,000 each.

[16] Use of Legal Instruments, 2015 ProDoc, page 27: Agreements with Ireland, DFAT and DECLG – Ireland, Euro 600,000 for 4 years (USD 818,574)

[17] MoU between the DECLG and UNEP (2014-2019); MoU between Irish Aid and UNEP (2014-2019)

[18] Interim certified financial statement for the period ended in December 2021, for the DHLGH and Irish Aid

[19] MoU with Irish Aid and the DHLGH: € 500,000 disbursed in tranches of € 250,000 (2020), € 150,000 (2021) and € 100,000 (2021). Mean annual exchange rates USD Euro for 2020, 2021 and January-June 2022 used to convert.

[20] Interim certified financial statements

original cost calculation was for the 2015-2019 period (four years), while GEMS/ Water implements the secured funding for the 2015-2023 (8 years) period. **Thus, the program operated with only 70% of the original annual budget per year (assuming same expenditure rate per year) (Figure 3).**

60. The total budget calculation above only includes USD 1,600,000 as the UNEP in-kind contribution (Environment Fund staff-post costs)[21], as GPCU posts were funded by the extra-budgetary funding. The calculation also includes in-kind contributions from the governments of Germany (USD 5,652,341)[22], Brazil (USD 300,000), and the University College Cork (USD 1,346,077.46)[23]. There is no information (documentary or from respondents) about other in-kind contributions from UNEP regional offices in Latin America and the Caribbean that also participated in the project.

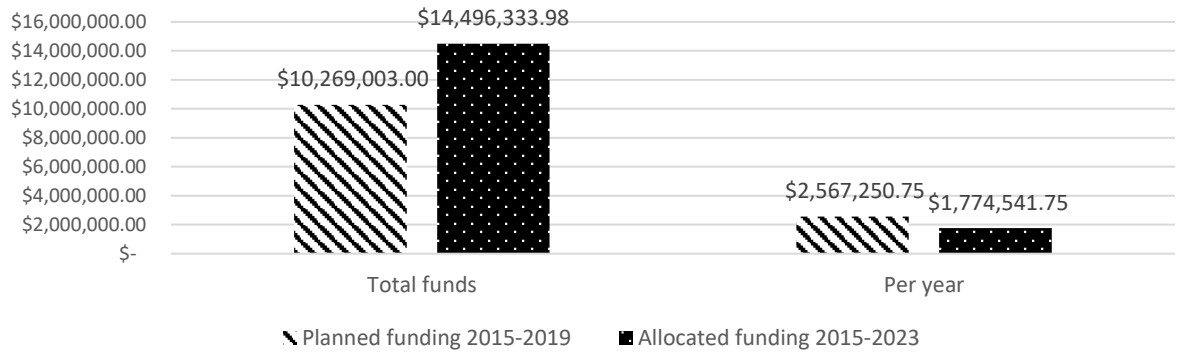


Figure 3. Planned costs and secured budget

[21] 8 years 100% unit supervisor (P5)

[22] Under a MoU with the German Federal Ministry for the Environment and Nuclear Security (BMUV at the time) signed in 2015 assuming the costs of operating GEMStat (estimated at $4,902,340.99 for the 2015-2023 period) and funding of two JPO posts at the GPCU (estimated at $ 750,000 for the same period).

[23] Estimation based on actual in-kind contribution up to 2020 and projection until 2023

THEORY OF CHANGE AT REVIEW

62. The Theory of Change (ToC) in the original 2015 ProDoc included the project activities, four outputs, intended outcomes, and Impact (Figure 4). This ToC was slightly modified in 2019 (Figure 4) according to the changes in design described above.

63. The ToC in the 313.1 ProDoc included the following assumptions:

1. Governments share data and use guidelines
2. Governments commit funding and HR for water quality

64. ToC's assumptions were modified in the 2019 version, as the original assumptions did not hold. As it will be explained in the section Effectiveness, the initially intended product of global ambient water quality guidelines was abandoned in favor of a more realistic ambient water quality framework to account for the diversity of water bodies and their characteristics. Neither was there evidence of increasing funding for water quality.

65. The assumptions in the 2019 version were formulated as follows:

1. Governments willing to share data increasing evidence base and advocate its use in policy
2. Governments & institutions commit to improving integrated water resource and ecosystem management with a landscape/nexus focus and embracing technology innovation on data and social process

66. The 2015 assumptions are downgraded to more realistic statements on the attitudes of national governments towards ambient water quality. Review respondents confirmed that, with GEMS/ Water support, their national governments have been more willing to invest in ambient water quality, albeit insufficiently. Data sharing has also improved but is linked to the national SDG reporting requirements (GEMS/ Water support for SDG 6.3.2 indicator)

67. Likewise, the 2015 identified drivers of i) outreach and awareness drive water quality action, and ii) UNEP Live open data flows did only partially materialize, as GEMS/ Water workshops and data drives did contribute, not drive, to increase awareness about ambient water quality, as confirmed by the review's respondents. There is no evidence of UNEP Live ever being relevant in promoting data flows on ambient water quality. Thus, the more accurate 2019 identified drivers: i) Stakeholder engagement and ii) 2030 Agenda and the SDGs were significant factors in the project's progress towards results.

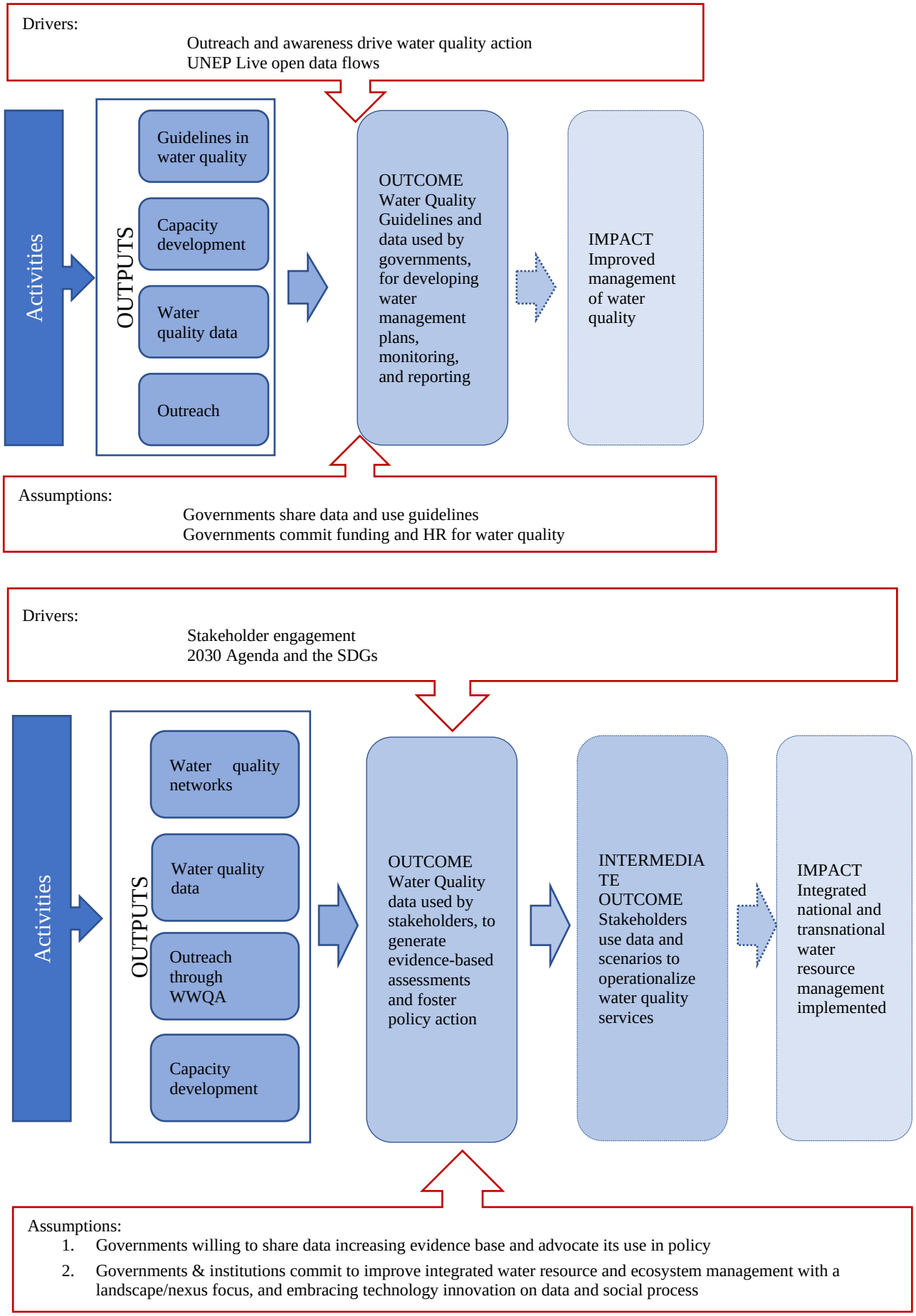


Figure 4. Project's ToC, 2015 (above) and 2019

REVIEW FINDINGS

Strategic Relevance

Alignment to UNEP's Medium-Term Strategy[24] (MTS), Program of Work (POW) and Strategic Priorities

68. The project responds to UNEA's resolution 1/9 of 2014 and UNEA-3 Resolution 3/10: Addressing water pollution to protect and restore water-related ecosystems of 2017. This second resolution, issued during the project's second year of implementation, called on UNEP to strengthen GEMS/Water to extend assistance to developing countries in water quality monitoring, including by setting up monitoring stations capacity-building and data management.

69. The project started implementation (ProDoc 313.1) under the UNEP Division of Environmental Policy Implementation implementing the sub-programme three (SP-3): *Ecosystem Management* during the 2014-2017 UNEP midterm strategy. By 2018, with a new ProDoc (716.1) under the 2018-21 MTS and PoW 2018-19, the project was reassigned to sub-programme seven (SP-7), *Environment Under Review*, implemented by the then rebranded Science Division (former DEWA). The 2015 ProDoc emphasized the degradation of ambient water quality in lower- and middle-income countries and the need to expand monitoring networks and share data. The 2018 ProDoc reformulated the original problem focusing on capacities to collect and manage data for the reporting and achieving the SDGs, with GEMS/ Water (output D) specifically focusing on the SDG 6.3.2 indicator.

70. The project's intended outcomes contributed to SP-3's Expected Accomplishments (EA), and, as water quality affects the health of a range of ecosystems, to SP 7's EAs (Table 6). Specifically, water quality targets are incorporated under SP-3 in the 2014-15, 2016-17 PoWs, and under SP-5 and SP-7 in the 2018-19, and SP-5 in the 2020-21 PoW.

71. For the current 2022-25 MTS and 2022-23 POW, the connection of GEMS/Water to UNEP's results is less explicit. The new MTS 2022-25) has three overarching objectives, related to the three environmental crises: climate, biodiversity (nature), and pollution (chemicals and pollution), to be achieved through the contribution of rebranded sub-programmes. While the MTS/ PoW makes no explicit mention of the GEMS/Water project, this review links the project to the outcome: *Sound science, data and statistics, analysis, information, and knowledge are generated and shared* output, leading to the *Releases of pollutant to air, water, soil and the ocean are reduced*, under the Science-Policy sub-programme.

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

72. The project has been the world's main support for the data collection and reporting on SDG indicator 6.3.2. Ambient water quality has, in general terms, as confirmed by this review's respondents, a lower national priority rank than drinking water quality or even agricultural water supply. However, respondents acknowledge a growing

[24] 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.

awareness on the need of good underlying ambient water quality for the improvement of drinking water supply and other national goals. Hence, many countries have included ambient water quality goals into national strategies, plans and policies.

73. To further illustrate how countries are mainstreaming and acting upon national water quality goals, 87 countries reported their SDG 6.3.2 values in 2020, increasing from just 59 in 2017. Of the total of 96 countries that have reported on SDG 6.3.2 in 2017 and 2020, 30 of them were low and lower-middle income countries, mostly African.

74. Also under the custodian ship of UNEP, SDG indicator 6.5.1. measures the implementation of integrated water resource management, which is often a precondition to obtain good ambient water quality. By 2020, 130 countries had reached a score of 40, (101 in 2017), signifying that national governments have approved IWRM policies and are at least starting to act upon them, including 47 low and lower-middle income countries mostly from Africa (27), Asia and the Pacific (15).

Table 6. UNEP's POW expected accomplishments to which GEMS/ Water has contributed

ProDoc	PoW	SP	Output	Expected Accomplishment	Indicator
313.1	14 -15	SP 3	3. Tools, technical support, and partnerships to improve integrated water resource management, including water quality, through the adoption of the ecosystem approach	a) Use of the ecosystem approach in countries to maintain ecosystem services and sustainable productivity of terrestrial and aquatic systems is increased	Increase in the number of countries integrating the ecosystem approach with traditional sector-based natural resource management
	16-17				Increased ratio of river basins where the ecosystem approach is approved by governing bodies or under implementation by parties, to the total number of river basins in countries, with the assistance of UNEP
716.1	18-19	SP 7	5. Capacity development and indicator support to Sustainable Development Goal follow-up and review, including environmental inputs to United Nations reports and policy forums	a) Governments and other stakeholders use quality open environmental data, analyses and participatory processes that strengthen the science-policy interface to generate evidence-based environmental assessments, identify emerging issues and foster policy action	ii) Increase in the number of countries reporting on the environmental dimension of sustainable development through shared environmental information systems with country-level data made discoverable through UNEP
	20-21				
	22-23	Science Policy	Not applicable	Releases of pollutant to air, water, soil, and the ocean are reduced	Number of relevant global, regional, and national forums, institutions and Governments using data, statistics, scientific assessments and early warning and foresight systems provided by UNEP for catalyzing policymaking and action
					Number of policy, regulatory, financial, and technical measures developed with UNEP

					support to reduce pollution in air, water, soil, and the ocean

Complementarity with Existing Interventions/Coherence

75. GEMS/Water is one of only two UN initiatives with a global scope supporting the monitoring of ambient water quality networks. Most UN, bilateral and multilateral supported projects and programs related to ambient water or freshwater ecosystems focus on restoration and conservation (e.g., conservation of wetlands of international importance linked to the Ramsar Convention). Other UN water quality and data initiatives, such as FAO's AQUASTAT or UNICEF and WHO's Joint Monitoring Program, focus on water for agriculture and water, sanitation, and health, respectively.

76. The only other UN program with overlapping objectives is UNESCO's World Water Assessment Program (WWAP). The WWAP, funded by the government of Italy, was launched in 2000, aiming to produce a periodic global overview of the status of freshwater resources, having very similar stated goals to GEMS/Water. The WWAP has a capacity development component focusing on topics such as emergent pollutants (microplastics, pharmaceuticals), gender aspects, and climate change, delivered through short courses and workshops. The WWAP publishes an annual World Water Development Report, which, since 2016, has focused on water and employment, wastewater, nature-based solutions, equality in access, climate change, and the economic. Despite the thematic overlap, differences in approach and implementation modality prevented cooperation between the two projects.

77. UNEP commissioned the United Nations University - Institute for Environment and Human Security (UNU -EHS), responding to a 2013 mandate from the (former) UNEP Governing Council (GC 27/3) to set up a working group to draft international water quality guidelines for ecosystems. UNEP also included this as an output in the 2015 GEMS/Water ProDoc. Facing the challenge of providing guidelines for diverse national settings and ecosystem types, and in consultation with national government agencies, this output was reoriented to produce a **framework for freshwater ecosystem management** culminating in the 2017 submission to UNEA of a four-volume report led by UNU -EHS with significant inputs from GEMS/Water and the UNEP-DHI Center for Water and Environment[25].

78. Since 2017, GEMS/Water has been a key participant of UN-Water's Integrated Monitoring Initiative, contributing to the periodic progress reports together with the other SDG 6 custodian agencies.

79. In 2018, UNEP launched the World Water Quality Alliance (WWQA), in cooperation with the World Meteorological Organization and the government of Switzerland, who provided funds for the WWQA. The launching and operation of the WWQA has been catalyzed and facilitated by GEMS/Water. The WWQA is composed of 50 organizations including public & private sector, civil society, UN-Water, and other UN agencies, set to respond to UNEA 3/10 resolution that, among others, mandated UNEP to prepare a Worldwide Assessment of Freshwater Quality, thus recapturing one of the programme's 2015 ProDoc components (Table 1). GEMS/Water hosts and plays a key role in the alliance, as main capacity development and data provider. Moreover,

[25] https://www.unep.org/resources/publication/framework-freshwater-ecosystem-management

GEMS/Water has successfully mobilized funding for the Alliance amounting to USD 786,2017, from the Swiss and Norwegian governments.

80. As foreseen in the 2015 ProDoc, GEMS/Water has cooperated with UNEP-DHI, Center for Water and Environment[26]. Beyond collaborating in elaborating the framework for freshwater ecosystems management, GEMS/Water and UNEP-DHI have cooperated harmonizing regional SDG indicator data from Africa in 2017. Since 2022, under an SSFA, UNEP-DHI has been developing a water portal for SDG indicator 6.3.2 to support and harmonize the global reporting process by member states. Currently, GEMS/Water disseminates data through the UN-Water's SDG-6 data portal and GEMStat, the latter without information related to SDGs.

Rating for Strategic Relevance: Highly Satisfactory

Quality of Project Design

(See Quality of Project Design Evaluation Table, Annex VII)

81. GEMS/Water does not correspond to the standard project definition, with designated funding, outputs, and implementation timeframe. However, for administrative reasons, UNEP framed the 2015-2018 and 2018-2022 implementation periods within two project documents in 2015 and 2018 (described above), which included the project's primary responsibilities (water quality networks, capacity development, data collection, and dissemination and outreach) as outputs (or "sub-outputs" in the case of the 2018 version). In both cases (2015 and 2018), the project design contemplated a series of independent but coordinated actions (activities/ work packages) by UNEP divisions and regional offices leading to four defined outputs logically linked to an achievable outcome, which would contribute to the expected impact of improving water quality. However, actual involvement of other divisions and regional offices was less than expected (See section Effectiveness).

82. Throughout the reviewed period, GEMS/Water has adapted its strategy to current conditions and the availability and feasibility of partnerships. For example, the 2015 main output of water quality guidelines was changed into a framework for freshwater ecosystem management in cooperation with other UNEP units. Moreover, GEMS/Water adopted and promoted the SDGs (introduced after its 2015 ProDoc), and catalyzed the WWQA to advance global ambient water quality goals.

83. At all stages, the three implementing units have revised and updated the strategy, formally reviewing the project's ToC. GEMS/Water included the last revision in a then unfunded 2021-2024 strategy prepared between 2018 and 2019. By the time of the terminal review (September 2022), GEMS/ Water had secured funding until December 2023 (see financial management section).

84. GEMS/Water demonstrated anticipation by developing work plans and strategy up to 2024 by 2018-19, flexibility by adapting to the external context, and responsiveness to national and regional points of view. The transition from the 313.1 ProDoc (2015) to the 2018 761.1 ProDoc was initiated by the Global Programme Coordination Unit within the Global Environment Monitoring Unit of the Division of Early Warning and

[26] UNEP-DHI, Center for Water and Environment Is the custodian unit for the SDG indicator 6.5.1 on integrated water resource management (IWRM).

Assessment (currently Science Division) and duly documented in a 2022 Memorandum by the Science Division.

Rating for Project Design: Satisfactory

Nature of the External Context

85. Two external features affected the project's implementation: the non-renewal of the MoU with the Brazilian Water and Sanitation Agency (ANA) and the onset of the global COVID-19 pandemic.

86. In 2020, travel restrictions and lockdowns implemented in most countries started affecting the development of workshops and capacity development activities implemented by GEMS/Water. The project adapted promptly to the outbreak of the global COVID-19 pandemic, abandoning regional workshops and in-person capacity development activities, repackaging short courses as free online courses through UNEP Moodle platform https://elearning.unep.org/ and the Postgraduate Diploma (PG Dip)/MSc in Freshwater Quality Monitoring and Assessment and component modules through UCC's online platform:

https://www.ucc.ie/en/gemscdc/onlinecourses/.

87. Regional hubs were a linchpin of the 2015-18 GEMS/Water strategy. The Brazilian Water Agency ANA collaborated since the inception of the new GEMS/Water phase in 2014 and provided critical support for the development of capacity development activities in Latin America and the Caribbean, such as technical workshops for water agency professionals. GEMS/Water intended to replicate this successful cooperation in other regions, creating regional hubs hosted by regionally relevant water agencies or regional or basin bodies.

88. However, changes in political priorities in the Brazilian government led to the decision not to renew the MoU between ANA and GEMS/Water. GEMS/Water continued to strive to identify water agencies in LAC and other regions that could function as hubs, such as the European Commission's Joint Research Centre (JRC), the Mexican Water Commission (CONAGUA), the Research Centre for Eco-Environmental Sciences (RCEES) of the Chinese Academy of Sciences, or the Mekong River Commission (MRC). However, only the European Commission's Joint Research Centre (JRC) materialized its support as a regional hub for Europe and the Mediterranean regions starting in 2022, without any activities yet reported for this review. Conversations with the MRC and the RCEES are still ongoing but have been stalled after the COVID-19 pandemic.

Rating for Nature of the External Context: Favorable

Effectiveness

Availability of Outputs

89. The 2015 313.1 ProDoc contemplated the delivery of four outputs (Tables 1 and 5). Those outputs are partially reflected as three output indicators in the 716.1 2018 version of the ProDoc. The four original outputs were reformulated in the 2019 modified ToC (GEMS/Water Strategy 2020-2024):

- *Monitoring, observation, data and capacity development networks and implementation*
- *Data analysis, QA/QC, data services platform,*
- *Capacity development platform supports monitoring, data management and processing from various sources and reporting.*
- *Engagement and outreach including in the World Water Quality Alliance*

90. GEMS/Water reported in annual reports for the primary project donor (Irish government) since 2017 and internal PIMS monthly, biannual, and annual reports since 2018 against the project's five work packages and four output indicators, respectively as shown in Table 7.

Table 7. Output, work packages, indicators

Outputs in 2015 ProDoc	2019 ToC in 2020-24 Strategy	Work Packages in Irish reports	Indicators in PIMS reports (target)
International guidelines for water quality developed	NA	NA	NA
Capacity development delivered: Trained personnel (focal points) at regional and national levels drawing from the international water guidelines Support to GEMStat networks and regional hubs& establishment provided	Monitoring, observation, data and capacity development networks and implementation	Networking	1. Number of GEMS/Water National Focal Points and other technical experts (120) in all regions trained
	Capacity development platform supports monitoring, data management and processing from various sources and reporting	Capacity Development	
Environmental data and information on water quality developed	Data analysis, QA/QC, data services platform,	Data	2. # of Countries and regional entities (90) submitting quality assured data to the relaunched GEMStat database, including SDG indicator 6.3.2 reporting
		SDG indicator 6.3.2 on ambient water quality	
Outreach on Water Quality delivered	Engagement and outreach including in the World Water Quality Alliance	Outreach	3. Number of GEMS/Water Regional Hubs (3) and/or

			collaborating centers established

91. To harmonize reporting, this terminal review reports on output delivery using the three PIMS indicators (Table 7), but accounting for all project's work packages: networking, capacity development, data and 6.3.2, and outreach.

92. First, the terminal review must report on the "terminated" international water quality guidelines output. The project worked on this output throughout 2016 and 2017. However, in consultations among the implementing partners, national stakeholders, and other UN agencies, the lack of relevance of universal guidelines became apparent. Thus, by 2017, UNEP had reframed the output as a framework for water quality for freshwater ecosystems[27] submitted to UNEA 3. Currently, the discussion on guidelines for different ecosystem types is contained in the debate about the SDG indicator 6.3.2 and supported by the capacity development modules and courses developed by GEMS/Water. Respondents to this review and GEMS/Water reports express the need to orient countries, particularly low and lower-middle-income countries, with more guidance on setting national and subnational guidelines.

Indicator 1: 120 water quality experts (GEMS/Water National Focal Points and other technical experts) in all regions trained.

1a) Work package: Networking

93. The Global Programme Coordination Unit (GPCU) and the GEMS/Water Capacity Development Centre (CDC) have worked since 2017 to reactivate the GEMS/Water national focal point network. Through scoping and training workshops in all regions: Latin America and the Caribbean, Asia and the Pacific, English-speaking Africa (2017), French-speaking Africa (2018), Europe, West Asia, and North Africa (2019), the network of active national focal points reached 117 as of December 2021.

94. However, the engagement of different national focal points varies significantly among countries in all regions, as confirmed by the different degrees of response by respondents to the terminal review. Reporting on SDG 6.3.2 and access to capacity development activities have been essential drivers to maintaining and expanding the network. The SDG indicator 6.3.2 help desk has been instrumental in keeping active communication between GEMS/Water and national focal points.

95. The financial and institutional power of the national water agencies and the empowerment and other personal characteristics of the focal points determine to a great degree the extent to which national water quality agencies engage with GEMS/Water.

96. GEMS/ Water reactivated the National Focal Point network through regional scoping workshops held in 2016 in East and West Africa (the latter in collaboration with UNESCO), in 2017 for Latin America and the Caribbean (with the Brazilian Federal Water and Sanitation Agency, ANA), and East Asia and the Pacific, and second East and West Africa workshops in 2018.

[27] https://www.unep.org/resources/publication/framework-freshwater-ecosystem-management

97. The main drawback in engaging the National Focal Point network has been the limited project staff (both at the GPCU and CDC) to keep the desired level of engagement, especially with countries that did not actively participate in the project's capacity development activities.

98. Except for the case of UNEP's regional office for Latin America and the Caribbean (ROLAC), the expected (2015 and 2018 project documents) role of UNEP's regional offices (RO) did not materialize. The Asia and Pacific regional office limited its involvement to hosting the regional scoping workshop in 2017. Other UNEP regional offices did not engage with GEMS/Water activities. ROLAC's engagement facilitated workshops and supported SDG data collection, which has not been replicated in other regions. The uneven engagement can be ascribed to the absence of MoUs with the RO supporting the ProDocs commitments, GCPU staff limitations affecting proactive engagement, and different degrees of interest in the topic by RO officers.

1b) Work package: Capacity development

99. The GEMS/Water capacity development center at the University College Cork developed eight modules on water quality monitoring framed in accredited Post graduated diploma and Master of Science degree. Six modules: Freshwater Monitoring Program Design (EV6012), Quality Assurance for Freshwater Quality Monitoring (EV6013), Data Handling, Assessment & Presentation for Freshwater Quality Monitoring (EV6014), Water Quality Monitoring and Assessment in rivers/lakes/reservoirs (EV6015), Water Quality Monitoring and Assessment of Groundwater (EV6016), and Freshwater Quality Monitoring with Biota and Particulate Matter (EV6017) are also offered individually as professional development courses through the UCC online learning platform: https://www.ucc.ie/en/gemscdc/onlinecourses.

100. GEMS/Water also repackaged the UCC modules/ professional development courses as four free online courses: Water Quality Monitoring and Assessment of Groundwater, Water Quality Monitoring in Rivers and Lakes, Quality Assurance for Freshwater Quality Monitoring, and Freshwater Quality Monitoring Program Design offered through UNEP's e-learning platform: https://elearning.unep.org/.

101. Forty-four students from 22 countries (20 women), mainly from Africa, have participated in the formal courses: PG Dip, MSc, and professional development (Table 8, Figure 5).

Table 8. Countries and number of GEMS/Water CDC students

Country	Region	Student #
Jamaica	Caribbean	8
Uganda	Africa	5
Lesotho	Africa	3
Zambia	Africa	3

Brazil	Latin America	2
Ethiopia	Africa	2
Kenya	Africa	2
Nigeria	Africa	2
Sierra Leone	Africa	2
Zimbabwe	Africa	2
Barbados	Caribbean	1
Botswana	Africa	1
Cameroon	Africa	1
Fiji	Pacific	1
Ghana	Africa	1
Lao PDR	Asia	1
Liberia	Africa	1
Morocco	North Africa	1
Norway	Europe	1
South Sudan	Africa	1
Sudan	Africa	1
Tanzania	Africa	1
USA	North America	1

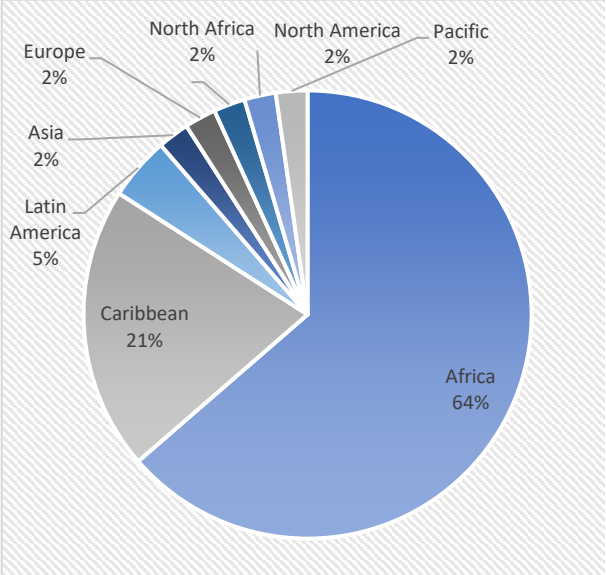


Figure 5. Countries and number of GEMS/Water CDC students

102. Degree, diplomas, and professional courses were issued from the University College Cork and included all the credentials and access requirements of that academic institution's certificates and degrees. National focal points and CDC alumni responding to this review consider obtaining an official degree from a prestigious university as very valuable and advantageous, both in high and low-income countries. Most students were employees of national or subnational water quality agencies, so the courses immediately impacted their organizations at all income levels.

103. Terminal review respondents cited two main barriers preventing access to the capacity development activities: language barrier (the English medium of the course favoured those students, the majority, who came from English-speaking African countries), especially in Latin America, and financial barriers, especially in Africa, despite GEMS/Water subsidizing students from low and lower-middle-income countries with GEMS/Water funds and tuition fees from high-income country students. The commitment and engagement of the National Focal Points (NFP) were also crucial to enabling access to the CDC courses. Thus, limitations from the GCPU and CDC to engage NFPs worldwide affected access to the courses and degrees.

104. GEMS/Water held conversations to expand the scope and reach of its capacity development activities with other capacity development service providers: Delft's University Institute for Water Education (IHE Delft), the United Nations University Institute for Integrated Management of Material Fluxes and of Resources (UNU-Flores), and the Companhia Ambiental do Estado de São Paulo (CETESB) in Brazil. Yet, administrative challenges and the onset of COVID-19 prevented closing of any agreements regarding joint delivery of capacity development.

105. In Argentina, the National Water Agency (Instituto Nacional del Agua, INA) developed and delivered an online university-level course on water quality monitoring in surface water bodies through the Argentina Cap-Net platform https://www.argcapnet.org.ar/. The course was intended for Argentinian water professionals but has attracted attention from other LAC Spanish-speaking countries. While this course was designed and delivered solely by the INA in cooperation with Arg Cap-Net, it was inspired by the GEMS/Water CDC courses.

106. In this regard, respondents of this terminal review from all regions recommended reaching agreements with local or regional academic institutions as a positive development, which would lower financial and language barriers to developing capacity.

107. Additionally, the GEMS/Water Capacity Development Center organized or imparted training workshops in the Arab region (2015), English-speaking Africa (2017), Latin America and the Caribbean (2017 through GEMS/Water regional hub, ANA), French-speaking Africa (2018), Eastern Europe and Central Asia, and West Asia (2019) and the Mekong River Basin (2019, funded by the MRC), with a total of 108 participants (table 9). Adding GEMS/Water students and workshop participants, and assuming no overlapping among the two groups, the total number of people trained by GEMS/Water in the 2015-2022 period amounts to 152, more than the 120 2018 target.

Table 9. Training workshops

Region	Year	Participants
Arab region	2015	13
English-speaking Africa	2017	22
Latin America and the Caribbean	2017	13
French-speaking Africa	2018	14
Mekong River Commission	2019	13
West Asia	2019	22
Eastern Europe and Central Asia	2019	11
	Total	**108**

Indicator 2: 90 countries and regional entities submitting quality assured data to the relaunched GEMStat database, including SDG indicator 6.3.2 reporting.

2a) Work package: Data

108. In 2017, the GEMS/Water Data Center (DC) finalized the migration and restructuring of the GEMS/Water database GEMStat, developing a data portal to simplify the discovery and visualization of the underlying monitoring data at the site, catchment, and country level. The new GEMStat data portal https://gemstat.org/data/data-portal/ was launched during UNEA-4 in March 2019. The number of portal users, mainly from academic institutions in high or upper-middle-income countries, has increased steadily since its launching.

109. The data center has also cooperated with UNEP's World Environment Situation Room (WESR) to enable the visualization and download of GEMStat data through the WESR portal, and with the World Meteorological Organization (WMO) developing metadata protocols to facilitate the integration of GEMStat data with the WMO Hydrological Observation System (WHOS).

110. Data collection from national focal points has progressed linearly since 2017. However, despite combined efforts by the three GEMS/Water units, data sharing continues to be challenged by technical, human resource, and political issues, and the total number of countries sharing monitoring data with GEMStat only reached 67 countries in 2022, below the intended target of ninety countries. Since 2018, GEMS/Water data efforts focused mainly on the indicator 6.3.2, which became a higher national priority, as countries needed to report on SDG progress, contributing to lower reports for GEMStat. However, the Data Center continues to promote and request data, and has secured cooperation to share harmonized data from several regional organizations, including the Lake Victoria Basin Commission and the European Environmental Agency.

111. National focal points interviewed for this review positively valued the existence of the data portal and reported motivation to share and compare water quality data, especially in the case of transboundary water basins and water bodies. The willingness to share data was independent of the number of stations or parameters monitored by the country.

112. GEMS/ Water was the world's leading project assisting countries reporting on SDG indicator 6.3.2. GEMS/Water developed methodological guidelines, set up a help desk: https://communities.unep.org/display/sdg632, and supported collection, and processing of raw data provided by national agencies.

113. Respondents of this review value the support provided by GEMS/Water in reporting on indicator 6.3.2 as very positive and decisive to enable the calculation and reporting of the indicator. GEMS/Water collected raw data from countries with limited statistical capacities to calculate the 6.3.2 values. Two data drives were conducted in 2017 and 2020, reaching 96 countries. Data can be accessed through the UN-Water portal https://www.sdg6data.org, but not in the GEMStat portal. Since 2022, under an SSFA, UNEP-DHI has been developing a water portal for 6.3.2 on behalf of GEMS/Water to support and harmonize reporting by the member states. This later platform is a reporting platform to enter data and facilitate reporting by countries, rather than a platform for public access. Thus, there are currently three public access portals (GEMS/ Water's GEMStat, UNEP's World Environment Situation Room, and UN Water's SDG 6 portal) each providing, partially, data shared through GEMS/ Water, and a developing reporting platform (GEMS/Water-UNEP-DHI) to facilitate national 6.3.2 reporting.

Table 10. SDG Indicator 6.3.2 report by region and income level, 2020 data drive

REGION	
Region	%
Europe and Central Asia	36%
Africa	31%
Latin America and the Caribbean	17%

East Asia and the Pacific	10%
West Asia	3%
North America	2%
INCOME LEVEL	
Income level	%
High	39%
Upper middle	30%
Lower middle	17%
Low	15%

114. The overwhelming majority of the stations and water bodies used to compile the SDG indicator 6.3.2 value came from high-income countries with consolidated monitoring networks and policy frameworks. Just 1% of the reported water bodies are in low-income countries. The gap in monitoring capacities is the greatest for low-income countries in Sub-Saharan Africa, which based their reported values on a few stations.

115. Despite the success achieved on the reporting of indicator 6.3.2, respondents to this review report some weaknesses. The intended significance of SDG indicator 6.3.2, giving an overview of the national ambient water quality situation by reporting the proportion of water bodies with good water quality clashes with the disparity in quantity (stations, water bodies) and quality (number of parameters) of measures on which the value is based. Therefore, there has been criticism and discussions on the relevance of the SDG indicator 6.3.2, particularly around target values (water quality standards), reporting units and water bodies (basin districts, surface, and groundwater), parameters, information sources (traditional monitoring networks, earth observation, citizen science), and alignment with national and regional data collection and sharing systems. GEMS/Water encourages and facilitates the discussion, collecting feedback from individual and corporative stakeholders, as shown, among others, in its 2019 report on maximizing options for the SDG 6.3.2 indicator.

116. GEMS/Water has initiated dialogues to include remote sensing products, e.g., from existing COPERNICUS lake water quality datasets and citizen science programs. Despite their limitations, remote sensing and citizen science offer the opportunity to significantly expand the extent of monitoring in countries with limited monitoring networks. However, water quality measurements through Earth observation are limited to a few parameters in water bodies of significant size, and citizen science networks need training and management systems. In this regard, starting in 2021 GEMS/Water has agreed with the non-profit Earthwatch to develop concepts for citizen science systems in Sierra Leone, Tanzania, Malawi, Zambia.

Indicator 3: Three GEMS/Water Regional Hubs and/or collaborating centers established

3a) Work package: Outreach

117. GEMS/Water has used different outlets and tools to increase awareness about itself and water quality. The primary source for GEMS/Water related information is its homepage, https://communities.unep.org/display/gemswater. The web hosts all reports, flyers, posters, videos, and other materials, as well as links to the websites of the GEMS/Water Capacity Development Centre, the GEMS/Water Data Center, and SDG indicator 6.3.2 content. GEMS/Water CDC is active on Twitter, with a low (916 followers) but committed following among UCC-link people, institutions, and water quality professionals and organizations. Terminal review respondents confirmed having received program updates through Twitter.

118. Although the main tools to raise awareness among national stakeholders were the scoping meetings held between 2017 and 2019, GEMS/Water staff also participated in several international water quality events, including UNEA 3, and UNEA 4, Stockholm's International Water Institute's World Water Week in 2017 and 2018, Arab Water Council in 2018 and 2019 among others. Participation in events ceased at the onset of the COVID-19 pandemic and has yet to resume fully.

119. GEMS/Water produced and cooperated in two globally significant publications: the 2016 Snapshot report on water quality (GEMS/Water) and UN-Water's 2018 and 2021 SDG 6 Progress report. The former constituted an essential reference for the freshwater chapter of the 6th Global Environmental Review (GEO-6, 2019), and the latter is part of the data and information components of UN-Water's SDG 6 Global Acceleration Framework. As reported above, GEMS/Water plays a central role in the World Water Quality Alliance, tasked by UNEA-3 to compile a Baseline World Water Quality Assessment report.

120. Beyond active participation in water for, and contribution to, relevant UN reports, GEMS/Water has proactively engaged with an array of organizations, from UN agencies to academic institutions and basin organizations, which, although not always leading to successful collaboration, has enabled the progress towards the networking and data sharing outputs described above.

121. After the non-renewal of the ANA (LAC-hub), GEMS/Water continued to strive to identify water agencies in LAC and other regions that could function as hubs, such as the European Commission's Joint Research Centre (JRC), the Mexican Water Commission (CONAGUA), the Research Centre for Eco-Environmental Sciences (RCEES) of the Chinese Academy of Sciences, or the Mekong River Commission (MRC). Reaching agreements has proven challenging, and negotiations needed substantial GPCU time investment. Negotiations were interrupted during the COVID-19 pandemic and have yet to resume.

122. Nonetheless, in 2022 GEMS/ Water succeeded in establishing a regional hub for Europe and the Mediterranean at the European Commission's Joint Research Centre (JRC). Conversations with the MRC and the RCEES are still ongoing but have been stalled after the COVID-19 pandemic.

Rating for availability of outputs: Satisfactory

Achievement of the Project Outcome

123. In the 2015 ProDoc GEMS/Water's outcome was that international water quality guidelines are incorporated in water quality management and data made available, and accessible being used by governments, for developing water management plans, including monitoring and reporting. As the water quality guidelines output changed towards developing a freshwater ecosystem management framework, the outcome statement was substituted in the 2018 ProDoc by: *GEMS/Water Networks with strengthened water quality monitoring, data management and assessment capacity providing quality assured data to GEMStat, contributing to* the overall outcome of *strengthened capacity of countries for making evidence-based decisions due to increased knowledge on the state of the environment at the regional, sub-regional and national level as a result of the use and management of quality environmental information*. The latter is in essence, an output statement or project deliverable (strengthened capacities) contributing to the sub-programme (SP-7) expected accomplishment (EA) or outcome that *governments and other stakeholders use quality open environmental data, analyses and participatory processes that strengthen the science-policy interface to generate evidence-based environmental assessments, identify emerging issues and foster policy action*, identical to the outcome outlined in the GEMS/Water Strategy 2020-24.

124. Condensing the formulations above, the project's outcome in this implementation period should contain action on the following elements:

- National governments actions based on water quality data
- Strengthened monitoring networks
- Enhanced information sharing for policy making

Here we analyze the evidence for these elements.

125. Despite limitations, GEMS/Water has maintained a global network of national focal points, which, while engagement is uneven across countries and regions is instrumental in data sharing and providing access for water quality professionals to capacity development activities. In this sense, GEMS/Water has undoubtedly contributed to significant increases in national capacities, particularly in low-income African countries, which has translated in some countries into the first-time generation of data on ambient water quality.

126. While there are limitations in the data sharing and use of the GEMS/Water Data Center, the launching of the GEMStat data portal (https://gemstat.org/) provides a potential venue for increased data sharing, which the terminal review's respondents understand to be a possible driver of progress and awareness raising. However, challenges remain in keeping a functional, updated data portal serving as the primary source for global data on ambient water quality. Currently, water quality data collected by the project is disseminated partially through three different venues: GEMStat, World Environment Situation Room (https://wesr.unep.org/), and the SDG 6 data portal (https://www.sdg6data.org/indicator/6.3.2). All three platforms present gaps in the data's geographical, temporal, or parametric scope. While GEMS/Water SDG indicator 6.3.2 efforts have led countries to improve water quality data collection and management, there is currently no evidence of GEMStat or SDG 6 data being used for government action.

127. Beyond improving water quality data through the project's portals, the link between information and government action is awareness. Terminal review respondents firmly state that awareness about the importance of ambient water quality has increased in decision-making. However, awareness leading to increased funding and empowerment is rare. The connection between ambient water quality and drinking water supply, sanitation, and, therefore, health and wellbeing is still largely ignored, which, according to the review's respondents, has led to a regression in some countries, limiting funding and power of the national water agencies.

128. The outcomes have been partially achieved, albeit unevenly, in different countries. Monitoring networks have been strengthened as a direct project contribution. Due to this project's activities, some national governments have taken action on ambient water, expanding incipient monitoring networks and improving reporting on SDG 6. While ambient data quality sharing is still sub-optimal if the global level is considered, review respondents confirmed that SDG reporting obligations supported by this project motivated increased monitoring and reporting efforts. Given the progress verified by the review, the rating for the achievement of outcomes is satisfactory.

Rating for achievement of outcomes:	**Satisfactory**

Likelihood of Impact

129. The drivers of degrading water quality, population, urbanization, and intensive agriculture have kept growing since the project's inception (2014). At the same time, wastewater treatment facilities are still largely absent from lower and lower-middle-income countries, especially in Central America, Sub-Saharan Africa, and South and Southeast Asia. Positive changes have been registered in high-income countries, albeit not within this project's implementation period, but responding to older policy changes associated with the 1970s Clean Water Act in the USA and the predecessor regulatory framework leading to the current European Water Framework Directive.

130. Meanwhile, there have been few changes in the extent and power of national water quality frameworks: some advances in low-income countries and some regressions in middle-income countries. According to this review's respondents, ambient water quality is still far from being a national priority, and awareness of the linkages with priority issues such as water supply and food production (drinking water and water for agriculture and livestock), sanitation, health and adaptation to climate change is mainly absent.

131. The project design already recognized that a tangible impact in mitigating a global challenge by a four-year project with limited funding was unfeasible and did not assign any concrete target to the intended impact of improving worldwide water quality.

132. However, advances towards the impact have been registered, also shown by the continuous donor support and securing finance for GEMS/ Water until the end of 2023.As the UN-Water 2021 SDG 6.3.2 report (with critical contributions from

GEMS/Water) and GEMS/Water reports and case studies manifest, there have been moderate gains in improving capacities and networking at least contributed to mitigating the deterioration of water quality. Especially in the West African countries of Liberia and Sierra Leone, which have taken the first steps toward comprehensively monitoring ambient water quality, with the project's support.

Rating for Effectiveness: Satisfactory

Financial Management

Adherence to UNEP's Financial Policies and Procedures

133. The United Nations Office at Nairobi (UNON) handled project funds, disbursement, and expenditure and have been duly accounted for and registered at UNEP's financial system Umoja. However, there is limited information on the transfer of the monitoring budget in the 2014 (see section on Monitoring below) to the 2018 ProDoc, which had no explicit monitoring and evaluation budget.

Rating for Adherence to UNEP's Financial Policies and Procedures: Moderately satisfactory

Completeness of Financial Information

134. Numerous financial reports have been prepared and submitted to the main project donors: Irish Government (Irish Aid and DHLGH), and accounting for other GEMS/Water and World Water Quality Alliance funding.

135. As described in section Project Finance, the project secured an estimated of USD 14,496,334 the 2015-2023 period. **Cash funding** (39% of the project funds) came from mainly from the Irish Government, USD 4,581,683 (32% of the total and 82% of the cash grant), but also UN-Water, USD 824,024 (6% of the total and 15% of the cash grant), and the Norwegian government (1% of the total, 3% of the cash grants). In-kind (post cost) contributions amounted to 61% of the total allocated funds, mainly from the government of Germany, hosting GEMStat and the data center and funding GPCU posts, with a contribution of USD 5,652,341 (39% of the total, 64% of in-kind contribution), as well as the project's implementing partner's University College Cork (USD 1,346,077) and ANA (USD 300,000).

136. Until December 31, 2021, GEMS/ Water had expended or committed 81% (USD 11,752,778) of the allocated contributions.

125. Regarding the grants (cash) received from the Irish government under the first (2014) and second (2020) MoU with Irish Aid and the DHLGH (USD 4,581,683), USD 3,826,659 (84%) had been expended as of June 2022, with still 1.5 years of implementation left (Table 11, Figure 6).

Table 11. Expenditure per cash funding source

Source of Funding	Allocated funding 2015-2023	Expenditure 2015-30/06/2022	Expenditure rate
CASH			
Irish Aid I (2015-2020)	$ 1,719,507.63	$ 1,610,693.01	94%
Irish DECLG I (2015-2020)	$ 1,718,646.88	$ 1,654,399.38	96%
Irish Aid II (2020-2023)	$ 571,764.01	$ 260,822.23	46%
Irish DECLG/ DHLGH II (2020-2023)	$ 571,764.01	$ 300,743.85	53%
Norway (2019-2022)	$ 176,600.00	$ 176,335.00	100%
UN Water (2019-2023)	$ 839,633.00	$ 644,471.00	77%
Total Cash	**$ 5,597,915.53**	**$ 4,647,464.47**	**83%**

Table 12. Expenditure per in-kind funding source

Source of Funding	Allocated funding 2015-2023	Expenditure 2015-30/06/2022	Expenditure rate
IN-KIND			
Government of Brazil ANA	$ 300,000.00	$ 300,000.00	100%
German BMUB/BfG	$ 4,902,340.99	$ 3,994,301.68	81%
Government of Germany JPO post cost	$ 750,000.00	$ 750,000.00	100%
University College Cork (GEMS/Water CDC)	$ 1,346,077.46	$ 962,580.94	72%
UNEP Environment Fund post cost	$ 1,600,000.00	$ 1,500,000.00	94%
Total In-kind	**$ 8,898,418.45**	**$ 7,206,882.62**	**84%**

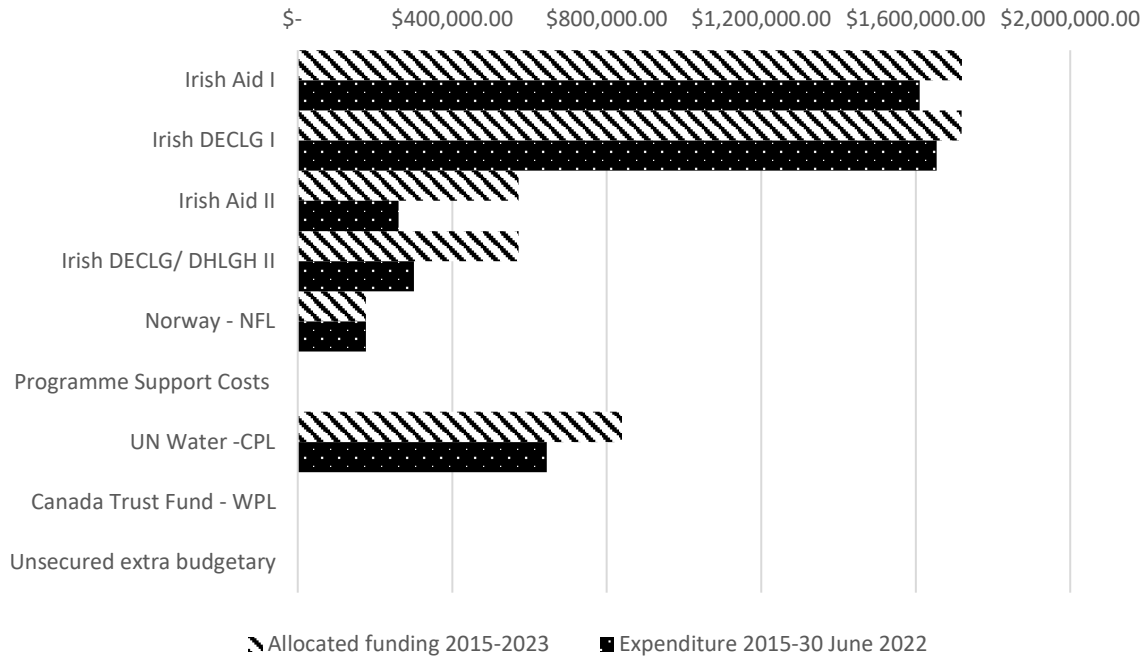


Figure 6. Expenditure per funding source (cash grants only)

Rating for Completeness of Financial Information: Satisfactory

Communication Between Finance and Project Management Staff

137. Communications between finance and project management staff were fluent, and all parties knew the procedures. However, UNEP procedures caused delays in disbursement towards the implementing partners, originating occasional funding gaps that had to be covered by the project's implementing partners.

Rating for Communication Between Finance and Project Management Staff: Satisfactory

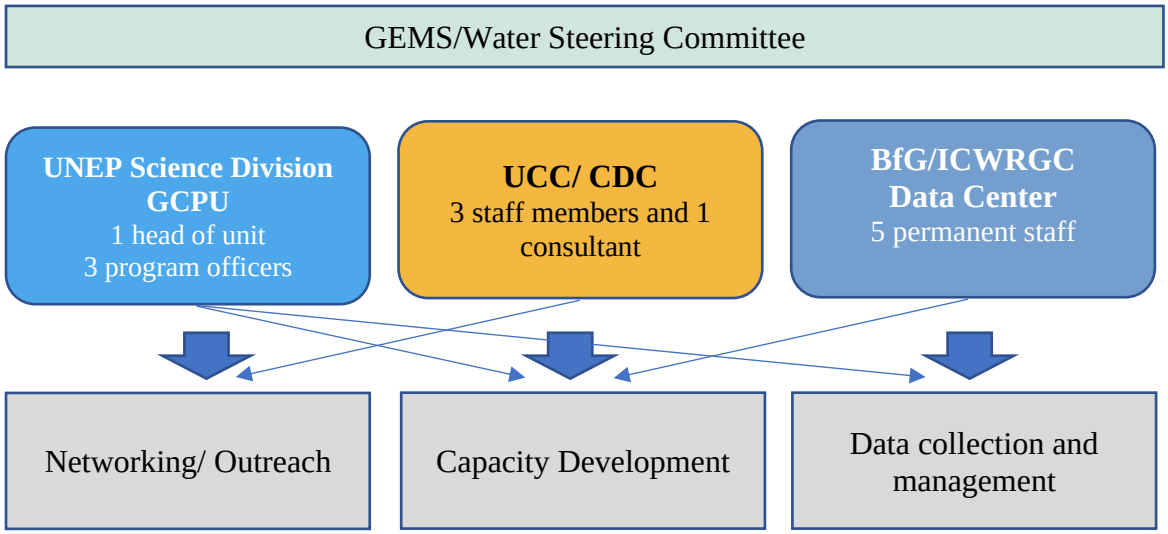
Rating for Financial Management: Satisfactory

Efficiency

138. The project design underestimated the high transaction costs of coordinating tasks needed to maintain GEMS/Water's complex superstructure of partners. Moreover, the actual project management structure (Figure 6, compare to Figures 1 and 2) was drastically reduced, from 12 staff members at the GCPU to merely three full-time staff members, and many crucial implementing partners (e.g., UNEP's regional offices) did not significantly participate and contribute to the core objectives of maintaining the global network, sharing data, developing capacities, and raising awareness.

139. GEMS/Water dedicated considerable staff time to securing additional funding to complete activities and deliver outputs. While the fund-raising drives have been successful, these efforts diverted precious staff time from focusing on the time-demanding networking, capacity development, data, and outreach packages. Reporting load was also considerable, needing to complete different report formats on a monthly, biannual, and annual basis.

Figure 6. Actual project governing structures



Rating for Efficiency: Moderately Satisfactory

Monitoring and Reporting

Monitoring Design and Budgeting

140. The project design (2015) included an indicator framework with two indicators for the project outcome and 12 for the project's original four outcomes, with associated baselines and target values. UNEP did not select an indicator for the impact level. In 2018, the indicator framework was significantly simplified, with just three indicators for the output level GEMS/Water result (Table 8).

Table 8. Indicator framework in 2015 and 2018.

Level	2015 Indicator framework	2018 Indicator framework
Outcome	Number of countries referring to international Water Quality Guidelines for ecosystems and other global and regional statements on water quality in their national water quality and/or ecosystem management plans and policy frameworks	Number of countries reporting on the environmental dimension of sustainable development using improved information sharing arrangements at national level **(Beyond GEMS/Water results level)**
	Number of countries submitting data on selected parameters to respective regional water quality databases (where applicable) and GEMStat and using information thereof to control and reduce pollution of surface and groundwater	
Output	Number of Compendiums of existing water quality guidelines developed and peer reviewed	NA
	Number of International water quality guidelines for ecosystems developed and peer reviewed	
	Number of countries with experts (focal points) trained	Number of water quality experts (GEMS/Water National Focal Points and other technical experts) in all regions trained
	Number of countries with experts (focal points) trained	
	Number of regional hubs and GEM Stat networks established	Number of GEMS/Water Regional Hubs and/or collaborating centers established
	Number of regional databases on selected parameters developed and peer reviewed	Number of Countries/regional entities that are submitting quality assured data to the relaunched GEMStat database, including SDG indicator 6.3.2 reporting
	Number of comprehensive data sets for the global assessments developed and peer reviewed	
	Number of comprehensive World Water Quality Assessment reports developed and peer reviewed	
	Number of International and regional policy statements addressing water developed and peer reviewed	
	Number of SDG 6 targets featuring on UNEP Live developed	
	Number of visits per year to the developed websites	
	Number of outreach materials including audio-visual products, brochures, publications, posters, factsheets, and press materials on water quality developed and disseminated	NA

141. The 2015 monitoring plan was budgeted at USD 65,000, most of which was allocated to the midterm (31%) and terminal review (54%), neither of which were executed. The 2018 ProDoc contained a monitoring plan but no budget. Monitoring expenditures were not separately quantified under this ProDoc, but at least partially destined to the terminal review.

Rating for Monitoring Design and Budgeting: Moderately satisfactory

Monitoring of Project Implementation

142. The original monitoring and evaluation plan was not executed, as the project focused more on the five work packages and the three output indicators described above. GEMS/Water GPCU reported on progress against the targets on a biannual basis between 2018 and 2022.

Rating for Monitoring of Project Implementation: Moderately satisfactory

Project Reporting

143. The GPCU submitted multiple monthly, biannual, and annual narrative and financial reports to satisfy UNEP's and donors requirements. Reports to the programme's primary donors were articulated along the programme's work packages, while UNEP reports were against the three outputs indicators of the 2018 ProDoc.

Rating for Project Reporting: Satisfactory

Rating for Monitoring and Reporting: Moderately satisfactory

Sustainability

Socio-political Sustainability

144. All national stakeholders interviewed in the frame of the terminal review expressed their interest in keeping the work of GEMS/Water going. According to the respondents, support from GEMS/Water is necessary to keep on supporting capacity to establish and maintain monitoring networks, and data collection, processing and sharing. Countries also shared the view that GEMS/Water has an important role to increase decision-maker's awareness of the critical importance of ambient water quality to ensure SDG 6 achievements.

145. Countries expressed different views according to their existing capacities. Latin American and Caribbean and Sub-Saharan African countries with established monitoring networks and a sufficient pool of professional water quality staff deem support on laboratory proficiency (inter-laboratory calibration/performance evaluation exercises) as critical to keep with international standards. This GEMS/Water component was discontinued in this implementation period. However, low-income countries, especially in Sub-Saharan Africa would need the continuation of individual capacity development to consolidate their incipient monitoring networks.

Rating for Socio-political Sustainability: Likely

Financial Sustainability

146. GEMS/ Water stands at a critical point in terms of financing. With 83% of cash funding and 84% of the committed in-kind contributions exhausted, the program has yet to secure funding commitments for beyond 2023. Thus, the program has 1 and half years to mobilize funding to continue support to water quality monitoring worldwide.

147. Bilateral partners have been the project’s primary financial support since its inception in 1978. Multilateral funding sources, e.g., the Global Environmental Facility (GEF) or the Green Climate Fund (GCF), do not have a focal area specifically dedicated to water quality. Moreover, GEF and GCF funding cycles involve a political process that includes the countries' focal point or national designated authority, which tend to be hosted at national environmental agencies, or climate change departments at planning or finance ministries, neither of which are the traditional national partners of GEMS/Water. However, GEF and other multilateral bodies fund regional projects with river and lake basin organizations (e.g., GEF and the Mekong River Commission).

148. Despite UNEA Resolution 3/10 requesting UNEP to expand on the GEMS/Water Trust Fund to support countries in water quality monitoring, there have not been any contributions to the GEMS/Water Trust Fund since it was established. However, the project has been adept in capturing medium and small bilateral grants from European donors since 2018.

149. The United States, Japan, Germany, and the Netherlands are the bilateral donors providing the most significant water-related Overseas Development Assistance (ODA) flows, accounting for almost half of the bilateral water-related aid (Table 9). Among the multilateral donors, the World Bank dominates, providing 13% of the total water-related ODA. These figures refer to mostly water and sanitation projects, which get

most of the water-related ODA, to the detriment of programs addressing the drivers of improved water supply and sanitation, including ambient water quality, freshwater ecosystems, integrated water resource management, and wastewater treatment.

Table 13. Water related ODA flows for 2020 (OECD, 2022)

Funding source	Million USD	% Total Water related ODA
Japan	2,169.5	23.8%
Germany	1,294.0	14.2%
United States	322.5	3.5%
Netherlands	252.5	2.8%
All Multilaterals	3,573.7	39.2%
United Nations	47.21	0.05%
World Bank Group	1170.3	12.8%
Total Water related ODA	9,114.56	100.0%

Rating for Financial Sustainability: Moderately likely

Institutional Sustainability

150. UNEA, UN-Water and national stakeholders have repeatedly acknowledged GEMS/Water as UNEP's ambient water quality implementing unit and the only global support for SDG indicator 6.3.2.

Rating for Sustainability: Likely

Rating for Sustainability: Moderately likely

Factors Affecting Performance and Cross-Cutting Issues

Quality of Project Management and Supervision

151. Terminal review respondents expressed satisfaction with the attention and responsiveness of the GCPU and the CDC to requests for support, mostly in response to direct demands to the CDC and to the SDG 632 helpdesk. National stakeholders became involved with the project through different paths discussed in Stakeholder Participation below.

152. Communication among the three implementing units of the project had some challenges, as geographical dispersion led to sub-optimal coordination of activities, and strategy, compounded by limited staff numbers at the GPCU, CDC and Data Center. Despite these challenges, the project management structure managed to deliver significant advances in all project outputs, as described in the section on Effectiveness.

Stakeholders Participation and Cooperation

153. National stakeholders (national focal point) participation and engagement with GEMS/Water was revived through the regional scoping workshops held in 2016 in East and West Africa (the latter in collaboration with UNESCO), in 2017 for Latin America and the Caribbean (with the Brazilian Federal Water and Sanitation Agency, ANA), and East Asia and the Pacific, and second East and West Africa workshops in 2018.The aim of the workshops was to establish the network, gauge capacity development needs, and to introduce the new Sustainable Development Goal indicator for ambient water quality.

154. However, not all participants in the workshops maintain engagement with GEMS/ Water. National focal points remained engaged with GEMS/Water based on individual interest, which varied widely from country to country across regions. Access to capacity development and participation in the data drives for SDG indicator 6.3.2 were the main drivers keeping the national focal point network active.

Responsiveness to Human Rights and Gender Equality

155. Selection for participation in workshops and capacity development courses was determined by the respective national governments through their national water agencies and ministries, without any influence by the GPCU or CDC. Participation tends to be equal, and, in most countries, there are presently no barriers for women accessing technical careers in water management. Respondents to this review, at the technical and management positions, tended to be male in Africa and female in LAC, reflecting historical differences in access to education. However, all African respondents reported awareness on the issue and having policies in effect to enable women’s access to water careers, at both the technical and management levels.

156. All respondents acknowledged that degraded ambient water quality may affect women and girls more, due to exposure associated with their gender roles. However, as many low- and middle-income countries are yet struggling to establish, expand and strengthen their water quality monitoring networks, collection of data on the issue or any policy action was not reported by any country.

157. GEMS/Water could be rated as gender blind in that it left selection of participants to the countries, and merely tallied the gender of participants in workshops, and other activities.

Environmental and Social Safeguards

158. No environmental and social safeguards were needed for this project, as it did not have any field implementation.

Country Ownership

159. Although countries unevenly internalized results from capacity development activities including scoping workshops, monitoring ambient water quality is a country-driven process, supported by GEMS/Water. Selection of participants and actions taken in response to GEMS/Water activities were completely country -driven.

Communication and Public Awareness

160. Outreach was one of the project outputs. Refer to section on Effectiveness

Table 14. Ratings for Factors Affecting Performance and Cross-Cutting Issues Sub-categories

Sub-category	Rating
Quality of Project Management and Supervision	Satisfactory
Stakeholders Participation and Cooperation	Satisfactory
Responsiveness to Human Rights and Gender Equality	Satisfactory
Environmental and Social Safeguards	Not applicable
Country Ownership	Satisfactory
Communication and Public Awareness	Satisfactory

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

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Strategic relevance

161. GEMS/Water is the custodian unit of SDG indicator 6.3.2, and the UN's main project supporting ambient water quality goals. GEMS/ Water implements UNEA's 1/9 and 3/10 resolutions. Despite supporting several of UNEP's Expected Accomplishments, and UNEP holding the custodianship of SDG indicator 6.3.2, ambient water quality has not figured prominently in UNEP's MTS since 2014, including the current 2022-25 strategy.

Quality of Project Design

162. During the review period 2015-2022, GEMS/Water operated administratively under two project documents implementing UNEA's resolutions: strengthen monitoring networks, facilitate data sharing and delivery of capacity development. These outputs resulted from well-defined work packages (activities). Outputs (strengthened monitoring networks, enhanced data sharing and capacity development) linked logically to the expected outcome of improved ambient water quality resulting from national implementation of evidence-based policies. However, the project design assumed actions by governments responding to greater availability of water quality data, which only partially holds, as awareness of the linkage between ambient water quality and higher-ranking national priorities, such as drinking water supply are not well established at the higher decision-making levels in many countries.

Nature of the External Context

163. GEMS/Water experienced two unexpected external events: the termination of its memorandum of understanding with its Latin America and the Caribbean hub and the onset of the COVID-19 pandemic.

164. GEMS/Water adapted rapidly and successfully to the COVID-19 pandemic by shifting to online meetings and courses. Online courses have been deemed as effective, or even better than in-person courses by terminal review respondents. However, GEMS/Water could not replace or expand regional hubs after the agreement with the Brazilian water agency ANA was terminated. Despite repeated attempts and contacts with relevant regional and national organizations in all regions, GEMS/Water could only recently conclude an agreement with the European Commission's Joint Research Center to act as a regional hub for Europe and the Mediterranean.

Effectiveness

165. GEMS/Water maintained and expanded the national focal point network inherited from the previous implementation phase. However, engagement of national focal points has been uneven across countries, mostly due to differences in personal engagement, and, in some cases, changes in political leadership.

166. The role of UNEP's regional offices has been less than anticipated in the project document, only achieving relevance in the case of ROLAC, for SDG indicator 6.3.2 and the Regional Office for East Asia and the Pacific in organizing the EAP scoping workshop. Limited support by UNEP's regional offices, compounded by the loss of the

LAC regional hub and the delay in establishing new regional hubs affected the project's abilities to mazimise its reach in networking and facilitating access to capacity development.

167. GEMS/Water is a the only UN project supporting countries' efforts to report on SDG indicator 6.3.2, by developing its methodology in collaboration with national water quality focal points. Reporting on the indicator has helped countries improve their water quality data management. GEMS/Water data platform GEMStat has made significant advances but needs further consolidation to realize its full potential as a global water quality data gateway, as there are two other portals (one UNEP, one UN-Water) with ambient water quality data, albeit not as complete as GEMStat in terms of parameters.

168. The capacity development courses developed and delivered by the GEMS/Water CDC have been successful in significantly raising capacities at national water agencies, especially in Sub-Saharan Africa. In some cases, the courses meant a watershed event in the development of the national water quality monitoring networks.

Financial management and efficiency

169. GEMS/Water mobilized extra-budgetary funding from different sources throughout the implementation period, beyond those committed in 2014. However, the project was implemented with less human resources than planned in the project documents. Limited human resources impacted coordination and implementation of activities, especially in maintaining the global water quality monitoring network and data sharing.

Sustainability

170. National stakeholders are convinced of the necessity of the continuation of the technical and capacity development support provided by GEMS/Water through current and expanded channels (e.g., MoU with national academic institutions).

171. Maintaining GEMS/ Water would need urgently securing funding on a magnitude of at least US 1.7 million per year (estimated yearly costs for the last seven years) for a period of five years. 90% of the project's funds come from extra-budgetary sources that will expire in December 2023.

Summary of project findings and ratings

172. The table below provides a summary of the ratings and findings discussed in Chapter five. Overall, the project demonstrates a rating of 'Satisfactory".

UNEP Evaluation Office Validation of Performance Ratings:

The UNEP Evaluation Office formally quality assesses (see Annex IX) management led Terminal Review reports and validates the performance ratings therein by ensuring that the performance judgments made are consistent with evidence presented in the Review report and in-line with the performance standards set out for independent evaluations.

The Evaluation Office assesses a Terminal Review report in the same way as it assesses the initial draft of a Terminal Evaluation report. It applies the following assumptions in its validation process:

– That what is being assessed is the contents of the report and the extent to which it makes a consistent and justifiable case for the performance ratings it records.

- That the consultant has, within the report, presented all the evidence that was made available to them.

- That the project team and key stakeholders have already reviewed a draft version of the report and provided substantive comments and made factual corrections to the Review Consultant, who has responded to them. The Evaluation Office assumes, therefore, that it has received the Final (revised) version of the report.

In this instance the Evaluation Office confirms that the Report provides sufficient evidence and analysis to support the performance ratings listed below and the overall project performance rating at the **Moderately Unsatisfactory** level.

Summary of project findings and ratings

Criterion	Summary assessment	Rating	*UNEP Evaluation Office:* Justification for any ratings change from validation process	*UNEP Evaluation Office* Validated Rating
Strategic Relevance		**HS**	**Rating Validated**	**HS**
Alignment to UNEP MTS, POW and strategic priorities	Programme executes UNEA resolutions and contributed to SP-3, SP-5 and SP-7 expected accomplishments	HS	Rating Validated	HS

Criterion	Summary assessment	Rating	*UNEP Evaluation Office:* Justification for any ratings change from validation process	*UNEP Evaluation Office* Validated Rating
Alignment to Donor/Partner strategic priorities	Programme aligned with donor's priorities and funding was renewed in 2020	HS	Rating Validated	HS
Relevance to global, regional, sub-regional and national environmental priorities	Programme is custodian unit of SDG indicator 6.3.2	HS	Rating Validated	HS
Complementarity with relevant existing interventions/coherence	GEMS/Water has facilitated and promoted the World Water Quality Alliance, with participation of 90 water-related organizations	HS	Rating Validated	HS
Quality of Project Design	Project design and later modifications have a coherent ToC and logical framework	S	'Highly Satisfactory' was the rating given in the narrative section of the report whereas 'Satisfactory' is listed in the final ratings table (the former has been amended to match the ratings table). The 'design' documents are not all specific to the GEMS initiative and involve 2 PRC-approved project documents, funding agreements and a strategy document. The QPD assessment does not specify which documents were used for each part of the assessment. The coherence of the 'design' is unclear.	MS
Nature of External Context	Project adapted well to COVID-19 but was vulnerable to political changes as its strategy was partially based on nationally based regional hubs.	S	Rating Validated – Favourable (F) = S	F
Effectiveness		**S**	**This aggregation is affected by adjusted ratings of the sub-categories**	**U**
Availability of outputs	Significant advances or maintenance towards global water quality networking, data sharing and capacity development	S	The Review lacks a strong evidence-based assessment of the availability of outputs. Outputs are defined largely by the GEMS work packages supported by Irish and the BMUV funding / the GEMS Strategy with performance targets 'partially reflected' by 3 indicators from the PIMS project 716.1. Some targets were not met or achieved (over longer timeframes). There is indirect evidence that what was reported on was achieved. Against the stated targets, the availability of outputs is partial.	MS

Criterion	Summary assessment	Rating	*UNEP Evaluation Office:* Justification for any ratings change from validation process	*UNEP Evaluation Office* Validated Rating
Achievement of project outcomes	Significant advances or maintenance towards global water quality networking, data sharing and capacity development	S	The report lacks evidence in support of the ToC outcome "*Water Quality data used by stakeholders, to generate evidence-based assessments and foster policy action*". The report states for example, "*While GEMS/Water SDG indicator 6.3.2 efforts have led countries to improve water quality data collection and management, there is currently no evidence of GEMStat or SDG 6 data being used for government action*". Some project outcomes may be partially achieved but do not include those most important to attain intermediate states/impact, the assumptions for the change process from project outputs to project outcomes do not hold and the drivers to support transition from outputs to project outcomes are not in place (paras 63-67). The Evaluation Office document TR Criteria ratings Description Matrix characterizes performance ratings for such situations as 'Unsatisfactory'.	U
Likelihood of impact	Impact in lower- and middle-income countries mediated by multiple factors beyond the project's control. Despite absence of evidence of improvements in lower- and middle-income countries, project has demonstrable contribution to generate enabling conditions towards impact.	S	An integrated analysis, guided by the causal pathways represented by the ToC is lacking in the review. The report states for example, "*The connection between ambient water quality and drinking water supply, sanitation, and, therefore, health and wellbeing is still largely ignored, which, according to the review's respondents, has led to a regression in some countries, limiting funding and power of the national water agencies.*" There is only very partial outcome achievement. Drivers and assumptions to reach intermediate states have not been identified / appear to be absent - the rating for the current likelihood of impact is 'Unlikely'.	U
Financial Management		**S**	**Rating Validated**	**S**
Adherence to UNEP's financial policies and procedures	Project adhered to UNEP's financial policies and procedures	MS	Rating Validated	MS
Completeness of project financial information	Financial information complete	S	Rating Validated	S
Communication between finance and project management staff	Fluid communications with minor setbacks due to limited staff	S	UNEP's late disbursements caused implementation delays.	MS
Efficiency	High coordination costs with less human resources than planned	MS	The design underestimated the high transaction costs of coordinating tasks needed to maintain GEMS/Water's complex superstructure of partners, and considerable staff time was dedicated to securing additional funding to complete activities and deliver outputs.	MU
Monitoring and Reporting		**MS**	**Rating Validated**	**MS**

Criterion	Summary assessment	Rating	*UNEP Evaluation Office:* Justification for any ratings change from validation process	*UNEP Evaluation Office* Validated Rating
Monitoring design and budgeting	Monitoring and evaluation budget not specified in 716.1 ProDoc	MS	Rating Validated	MS
Monitoring of project implementation	Adequate monitoring, but not of the original framework, and some deviations from monitoring plan	MS	The monitoring plan was not implemented. The review provides no verifiable evidence for the collection of any information in the original plan. Reporting to Irish and the BMUV funders may contain monitoring information but this is not mentioned/referenced.	MU
Project reporting	Project reporting adequate	S	Rating Validated	S
Sustainability		**ML**	**This aggregation is affected by adjusted ratings of the sub-categories**	**U**
Socio-political sustainability	National and UN stakeholders see it in their interest that GEMS/Water continues	L	The review describes the durability of stakeholder commitments to the GEMS initiative rather than presenting evidence on the extent to which social or political factors support the continuation and further development of the outcomes. The overall impression gained from the review document is that the durability of outcomes have a high dependency on social/political factors and that there is fairly strong ownership, interest and commitment among government and among other stakeholders but it does not reach the levels which have the power to sustain the project outcomes and mechanisms to adapt to changes in the social/political context are currently weak. The Evaluation Office document TR Criteria ratings Description Matrix characterizes performance ratings for such situations as 'Unlikely'.	U
Financial sustainability	Secure commitments yet to be reached	ML	The review describes the likelihood of securing funds for continued GEMS work rather than the extent to which the sustainability/durability of outcomes depends on continued funding. The overall impression gained from the review document is that the durability of outcomes have a high dependency on future funding / financial flows to persist, a low proportion of the required future funding requirements have been secured and no exit strategy has been developed. The Evaluation Office document TR Criteria ratings Description Matrix characterizes performance ratings for such situations as 'Unlikely'.	U

Criterion	Summary assessment	Rating	*UNEP Evaluation Office:* Justification for any ratings change from validation process	*UNEP Evaluation Office* Validated Rating
Institutional sustainability	GEMS/Water uniquely positioned to lead UN ambient water quality efforts	L	The review describes the need for continued GEMS work in relation to its role of providing global support for SDG indicator 6.3.2. It does not discuss the extent to which the sustainability/durability of outcomes depends on governance structures and processes, policies, sub-regional agreements, legal and accountability frameworks etc. The overall impression gained from the review document is that the durability of outcomes have a high dependency on / sensitivity to institutional support and only a partial mechanism is in place to support the institutionalization of outcomes. Limited capacity has been developed and there is evidence of some knowledge transfer and attitudinal change but no evidence of skills adoption in terms of data being used for government action. No exit strategy has been developed. The Evaluation Office document TR Criteria ratings Description Matrix characterizes performance ratings for such situations as 'Unlikely'.	U
Factors Affecting Performance				**MS**
Preparation and readiness		S	The section is missing from the report. As a long-established initiative the work to prepare and 'get ready' for this work was less prominent than for new projects, efforts continued under existing arrangements.	S
Quality of project management and supervision		S	Very limited information and analysis is presented in the section of the report assessing this criterion. A summative rating is given based on information presented throughout the report. A Steering Committee existed and is reported as having met but its contribution to oversight and implementation is not described. The geographic separation of GEMS' main implementing units led to sub-optimal coordination. However, GEMS remained responsive to stakeholder requests.	MS
2.1 UNEP/Implementing Agency:	Project management and supervision were adequate, despite staff shortages and coordination challenges	S	These roles are not differentiated in the report – sub-criterion not rated	N/A
2.2 Partners/Executing Agency:	Project management and supervision were adequate, despite staff shortages and coordination challenges	S	These roles are not differentiated in the report – sub-criterion not rated	N/A

Criterion	Summary assessment	Rating	*UNEP Evaluation Office:* Justification for any ratings change from validation process	*UNEP Evaluation Office* Validated Rating
Stakeholders' participation and cooperation	Stakeholders actively participated and benefited from the project activities, but uneven participation mediated by personal interest, beyond the reach of the programme	S	The review presents very limited information, the main finding being "National focal points remained engaged with GEMS/Water based on individual interest, which varied widely from country to country across regions. Access to capacity development and participation in the data drives for SDG indicator 6.3.2 were the main drivers keeping the national focal point network active." This is more consistent with a 'Moderately Satisfactory' rating.	MS
Responsiveness to human rights and gender equality	Project gender blind, but countries actively promoting gender parity	S	Gender and human rights were dimensions that were largely absent in the design and implementation of GEMS work. Limited collation of disaggregated data.	U
Environmental and social safeguards	Not applicable		Not rated	N/A
Country ownership and driven-ness	Water quality monitoring processes supported by project completely country-driven	HS	No substantive description or evidence is presented in the section for this criterion in the report. Assessment of the 'Effectiveness' criterion points to evidence that the uptake/adoption of project results is very uneven between the participating countries. The assessment of 'Sustainability' also points to the finding that there remains a need to increase decision-makers' awareness of the critical importance of ambient water quality, to improve its prioritization in national development planning.	MS
Communication and public awareness	Outreach implemented as part of project strategy	S	No evidence or analysis presented in the report section for this criterion. The effectiveness section concluded that the Outreach output did not reach its target (Indicator 3). Besides, para 130 ("According to this review's respondents, ambient water quality is still far from being a national priority, and awareness of the linkages with priority issues such as water supply and food production (drinking water and water for agriculture and livestock), sanitation, health and adaptation to climate change is mainly absent") shows limited results in terms of communication and public awareness.	MS
Overall Project Performance Rating		**S**		**MU**

Lessons learned

Lesson Learned #1:	**Complex management arrangements, involving several divisions and regional offices rarely work in the absence of formal mechanisms (MoU, ICA or similar)**
Context/comment:	In-kind contribution planned from different UNEP Divisions and Regional Offices did not materialize

Lesson Learned #2:	**The transaction and administrative costs of maintaining global networks should be assumed in the project design by assigning sufficient staff time and enabling flexible contract modalities to bypass rigid contractual procedures and high labor costs.**
Context/comment:	The project was chronically deprived of human resources and needed to build its current team by combining funding from diverse sources

Recommendations

Recommendation #1:	Considering the essential role played by GEMS/Water as the primary world project supporting ambient water quality and SDG indicator 6.3.2, GEMS/Water should extend its current 2020-2024 strategy until at least the end of 2025, coinciding with the current 2022-25 UNEP strategy and outline a UNEP ambient water strategy until 2030. Based on the extended strategy, the management of UNEP should engage current and potential bilateral donors to secure and mobilize core funding, including by activating the GEMS/Water fund, to secure at least USD 1.5 million per year.
Challenge/problem to be addressed by the recommendation:	End of the current MoUs with donors (Irish and German governments) and expiration of other funds
Priority Level:	High
Responsibility:	GEMS/Water, UNEP Science Division
Proposed implementation timeframe:	December 2022
Cross-reference(s) to rationale and supporting discussions	§83-120, §121-125, §135-137

Recommendation #2:	The science division should obtain formal commitments, such as a Memorandum of Understanding (MoU) between the project and regional offices to implement activities described in the new GEMS/ Water project document

Challenge/problem to be addressed by the recommendation:	Limited cooperation from regional offices
Priority Level:	High
Responsibility:	Science division
Proposed implementation time-frame:	2023 and beyond
Cross-reference(s) to rationale and supporting discussions	§98

Recommendation #3:	The project team should liaise closely with the Project Review Committee to ensure that changes that are driven by securing funds, or changes in the external context (like SDGs) are properly reflected in project documentation and that the project is following UNEP's guidance on results-oriented projectization of its work
Challenge/problem to be addressed by the recommendation:	Limited documentation of ProDoc changes and monitoring budget
Priority Level:	High
Responsibility:	GEMS/Water
Proposed implementation time-frame:	2023 and beyond
Cross-reference(s) to rationale and supporting discussions	§55-56; 133

Recommendation #4:	Maintain the blended format for capacity development (in-person and online) and workshops, taking advantage of the proven efficiency and general acceptance of such channels in the aftermath of the COVID-19 pandemic. Online meetings and courses reduce costs and environmental impacts, allowing for more focused addressing national or regional water quality problems.
Challenge/problem to be addressed by the recommendation:	Post-pandemic travel restrictions and high cost of in-person workshops/ courses
Priority Level:	Medium
Responsibility:	GCPU, CDC
Proposed implementation time-frame:	January 2023 onwards
Cross-reference(s) to rationale and supporting discussions	§80; §92-100

Recommendation #5:	The GEMStat platform needs consolidation to become the intended primary gateway for global ambient water quality data, including the SDG indicator 6.3.2. Thus, UNEP's management should ensure continuing support from the German Federal Institute of Hydrology to keep on hosting GEMS/Water data center to continue forging alliances enabling enhanced data sharing and interconnectivity of different data portals.

Challenge/problem to be addressed by the recommendation:	Existence of different data portals
Priority Level:	Medium
Responsibility:	UNEP Science division, GEMS/Water data center
Proposed implementation time-frame:	January 2023 onwards
Cross-reference(s) to rationale and supporting discussions	§101-107

Recommendation #6:	Considering the courses' positive impact and barriers to access and year-long turnover of graduates, UNEP management should ensure the continuation of the University College Cork as GEMS/Water Capacity Development Centre. However, GEMS/Water should explore agreements with relevant academic institutions, especially in Latin America, the Caribbean, and Africa, to facilitate access and expand the scope of GEMS/Water capacity development activities.
Challenge/problem to be addressed by the recommendation:	Limited scope and access barriers to GEMS/Water courses
Priority Level:	Medium
Responsibility:	GEMS/Water, UCC
Proposed implementation time-frame:	2023 and beyond
Cross-reference(s) to rationale and supporting discussions	§80; 92-100

Recommendation #7:	Scoping and training workshops have contributed to enhancing some capacities at national water agencies and reactivating GEMS/Water's global network. However, much more awareness about ambient water quality is needed in other key government organizations, including planning departments, ministries of finance, agriculture, etc. In cooperation with UNEP Regional Offices and other UN agencies with regional and country presence, GEMS/Water should consider participation in regional events to make the economic case for investment in water quality.
Challenge/problem to be addressed by the recommendation:	Linkage between ambient water quality and other SDGs and national goals not well established in many countries
Priority Level:	Medium
Responsibility:	GEMS/Water, WWQA
Proposed implementation time-frame:	2023
Cross-reference(s) to rationale and supporting discussions	§68-116

ANNEX 1. RESPONSE TO STAKEHOLDER COMMENTS

Table 5: Response to stakeholder comments received but not (fully) accepted by the reviewers, where appropriate

Page Ref	Stakeholder comment	Reviewer Response
	Xxx	Xxx

ANNEX II. PEOPLE CONSULTED DURING THE REVIEW

People consulted during the Review

Name	Country	Organization	Organization type
Deborah Chapman	NA	University College Cork	Academia
Timothy Sullivan	NA	University College Cork	Academia
Megan Patricia Cox	Barbados	Caribbean Institute for Meteorology and Hydrology	International organization
Caitlan O'Keeffe	USA	Gwinnett county	Local Government
Merlin Nganso	Cameroon	NA	NA
Mohamed Jahr Juanah	Sierra Leone	Ministry of Water Resources	National Government
Marcelo Pires da Costa	Brazil	Agência Nacional de Águas de Brasil (ANA)	National Government
Nadine Petterson	Jamaica	National Water Commission	National Government
Eugene Caine	Liberia	Ministry of Public Works	National Government
Daniela Fredes	Chile	Ministerio de Obras Públicas	National Government
Jamilu Habu	Nigeria	Federal Ministry of Water Resources	National Government
Philipp Saile	NA	Federal Institute of Hydrology	National Government
Ntiea Letsapo	Leshoto	Department of Water Affairs	National Government
Thembi Masilela	South Africa	Department of Water Affairs	National Government
Zulma Esperanza	El Salvador	Ministerio de Medio Ambiente y Recursos Naturales	National Government
Gerardo Nava Tovar	Colombia	Instituto Nacional de Salud	National Government
Heri Chisute	Tanzania	Ministry of Water and Irrigation (Maji Ubungo)	National Government
Eric Gutiérrez	Mexico	Comisión Nacional del Agua (CONAGUA)	National Government
Hugo Rancharan	Belize	Belize Water Services Limited (BWS)	National Government
Ana Laura Ruibal	Argentina	Instituto Nacional de Agua	National Government
Monica Camarena	Mexico	Comisión Nacional del Agua (CONAGUA)	National Government
Kilian Christ	NA	UNEP	UN
Melchior Elsler	NA	UNEP	UN
Sarantuyaa Zandaryaa	NA	UNESCO	UN
Stuart Warner	NA	UNEP	UN

ANNEX III. KEY DOCUMENTS CONSULTED

Author	Year	Title
Evaluation Office of UNEP	2015	Formative Evaluation of the UNEP Medium-term Strategy 2014-2017
GEMS/Water	2007	Water Quality Outlook
GEMS/Water GCPU	2018	Outputs from GEMS/Water Capacity Development Centre (CDC) SWOT and strategic planning session
GEMS/Water GCPU	2016	GEMS CapNet draft
GEMS/Water GCPU	2019	End of year finances 2019_signed_20200207
GEMS/Water GCPU	2018	Strategic Plan_CDC_2018-2024_v3
GEMS/Water GCPU	2022	02020 – Capacity building for national and regional environmental information and knowledge management Monthly activity reporting for project 716.1
GEMS/Water GCPU	2022	4.4: Project Output D: GEMS/Water Networks with strengthened water quality monitoring, data management and assessment capacity providing quality assured data to GEMS/Stat
GEMS/Water GCPU	2021	A6 - Capacity building for national and regional environmental information and knowledge management. Reporting period: July – Dec 2021
GEMS/Water GCPU	2021	A6 - Capacity building for national and regional environmental information and knowledge management. Reporting period: Jan – June 2021
GEMS/Water GCPU	2020	A6 - Capacity building for national and regional environmental information and knowledge management. Reporting period: July – December 2020
GEMS/Water GCPU	2020	A6 - Capacity building for national and regional environmental information and knowledge management. Reporting period: January - June 2020
GEMS/Water GCPU	2019	A6 - Capacity building for national and regional environmental information and knowledge management.
GEMS/Water GCPU	2019	A6 - Capacity building for national and regional environmental information and knowledge management. Preparation for Reporting – June 2019
GEMS/Water GCPU	2018	GEMS/Water Annual Progress Report 2017 Prepared by UN Environment for Irish Aid and the Department of Housing, Planning and Local Government, Ireland
GEMS/Water GCPU	2019	GEMS/Water Annual Progress Report 2018 Prepared by UN Environment for Irish Aid and the Department of Housing, Planning and Local Government, Ireland
GEMS/Water GCPU	2017	PIMS Reporting for JUNE 2017 Project No.01845 Project ID: Water Quality: Strengthening the normative basis for planning, monitoring and managing water quality for aquatic ecosystems
GEMS/Water GCPU	2018	GEMS/Water Programme
GEMS/Water GCPU	2020	GEMS/Water Draft Budget 2021-2023
GEMS/Water GCPU	2019	GEMS/Water Strategy 2020-2024 – Ver. 19 November 2019
GEMS/Water GCPU	2019	GEMS/Water Strategy 2020-2024 –Ver. 19November2019

GEMS/Water GCPU	2019	GEMS/Water Annual Progress Report 2018 Prepared by UN Environment for Irish Aid and the Department of Housing, Planning and Local Government, Ireland
GEMS/Water GCPU	2020	GEMS/Water Annual Progress Report 2019 Prepared by UN Environment for Irish Aid and the Department of Housing, Planning and Local Government, Ireland
GEMS/Water GCPU	2021	GEMS/Water Annual Progress Report 2020 Prepared by UN Environment for Irish Aid and the Department of Housing, Planning and Local Government, Ireland
GEMS/Water GCPU	2020	GEMS/Water Mid-Year Progress Report 2020 Prepared by UN Environment for Irish Aid and the Department of Housing, Planning and Local Government, Ireland
Thornton, J.	2015	Terminal Evaluation of the United Nations Environment Programme (UNEP) "Global Environment Monitoring System for Water Programme"
UN Environment	2017	UNEP MTS 2018-2021
UNEA	2018	Agenda Item 6 c): Implementation of UNEP/EA.3/Res.10: Addressing water pollution to protect and restore water-related ecosystems
UNEA	2014	Proposed biennial programme of work and budget for 2016–2017. Report of the Executive Director
UNEA	2018	Programme of work and budget for the biennium 2018–2019 Report of the Executive Director
UNEA	2017	Resolution 3/10. Addressing water pollution to protect and restore water-related ecosystems
UNEA	2014	Resolutions and decisions adopted by the United Nations Environment Assembly of the United Nations Environment Programme at its first session on 27 June 2014
UNEP	2014	UNEP Project Document: Water Quality: Strengthening the normative basis for planning, monitoring and managing water quality for aquatic ecosystems
UNEP	2018	Amendment no. 1 to the MoU between UNEP and the Ministry of Environment, Community and Local Government - Ireland in Relation to UNEP's
UNEP	2015	Agreement between the Federal Ministry of Environment, Nature Conservation, Building and Nuclear Safety of the Federal Republic of Germany and the United Nations Environment Programme on the establishment of a partnership in the framework of the Global Environment Monitoring System/ Water Programme
UNEP	2015	Project Cooperation Agreement between the United Nations Environment Programme (UNEP) and University College Cork-National University of Ireland Cork
UNEP	2015	Water Quality: Strengthening the Normative Basis for Planning, Monitoring and Managing Water Quality for Aquatic Ecosystems. Project Document
UNEP	2014	Amendment no. 1 to the Project Cooperation Agreement between the Helmholtz-Zentrum für Umweltforschung GmbH (UFZ) and the United Nations Development Program (UNEP) on the

		assessment of world water quality to meet the global water quality challenge
UNEP	2021	Small Scale Funding Agreement between UNEP and UNEP DHI
UNEP	2022	Small Scale Funding Agreement between UNEP and Earthwatch
UNEP	2015	Memorandum of Understanding between the European Commission and the United Nations Environment Program
UNEP	2018	Project Document 716.1: Capacity building for national and regional environmental information and knowledge management
UNEP	2017	Internal Cooperation Agreement (ICA) between Ecosystem Division and Science Division (Suballotment of $139,100 inc.. PSC) from Freshwater Ecosystems Unit, Ecosystem Division to GEMS/Water Unit, Science Division
UNEP	2017	Small-Scale Funding Agreement made on 1st July 2019 between UNEP and The German Federal Institute of Hydrology (BfG)
UNEP	2017	Small-Scale Funding Agreement made on 1st July 2019 between UNEP and The University College Cork
UNEP	2017	Project Portfolio for Healthy and Productive Ecosystems Subprogramme 3 Medium Term Strategy 2018-21
UNEP	2020	Memorandum of Understanding between the United Nations Environment Programme and The Government of Ireland in relation to UNEP's Global Environment Monitoring System Water Programme (GEMS/Water) 2021-2023
UNEP	2013	UNEP Medium Term Strategy 2014-2017
UNEP	2016	A Snapshot of the World's Water Quality: Towards a global assessment.
UNEP	2017	UNEP Medium Term Strategy 2014-2017
UNEP	2021	For people and planet: the UNEP strategy for 2022–2025
UNEP	2017	A Framework for Water Ecosystem Management
UNEP	2020	Memorandum of Understanding between the United Nations Environment Programme and The Government of Ireland in relation to UNEP's Global Environment Monitoring System Water Programme (GEMS/Water)2021-2023
UNEP-DEWA	2014	Memorandum of Understanding between the United Nations Environment Programme and The Government of Ireland in relation to UNEP's Global Environment Monitoring System Water Programme (GEMS/Water) 2014-2019
UNESCO World Water Assessment Program	2016	World Water Development Report: Water and Jobs
UNESCO World Water Assessment Program	2017	World Water Development Report: Wastewater and untapped resource
UNESCO World Water Assessment Program	2018	World Water Development Report: Nature Based Solutions for Water
UNESCO World Water Assessment Program	2019	World Water Development Report: Leaving no one behind

UNESCO World Water Assessment Program	2020	World Water Development Report: Water and climate change
UNESCO World Water Assessment Program	2021	World Water Development Report: Valuing water
UNESCO World Water Assessment Program	2022	World Water Development Report: Making the invisible visible
Wagner, S.	2019	Sustainable Development Goal Indicator 6.3.2 Technical Feedback Process Report
Wagner, S.	2022	Sustainable Development Goal Indicator 6.3.2. Options for maximising the indicator's positive impact

ANNEX IV. PROJECT BUDGET AND EXPENDITURES

Project Funding Sources Table

Funding source (All figures as USD)	Planned funding [2014-2018]	% of planned funding	Secured funding [2014-2023]	% of secured funding
Cash				
Funds from the Environment Fund	-	0%	-	0%
Funds from the Regular Budget	-	0%	-	0%
Extra-budgetary funding (listed per donor):				
Irish Aid I	$ 1,637,148.00	16%	$ 1,719,507.63	12%
Irish DECLG I	$ 1,637,148.00	16%	$ 1,718,646.88	12%
Irish Aid II	$ -	0%	$ 571,764.01	4%
Irish DECLG/ DHLGH II	$ -	0%	$ 571,764.01	4%
Norway - NFL	$ 684,616.00	7%	$ 176,600.00	1%
Programme Support Costs	$ 475,072.00	5%	$ -	0%
UN Water -CPL	$ 308,850.00	3%	$ 839,633.00	6%
Canada Trust Fund - WPL	$ 26,549.00	0%	$ -	0%
Unsecured extra budgetary	$ 1,720,000.00	17%	$ -	0%
Sub-total: Cash contributions	$ 6,489,383.00	63%	$ 5,597,915.53	39%
In-kind				
Environment Fund staff-post costs	$ 1,280,640.00	12%	1,600,000	11%
Regular Budget staff-post costs	$ 43,260.00	0%	-	0%
Extra-budgetary funding for staff-posts (listed per donor)				
Government of Brazil ANA	$ -		$ 300,000.00	2%
German BMUB/FIH	$ 2,455,720.00		$ 4,902,340.99	34%
Government of Germany JPO post cost	$ -		$ 750,000.00	5%
University College Cork (GEMS/Water CDC)	$ -	0%	$ 1,346,077.46	9%
Sub-total: In-kind contributions	$ 3,779,620.00	37%	$ 8,898,418.45	61%
Co-financing*				
Co-financing cash contribution	-	0%	-	0%
Co-financing in-kind contribution	-	0%	-	0%
Sub-total: Co-financing contributions	-	0%	-	0%
Total	$ 10,269,003.00	100%	$ 14,496,333.98	100%

*Funding from a donor to a partner which is not received into UNEP accounts but is used by a UNEP partner or collaborating centre to deliver the results in a UNEP – approved project.

Table 8: Expenditure by Funding Source

Source of Funding	Allocated funding 2015-2023	Expenditure 2015-30/06/2022	Expenditure rate
Irish Aid I	$ 1,719,507.63	$ 1,610,693.01	94%
Irish DECLG I	$ 1,718,646.88	$ 1,654,399.38	96%
Irish Aid II	$ 571,764.01	$ 260,822.23	46%
Irish DECLG/ DHLGH II	$ 571,764.01	$ 300,743.85	53%
Norway - NFL	$ 176,600.00	$ 176,335.00	100%
Programme Support Costs	$ -	$ -	0%
UN Water -CPL	$ 839,633.00	$ 644,471.00	77%
Canada Trust Fund - WPL	$ -	$ -	0%
Unsecured extra budgetary	$ -	$ -	0%
Government of Brazil ANA	$ 300,000.00	$ 300,000.00	100%
German BMUB/FIH	$ 4,902,340.99	$ 3,994,301.68	81%
Government of Germany JPO post cost	$ 750,000.00	$ 750,000.00	100%
University College Cork (GEMS/Water CDC)	$ 1,346,077.46	$ 962,580.94	72%
UNEP Environment Fund post cost	$ 1,600,000.00	$ 1,500,000.00	94%
UNEP Regular Budget post cost			
Total Cash	$ 5,597,915.53	$ 4,647,464.47	83%
Total In-kind	$ 8,598,418.45	$ 7,206,882.62	84%
TOTAL	$ 14,196,333.98	$ 11,752,778.09	83%

ANNEX V. FINANCIAL MANAGEMENT

Table 9: Financial Management Table

Financial management components:		**Rating**	**Evidence/ Comments**
Adherence to UNEP's policies and procedures:		**MS**	
Any evidence that indicates shortcomings in the project's adherence[28] to UNEP or donor policies, procedures or rules		Yes	2014 monitoring budget not used but not reflected in 2018 Prodoc
Completeness of project financial information[29]:			
Provision of key documents to the reviewer (based on the responses to A-H below)		**S**	
A.	Co-financing and Project Cost's tables at design (by budget lines)	N/A	**N/A**
B.	Revisions to the budget	Yes	**Budget changed due to new extrabudgetary contributions**
C.	All relevant project legal agreements (e.g. SSFA, PCA, ICA)	Yes	
D.	Proof of fund transfers	Yes	**Confirmed with implementing units**
E.	Proof of co-financing (cash and in-kind)	Yes	**Info supplied by co-financiers**
F.	A summary report on the project's expenditures during the life of the project (by budget lines, project components and/or annual level)	Partially	**Lines and components not detailed**
G.	Copies of any completed audits and management responses *(where applicable)*	No	**No audits**
H.	Any other financial information that was required for this project (list):	Yes	**Need for feedback due to complex financial structure with associated WWQA**
Communication between finance and project management staff		**HS:HU**	
Project Manager and/or Task Manager's level of awareness of the project's financial status.		HS	No issues reported
Fund Management Officer's knowledge of project progress/status when disbursements are done.		HS	No issues reported
Level of addressing and resolving financial management issues among Fund Management Officer and Project Manager/Task Manager.		HS	No issues reported
Contact/communication between by Fund Management Officer, Project Manager/Task Manager during the preparation of financial and progress reports.		HS	No issues reported
Project Manager, Task Manager and Fund Management Officer responsiveness to financial requests during the review process		HS	No issues reported
Overall rating			**Satisfactory**

[28] If the review 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.

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

ANNEX VI. BRIEF CV OF THE REVIEWER

Name

Profession	Oceanographer
Nationality	Spanish
Country experience	Europe: Germany, Spain Americas: Guatemala, El Salvador, Brazil, Haiti Asia: Bangladesh, India, Vietnam, Thailand, Philippines Pacific: Solomon Islands, Papua New Guinea Africa: Mozambique, Tanzania, Cabo Verde, Seychelles
Education	MSc Environmental Economics MSc Marine Science

Short biography

José Antonio Cabo Buján, Pontevedra, Spain, 1974, is a natural scientist with an academic background in oceanography and environmental economics and over 20 years of experience in designing, implementing, and evaluating climate change adaptation, ecosystem management, and biodiversity conservation projects.

From 2012 till present, the reviewer has evaluated seventeen UN-implemented projects in twelve countries in Africa, Latin America, Asia, and the Pacific, on topics ranging from the adaptation of the water sector to climate change in Cabo Verde to improving the environmental management capacities of local government in Thailand. In the meantime, Antonio also successfully graduated with an MSc. in Environmental Economics from the School of Oriental and African Studies of the University of London and collaborated with UNICEF in Nepal and Haiti and UNDP in Mozambique, authoring reports on climate change vulnerability, and developing project documents

Key specialties and capabilities cover:

Biodiversity and climate change project evaluation

Selected assignments and experiences
Independent reviews/evaluations:
20 independent evaluations and reviews
(See inspira profile)

ANNEX VII. REVIEW TORS (WITHOUT ANNEXES)

TERMS OF REFERENCE

Terminal Review of the UNEP/Irish Aid project

"Global Environment Monitoring System for Freshwater" and "716.1 Output D"

(Contributing to the UNEP project: ***Capacity building for national and regional environmental information and knowledge management, PIMS ID 2020****)*

Section 1: PROJECT BACKGROUND AND OVERVIEW

1. Project General Information

Table 1. Project summary

PIMS ID:	02020 (Output D)		
Implementing Partners:	University College Cork – National University of Ireland (UCC) The German Federal Institute of Hydrology (BfG)		
SDG(s) and indicator(s)			
Sub-programme:	SP7	**Expected Accomplishment(s):**	SP7 EA(a): Governments and other stakeholders use quality open environmental data, analyses and participatory processes that strengthen the science-policy interface to generate evidence-based environmental assessments, identify emerging issues and foster policy action
UNEP approval date:	04 July 2018 (UNEP ProDoc 716.1)	**Programme of Work Output(s):**	6: National and regional reporting systems based on shared environmental information system principles generating open access to information
***Expected* start date:**	11/2014 (donor agreements)	**Actual start date:**	01/2015
***Planned* completion date:**	12/2019	**Actual operational completion date:**	12/2020
***Planned* project budget at approval:**	EUR 3,000,000 (committed by donor)	**Actual total expenditures reported as of 31/12/2020**	USD 3,087,199 (unspent balance of USD 350,954 due to

	USD 3,438,153 (received)		covid rolled over into Phase II (2021-2023))
***Expected* co-financing:**	-	***Secured* co-financing:**	-
First disbursement:	17/12/2014	**Planned date of financial closure:**	12/2019
No. of project revisions:	1	**Date of last approved project revision:**	04 July 2018
No. of Steering Committee meetings:	5	**Date of last/next Steering Committee meeting:**	**Last: 11/02/2021 (postponed from 11/2020 due to Covid)** **Next: 11/12-2021(under Phase II)**
Mid-term Review/ Evaluation *(planned date):*	**-**	**Mid-term Review/ Evaluation (actual date):**	**-**
Terminal Review *(planned date):*	End 01/2021	**Terminal Review (actual date):**	As soon as possible
Coverage - Country(ies):	global	**Coverage - Region(s):**	global
Dates of previous project phases:	Programme initially established in 1978. Previous phases: 10/2010-03/2014 01/2015-12/2020	**Status of future project phases:**	Phase II of the project has been confirmed through the new MoUs with the donors running from 2021 until 2023

2. Project rationale

The Global Environment Monitoring System for Freshwater (GEMS/Water) Programme was established in 1978 to collect detailed global water quality data to support scientific assessments of status and trends in global inland water quality and to support related decision-making. In 2014, the GEMS/Water Programme mandate was renewed and strengthened by the United Nations Environment Assembly (UNEA) Resolution 1/9. With the support of new donors, the revised and restructured GEMS/Water Programme workplan was submitted to UNEA-2 in 2016. The mandate of GEMS/Water was reiterated and further expanded at UNEA-3 through Resolution 3/10 in December 2017[30]. The resolution acknowledges the growing need for water quality monitoring and capacity development on water quality monitoring, data quality assurance, data management and information sharing, as well as related Sustainable Development Goal monitoring.

3. Project objectives and components

Objectives:

The GEMS/Water Programme of the United Nations Environment Programme (UNEP) collects detailed data and information on surface and ground water quality, to support scientific assessments and decision-making. GEMS/Water encourages collection of water quality data and promotes a standardized approach to water quality data generation to ensure its compatibility and comparability.

In the MoUs between UNEP and the Government of Ireland the general objectives of the GEMS/Water Programme (2014-2020) were defined as follows:

[30] UNEA Resolution 3/10. Addressing water pollution to protect and restore water-related ecosystems (UNEP/EA.3/Res.10); https://papersmart.unon.org/resolution/uploads/k1800216.english.pdf.

The GEMS/Water Programme aims to:

- contribute to improved water resource management and use at a global level.
- improve water quality monitoring capacity globally and to encourage participation in the GEMS/Water monitoring and assessment programme.
- improve water quality monitoring capacity in African countries, particularly in Ireland's Partner Countries, by the enhancement of approaches to the gathering, dissemination and application of data on water quality within each country.

Components:

The main components of GEMS/Water are delivered through four main operating pillars:

Global Monitoring Network

The GEMS/Water Global Programme Coordination Unit (GPCU) at the UNEP headquarters in Nairobi, Kenya, is responsible for the overall programme coordination. It grows and maintains the GEMS/Water network of National and Collaborating Focal Points (NFPs and CFPs), consisting of entities with responsibility for water quality monitoring, and which are nominated by Member States to liaise and collaborate with GEMS/Water. Furthermore, UNEA-3 resolution 3/10 on addressing water pollution to protect and restore water related ecosystems reiterated and expanded the mandate of GEMS/Water by requesting Member States in collaboration with UNEP to establish and improve their water quality monitoring network.

GEMStat Database and Information System

The Global Water Quality database and information system, GEMStat (gemstat.org), is hosted, operated and maintained by the GEMS/Water Data Centre at the International Centre for Water Resources and Global Change (ICWRGC) which is hosted at the Federal Institute of Hydrology (BfG) Koblenz, Germany. Underlying is a national agreement of collaboration between the German Ministries and an agreement between UNEP and BMU (Germany). GEMStat is one of the most comprehensive databases on global, inland, in-situ water quality monitoring data, containing data from 1965 to recent years, for about 250 water quality parameters.

GEMS/Water Capacity Development

The GEMS/Water Capacity Development Centre, CDC, established in the Environmental Research Institute of University College Cork (UCC); Ireland encourages best practice in water quality monitoring to support effective water resources management. Underlying are MoUs between UNEP and Irish Aid and UNEP and Department of Housing, Local Government and Heritage of the Government of Ireland. CDC provides guidance and training on all aspects of water quality monitoring and assessment, in the form of face-to-face training workshops, online training and provision of guidance documents. Through UCC, GEMS/Water also offers university accredited courses with internationally recognized and transferrable credits. The Centre is also available to provide advice and technical assistance to participating countries on national or transboundary systems in water quality monitoring network design, development and operation. It can assist on surface waters, citizen monitoring programmes and real time monitoring networks. For more information:

www.ucc.ie/en/gemscdc/

Sustainable Development Goal Indicator

To assist member states in monitoring and reporting of the Sustainable Development Goal Indicator 6.3.2 on ambient water quality GEMS/Water is UNEP's operational arm responsible to cover UNEP's custodian role in this context. In addition to methodology development, data management and quality assurance, GEMS/Water supports countries in indicator calculation and provides related capacity development. Underlying is the multi-donor Integrated Monitoring Initiative on SDG 6 coordinated by UN-Water with 9 participating UN parties.

4. Executing Arrangements

The Global Environment Monitoring Unit in UNEP's Science Division (formerly Division of Early Warning and Assessment) is responsible for the implementation of the GEMS/Water Programme and hosts the Global Programme Coordination Unit (GPCU) at the UNEP headquarters in Nairobi, Kenya. GPCU, is in charge of the overall coordination of the UN Environment GEMS/Water programme and the day-to-day management. It supports the Steering Committee and liaises with key executing partners, the UN Environment Regional Offices, and donors.

University College Cork – National University of Ireland (UCC), Cork, Ireland hosts the GEMS/Water Capacity Development Centre and is leading the capacity development component/work package of the Programme.

The German Federal Institute of Hydrology (BfG) Koblenz, Germany hosts the GEMS/Water Data Centre and is in charge of operating and maintaining the GEMStat database and information system on in-situ water quality monitoring data. It operates as the entrusted agency of the BMU with which UNEP has a related Agreement in place.

The GEMS/Water Steering Committee consists of representatives from Donor Governments, UN-Water Member agencies and other strategic partners working in water related areas and have a mutual interest in GEMS/Water. The key executing partners and the GPCU participate as ex-officio members.

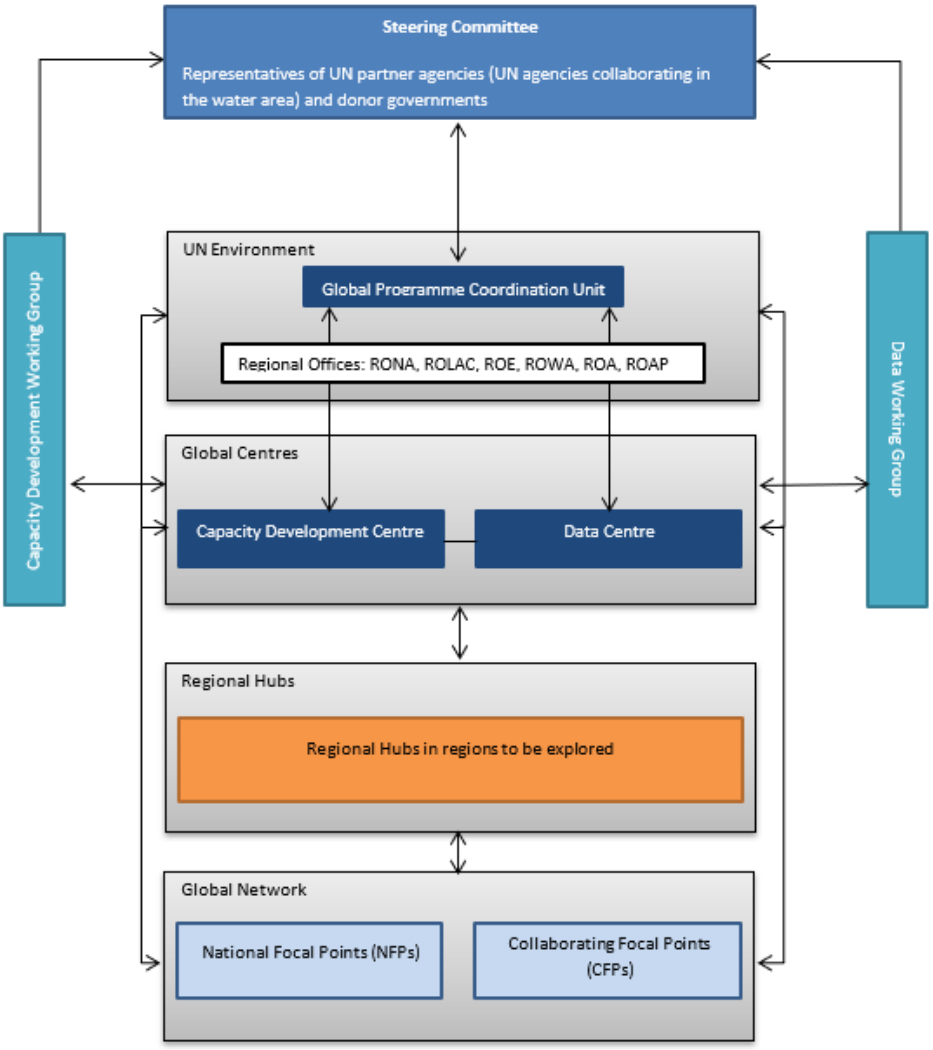


Figure 7 GEMS/Water Programme implementation structure

5. Project Cost and Financing

Estimated Project Budget at Design

BL*	Budget Line description	2015-2020		
		Irish Aid	DHLGH	Total
10	Personnel	$ 199,091.00	$ 479,892.00	**$ 678,983.00**
120	Contractual Services	-	-	**$ -**
125	Operational Costs	$ 7,919.00	$ 8,002.00	**$ 15,921.00**
130	Supplies	-	-	**$ -**
135	Equipment/ Vehicle/ Furniture	-	-	**$ -**
140	Transfer/ Grant to Implementing Partner	$ 1,000,793.00	$ 825,706.00	**$ 1,826,499.00**
145	Grants Out	-	-	**$ -**
160	Travel	$ 176,345.00	$ 86,112.00	**$ 262,457.00**
155	UN Programme Support Cost	$ 264,204.00	$ 248,639.00	**$ 512,843.00**
Total (as per E in Cash Statement)		**$ 1,648,352.00**	**$ 1,648,352.00**	**$ 3,296,704.00**

DETAILS OF ACTUAL AND ESTMATED DISBURSEMENTS 2015-2020 in USD
IRISH AID

BL*	Budget Line description	Actual Expenditure					Total Cumulative Expenditure & Disbursements	Estimated Disbursements	Total Phase I Budget
		2015-2016	2017	2018	2019	2020	2015-2020	2021	TOTAL
010	Personnel	-	28,346	31,097	50,359	33,682	143,483	60,000	203,483
120	Contractual Services						-		-
125	Operational Costs	2,919	1,936	864	3,334		9,053	5,312	14,365
130	Supplies						-		-
135	Equipment/ Vehicle/ Furniture						-		-
140	Transfer/ Grant to Implementing Partner	354,672	-	262,173	170,300	179,833	966,978	133,815	1,100,793
145	Planned Grant to Implementing Partner						-	20,000	20,000
160	Travel (incl. Contract Service)	43,844	37,432	32,752	40,173	10,846	165,047	8,000	173,047
	Evaluation				-		-	10,000	10,000
155	UN Programme Support Cost	136,452	8,533.61	8,438.21	13,077	4,889	171,389	26,430.56	197,819
Total		**537,886**	**76,248**	**335,325**	**277,242**	**229,250**	**1,455,950**	**263,557**	**1,719,507**

DETAILS OF ACTUAL AND ESTMATED DISBURSEMENTS 2015-2020 in USD
DHLGH

BL*	Budget Line description	Actual Expenditure					Total Cumulative Expenditure & Disbursements	Estimated Disbursements	
		2015-2016	2017	2018	2019	2020	2015-2020	2021	TOTAL
010	Personnel	103,663	85,036	65,074	153,326	96,972	504,070	60,000	564,070
120	Contractual Services						-		-
125	Operational Costs	3,541	156	519	-	663	4,879	3,000	7,879
130	Supplies						-		-
135	Equipment/ Vehicle/ Furniture						-		-
140	Transfer/ Grant to Implementing Partner	316,075	-	181,795	130,900	164,095	792,865	32,842	825,707
145	Planned Grant to Implementing Partner						-	20,000	20,000
160	Travel	26,917	29,623	19,412	3,052	-	79,003	14,337	93,340
	Evaluation	-	-	-	-		-	10,000	10,000
155	UN Programme Support Cost	125,223	14,506.66	11,022.03	20,336.64	12,687.66	183,776	13,944	197,720
Total		**575,419**	**129,322**	**277,821**	**307,614**	**274,417**	**1,564,593**	**154,124**	**1,718,716.78**

6. Implementation Issues

Due to the ongoing COVID-19 pandemic starting in early 2020 several projects and activities were temporarily put on hold or cancelled (6.3.2 workshop was cancelled, no fieldwork was possible in the area of capacity development neither were any summer schools, the WWQA Annual Global Meeting in which GEMS plays an important role could only be held virtually, the GEMS SC meeting 2020 had to be moved to early 2021, etc.). Ultimately, the unforeseen circumstances did not make it possible to use all GEMS/Water funds as planned, which is why parts of them had to be carried over to a next programme cycle which was negotiated with the Government of Ireland between 2019 and 2020 and resulted in the extension of the Project into a Phase II (2021-2023).

Section 2. OBJECTIVE AND SCOPE OF THE REVIEW

7. Objective of the Review

In line with the UNEP Evaluation Policy[31] and the UNEP Programme Manual[32], the Terminal Review (TR) 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 Review 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 core partners (i.e. UCC and BfG). Therefore, the Review will identify lessons of operational relevance for future project formulation and implementation, especially for future phases of the project, where applicable. The review will focus on the activities funded through the MoUs with the Irish Donors 2014-2020 (i.e. Capacity Development and overall coordination of the project) but will also consider other work packages of the programme as well as aspects on data which largely fall under the mandate of the Agreement between UNEP and the BMU (Germany), as they cannot be viewed in isolation.

8. Key Review principles

Review findings and judgements will be based on sound evidence and analysis, clearly documented in the review 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.

The "Why?" Question. As this is a Terminal Review focusing on the first phase (2014-2020) which is being followed by a new phase supported both by the Governments of Germany (in-kind till 2024) and for a final, terminating funding period till end of 2023 by the Government of Ireland particular attention will be given to learning from experiences and feed into the new phase as much as still possible. Therefore, the "*Why?*" question should be at the front of the consultants' minds all through the review exercise and is supported by the use of a theory of change approach. This means that the consultants need to go beyond the assessment of "*what*" the project performance was and make a serious effort to provide a deeper understanding of "*why*" the performance was as it was (i.e. what contributed to the achievement of the project's results). This should provide the basis for the lessons that can be drawn from the project.

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 reviews. 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

[31] https://www.unenvironment.org/about-un-environment/evaluation-office/policies-and-strategies.

[32] https://wecollaborate.unep.org/display/PPMM.

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.

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

9. Key Strategic Questions

In addition to the evaluation criteria outlined in Section 10 below, the Review will address the **strategic questions** listed below. These are questions of interest to UNEP and Donors and to Member States, to which the project is believed to be able to make a substantive contribution:

(a) To what extent has GEMS/Water increased its engagement and focus on the southern hemisphere and, in particular, on African Countries?

(b) To what extent has there been progress with the UCC Capacity Development Centre (CDC) and its further potential to become a global centre of excellence in freshwater monitoring?

(c) What is the impact of the collaboration between CDC and GEMS/Water in light of growing policy interest and awareness of the importance of freshwater in the environment, biodiversity and climate context?

(d) To what extent has the project developed and maintained global water quality data and information systems to improve accessibility to credible and comparable data and contributed to accessibility and interoperability with other environmental information systems?

(e) To what extent has the GEMS/Water project been relevant, timely and effective in increasing awareness of the state of water quality, importance of water quality monitoring, in general and in context of SDG 6.3.2 and problems and emerging issues through cooperation, among governments and the public?

10. Review Criteria

All criteria will be rated on a six-point scale. Sections A-I below, outline the scope of the criteria. 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.

Annex 1 of these Terms of Reference provides a table with links to various tools, templates and guidelines that can help Review Consultants to follow the approach taken by UNEP Evaluation Office in its evaluation work. These links include one to a table for recording the ratings by criteria and an excel file determining the overall project performance rating (using a weighted averaging approach). There is also a matrix that provides guidance on how to set the ratings level (at which point on the 6-point scale) for each evaluation criterion. Please contact Cecilia Morales (cecilia.morales@un.org) if any of these links do not work.

A. Strategic Relevance

The Review will assess the extent to which the activity is suited to the priorities and policies of the target group, recipient and donor. The Review 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, as well as each

country's UNDAF. Under strategic relevance an assessment of the complementarity of the project with other interventions addressing the needs of the same target groups will be made. This criterion comprises four elements:

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

The Review 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.

2. *Alignment to Donor/Partner Strategic Priorities*

Donor strategic priorities will vary across interventions. The Evaluation 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.

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

The Review 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 also be considered. Examples may include: UN Development Assistance Frameworks (UNDAF) or, 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.

4. *Complementarity with Existing Interventions/Coherence[35]*

An assessment will be made of how well the 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 - programmes, or being implemented by other agencies within the same country, sector or institution) that address similar needs of the same target groups. The Review will consider if the project team, 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 effort. Examples may include work within UNDAFs 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

The quality of project design is assessed using an agreed template during the review inception phase. Ratings are attributed to identified criteria and an overall Project Design Quality rating is established (www.unenvironment.org/about-un-environment/evaluation-office/our-evaluation-approach/templates-and-

[33] UN Environment's Medium-Term Strategy (MTS) is a document that guides UN Environment's programme planning over a four-year period. It identifies UN Environment'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.

tools). The complete Project Design Quality template should be annexed in the Inception Report. Later, the overall Project Design Quality rating should be entered within the ratings table (as item B) in the Main Review Report and a summary of the project's strengths and weaknesses at design stage should be included in the Executive Summary of the Main Review Report. (Guidance on the Structure and Content of an Inception Report and Main Review Report is given in the materials listed in Annex 1 of these Terms of Reference).

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

At review inception stage a rating is established for the project's 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 Review Consultant and Project Manager together. A justification for such an increase must be given.

D. Effectiveness

i. Availability of Outputs[38]

The Review will assess the 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. In such cases 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 Review will briefly explain the reasons behind the success or shortcomings of the project in delivering its programmed outputs and meeting expected quality standards.

Factors affecting this criterion may include:

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

ii. Achievement of Project Outcomes[40]

The achievement of project outcomes is assessed as performance against the 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

[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 of 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).

[39] In some cases 'project management and supervision' will refer to the supervision and guidance provided by UN Environment 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 UN Environment.

[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] UNEP staff are currently required to submit 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 changes made to the project design. In the case of projects pre-dating 2013 the intervention logic is often represented in a logical framework and a TOC will need to be constructed in the inception stage of the evaluation.

amendments to the formulation of project outcomes is necessary to allow for an assessment of performance. The Review 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

Based on the articulation of long-lasting effects in the reconstructed TOC *(i.e. from project outcomes, via intermediate states, to impact)*, the Review 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'. 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.

The Review 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, Social and Economic Safeguards.[42]

The Review will consider the extent to which the project has played a catalytic role or has promoted scaling up and/or replication[43] as part of its Theory of Change and as factors that are likely to contribute to long-lasting impact.

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 partner(s).

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

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/component 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

[42] Further information on Environmental, Social and Economic Safeguards (ESES) can be found at http://wedocs.unep.org/handle/20.500.11822/8718.

[43] Scaling up refers to approaches being adopted on a much larger scale, but in a very similar context. Scaling up is often the longer term objective of pilot initiatives. Replication refers to approaches being repeated or lessons being explicitly applied in new/different contexts e.g. other geographic areas, different target group 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.

timely delivery of the project or the quality of its performance will be highlighted. The evaluation will record where standard financial documentation is missing, inaccurate, incomplete or unavailable in a timely manner. The evaluation will assess the level of communication between the Project 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

Under the efficiency criterion the Review 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.

Focussing 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 Review 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 Review will describe any cost or time-saving measures 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.

The evaluation 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[44] with other initiatives, programmes and projects etc. to increase project efficiency. The Review will also consider the extent to which the management of the project minimised UNEP's environmental footprint.

The factors underpinning the need for any project extensions will also be explored and discussed. Consultants should note that as management or project support costs cannot be increased in cases of 'no cost extensions', such extensions represent an increase in unstated costs to UNEP and 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

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

i. Monitoring Design and Budgeting

Each project should be supported by a sound monitoring plan that is designed to track progress against SMART[45] results towards the achievement of the project's outputs and 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 review 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, where applicable.

ii. Monitoring of Project Implementation

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

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

The Review 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 Review should confirm that funds allocated for monitoring were used to support this activity.

iii. Project Reporting

UNEP has a centralised Project Information Management System (PIMS) in which project managers upload six-monthly progress reports against agreed project milestones. This information will be provided to the Review Consultant(s) by the Project Manager. Some projects have additional requirements to report regularly to funding partners, which will be supplied by the project team. The Review 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

Sustainability[46] is understood as the probability of the benefits derived from the achievement of project outcomes being maintained and developed after the close of the intervention. The Review will identify and assess the key conditions or factors that are likely to undermine or contribute to the endurance of achieved project outcomes (ie. '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

The Review will assess the extent to which social or political factors support the continuation and further development of the benefits derived from 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 Review will consider whether individual capacity development efforts are likely to be sustained.

ii. Financial Sustainability

Some project outcomes, once achieved, do not require further financial inputs, e.g. the adoption of a revised policy. However, in order to sustain the benefit from projects 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 Review 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 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.

iii. Institutional Sustainability

The Review 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

[46] 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).

associated with the project outcomes after project closure. In particular, the Review 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 Review Report as cross-cutting themes as appropriate under the other evaluation criteria, above. If these issues have not been addressed under the Evaluation Criteria above, then independent summaries of their status within the reviewed project should be given.)

i. Preparation and Readiness

This criterion focuses on the inception or mobilisation stage of the project (ie. the time between project approval and first disbursement). The Review will assess whether appropriate measures were taken to either address weaknesses in the project design or respond to changes that took place between project approval, the securing of funds and project mobilisation. In particular the Review will consider the nature and quality of engagement with stakeholder groups by the project team, 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

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 it may refer to the project management performance of an implementing partner and the technical backstopping and supervision provided by UNEP.

The Review 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

Here the term 'stakeholder' should be considered in a broad sense, encompassing all project partners, duty bearers with a role in delivering project outputs, target users of project outputs and any other collaborating agents external to UNEP. The assessment 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.

iv. Responsiveness to Human Rights and Gender Equity

The Review 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 Review will assess to what extent the intervention adheres to UNEP's Policy and Strategy for Gender Equality and the Environment[47].

[47] 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/-

In particular the Review 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.

v. Environmental and Social Safeguards

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[48] 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).

The evaluation will also consider the extent to which the management of the project minimised UNEP's environmental footprint.

vi. Country Ownership and Driven-ness

The Review 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, ie. either: a) moving forwards from outputs to project outcomes or b) moving forward from project outcomes towards intermediate states. The Review 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 gender and marginalised groups.

vii. Communication and Public Awareness

The Review 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 Review 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 Review will comment on the sustainability of the communication channel under either socio-political, institutional or financial sustainability, as appropriate.

Section 3. REVIEW APPROACH, METHODS AND DELIVERABLES

The Terminal Review will be an in-depth review using a participatory approach whereby key stakeholders are kept informed and consulted throughout the review process. Both quantitative and qualitative evaluation methods will be used as appropriate to determine project achievements against the expected outputs, outcomes and impacts. It is highly recommended that the consultant(s) maintains close communication with the project team and

Gender_equality_and_the_environment_Policy_and_strategy-2015Gender_equality_and_the_environment_policy_and_strategy.pdf.pdf?sequence=3&isAllowed=y.

[48] 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.

promotes information exchange throughout the review implementation phase in order to increase their (and other stakeholder) ownership of the review findings. Where applicable, the consultant(s) should provide a geo-referenced map that demarcates the area covered by the project and, where possible, provide geo-reference photographs of key intervention sites (e.g. sites of habitat rehabilitation and protection, pollution treatment infrastructure, etc.)

The findings of the Review will be based on the following:

A **desk review** of:

- Relevant background documentation, inter alia; Relevant UNEA Resolutions (e.g. 1/9 and 3/10); UNEA Information Documents; GEMS/Water Strategy 2020-2024; SWOT Analysis
- Project design documents (including minutes of the project design review meeting at approval); Annual Work Plans and Budgets or equivalent, revisions to the project (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 any other monitoring materials etc.;
- Project deliverables (e.g. publications, assessments etc): Training Workshop Reports; Scoping Reports; online training material, handbooks
- Mid-Term Review or Mid-Term Evaluation of the project;
- Evaluations/Reviews of similar projects.

Interviews (individual or in group) with:

- UNEP Project Manager (PM);
- Project management team;
- UNEP Fund Management Officer (FMO);
- Sub-Programme Coordinator;
- Project partners, including: UCC, BfG, selected GEMS/Water National Focal Points (NFPs); former regional hubs (ANA Brazil); Mekong River Commission (MRC);
- Relevant resource persons;
- Representatives from civil society and specialist groups (such as women's, farmers and trade associations etc).
-

Surveys: scoping reports
Field visits: various mission reports
Other data collection tools

11. Review Deliverables and Review Procedures

The Review Consultant will prepare:

- Inception Report: (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, review framework and a tentative review schedule.
- Preliminary Findings Note: 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.

- Draft and Final Review Report: (see links in Annex 1) containing an executive summary that can act as a stand-alone document; detailed analysis of the review findings organised by evaluation criteria and supported with evidence; lessons learned and recommendations and an annotated ratings table.

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

Review of the draft review report. The Consultant will submit a draft report to the Project Manager and revise the draft in response to their comments and suggestions. The Project Manager will then forward the revised draft report 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 Project Manager for consolidation. The Project Manager will provide all comments to the Review Consultant for consideration in preparing the final report, along with guidance on areas of contradiction or issues requiring an institutional response.

The final version of the Terminal Review report will be assessed for its quality by the UNEP Evaluation Office using a standard template and this assessment will be annexed to the final Terminal Review report.

At the end of the review process, the Project Manager will prepare a Recommendations Implementation Plan in the format of a table, to be completed and updated at regular intervals, and circulate the Lessons Learned.

12. The Review Consultant

The Review Consultant will work under the overall responsibility of the Project Manager, Hartwig Kremer, Head of Global Environment Monitoring Unit, Science Division and Programme Officer, Kilian Christ, in consultation with the Science Division Fund Management Officer Nada Matta, the Chief of Big Data Branch, Science Division, Alexandre Caldas and the Sub-programme Coordinator, Rula Qalyoubi.

The Review Consultant will liaise with the Project Manager on any procedural and methodological matters related to the Review. It is, however, the consultants' 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 Project Manager and project team will, where possible, provide logistical support (introductions, meetings etc.) allowing the consultants to conduct the Review as efficiently and independently as possible.

The Review Consultant will be hired over a period of 3-4 months 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 projects or programmes and using a Theory of Change approach. A good understanding of freshwater monitoring, data quality and analytics as well as international capacity development in the field is desirable. In addition, a thorough understanding of the Agenda 2030 and the water relate SDG 6 and implications of water quality in this socio environmental and policy context would be an advantage. 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 with possible field visits.

The consultant will be responsible, in close consultation with the Project Manager, for overall quality of the review and timely delivery of its outputs, described above in Section 11 Review Deliverables, above. The consultant will ensure that all evaluation criteria and questions are adequately covered.

13. Schedule of the Review

The table below presents the tentative schedule.

Table 3. Tentative schedule for the Review

Milestone	Indicative Timeline
Inception Report	End-September/Mid of October
Review Mission	Tbd – subject to COVID-19 restrictions (not mandatory)

Telephone interviews, surveys etc.	October – first half of November
Powerpoint/presentation on preliminary findings and recommendations	Early second half of November
Draft Review Report to Project Manager	Mid second half of November
Draft Review Report shared with UNEP colleagues	End of November
Draft Review Report shared with wider group of stakeholders	End of November
Final Review Report	Early second half of December
Final Review Report shared with all respondents	Before Christmas, December 2021

14. Contractual Arrangements

The Review Consultant will be selected and recruited by the Project Manager under an individual Special Service Agreement (SSA) on a "fees only" basis (see below). By signing the service contract with UNEP/UNON, the consultant certifies that they have not been associated with the design and implementation of the project in any way which may jeopardize their independence and impartiality towards project achievements and project partner performance. In addition, they will not have any future interests (within six months after completion of the contract) with the project's executing or implementing units. All consultants are required to sigh the Code of Conduct Agreement Form.

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

Schedule of Payment:

Deliverable	Percentage Payment
Approved Inception Report	30%
Approved Draft Main Review Report	30%
Approved Final Main Review Report	40%

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 Project Manager and on the production of acceptable receipts. Terminal expenses and residual DSA entitlements (25%) will be paid after mission completion.

The consultant may be provided with access to UNEP's information management system and, if such access is granted, the consultants agree not to disclose information from that system to third parties beyond information required for, and included in, the Review Report.

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 UNEP, payment may be withheld at the discretion of the Head of Unit/Branch until the consultants have improved the deliverables to meet UNEP's quality standards.

If the consultant fails to submit a satisfactory final product to UNEP in a timely manner, i.e. before the end date of their contract, UNEP reserves the right to employ additional human resources to finalize the report, and to reduce the consultants' fees by an amount equal to the additional costs borne by the project team to bring the report up to standard.

ANNEX VIII. REVIEW FRAMEWORK

Evaluation criterion: Strategic Relevance

EQ1: To what extent are the objectives and results of the project consistent with global, donor, regional and national environmental priorities development priorities and policies, and were aligned throughout the project implementation period with the SDGs and with agencies global policies and strategies? **-To what extent are the project results and design:** • **responsive to UNEP Medium-Term Strategy4 (MTS), Program of Work (POW) and Strategic Priorities?** • **responsive to emerging needs and orientations during the implementation period?** • **aligned with the national environmental strategies and government priorities?** • **aligned with Irish Aid, Norway, UNEP and UNEA?** • **Aligned and supportive of the SDGs?**	
Assumption to be assessed	**A1.1: The project results are responsive to global, regional, and national environmental priorities, with a human right perspective**
Indicators/Criteria	• Existence updated needs assessment, identifying the needs of diverse stakeholder groups throughout the implementation period • The project is consistent with UNEP, UNEA and donor's strategies • The selection of priority countries is consistent with identified needs as well as global and regional environmental priorities • National stakeholders participated in the design and implementation of the project • The project has used disaggregated data to identify women, children, youth, and vulnerable groups • Extent to which the project supports the SDGs
Sources of information	• Project document and project reports • AWPs • National policy/strategy documents • Surveys and census data • Other relevant studies used to understand the context • GPCU, UCC-CDC, ICWRGC staff • National Partners
Methods for data collection	• Documentary analysis • Interviews/ FDG with project staff • Interviews/ FDG with national focal points • Interviews/focus groups with final beneficiaries • Interviews/ FDG with Civil Society Organizations (CSOs) (to be identified) • Survey to national focal points/ government officials/ CSO/ Academia
EQ2: To what extent are the objectives and results of the project consistent with global, donor, regional and national environmental priorities development priorities and policies, and were aligned throughout the project implementation period with the SDGs and with agencies global policies and strategies? **-To what extent are the project results and design:**	

• **Align with UNEP GEMS/Water comparative advantage/ value added?** • **Identified and built synergies with other ongoing or planned interventions? (e.g., UNESCO's World Water Assessment Program, UN-Water, UNU-INWEH)**	
Assumption to be assessed	**A1.2: The project builds on GEMS/water comparative advantages and synergies with other ongoing initiatives**
Indicators/Criteria	• GEMS/water is uniquely positioned to deliver the project results • The project is aware of and has proactively seek synergies with other ongoing initiatives • The project has cooperated and draw lessons from the implementation of the project *Building Capacities of Governments and Stakeholders to Implement Integrated Water Resources Management*
Sources of information	• Project document • AWPs • National policy/strategy documents • Documents from other UN, bilateral, and multilateral water programs, projects, and initiatives • GPCU, UCC-CDC, ICWRGC staff • National Partners • UN, bilateral, multilateral partners
Methods for data collection	• Documentary analysis • Interviews/ FDG with project staff • Interviews/ FDG with national focal points • Interviews/focus groups with final beneficiaries • Interviews/ FDG with Civil Society Organizations (CSOs) (to be identified) • Interviews FDG with staff from UN, bilateral, multilateral partners • Survey to national focal points/ government officials/ CSO/ Academia

Evaluation criterion: **Nature of External Context**

EQ3: To what extent has the project design been able to adapt to crisis, including the COVID-19 pandemic?	
- **To what extent has the project been flexible, innovative, and agile in adapting to the Covid-19 pandemic?** - **To what extent has the project been flexible, innovative, and agile in adapting to political, migratory crisis, natural disasters, and conflict?**	
Assumption to be assessed	**A3.1: The project has been flexible, innovative, and agile in adapting to the Covid-19 pandemic/ other crisis in target countries**
Indicators/Criteria	• Degree to which the project has provided rapid responses to the health, political and social changes caused by the Covid-19 pandemic/ another crisis affecting project implementation
Sources of information	• AWPs • Annual Reports

	• National policy/strategy documents related to Covid-19 • Project staff • National Partners (Governments, CSO and Academia)
Methods for data collection	• Documentary analysis • Interviews/FDG with project staff • Interviews/ FDG with NFP/CFP • Interviews/ FDG with other relevant partners (government, CSOs, UN, Academia) • Survey to national focal points/ government officials/ CSO/ Academia

Evaluation criterion: **Quality of Project Design**

EQ4: Does the project document entail clear and adequate problem and situation analyses? • **To what extent has the project design been based on current scientific paradigms and results from similar interventions?**	
Assumption to be assessed	**A4.1: The project is based on an updated, scientific, evidence-based assessment for the situation of freshwater quality and freshwater quality monitoring, including lessons learned from past interventions**
Indicators/Criteria	• Degree to which the project is based on an updated, scientific, evidence-based assessment for the situation of freshwater quality and freshwater quality monitoring
Sources of information	• Project document, project reports and AWPs • Peer reviewed, grey literature reports (Academia, UN, multilateral financial institutions) • Project staff • National Partners (Governments, CSO and Academia)
Methods for data collection	• Documentary analysis • Interviews/FDG with project staff • Interviews/ FDG with NFP/CFP • Interviews/ FDG with other relevant partners (government, CSOs, UN, Academia) • Survey to national focal points/ government officials/ CSO/ Academia
EQ5: Does the project document include a clear and adequate stakeholder analysis, including by gender/minority groupings or indigenous peoples, and a description of stakeholder consultation/participation during project design process? • **To what extent has the project identified and engaged relevant stakeholders at the global, regional, and national level?** • **To what extent has the project ensured that the gender, vulnerable population issues are considered?**	
Assumption to be assessed	**A4.1: The project has identified all the relevant stakeholders and included gender and human rights issues**
Indicators/Criteria	• The project has identified and engaged all relevant stakeholders at the global, regional, and national level

	• The project has addressed gender and human right issues ensuring equal access to capacity development and outreach activities and striving to collect disaggregated data
Sources of information	• Project document, project reports and AWPs • Peer reviewed, grey literature reports (Academia, UN, multilateral financial institutions) • Project staff • National Partners (Governments, CSO and Academia)
Methods for data collection	• Documentary analysis • Interviews/FDG with project staff • Interviews/ FDG with NFP/CFP • Interviews/ FDG with other relevant partners (government, CSOs, UN, Academia) • Survey to national focal points/ government officials/ CSO/ Academia

Evaluation criterion: **Effectiveness**

EQ6: Has the project delivered all its intended outputs?	
Assumption to be assessed	**A6.1: The project logic included feasible outputs resulting from the completion of the project activities** **A6.2: The different initial capacities of the national focal points will not affect the delivery of activities and outputs**
Indicators/Criteria	• Project outputs including water quality assessments, guidelines, training materials, and database have been produced with adequate quality to be used by the project's national partners
Sources of information	• Project's outputs and publications • Project and regional office staff • National Partners (Government, CSO and Academia)
Methods for data collection	• Documentary analysis • Interviews/FDG with project staff • Interviews/ FDG with NFP/CFP • Interviews/ FDG with other relevant partners (government, CSOs, UN, Academia) • Survey to national focal points/ government officials/ CSO/ Academia
EQ7: Have the project outcomes been realized? • **Are the Drivers to support transition from Outputs to Project Outcomes in place (increased awareness)?** • **Do the Assumptions for the change process from Outputs to Project Outcomes hold?**	
Assumption to be assessed	**A7.1: National organizations will use the project outputs (capacity development, outreach, database) to improve their water quality monitoring frameworks** **A7.2: The difference in initial capacities of national organizations will not affect the outcomes**

Indicators/Criteria	• National organizations have used the project outputs (capacity development, outreach, database) to improve their water quality monitoring frameworks
Sources of information	• Project's outputs and publications • Other peer reviewed publications and publications by UN agencies and multilateral financial institutions. • Project and regional office staff • National Partners (Government, CSO and Academia)
Methods for data collection	• Documentary analysis • Interviews/FDG with project staff • Interviews/ FDG with NFP/CFP • Interviews/ FDG with other relevant partners (government, CSOs, UN, Academia) • Survey to national focal points/ government officials/ CSO/ Academia
EQ8: How likely is the realization of the project's intended impact (reduce degradation of water quality)? • **Is there indication of progress towards the project's implicit intermediate results (e.g., National regulatory and policy framework developed and implemented). The intermediate result will be prove of the project's catalytic role in improving national water quality monitoring systems**	
Assumption to be assessed	**A8.1: Improved water quality monitoring frameworks will strongly contribute to stop degradation of water quality for ecosystems**
Indicators/Criteria	• Improved water quality monitoring frameworks is likely to contribute to stop degradation of water quality for ecosystems
Sources of information	• Project's outputs and publications • Other peer reviewed publications and publications by UN agencies and multilateral financial institutions. • Project and regional office staff • National Partners (Government, CSO and Academia)
Methods for data collection	• Documentary analysis • Interviews/FDG with project staff • Interviews/ FDG with NFP/CFP • Interviews/ FDG with other relevant partners (government, CSOs, UN, Academia) • Survey to national focal points/ government officials/ CSO/ Academia

Evaluation criterion: **Financial management**

EQ9: Are the budgets / financial management adequate?	
Assumption to be assessed	**A9.1: Project budget and financial management is adequate to the timely delivery of the project's outputs**
Indicators/Criteria	• The project budget, annual reviews reflected in the AWPs sustained the timely delivery of project activities and outputs • The project financial management is in accordance with UNEP rules and regulations
Sources of information	• Project's outputs and publications • Project document, reports, including financial reports and audits • Project staff
Methods for data collection	• Documentary analysis • Interviews/FDG with project staff

Evaluation criterion: **Efficiency**

EQ10: Are the budgets / financial management adequate?	
Assumption to be assessed	**A10.1: The project approach and governance enable the timely delivery of the project's outputs, minimizing their material and energy footprint**
Indicators/Criteria	• The project management and implementing partners were able to deliver the expected outputs within the implementation timeframe • The project management and implementing partners took steps to minimize the project's their material and energy footprint
Sources of information	• Project's outputs and publications • Project document, reports, including financial reports and audits • Project staff
Methods for data collection	• Documentary analysis • Interviews/FDG with project staff

Evaluation criterion: **Monitoring and reporting**

EQ11: Does the project logical framework captures the main elements of the project's ToC and is equipped with cost-effective, SMART indicators, including baseline and targets? • **Did the project count with sufficient financial and human resources for monitoring and evaluation?** • **Were the baselines determined at project design accurate and useful for the project's monitoring?** • **Were monitoring tools (reports, MTR, etc.) submitted timely and results incorporated in AWPs?**	
Assumption to be assessed	**A11.1: The logical framework of the project possesses SMART indicators at output and outcome level and a clear monitoring plan**
Indicators/Criteria	• Project's logical framework has SMART indicators at output and outcome level (baseline and target) • Project's design includes a monitoring and evaluation plan • Project's monitoring was implemented in a cost-effective manner (data collection, reporting)
Sources of information	• Project's outputs and publications

	• Project document, reports, including financial reports and audits • Project staff
Methods for data collection	• Documentary analysis • Interviews/FDG with project staff

Evaluation criterion: **Sustainability**

EQ12: Are project results likely to be sustained over the next five years? • **What is the expectation in terms of funding for water quality monitoring?** • **Do project's stakeholders see it in their interest to sustain and apply capacities obtained through the project?** • **Have the institutional frameworks for water quality monitoring been strengthened thanks to the project?**	
Assumption to be assessed	**A12.1: Project's national stakeholders are aware and willing to implement water quality monitoring at the national level**
Indicators/Criteria	• Funding for water quality monitoring at global access is secured for the next 5 years • Funding for water quality monitoring at the national access is secured for the next 5 years • Policy framework and capacities for water policy monitoring present
Sources of information	• Project's outputs and publications • Other peer reviewed publications and publications by UN agencies and multilateral financial institutions. • Project and regional office staff • National Partners (Government, CSO and Academia)
Methods for data collection	• Documentary analysis • Interviews/FDG with project staff • Interviews/ FDG with NFP/CFP • Interviews/ FDG with other relevant partners (government, CSOs, UN, Academia) • Survey to national focal points/ government officials/ CSO/ Academia

ANNEX IX. QUALITY ASSESSMENT OF THE REVIEW REPORT

UNEP Evaluation Office Quality Assessment of the Terminal Review Report

Review Title: Terminal Review of GEMS/Water (Contributing to the UNEP Projects: "Water Quality: Strengthening the normative basis for planning, monitoring, and managing water quality for aquatic ecosystems" (2015-2018, PIMS ID 01845) and "Capacity building for national and regional environmental information and knowledge management" (2018-2022, PIMS ID 02020)).

Consultant: José Antonio CABO BUJÁN

All UNEP Reviews are subject to a quality assessment by the UNEP Evaluation Office. This is an assessment of the quality of the review product (i.e. Main Review Report).

	UNEP Evaluation Office Comments	Final Review 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 review product. It should include a concise overview of the review object; clear summary of the review objectives and scope; overall project performance rating of the project and key features of performance (strengths and weaknesses) against exceptional criteria (plus reference to where the review 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 review questions), lessons learned and recommendations.	Final report: The Executive Summary provides the justification for the project and its evolution as a 'project'/initiative but not its rationale and objectives. A summary of the review objectives and scope is also missing as is the overall project performance ratings. The Executive Summary does not make a distinction between the project's achievements (performance) and the project's strength (design/legitimacy) e.g. its significant contribution to consolidating water quality data sharing and importance in the context of SGD indicators. The review conclusion doesn't present a summative statement that reflects on the performance of the evaluand as a whole. The review describes the project as having been successful in significantly raising the capacities at national water agencies but does not show its contribution to improved decision-making in support of better water resource management.	4
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 review; 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 reviewed/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 review and the key intended audience for the findings?	Final report: The section provides a basic introduction, but the unit of analysis (evaluand) is not clearly/ sufficiently identified and is lacking details such as institutional context and the scope of the review, timelines, budget. The primary unit of analysis appears to be work undertaken under particular funding agreements (Irish and BMUV) that were administratively associated, at different points in time, with two different PRC-approved projects.	3

II. Review Methods A data collection section should include: a description of review 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 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 review limitations such as: low or imbalanced response rates across different groups; gaps in documentation; extent to which findings can be either generalised to wider review 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. E.g. *'Throughout the review process and in the compilation of the Final Review 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'*	Final report: The section describes the review methods used; the data collection methods (qualitative & quantitative); data verification methods (triangulation); secondary data sources; respondents interviewed. The available quantitative data, however, was based on secondary sources of a survey undertaken in 2021. The selection criteria used to identify the respondents, and whether the number of respondents interviewed was adequate, is lacking. There was an attempt to disaggregate the respondents by type and sex. There is mention of adherence to UNEG ethical guidelines – but it is not explicitly described which (e.g. confidentiality, consent, anonymity) were applied and how. Table 1 has differences from Annex II regarding numbers of people consulted. No limitations to the review are mentioned. No reference to annexes (TOR, documents, etc. are included).	3
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	Final report: The section covers the aspects required. Efforts are made for the reader to better understand the unit of analysis (evaluand). It seems the workstream undertaken by the Global Programme Coordination Unit (GPCU) and three implementing partners: the University College Cork (GEMS/Water Capacity Development Center), the German Federal Institute for Hydrology (GEMS/Water Data Center) and the Brazilian Water and Sanitation Agency (GEMS/Water Latin America Regional Hub) defines the scope of the review. The institutional set-up, overview of stakeholders, log- frames of both associated PRC-approved PIMS projects and changes during implementation are described. outlined. Although the section is detailed in its description of financing, it does not break down the budgets and expenditures with regard to PRC-approved projects, results	4

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	frameworks (313.1 and 716.1) and funding streams.	
IV. Theory of Change The reconstructed TOC at Review 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 Review*[49] was designed (who was involved etc.) and applied to the context of the project? Where different groups (e.g. vulnerable, gender, marginalised etc) are included in, or affected by the project in different ways, this should be reflected in the TOC. 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 Review. *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: The TR report presents (on page 29) two ToCs of the GEMS/Water Programme. The first is the same as the ToC of the PIMS ID 1845. The second, which is described as the "2019 version", is unclear whether represents the ToC of the GEMS/Water Programme or the ToC of the second UNEP project (ID 2020) under which GEMS/Water has been implemented as Output D. However, the logframe of the PIMS ID 2020 presented on page 20 doesn't match with the second ToC diagram on page 29, hence one could assume that the latter is the ToC of the GEMS/Water Programme only, which was modified in 2019 with the approval of the GEMS/Water Strategy 2020-2024. ToC discussed but not presented clearly as a narrative. The Review discusses changes in the ToC between original and modified ProDoc but does not explore in detail the causal links within the intended change process and how this applies to the context of the project. No clear articulation major causal pathways in text. The TOC has not been reconstructed to explicitly represent the work supported by the grant agreements.	3
V. Key Findings **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[50]) 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: Provides assessment of the project's relevance in relation to UNEP's mandate and its alignment with UNEP's policies and strategies. The section does not address sub-criteria 2 alignment to Donor/Partner Strategic Priorities. Relevance to regional, sub-national and national environmental priorities is linked to analysis of SDGs. Overall, this section adequately describes the alignment to the four elements and gives an overall rating for the relevance criteria. However, it does not assign the rating on each of the four elements.	4

[49] During the Inception Phase of the review process a *TOC at Design* is created based on the information contained in the approved project documents (these may include either logical framework or a TOC or narrative descriptions). During the review process this TOC is revised based on changes made during project intervention and becomes the *TOC at Review*.

[50] 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.

5. Alignment to the UNEP Medium Term Strategy (MTS), Programme of Work (POW) and Strategic Priorities 6. Alignment to Donor/Partner Strategic Priorities 7. Relevance to Regional, Sub-regional and National Environmental Priorities 8. Complementarity with Existing Interventions		
B. Quality of Project Design To what extent are the strength and weaknesses of the project design effectively summarized?	Final report: The *Review of quality of project design* Table, which is indicated to be provided as Annex VII, was not included in the report. It is acknowledged that there is a challenge with this section as the review is covering a set of activities covered by GEMS-related grant agreements and not a formally approved project document. The Quality of Project Design is rated as HS on page 34 and as S in the summary table of project findings and ratings.	3
C. Nature of the External Context For projects where this is appropriate, key external features of the project's implementing context that may have been reasonably expected to limit the project's performance (e.g. conflict, natural disaster, political upheaval[51]) and how they have affected performance, should be described.	Final report: The section describes how the project adapted shifting external context and how this has affected performance. Changes in political strategies in Brazil should not be considered as political upheaval and non-renewal of the MoU with ANA should have been considered under sections dealing with adaptative management.	4
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: A clearly reconstructed ToC earlier in the report would have helped with clarity of this section. The Review struggles to present a well-reasoned, complete and evidence-based assessment of the availability of outputs because they are defined largely by the GEMS work packages supported by Irish and the BMUV funding / the GEMS Strategy. There is indirect evidence that what was reported on was achieved but it is unclear to what extent. The section on the achievement of outcomes is unclear for the same reasons i.e. the scope of the review does not correspond to an approved project document and the main causal pathways have not been sufficiently specified and unpacked. The main focus of the section is still on outputs and activities. The most relevant type of outcome with respect to the purpose of the GEMS initiative would be examples of evidence-based decisions at the regional, sub-regional and national level made as a result of the use of quality environmental information. Verifiable evidence on the use of GEMS in decision-making is lacking. The report states "*Due to this project's activities, some national governments have*	3

[51] 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.

	taken action on ambient water, expanding incipient monitoring networks and improving reporting on SDG 6". Evidence in support of the statement is absent. Overall the report does not clearly determine to what extent outcomes were achieved.	
(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: This section does not provide an adequate assessment of the criterion. An integrated analysis, guided by the causal pathways represented by the ToC is lacking. The text doesn't explain drivers and assumptions explicitly, but rather focuses on external context when considering likelihood of impact. No examples are presented where outcomes are presented and further progress towards through intermediate states impact discussed. The section acknowledges that the project did not envisage a tangible impact given its timeframe and funding envelope. The review did not provide a rating.	2
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: Discussion on adherence to UNEP's financial policies and procedures and communication between financial and project management staff are very limited and lack evidence. The section presents the expenditure against allocated funding by respective donors. However, because the scope of the review does not directly correspond to an approved 'accounting unit', e.g. an approved project, it lacks any meaningful information by output and component level. The text refers to 'the project' the boundaries of which remain unclear in this context.	2
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: The Section does not provide a sufficiently detailed and evidence-based description of the cost- and time-saving measures. The text describes high transaction costs of coordinating tasks and reallocation of staff level of effort towards fund raising - but does not describe its effect on timeliness of interventions delivery neither on sequencing of events. It does not cover the extent to which the management of the project minimised UNEP's environmental footprint	2

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: Although the section describes the indicator framework, it does not assess the adequacy of the indicators as measures of the respective result levels or describe the existence or implementation a sound monitoring plan pertaining to the implementation of the GEMS initiative. The rating on monitoring of project implementation was rated at MS yet the finding is that the M&E plan was not prepared or executed. The section on reporting makes no mention of report content, quality or utility.	2
H. Sustainability How well does the review 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 *(including issues of partnerships)*	Final report: Beyond respondents' expressions of; their interest in the continuation of the GEMS initiative, the multilateral political support for GEMS via UNEA and the acknowledgement that GEMS/Water is UNEP's ambient water quality implementing unit and the only support for SDG goal 6.3.2 - i.e. strong evidence supporting GEMS' continued relevance, the review does not present evidence for any factors or conditions to sustain the gains / results made. The absence of well-evidenced outcomes earlier in the report makes an assessment of their durability challenging. Beyond the GEMS initiative's ability to secure small and medium bilateral grants from European donors and the uncertainty of adequate future large-scale financial support, the review does not describe the extent to which achievement of the outcomes is dependent on this additional/future funding. It is implied that lack of continued funding to support the GEMS initiative will jeopardize the durability of outcomes.	2
I. Factors Affecting Performance These factors are <u>not</u> 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 review report cover the following cross-cutting themes: • Preparation and readiness • Quality of project management and supervision[52] • Stakeholder participation and co-operation • Responsiveness to human rights and gender equity • Environmental and social safeguards • Country ownership and driven-ness • Communication and public awareness	The analysis in this section is presented at varying levels of detail. An assessment of 'preparation and readiness' is missing presumably because GEMS, in recent years, was not designed and approved as a PRC-approved project but included as a funded initiative within other UNEP projects. The assessment of the following themes is unclear: Environmental and Social Safeguards, Country Ownership and Communication and Public Awareness. The section would have benefitted from references to where these themes are discussed within the text and supported by verifiable sources of evidence.	3
VI. Conclusions and Recommendations	Final report:	3

[52] 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 overall supervision/technical backstopping provided by UNEP, as the Implementing Agency. Comments and a rating should be provided for both types of supervision and the overall rating for this sub-category established as a simple average of the two.

Quality of the conclusions: The key strategic questions should be clearly and succinctly addressed within the conclusions section. It is expected that the conclusions will highlight the main strengths and weaknesses of the project, and connect them in a compelling story line. 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 recommendations, should be consistent with the evidence presented in the main body of the report.	Highlights form some of the criteria that were evaluated have been presented. The section however lacks a summation of the main strengths and weaknesses. a narrative on the strategic questions identified in the TOR are also missing. The project being the custodian of SDG indicator 6.3.2 and hence helping countries to improve their water quality data management, is not articulated as a strength of the project in this section. The review describes the project as having been successful in significantly raising the capacities at national water agencies but does not show its contribution to improved decision-making in support of improved water resource management the key intended outcome of the initiative.	
ii) Quality and utility of the lessons: Both positive and negative lessons are expected and duplication with recommendations should be avoided. Based on explicit review 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: Good lessons. The Context/ comments could have been further elaborated and be better supported by findings in main text.	4
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.	Final report: Recommendations lack details of responsibility to implement but are overall actionable and relevant.	4

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.		
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, including a gender disaggregation total for respondents.	Final report: Some Annexes are missing. A larger number of documents consulted are listed but none are referenced in the main text. Specifying documentary sources of information and evidence would have increased the robustness of the report.	3
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 UNEP Evaluation Office formatting guidelines?	Final report: The report is written in a clear manner. The report follows UNEP's guidelines.	4
OVERALL REPORT QUALITY RATING		3.1

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 review report is calculated by taking the mean score of all rated quality criteria.