UNITED NATIONS

ECLAC

FINAL ASSESSMENT REPORT

April
2025

ASSESSMENT OF THE UNITED NATIONS PEACE AND DEVELOPMENT TRUST FUND PROJECT

Potable water, sanitation and renewable energies to improve the health conditions of the population and promote productive uses in the most lagging behind municipalities of the countries of the northern subregion of Latin America and the Caribbean

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Potable water, sanitation and renewable energies to improve the health conditions of the population and promote productive uses in the most lagging behind municipalities of the countries of the northern subregion of Latin America and the Caribbean

April 2025

This report was prepared by Jose Antonio Cabo, an external consultant, who conducted the evaluation. Mr. Cabo worked under the overall guidance of Sandra Manuelito, Officer in Charge of the Programme Planning and Operations Division of the Economic Commission for Latin America and the Caribbean (ECLAC), and under the direct supervision of Anne-Sophie Samjee, Programme Management Officer, who provided strategic and technical guidance, coordination and methodological and logistical support. The assessment also benefited from the assistance of Sara Albornoz Gallegos, Programme Management Assistant.

The support provided by the project stakeholders at ECLAC, all of whom are involved in the implementation of this project, is gratefully acknowledged. Special thanks are owed to the United Nations peace and development trust fund project manager, Silvia Saravia, Economic Affairs Officer of the Water and Energy Unit of the Natural Resources Division of ECLAC, for her cooperation throughout the evaluation process and assistance in the review of this report. The valuable support and contributions of the technical advisers and staff of ECLAC subregional headquarters and country offices are greatly appreciated. The evaluator extends his gratitude to the project partners, collaborators, participants and beneficiaries for their availability and valuable insights shared in the evaluation exercise.

All comments on the evaluation report by the Evaluation Reference Group and the evaluation team of the Programme Planning and Evaluation Unit were considered by the evaluator and duly addressed, where appropriate, in the final text of the report.

Printed at United Nations, Santiago
S.2500310[E]

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DIAGRAM

ACRONYMS

Acronym	Definition
ANDA	National Aqueducts and Sewerage Administration of El Salvador
ASA	Salvadoran Water Authority
ECLAC	Economic Commission for Latin America and the Caribbean
IDAAN	National Institute of Aqueducts and Sewerage of Panama
ROSA	Regional Network and Observatory for Water Sustainability
SDG	Sustainable Development Goal
SICA	Central American Integration System

EXECUTIVE SUMMARY

The evaluated project, "Potable water, sanitation and renewable energies to improve the health conditions of the population and promote productive uses in the most lagging behind municipalities of the countries of the northern subregion of Latin America and the Caribbean", was implemented by ECLAC and funded through the United Nations peace and development trust fund. The project aimed to promote circular economy solutions —specifically, methane recovery from wastewater treatment plants— as a means of reducing operational costs and advancing sustainable sanitation in El Salvador, Mexico and Panama. While not all of its envisioned outcomes materialized, the project sparked significant interest among national stakeholders and regional actors and made a lasting contribution to technical knowledge and policy dialogue in the region.

KEY FINDINGS

- The project team successfully engaged national water authorities and utilities, integrating technical materials into ongoing policy discussions on wastewater treatment and renewable energy. The initiative also resonated regionally: other countries such as Colombia and the Dominican Republic expressed interest in applying its methodology. Among United Nations agencies, the United Nations Environment Programme (UNEP) has shown willingness to build on its findings to refine methodologies and explore biodiversity co-benefits.
- The project generated valuable outputs —national reports, a methane recovery calculator and capacity-building seminars— that were generally well received by national stakeholders. It also provided a unique opportunity for peer-to-peer learning through a study tour in Chile. However, limitations emerged at the local level. Wastewater treatment plant operators often prioritized regulatory compliance and service expansion over circular economy solutions, citing financial, institutional and technical constraints. Smaller wastewater treatment plants were found to have limited methane recovery potential and larger plants under concession were not included in the project.
- Coordination with national counterparts was essential, but not all relevant local stakeholders could participate in activities such as the study tour. While the project did engage the United Nations resident coordinator offices and explore partnerships with international financial institutions, these efforts did not translate into formalized collaborations or co-financed activities during the project period.

CONCLUSIONS

- The project was highly relevant to national and regional priorities and enhanced regional knowledge of circular economy applications in wastewater treatment. It resulted in the successful expansion of ECLAC policy engagement into operational domains.
- Its influence was strongest at the national level, where it contributed to conceptual thinking and technical understanding; however, the project did not result in the implementation of methane recovery investments.
- The project methodology and tools were appropriate and appreciated but required adaptation to local realities, particularly in terms of the scale and capacity of wastewater treatment plants in the participating countries.
- Financial and institutional barriers and competing local priorities, such as wastewater coverage and regulatory compliance, limited the practical application of project recommendations.

LESSONS LEARNED

- Methane recovery and circular economy solutions require tailoring to local wastewater treatment plant conditions and capacities.
- Early structured engagement with local operators and municipalities enhances the relevance and feasibility of implementation.
- Alignment with national priorities is essential but must be matched with sustained support mechanisms to bridge policy and practice.
- Peer-to-peer learning activities like study tours are valuable, but their impact hinges on inclusive and well-coordinated participation.

RECOMMENDATIONS

ECLAC and its national and local partners could consider:

- Strengthening local-level implementation by enhancing direct support to wastewater treatment plants.
- Improving access to financial resources for the modernization of wastewater treatment plants and the integration of circular economy approaches.
- Enhancing policy uptake by strengthening the link between project outputs and national regulatory frameworks.
- Improving gender and social inclusion strategies in future projects on the water-energy nexus.
- Strengthening regional coordination and scaling up project results in other Latin American countries.
- Increasing the practical utility of the Methane Calculator for wastewater treatment plants.
- Optimizing project management and local engagement for future ECLAC-implemented initiatives.

1. INTRODUCTION

1. The evaluation of the project "Potable water, sanitation and renewable energies to improve the health conditions of the population and promote productive uses in the most lagging behind municipalities of the countries of the northern subregion of Latin America and the Caribbean" aims to assess its relevance, effectiveness, efficiency, coherence and sustainability by documenting and evaluating the project's delivery of outputs and expected outcomes, while identifying lessons learned and good practices that can be replicated in posterior phases or settings. The evaluation findings could guide the future planning and implementation of similar projects.

2. This evaluation is mandated by General Assembly resolutions (54/236, 54/474, 70/8 and 73/269) endorsing the Regulations and Rules Governing Programme Planning, the Programme Aspects of the Budget, the Monitoring of Implementation and the Methods of Evaluation. The ECLAC Executive Secretary oversees this internal evaluation as part of the Commission's strategy to periodically assess various areas of its work, ensuring alignment with United Nations evaluation norms and standards.

3. The evaluation is facilitated by an independent consultant, following ECLAC evaluation guidelines and the United Nations Evaluation Group's ethical guidelines, and covers the entire project cycle, from its approval in 2021 to its closure in January 2025. The evaluation analyses all project activities, financial and human resources, and both expected and unexpected results.

4. The evaluation is independent and evidence-based, deriving findings from multiple sources, including project reports, stakeholder interviews and a survey of project beneficiaries.

Main evaluation criteria and questions:

5. Thirty-two evaluation questions in line with the evaluation criteria of relevance, efficiency, effectiveness, coherence, sustainability and cross-cutting issues were prepared on the basis of the evaluation terms of reference and the guidelines of ECLAC and the United Nations peace and development trust fund, and were subsequently adjusted by the independent evaluation consultant. During data collection and analysis, these questions were slightly modified to:

   (i) Reduce redundancies by merging similar questions.

   (ii) Improve focus on core evaluation criteria by merging subquestions under each criterion, thereby eliminating duplications.

   (iii) Streamline the questions to ensure better alignment with the evaluation criteria and coherence between findings and conclusions and recommendations.

   (iv) Adjust the questions to the actual scope of the project, which during implementation focused on methane recovery in wastewater treatment plants for electricity generation to reduce the running costs of such plants, rather than the original design outcome of implementing investment projects in drinking water and sanitation to support a sustainable, resilient and inclusive recovery from the coronavirus disease (COVID-19) pandemic and to improve public health conditions. Therefore, evaluation question 10.2 of the evaluation inception report was changed from "*To what extent can water or energy supply changes in the selected municipalities be linked to the project? How are the observed changes related to the project? How many people are estimated to be affected positively or negatively by the project?*" to "*What changes in the wastewater treatment context in the respondents' area can be attributed to the project?*"

6. The streamlining process resulted in the following reduced list of 19 evaluation questions.

Relevance

Q 1. Did the project consult all relevant stakeholders from different sectors (national and local government, private, civil society, communities) during project preparation and implementation? How was this ensured? If any relevant group or person was not included, why?

Q 2.1. How well did the project respond to demands and needs from national and municipal stakeholders?

Q 2.2. How does the project contribute to policies, strategies and programmes at national and local levels in the participating countries?

Q 3. How did the project contribute to the ECLAC programme of work?

Q 4. How robust was the project problem analysis and theory of change in identifying the root causes of the issues addressed and defining clear pathways to achieve the intended outcomes?

Efficiency

Q 5. How well did the project follow the project document's timeline and milestones? What were the primary causes for delays, if any, and how did this affect the delivery of outputs and implementation of outcomes?

Q 6. How well did the project management arrangements (project team, implementing partners, governing structures) enable the delivery of activities and outputs and facilitate the implementation of the outcomes? What were the main strengths and weaknesses of the implementation arrangements?

Q 7. Were alternative implementation strategies considered? Was the chosen approach the most cost-effective?

Effectiveness

Q 8.1. Has the project team finalized the reports on water and energy at the national level? If not, why not? To what extent did the reports contain a detailed analysis of the energy sources used for drinking water extraction, treatment and distribution and opportunities to generate renewable energy from wastewater treatment plants?

Q 8.2. To what extent did the expert groups evaluate the reports and select wastewater treatment plants, including all relevant organizations? How did the expert groups convene, validate the reports, and choose wastewater treatment plants? How did the selected wastewater treatment plants comply with the selection criteria?

Q 9. To what extent did national and wastewater treatment plant stakeholders find the project's technical materials (reports and calculator) and capacity development seminars valuable and actionable for implementing water and energy solutions? Were the capacity development seminars delivered as planned to all relevant stakeholders at the national and wastewater treatment plant levels? If not or partially, why? What factors favoured or hampered the delivery of the capacity development seminars?

Q 10.1 To what extent have the selected wastewater treatment plants completed the design and started the implementation of the plans? If not, what barriers persist hampering plan design or implementation?

Q 10.2 What changes in the wastewater treatment context in the respondents' area can be attributed to the project?

Q 10.3 Has the project contributed to national and local policy development?

Q 11. What changes in procedures, technology and administration, whether positive or negative, expected or unexpected, can be attributed or linked to the project?

Coherence

Q 12. What actors and initiatives related to water supply, sanitation, wastewater treatment and energy solutions for supply, sanitation or treatment were identified in the project's locations? What contacts and collaborations were initiated with these actors and initiatives, including with the United Nations country teams in the three countries? What tangible synergies, including cost reductions, resulted from these contacts, and were any duplications or overlapping initiatives identified? What steps were taken to mitigate duplication and overlap?

Sustainability

Q 13. Have local or national governments incorporated lessons learned or good practices from the project into their policies or operations? Have any management or institutional arrangements been established to support the implementation of related investment plans, such as methane recovery initiatives?

Cross-cutting issues

Q 14. What measures did the project implement to ensure compliance with human rights standards, particularly in promoting non-discrimination in access to training, water and energy services? How did the project address gender equality, ensuring equal participation of women in training and capacity development activities? Additionally, what efforts were made to facilitate access for persons with disabilities? Did the project evaluate potential social or environmental externalities — both positive and negative— resulting from its activities, and if any were identified, what measures were introduced to mitigate them?

Q 15. How has the project contributed to achieving the Sustainable Development Goals (SDGs), particularly Goal 6 (Clean water and sanitation) and Goal 7 (Affordable and clean energy)? Has its contribution been reported? Additionally, how has the project contributed to regional policy initiatives such as the Central American Integration System (SICA) Sustainable Energy Strategy 2030 and the Regional Environmental Framework Strategy 2015–2020? Has this contribution been formally documented and integrated into policy frameworks?

2. BACKGROUND

2.1 SUBJECT UNDER EVALUATION

7. This evaluation assesses the United Nations peace and development trust fund project "Potable water, sanitation and renewable energies to improve the health conditions of the population and promote productive uses in the most lagging behind municipalities of the countries of the northern subregion of Latin America and the Caribbean". The project is implemented by ECLAC and targets municipalities in El Salvador, Mexico and Panama, focusing on improving access to potable water, sanitation and renewable energy solutions through a circular economy approach.

2.2 HISTORY AND CURRENT STATUS

- **Approval and launch.** The project was approved in October 2021 under the 2030 Agenda for Sustainable Development Sub-Fund of the United Nations peace and development trust fund. Implementation began in February 2022 with completion scheduled for January 2025.
- **Project justification.** Many rural and marginalized areas in the project countries lack adequate drinking water, sanitation and energy services, a situation exacerbated by insufficient investment, weak institutional frameworks and high operational costs of traditional energy-dependent systems.
- **Current project status.** The project has resulted in several technical reports, capacity-building seminars and stakeholder engagement activities and has promoted the integration of circular economy principles into wastewater treatment and energy recovery.

2.3 OBJECTIVES AND EXPECTED RESULTS CHAIN

8. The project aims to:

   - Enhance national and local capacities to improve potable water, sanitation and energy services.
   - Promote circular economy solutions such as methane recovery for energy generation at wastewater treatment plants.
   - Foster intersectoral collaboration at the national, municipal and regional levels.

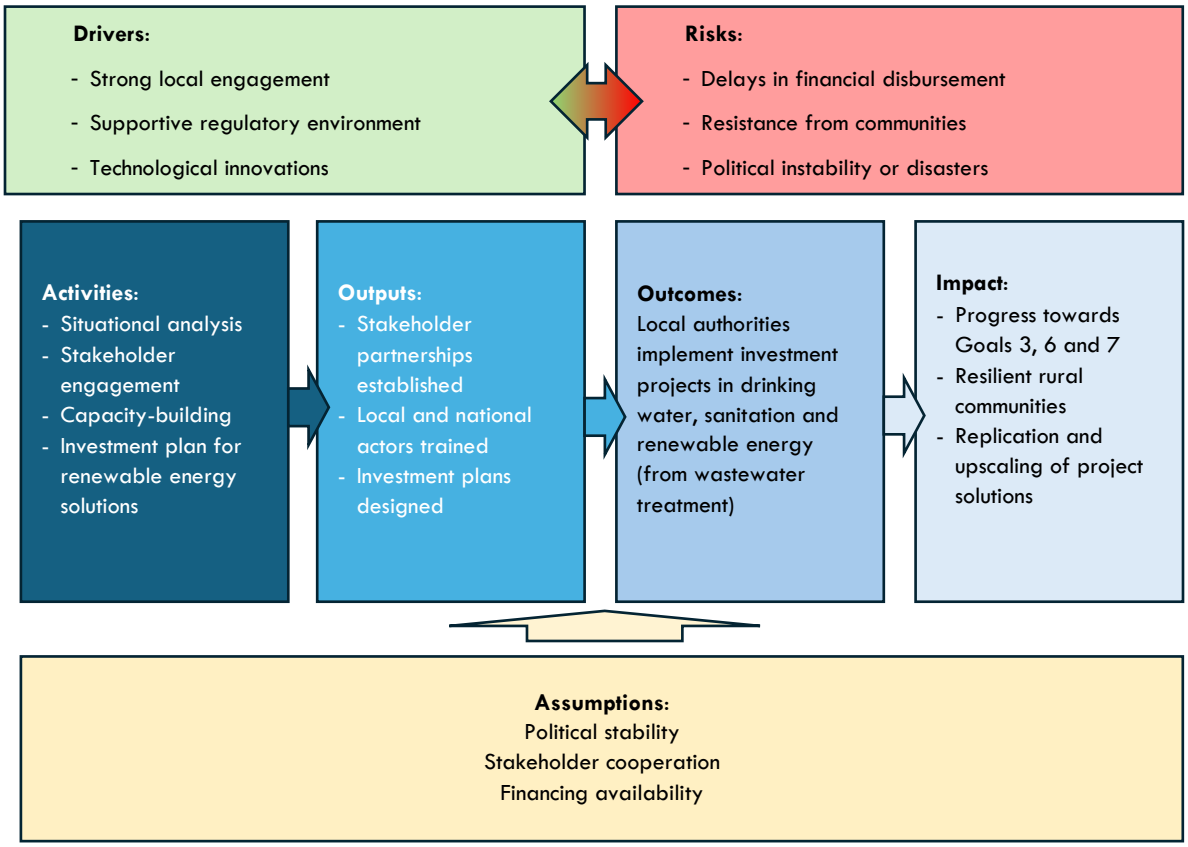
9. The theory of change (see diagram 1) assumes that through technical assessments and expert meetings, capacity-building seminars for national and local stakeholders, investment planning for renewable energy integration in wastewater treatment plants and regional knowledge-sharing events, the project will contribute to:

   - Improved governance and institutional capacity in water and energy management.
   - More efficient and sustainable water and sanitation systems integrating renewable energy.
   - Scaling and replication of successful models across other regions.

2.4 DURATION AND BUDGET

- Project duration: February 2022 to January 2025 (three years).
- Total budget: US$ 496,964, funded through the 2030 Agenda for Sustainable Development Sub-Fund of the United Nations peace and development trust fund.

Diagram 1
Project theory of change



Source: Prepared by the author, on the basis of the letter of agreement of the project.

3. METHODOLOGY

3.1 EVALUATION APPROACH AND SCOPE

10. This evaluation is based on a contribution analysis approach and includes analysis of the contribution of the project's outputs and activities to its intended outcomes and impacts. The evaluation is structured around the Development Assistance Committee criteria: relevance, coherence, efficiency, effectiveness (including impact) and sustainability, along with cross-cutting considerations related to gender, human rights, disability inclusion and environmental impacts.

11. The evaluation included gender considerations by selecting all women identified as stakeholders for interviews, particularly at the technical level (wastewater treatment plant management). As indicated in annex 2, few women were interviewed at the local technical level. This was largely owing to staff turnover at the municipal level, with identified women engineers having been dismissed, transferred to other positions or refusing the interview. Likewise, the evaluation included wastewater professionals of Indigenous background for interviews in the only project area where Indigenous technical and management staff were present (Quintana Roo, Mexico). Questions on the incidence of the project in gender, human rights and disability issues were included in all interview guidelines (see interview guidelines in annex IV). Project environmental effects were considered under cross-cutting criteria as project contributions to mitigate environmental and social externalities and contributions to the achievement of the SDGs.

3.2 DATA COLLECTION METHODS

12. The evaluation methodology consisted of three main data sources:

A. Document review

A comprehensive desk review of project-related documentation was conducted, including:

- Project document (letter of agreement)
- Annual and progress reports (covering 2022–2024)
- Capacity-building materials and agendas
- Technical reports on drinking water, sanitation and renewable energy
- Policy and strategy documents related to Goal 6 and Goal 7
- Relevant national regulations and policy frameworks in El Salvador, Mexico and Panama

13. These documents provided contextual background, detailed project implementation and initial insights into project outputs and contributions to water, sanitation and energy policies in the target countries.

B. Interviews with stakeholders

14. A total of 12 semi-structured interviews were conducted with 20 stakeholders across all levels of engagement, ensuring a diverse set of perspectives. Respondents were selected on the basis of their involvement in project activities and potential influence on project outcomes. The sample included:

- Project team members (ECLAC staff)

- National water and sanitation authorities, such as the National Water Commission of Mexico, the Salvadoran Water Authority (ASA) and the National Aqueduct and Sewerage Administration (ANDA) in El Salvador, and the National Institute of Aqueducts and Sewerage (IDAAN) of Panama (national direct beneficiaries)
- Local representatives managing wastewater treatment plants (local direct beneficiaries)
- Other United Nations agencies and regional organizations, such as resident coordinator offices (third parties)

15. These interviews explored project relevance, effectiveness and coherence, particularly focusing on stakeholder engagement, barriers to implementation and project sustainability. Annex 2 lists the individuals interviewed for this evaluation.

C. Online survey of project participants

16. An evaluation survey was distributed to 297 identified project participants (of 375 total participants), targeting participants in the project's capacity-building activities, but excluding high-level utility officials and other wastewater treatment officials selected for individual interviews. Survey respondents are divided into the evaluation's three stakeholder categories: project team (ECLAC staff), direct beneficiaries (national and local) and third parties (see definitions below under "Stakeholders").

17. The survey measured:

- Perceived relevance of training materials and reports.
- Effectiveness of the project in improving technical capacities.
- Likelihood of project recommendations being implemented.
- Sustainability and institutional adoption of project solutions.

18. The response rate was relatively low (18%, 52 responses). The survey response percentages were broadly similar to the sampling frame percentages in terms of stakeholder type (see table 1), but markedly different in terms of nationality, where some countries were underrepresented among survey respondents (see table 2). In particular, participation was low among participants in the capacity-building activities from El Salvador, Mexico and Panama, while responses were more heavily represented by participants in a community socialization activity held in Mexico in 2023. Women accounted for 21% of the sampling frame, which is close to the 25% of women among survey respondents.

19. In addition to the evaluation survey, results from six other project surveys were considered and analysed. These include the post-event surveys from the project's three capacity-building seminars in El Salvador, Mexico and Panama, and post-event surveys from the three regional activities: expert workshop in Santiago, third edition of the Regional Water Dialogues in Latin America and the Caribbean (2023) and fourth edition of the Regional Water Dialogues in Latin America and the Caribbean (2024) (see table 3). The project capacity-building activity surveys covered the same topics as the evaluation survey. The regional event surveys were significantly shorter and focused on variables such as event highlights, future participation and recommendations for improvement.

Table 1
Comparison between survey respondents and sampling frame, by stakeholder type

Stakeholder type	Sampling frame *(Numbers)*	Sampling frame *(Percentages)*	Survey respondents *(Numbers)*	Survey respondents *(Percentages)*
Direct beneficiary (local)	41	13.8	3	5.8
Direct beneficiary (national)	81	27.3	11	21.2
Project team	2	0.7	0	0.0
Third party	173	58.2	29	55.8
Not assigned	0	0.0	9	17.3
Total	297		52	

Source: Prepared by the author.

Table 2
Sampling frame and survey respondents, by nationality

Country	Sampling frame *(Numbers)*	Sampling frame *(Percentages)*	Survey respondents *(Numbers)*	Survey respondents *(Percentages)*
Mexico	94	32	8	15
Panama	51	17	2	4
El Salvador	37	12	7	13
Other	114	38	26	50
Not identified	1	0	9	17
Total	297		52	

Source: Prepared by the author.

Table 3
Project survey response rates

Event	Event participants *(Numbers)*	Survey responses *(Numbers)*	Response rate *(Percentages)*
Third edition of the Regional Water Dialogues in Latin America and the Caribbean 2023	1 303	133	10
Fourth edition of the Regional Water Dialogues in Latin America and the Caribbean 2024	168	132	79
Expert workshop, Santiago 2023	1 304	11	1
Capacity-building seminar, El Salvador, 2023	67	39	58
Capacity-building seminar, Mexico, 2023	66	15	23
Capacity-building seminar, Panama, 2024	54	19	35

Source: Prepared by the author.

D. Sampling strategy

Documents

- Project documents —e.g. technical reports, publications and progress reports (including documents from initiatives with which the project collaborated), lists of participants in activities, agendas and materials from project activities and other relevant events— were defined in the evaluation terms of reference and provided by the project team.
- Policy documents such as environmental discharge norms, water policy or hydrological plans were provided by national stakeholders or obtained through web searches.
- Context data on water, sanitation and treatment were obtained from the Joint Monitoring Programme for Water Supply, Sanitation and Hygiene of the World Health Organization and United Nations Children's Fund[1] and the UN-Water SDG 6 Data Portal.[2]
- Context data on the prevalence of methane recovery in wastewater treatment plants in the project area, political and social developments and other relevant initiatives were collected through a systematic web search.
- See annex 3 for a full list of the documents consulted.

20. For triangulation purposes, documents were divided into **project team** documents (all ECLAC-produced documents), **beneficiary** documents (all documents produced at national or local level), and **third-party** documents (see "Stakeholders" below for definitions).

Stakeholders

21. Stakeholders were also divided into three main groups: project team, direct beneficiaries and third parties. The project team consisted of the staff of the organizations directly involved in the implementation of the project, which in this case were ECLAC staff involved in project design, implementation or oversight. Direct beneficiaries were stakeholders who participated in any of the project's capacity development activities and who, according to the project's theory of change, were expected to support and carry out the design and implementation of methane recovery and electricity generation investment plans at wastewater treatment plants. These stakeholders were divided into national beneficiaries (staff and officials from utilities, water authorities and related ministries) and local beneficiaries (at the municipal or wastewater treatment level). To reflect the project's intended scale-up and replication in other countries, government officials working in the water sector who participated in project activities were also included as national and local direct beneficiaries. None were selected for interviews, although they participated in the survey. However, as non-governmental organizations, academic institutions and the private sector were not directly involved in the project, they were incorporated into the third-party category, which includes parties that share interests and objectives, implement similar initiatives or have participated in project activities but not in capacity development. The latter group included representatives from United Nations agencies that collaborated on the project.

[1] World Health Organization and United Nations Children's Fund. (2025). *WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene*. https://washdata.org.
[2] United Nations. (2025). *UN-Water SDG 6 Data Portal*. https://www.sdg6data.org.

22. The stakeholder sampling frame was composed of all 375 participants who attended the project's three capacity-building events (three national seminars) and one dissemination event with civil society and academia in Mexico. The project's study tour to Chile was not included as the list of participants was not available. However, most study tour participants had been involved in the three national seminars or belonged to organizations that had been engaged in those capacity development activities. For the interviews, a stratified sampling approach was used, with at least one interview from each of the following groups: the project team, United Nations agencies, national water authorities (National Water Commission of Mexico, National Water Council of Panama, ASA) and water utilities (ANDA, IDAAN), local wastewater treatment plant operators in each country (Drinking Water and Sewerage Commission of Quintana Roo, Water Commission of the State of Mexico, municipalities of Metapán, San Juan Opico and San Salvador in El Salvador and IDAAN in Panama), local government representatives when the municipality was not the operator, and one non-governmental representative (of academia, non-governmental organizations or the private sector) per country. Interview invitations were sent to a subset of 34 participants in the above-mentioned categories (national beneficiary, local beneficiary, third party) who could be identified and for whom a contact email address was available. Although all participants in the project capacity-building activities were registered by name, not all provided complete information regarding their organizations and contact details. Despite official invitations sent by ECLAC to email addresses provided by the project managers, contacting respondents was challenging (see "Limitations" section). Ultimately, 14 respondents were interviewed, including 8 from the national beneficiary group and 6 from the local beneficiary group. No local government or non-government respondents replied to repeated invitations to participate in the interviews. The other six interview respondents were project team members or United Nations third parties. The interviews were planned for December 2024 and January 2025, but because of the challenges described below under "Limitations" and the respondents' reduced availability during the year-end holiday period, the data collection phase had to be extended until the end of February.

23. All the other participants in project events were invited to take part in the evaluation survey. In both interviews and surveys, the sample diverged from the sampling frame in terms of proportion of different stakeholder categories (see table 4). However, the evaluation involved a considerable effort to ensure the inclusion of the views of local wastewater treatment plant operators and national water and utilities authorities, the project's direct beneficiaries.

Table 4
Sampling frame and sample, by stakeholder type

Stakeholder type	Project activities *(Numbers)*	Project activities *(Percentages)*	Interview invitations *(Numbers)*	Interview invitations *(Percentages)*	Actual interviews *(Numbers)*	Actual interviews *(Percentages)*
Direct beneficiary (local)	51	13.6	19	55.9	5	25.0
Direct beneficiary (national)	126	33.6	7	20.6	8	40.0
Project team	7	1.9	5	14.7	5	25.0
Third party	173	46.1	3	8.8	2	10.0
Not specified	18	4.8	0	0.0	0	0.0
Total	**375**	**100.0**	**34**	**100**	**20**	**100.0**

Source: Prepared by the author.

24. In terms of gender, 14% of people listed in the sampling frame (participants in project activities) were women, who represented 26% of the evaluation interviewees. In terms of nationality, apart from the fact that the interviews were conducted exclusively in the three project countries and with ECLAC (as an international organization), the sampling frame and interview sample were similar (see table 5).

Table 5
Sampling frame and sample, by nationality

Country	Sampling frame *(Numbers)*	Sampling frame *(Percentages)*	Sample *(Numbers)*	Sample *(Percentages)*
Mexico	111	30	7	35
El Salvador	82	22	4	20
Panama	61	16	2	10
Other	121	32	0	0
International organizations	0	0	7	35
Total	**375**		**20**	

Source: Prepared by the author.

3.3 DATA ANALYSIS AND TRIANGULATION

25. The evaluation followed a systematic coding and triangulation process to validate findings across different sources.

Analysis matrix development

- Data were structured using the evaluation questions as a framework, aligning responses from interviews, survey results and document review.
- Findings were categorized under the Development Assistance Committee criteria and cross-cutting issues.

Triangulation strategy

- A finding was considered robust if it was supported by at least two independent sources, such as an interview or a document, from different stakeholder groups (project team, project stakeholders and third parties). Evidence was considered strong if it was supported by more than three sources from at least two stakeholder groups. Evidence was considered interim if it was supported by at least two sources from the same stakeholder group. Minority and divergent opinions were also documented whenever multiple perspectives existed.

Rating system

- The six-point Likert scale recommended in the United Nations peace and development trust fund guidelines was used in the evaluation to rate each criterion, on the basis of the strength of evidence and overall project performance (see table 6). The rating table can be found in the conclusions section of each evaluation question.

Table 6
Rating system

Rating description	Description
Highly satisfactory (HS)	The project performed well overall against a particular evaluation criterion with no shortcomings.
Satisfactory (S)	The project performed well overall against a particular evaluation criterion but had minor shortcomings.
Moderately satisfactory (MS)	The project performed moderately well against the particular criterion (performing satisfactorily against almost half of the evaluation questions) and has shortcomings and room for improvement.
Somewhat satisfactory (SS)	The project performed poorly overall against the majority of the evaluation questions and there is need to take steps to improve the project aspect being evaluated.
Not satisfactory (NS)	The project performed poorly in almost all the evaluation questions and there is need for immediate and significant changes to be made to improve project outcomes.
Unable to assess (UA)	The available information does not allow an assessment of the level of outcome achievements.

Source: United Nations. (2022). *Guidelines: 2030 Agenda for Sustainable Development Sub-Fund.*

26. The United Nations peace and development trust fund rating system uses this scale to rate the criteria of relevance, effectiveness, efficiency, impact, sustainability and cross-cutting issues. As the rating system is based on the evaluation questions and the evaluation matrix —which includes the criteria listed above in addition to coherence but excludes impact—, the evaluation report groups the evaluation questions as shown in table 7 to establish ratings.

Table 7
Evaluation questions grouped according to evaluation criteria

Evaluation criteria	Evaluation questions
Relevance	Q1, Q2, Q3, Q4
Effectiveness	Q8.1, Q8.2, Q9, Q11
Impact	Q10.1 Q10.2
Sustainability	Q13
Cross-cutting issues	Q14, Q15

Source: Prepared by the author.

3.4 LIMITATIONS

27. Contacting participants for project interviews was challenging, especially for local and national stakeholders (direct beneficiaries). Many of the wastewater treatment plant operators and local and national government officials who participated in the project capacity-building activities were no longer in their positions following changes in political leadership. In some cases, contact was lost because institutional email accounts were deactivated; in others, former national and local officials, as well as some project participants who were still active in their positions, were reluctant to engage with the evaluation. Most respondents were eventually reached through alternative contacts after being reassured about the confidential nature of the interviews.

4. FINDINGS

4.1 RELEVANCE

Evaluation question 1. Did the project consult all relevant stakeholders from different sectors (national and local government, private, civil society, communities) during project preparation and implementation? How was this ensured? If any relevant group or person was not included, why?

Finding 1. The project team successfully identified and engaged key national institutions responsible for water supply, sanitation and wastewater treatment across El Salvador, Mexico and Panama. Additionally, engagement extended to other national governments in the region.
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

28. Contacts with national water authorities and utilities in El Salvador, Mexico and Panama were established directly, through engagement with the United Nations resident coordinator office and through the participation of representatives of national governments and utilities in ECLAC Regional Water Dialogues in Latin America and the Caribbean. Formal commitments were secured for the project through letters of interest from the National Water Commission of Mexico, ASA and ANDA in El Salvador, and the National Water Council and IDAAN in Panama. These national water authorities and utilities enabled the selection of and engagement with local governments and wastewater treatment plant operators in the three project countries. Moreover, the project involved engagement with the Water Resources and Hydraulic Infrastructure Committee of Mexico, which expressed interest in expanding water infrastructure investments in that country on the basis of lessons learned from the project.

29. Additionally, representatives from the national governments of Chile, Colombia, the Dominican Republic, Ecuador, Guatemala, Jamaica, Peru, the Plurinational State of Bolivia, Saint Kitts and Nevis and Trinidad and Tobago were actively engaged during the Regional Water Dialogues in Latin America and the Caribbean, and were exposed to the project's approach. While it did not participate in any project activity, Colombia formally requested technical assistance from ECLAC to support the design of a national methane capture and wastewater treatment programme in alignment with the country's 2022–2026National Development Plan. Likewise, the Dominican Republic has expressed strong interest in adopting the project's methodology. The project included a capacity-building session on methane recovery at wastewater treatment plants in the Dominican Republic in March 2025 under the framework of the Regional Network and Observatory for Water Sustainability (ROSA).

Finding 2. The project involved the engagement of some local (municipal, State) government stakeholders and included representatives of the private sector, academia and civil society in the Regional Water Dialogues. However, engagement with local government and public wastewater treatment plant operators was mediated through national authorities and engagement with private sector wastewater treatment plant operators was not systematically pursued.
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

30. The ECLAC Regional Water Dialogues in Latin America and the Caribbean facilitated interactions with private sector representatives. The participant data confirm institutional diversity, with 18 representatives from the private sector, 16 from academia, 14 from civil society and 12 from non-governmental

organizations, alongside strong government and technical expert representation. However, participation in ECLAC regional events —and, in the case of Mexico and Panama, the participation of non-governmental, private and academic organizations in the socialization event in Mexico and the capacity-building activity in Panama—, while engaging a broad range of academic and civil society institutions, did not positively or negatively affect project implementation or results.

31. Although the Global Water Partnership (GWP) was initially expected to be an implementation partner given its presence in all project countries, it did not actively participate in or contribute to project activities, and ECLAC engagement with national institutions took on a more prominent role in project implementation. In the end, the project's activities were driven by direct engagement with national water authorities (National Water Commission of Mexico, National Water Council of Panama, IDAAN, ANDA, ASA) and municipal stakeholders.

32. Engagement was facilitated by national authorities, such as ASA (El Salvador), IDAAN (Panama) and the National Water Commission (Mexico), rather than direct outreach to municipal governments. As a result, municipal or State-level stakeholders, including representatives from wastewater treatment plants, participated in capacity-building events in Mexico (Quintana Roo, State of Mexico), Panama (Chiriquí, Veraguas) and El Salvador (Metapán, Cuscatancingo, San Juan de Opico).

33. While some private sector actors participated in the Regional Water Dialogues, direct engagement with private wastewater treatment plant operators was not a structured component of the project. Thus, the project did not involve engagement with wastewater treatment plant operators working on methane recovery in the project's target areas. However, it did involve engagement with private sector entities such as Aguas Andinas in Santiago, which hosted a study tour for project participants.

Evaluation question 2.1. How well did the project respond to demands and needs from national and municipal stakeholders?

Finding 3. The project effectively addressed national needs and some local stakeholder needs through the alignment of its activities with national priorities and the provision of capacity-building and technical support to municipal stakeholders. However, while project performance with respect to national demands was good, with regard to municipal stakeholders and wastewater treatment plant operators, it was less consistent.
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

34. The project demonstrated responsiveness by integrating national demands, as expressed through national water authorities (ASA, ANDA, National Water Commission of Mexico, National Water Council of Panama and IDAAN), and ensuring engagement of some local (municipal, State) authorities based on technical criteria, including the presence of wastewater treatment plant operators and interest from local authorities.

- "*The* project *addressed national-level needs by structuring its activities around regulatory frameworks already in place. This made it easier to integrate technical outputs into existing policy discussions.*" (National water authority or utility representative)

35. At the local level, while acknowledging their interest in circular economy approaches, some local governments and wastewater treatment plant operators indicated that, in practice, raising awareness among the local population, expanding coverage and maintaining current operational capacities, and ensuring compliance with water quality standards ranked higher as priorities.

- *"I believe that information has not flowed adequately regarding bringing me up to date on what has happened in this ECLAC project."*
- *"We thought it was aimed at plant operators, but then we realized it was more targeted at project management and planning, not direct operations."*
  (Local-level project stakeholders)

Evaluation question 2.2. How does the project contribute to policies, strategies and programmes at national and local levels in the participating countries?

Finding 4. The project is aligned with the national water management, sanitation and renewable energy priorities of El Salvador, Mexico and Panama. Active work was undertaken with the National Water Commission (Mexico), ASA (El Salvador), and IDAAN and the National Water Council (Panama) to advance wastewater treatment strategies that incorporated circular economy elements.
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

36. Under the project, support was provided for national frameworks through collaboration with institutions such as the National Water Commission in Mexico, ASA in El Salvador, and IDAAN and the National Water Council in Panama. The project included policy objectives related to wastewater treatment and circular economy practices.

37. **El Salvador:** The project was aligned with the objective of the 2018–2039 National Drinking Water and Sanitation Plan to expand access to sustainable sanitation solutions, particularly by integrating energy recovery from wastewater treatment. El Salvador has been working on circular economy policy frameworks that the project helped to reinforce through its wastewater initiatives. While this policy is still under development, officials noted that project work on methane recovery and the circular economy in sanitation helped to "plant the seed" for future regulatory frameworks.

38. **Mexico:** The project facilitated support for Mexico's 2020–2024 National Water Programme and for that country's commitment to improving water governance and sustainability by demonstrating how circular economy principles can reduce operational costs for wastewater treatment plants.

39. **Panama:** Implementation of the project contributed to the goals of the National Sanitation and Water Policy to improve sanitation infrastructure and wastewater treatment efficiency by integrating circular economy principles into wastewater management discussions.

- *"This project really gave us the basis to move towards an industrial policy vision for the drinking water and sanitation sector. [...] There wasn't this strong approach to circular economy applied before this project here."*
- *"For us it had a great impact and relevance because it allowed us to understand what could be done with the capture and use of methane, not only from the reduction of emissions but also from the economic and efficiency benefits."*

- *"(We need) to be more efficient in our treatment plants, so incorporating methane use modules can be a key solution."*
  (National water authority or utility representatives)

40. Further discussion of the project's contribution to national and local policy is provided in section 4.3 (Effectiveness), evaluation question 10.3.

Evaluation question 3. How did the project contribute to the ECLAC programme of work?

Finding 5. The project contributed to the ECLAC programme of work by fostering regional policy dialogues and capacity-building initiatives in water management, sanitation and circular economy practices, while also strengthening the role of ECLAC as a facilitator of SDG-linked change at the local level. It aligned well with ECLAC workstreams, even if its local-level engagement was innovative and somewhat outside the traditional operational scope of ECLAC.
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

41. Under the project, ECLAC expertise in economic and policy analysis was leveraged to advance sustainable sanitation solutions aligned with Goal 6 (Clean water and sanitation) and Goal 13 (Climate action). The ongoing work of ECLAC on the circular economy was reinforced, particularly through the demonstration of how wastewater-to-energy initiatives could be integrated into national investment strategies. The ECLAC Regional Water Dialogues in Latin America and the Caribbean were leveraged as a catalyst for regional discussions on water governance and sanitation, elevating the Commission's role as a convening platform for the circular economy. For ECLAC, the project provided an opportunity to connect policy discussions with actionable investment frameworks, making it an applied policy initiative rather than purely diagnostic work. Thus, the project was innovative for ECLAC because it went beyond macroeconomic and regulatory analysis to engage directly with municipal stakeholders and wastewater treatment plant operators.

42. To some relevant stakeholders, this "bottom-up" approach was considered atypical and innovative compared with the Commission's usual focus on national policies. However, ECLAC also supports and works together with local stakeholders at the municipal level within the framework of the New Urban Agenda and the Urban and Cities Platform, together with the United Nations Human Settlements Programme and other partners.

43. ECLAC views the project's approach to wastewater-to-energy solutions —particularly the Methane Calculator tool— as a concrete and replicable output that could inform future national policies. This is reflected in the interest expressed by the Governments of Colombia and the Dominican Republic to engage with ECLAC to access the capacity-building activities and tools developed under the project.

Evaluation question 4. How robust was the project problem analysis and theory of change in identifying the root causes of the issues addressed and defining clear pathways to achieve the intended outcomes?

Finding 6. The project was designed to engage national water authorities while influencing local wastewater treatment plant operators, following a causal pathway that assumed national engagement would translate into local implementation and investment. However, while the project effectively engaged with national stakeholders, its direct influence among wastewater treatment plant operators was less consistent. Additionally, while financial resources for investment in circular economy solutions in wastewater treatment exist, the extent to which the project facilitated direct access to these financial opportunities remains limited.
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

44. The project's work was carried out primarily through national agencies such as the National Water Commission (Mexico), ASA and ANDA (El Salvador) and IDAAN (Panama), which were expected to facilitate engagement at the local level. However, evidence indicates varying levels of engagement for local wastewater treatment plant operators, with some reporting they were not fully informed about the project's methodology or expected outcomes. While capacity-building seminars provided hands-on engagement with wastewater treatment plant operators, this did not translate into the adoption of practices recommended under the project. Moreover, most of the stakeholders engaged in project activities operated at the national level, as shown in table 8.

Table 8
Number and proportion of participants in project capacity-building activities, by organization type[a]

Type of organization	Number of participants	Percentage
National government	123	57.2
Academic institution	32	14.9
Not specified	21	9.8
Local government	20	9.3
Wastewater treatment plant operator	9	4.2
United Nations	5	2.3
Civil society	3	1.4
Private sector	2	0.9
Total	**215**	

Source: Prepared by the author.
[a] Excludes study tour in Chile and socialization event in Mexico.

45. The theory of change assumed that adequate financial resources would be available for scaling up and sustaining interventions (see table 9). Project reports and stakeholders confirmed that financial mobilization for follow-up investments was being explored. However, neither the project managers nor national stakeholders were able to secure funding or formal financing agreements, nor to systematically connect wastewater treatment plant operators with concrete investment sources.

Table 9
Key assumptions and risks validated

Key assumption or risk	Validation
Key assumption 1. National-engagement would lead to local implementation	Partially validated: While national agencies were engaged, their ability to drive change at the municipal level varied. Some local stakeholders expressed uncertainty regarding project outcomes.
Key assumption 2. Adequate financial resources are available	Partially validated: Funding sources exist, but direct linkages between wastewater treatment plant operators and financing mechanisms were not systematically established.
Key assumption 3. Political stability	Partially validated: While not highly disruptive, political transitions and social unrest influenced project implementation, slowing engagement with key stakeholders and delaying investment planning efforts.
Key risk 1. Resistance from local wastewater treatment plant operators	Partially materialized: Some wastewater treatment plant operators noted that while circular economy concepts were introduced, they were not integrated into existing operational strategies.
Key risk 2. Delays in financial disbursement	Not materialized: There were no difficulties with project disbursements, but the reporting burden was significant relative to the scale of the project's budget.

Source: Prepared by the author.

4.2 EFFICIENCY

Evaluation question 5. How well did the project follow the project document's timeline and milestones? What were the primary causes for delays, if any, and how did this affect the delivery of outputs and implementation of outcomes?

Finding 7. The project largely adhered to its planned timeline and milestones, with the completion of most activities within the expected time frame despite external challenges such as administrative delays and institutional transitions.
(Moderate evidence backed by multiple project team sources, but only one source that was a beneficiary at the national and local level and one third-party source)

46. Key activities, including capacity-building workshops, technical assessments and stakeholder consultations, were carried out as scheduled. Minor adjustments in sequencing helped to maintain progress towards achieving project outputs and outcomes.

Finding 8. Institutional and political changes in El Salvador, Mexico and Panama led to adjustments in project activities, which affected the timing of engagement with local stakeholders and the implementation of capacity-building initiatives. External social dynamics, including public protests in Panama, also introduced additional challenges to maintaining consistent stakeholder participation.
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

47. Changes in political leadership and institutional frameworks required project strategies to be adapted and re-establishment of communication with new administrative counterparts. The social unrest in Panama added logistical and engagement challenges, impacting activity sequencing and stakeholder turnout.

Evaluation question 6. How well did the project management arrangements (project team, implementing partners, governing structures) enable the delivery of activities and outputs and facilitate the implementation of the outcomes? What were the main strengths and weaknesses of the implementation arrangements?

Finding 9. The project implementation strategies were highly adaptable, reflecting successful adjustment to political and institutional changes in Mexico and Panama. While operational flexibility helped to maintain momentum, the project had to follow rules and regulations of the United Nations, which required effort from the project team to ensure compliance without compromising adaptive management.
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

48. The project engagement strategies had to be modified owing to government transitions at the national and local level in El Salvador, Mexico and Panama, as well as social unrest and government reforms in Panama. The project team adjusted its approach by prioritizing technical desk work and email communication, helping to maintain momentum despite institutional changes. Moreover, the absence and turnover of key officials in national water authorities and utilities disrupted coordination efforts. In response, relevant stakeholders were engaged through both formal and informal channels, either directly or through partners such as the resident coordinator office, although the absence of ECLAC country offices placed limits on this approach. The participation of national authorities and utilities in the Regional Water Dialogues in Latin America and the Caribbean and capacity-building events, such as the study tour, helped to mitigate engagement gaps, even if participation was not at the expected level.

49. The United Nations financial and reporting procedures initially limited the ability to respond quickly to emerging opportunities. The project team negotiated a budget reallocation and adapted financial procedures, which allowed for:

- Adjustments in budget lines to prioritize travel and workshops to align with local stakeholders' needs.
- Changes in event dates and publication timelines to accommodate shifting political circumstances.

50. ECLAC had to adapt its usual administrative practices to meet the needs of local-level engagement, ensuring compliance while delivering outputs in a dynamic political context.

Finding 10. The project was part of a broader ECLAC programmatic approach, contributing to regional strategies through initiatives like the Regional Water Dialogues in Latin America and the Caribbean. ECLAC co-financing covered the full core project team and provided additional support through other ECLAC-led activities, significantly enhancing project resources and outreach while ensuring cost-effectiveness by leveraging internal resources and established platforms.
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

51. ECLAC contributions extended beyond staffing, as the project benefited from shared costs for events and capacity-building activities and from the use of regional forums. The implementation strategy maximized the use of ECLAC internal resources, avoiding external administrative fees and ensuring that the full budget of US$ 511,299.50 was allocated to project activities rather than external management costs. The project reflected a shift in the traditional approach of ECLAC, moving from high-level policy advisory work towards implementing localized interventions directly with wastewater treatment plants. The integration of project activities into broader ECLAC initiatives further contributed to cost savings and operational efficiency.

Finding 11. The participation of a local project partner could have helped to address coordination challenges in convening capacity-building activities and following up on actions, especially where local and national beneficiaries were affected by staff turnover at the management and technical levels, electoral processes or demonstrations (not related to the project topic).
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

52. The use of the centralized management model originating from ECLAC headquarters in Santiago required additional coordination efforts to address context-specific issues in project countries. The resident coordinator offices facilitated local coordination, particularly in El Salvador and Panama, helping to overcome some of the logistical hurdles and ensuring smoother communication and engagement. GWP was considered a potential implementation partner to ensure local presence. However, given the institutional communication between ECLAC and the relevant national water authorities, ministries and utilities, the project team did not find a clear area of alignment for collaboration and GWP did not engage in the project beyond initial discussions.

Evaluation question 7. Were alternative implementation strategies considered? Was the chosen approach the most cost-effective?

Finding 12. The project documents indicate that the selection of El Salvador, Mexico and Panama as target countries did not involve a formal evaluation of cost-effectiveness.
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

53. While no formal evaluation of cost-effectiveness across different geographical locations or implementing partners was undertaken, the project demonstrated cost-effectiveness, as described under finding 11.

4.3 EFFECTIVENESS

Evaluation question 8.1. Has the project team finalized the reports on water and energy at the national level? If not, why not? To what extent did the reports contain a detailed analysis of the energy sources used for drinking water extraction, treatment and distribution and opportunities to generate renewable energy from wastewater treatment plants?

Finding 13. The project team successfully completed national reports on water and energy for El Salvador, Mexico and Panama, which provided a solid analysis of existing conditions, national institutional frameworks and proposed solutions for advancing circular economy principles.
(Very strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

54. The national reports served as cornerstones of the project's analytical foundation, delivering evidence-based insight on the status of wastewater management and related opportunities. While some reports contained only broad overviews of water supply, sanitation and treatment in the wider Latin American region and the three project countries, the reports on incentives and opportunities in the regulatory framework for the energy use of biogas produced in wastewater treatment plants and the country case studies for El Salvador, Mexico and Panama provided more detailed analysis. These reports:

- Diagnosed the current situation:
  - Identified wastewater treatment challenges, including gaps in infrastructure, financing and regulatory enforcement.
  - Assessed energy consumption patterns and potential efficiency gains at wastewater treatment plants.
- Mapped the national institutional ecosystem:
  - Provided a comprehensive review of key sectoral institutions, including the National Water Commission (Mexico), ANDA (El Salvador) and IDAAN (Panama).
  - Examined regulatory structures guiding wastewater management and energy recovery, highlighting gaps and opportunities for policy alignment.
- Outlined circular economy solutions:
  - Explored wastewater reuse opportunities and strategies for energy recovery from methane emissions.
  - Provided case studies and best practices on integrating circular economy principles into wastewater treatment operations.

55. Building on these reports, the Methane Calculator application,[3] was developed. It was initially introduced during the capacity-building seminars as a spreadsheet that allows stakeholders and the general public to simulate methane capture and energy generation scenarios at wastewater treatment plants. By assessing the economic feasibility of methane recovery, the tool facilitates informed decision-making for future investment.

Evaluation question 8.2. To what extent did the expert groups evaluate the reports and select wastewater treatment plants, including all relevant organizations? How did the expert groups convene, validate the reports and choose wastewater treatment plants? How did the selected wastewater treatment plants comply with the selection criteria?

Finding 14. The expert groups, composed of national and international experts, effectively evaluated the national water and energy reports and selected wastewater treatment plants on the basis of technical feasibility and alignment with project objectives. Institutional priorities and political considerations also played a role in shaping the final selections.
(Moderate evidence backed by multiple project team sources, but only one source that was a beneficiary at the national and local level and one third-party source)

56. The expert groups convened through a combination of virtual and in-person meetings to review the reports and engage relevant organizations, including national water authorities (National Water Commission in Mexico, ASA and ANDA in El Salvador, and IDAAN and the National Water Council in Panama). The selection criteria included technical readiness for methane recovery and the potential to integrate circular economy practices. In addition, "political support from local authorities" and "capacity to develop synergies with other projects and institutions" were also considered as part of the selection criteria. Table 10 lists the characteristics of the selected plants.

Table 10
Selected wastewater treatment plants

Country	Location	Wastewater treatment plant name	Capacity *(Litres per second)*	Population served
El Salvador	San Juan Opico	San Juan Opico	30.0	10 040
	San Salvador	Ciudad Futura	30.0	21 250
	Santa Ana	Metapán	60.0	19 830
Mexico	Teotihuacan, Edo. México	San Martín de las Pirámides	70.0	30 240
	Othon P. Blanco, Quintana Roo	Centenario	180.0	29 623
	Solidaridad, Quintana Roo	Bicentenario	120.0	14 811
	Cozumel, Quintana Roo	San Miguelito	220.0	39 497
Panama	Montijo, Veraguas	Montijo	8.4	2 178
	Puerto Armuelles, Chiriquí	Puerto Armuelles	64.0	20 000
	Soná, Veraguas	Soná	25.0	12 786

Source: Economic Commission for Latin America and the Caribbean.

[3] Economic Commission for Latin America and the Caribbean. (n.d.). *Methane Calculator*. https://calculadora-metano-cepal.vercel.app/calcular.

Evaluation question 9. To what extent did national stakeholders and wastewater treatment plant operators find the project's technical materials (reports and calculator) and capacity development seminars valuable and actionable for implementing water and energy solutions? Were the capacity development seminars delivered as planned to all relevant stakeholders at the national and wastewater treatment plant levels? If not or partially, why? What factors favoured or hampered the delivery of the capacity development seminars?

Finding 15. National stakeholders and wastewater treatment plant operators generally found the project technical reports and calculator valuable and actionable, particularly appreciating the technical insights on methane recovery and circular economy practices, although some stakeholders noted a need for more localized recommendations.
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

57. The reports were well-received by institutions such as the National Water Commission (Mexico), ASA (El Salvador) and IDAAN (Panama), with stakeholders indicating that the documents provided a solid technical foundation for renewable energy integration and efficiency improvements at wastewater treatment plants.

58. The evaluation survey results indicated strong agreement on the relevance and applicability of training and technical materials. A total of 42.86% of the evaluation survey respondents strongly agreed and 34.69% agreed that the training materials, themes and topics were applicable to their country or local context. In addition, 55.10% of respondents strongly agreed and 26.53% agreed that the objectives of the training were very relevant to their professional field. Many respondents reported using their new skills in professional settings but pointed to external constraints, such as bureaucratic hurdles, financial limitations and unclear institutional arrangements, as obstacles to implementing water and energy solutions. These challenges were more pronounced during administrative transitions and periods of institutional restructuring. Moreover, some stakeholders mentioned that the short duration of the sessions limited the depth of coverage on complex topics and highlighted a need for continued support and follow-up training.

59. National project stakeholders acknowledged the value of the methane recovery calculator and technical reports in providing a theoretical model for assessing feasibility. However, local stakeholders pointed to limitations in the model's practical application.

- "*During the* training, *[the calculator] was an Excel sheet. Now the methane calculator has been improved. And I understand that they are still making some adjustments to make it more user-friendly.*" (National water authority or utility representative)
- "*If the case were to involve these concessionaires [privately operated plants under government concession] and plants with greater capacity, this instrument could be of some use.*" (Wastewater treatment plant operator)

60. National water authority stakeholders explicitly highlighted the importance of circular economy practices and methane recovery, as well as their sustained interest in integrating circular economy elements into their policies.

- "*We appreciate the willingness of ECLAC to provide us with technical assistance in preparing a future national methane recovery programme or project in the water and sanitation sector in line with the country's climate change policies.*" (National water authority or utility representative)

61. Moreover, stakeholders appreciated the project for the opportunities created for dialogue and learning between different countries and institutional settings. Evaluation respondents confirmed that sharing experiences and discussing strategies to integrate circular economy practices promoted cross-institutional learning and inspired potential procedural and administrative innovations. Cross-learning occurred mostly during the project's study tour to the Aguas Andinas facilities in Santiago. The study tour was highly appreciated by participants as an extraordinary opportunity to see circular economy elements —specifically methane recovery— in action and to share experiences with other participants from water authorities, utilities or related government structures and entities. However, not all relevant stakeholders were able to participate in the study tour, owing to staff turnover and administrative procedures. Stronger coordination with national authorities may have helped to ensure broader and more pertinent participation at the right technical level.

62. Despite broad acknowledgement by all participants of the relevance of the topics covered, some stakeholders noted limitations in applying the lessons at the local level given contextual differences in wastewater treatment plant size and operational conditions. They indicated that smaller plants may not generate sufficient methane for viable recovery and noted that larger plants under concession have not been included in the initiative. Respondents also highlighted the need for more detailed technical guidance and tailored investment planning and financing strategies that align with local energy and funding contexts.

- *"Under current conditions, we face limitations for methane generation and energy cogeneration. So, we saw this as viable in the treatment plants [with capacities] well above 350 litres per second."*
- *"What happened was that we chose very small plants, and when the model [calculator] was run, the results were not very relevant." (Local stakeholders)*

Evaluation question 10.1. To what extent have the selected wastewater treatment plants completed the design and started the implementation of the plans? If not, what barriers persist hampering plan design or implementation?

Finding 16. The project facilitated investment plan discussions for water and energy, but only one of the nine selected wastewater treatment plants engaged with national and local authorities in pursuing a draft plan. Ultimately, none of these plans progressed to full implementation owing to financial barriers, institutional constraints and misalignments between local wastewater treatment plant operator priorities and national circular economy strategies.
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

63. While the project facilitated technical support in appraising the economic feasibility of methane recovery, wastewater treatment plant operators in El Salvador, Mexico and Panama indicated that financial limitations and diverging priorities hampered implementation. Local wastewater treatment plant operators are focused primarily on compliance with national water quality standards and maintaining plant operations amid increasing demand. In Mexico, operators align with the Official Mexican Standard NOM-001-SEMARNAT-2021; in El Salvador, with decree No. 39 (Special Regulation on Wastewater); and in Panama, with Technical Regulation DGNTI-COPANIT 35-2000 (see table 11).

64. Survey respondents noted that, although they had the technical capacity to implement renewable energy solutions, institutional barriers —such as complex approval workflows, limited budget allocation, administrative restructuring resulting from political transitions, and urgent compliance and maintenance needs— took precedence over adopting circular economy principles. As a result, opportunities for implementing practices promoted under the project, such as nutrient recovery and methane reuse, were often given lower priority compared with regulatory adherence and service expansion.

Table 11
Environmental discharge regulations

Country	Water quality standard	Year	Short description
Mexico	Official Mexican Standard NOM-001-SEMARNAT-2021	2021	Establishes the maximum permissible limits of pollutants in wastewater discharges into national waters and resources.
Panama	Technical Regulation DGNTI-COPANIT 35-2000	2000	Specifies the permissible limits for various parameters in wastewater discharges to protect water bodies from contamination.
El Salvador	Salvadoran Technical Regulation: Wastewater Quality Parameters for Discharge and Sludge Management	2019	Specifies quality parameters for wastewater discharges and provides guidelines for sewage sludge management.
	Water Resources General Act (Decree No. 253)	2021	Provides comprehensive criteria for the management, treatment, reuse and disposal of wastewater to ensure the quality of water sources. As of March 2025, this decree lacks implementing regulations, and no specific discharge limits have yet been established under it.

Source: Prepared by the author, on the basis of official regulations.

Finding 17. The project aimed to integrate investment plans into existing national strategies and enhance stakeholders' understanding of advanced wastewater treatment technologies. However, persistent barriers —including financial limitations, unclear institutional arrangements and inconsistent support from national institutions— hindered the development of investment plans.
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

65. While stakeholders recognized the project's role in introducing innovative concepts such as nutrient recovery and renewable energy generation from wastewater, translating this knowledge into practice proved challenging. Financial constraints, including a lack of dedicated funding for infrastructure upgrades, coupled with administrative bottlenecks, slowed progress. During political transitions in all three countries, support from national institutions fluctuated, affecting stakeholders' ability to maintain momentum on investment plan design and eventual execution.

66. The current wastewater treatment context in these areas remains largely unchanged in terms of infrastructure and service delivery. Nonetheless, there is an increased readiness among technical staff to adopt new practices if enabling conditions —such as stable institutional frameworks, clear regulatory pathways and financial support— are improved.

Evaluation question 10.2. What changes in the wastewater treatment context in the respondents' area can be attributed to the project?

Finding 18. The wastewater treatment context in the project areas remains constrained by technical, financial and institutional challenges, with the project contributing primarily through capacity-building and facilitating guidance for potential future development opportunities, rather than implementing tangible solutions to address current urgent problems.
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

67. In El Salvador, Mexico and Panama, wastewater treatment plants continue to face operational challenges related to outdated technology, limited financial resources and complex regulatory environments. While Mexico showed modest progress in domestic wastewater treatment coverage, with an increase from 60.09% in 2020 to 64.35% in 2022, El Salvador remained low at 12.95% in 2020, with no more recent data available. In Panama, coverage increased slightly in the 2015–2018 period, from 53.4% to 54.7% of treated wastewater flows. The project played a role in offering guidance on assessing the feasibility of developing investment plans for energy solutions for wastewater treatment plants. However, achieving substantial increases in wastewater treatment coverage faces significant financial and institutional barriers. With growing urban populations and stagnating public budgets, preserving the health of freshwater ecosystems and improving related health outcomes (such as those measured under Goal 3) requires regulatory reforms that enhance development and compliance with environmental discharge standards, and a blending of public and private financing and concessions, measures that were never intended as part of this project's design.

Evaluation question 10.3. Has the project contributed to national and local policy development?

Finding 19. *The project contributed to national policy discussions through technical insights and recommendations through the Regional Water Dialogues in Latin America and the Caribbean and engagement with national institutions such as the National Water Commission (Mexico), ANDA and ASA (El Salvador) and the National Water Council and IDAAN (Panama). However, no concrete policy adoption directly attributable to the project has been identified to date.*
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

68. While the project facilitated valuable technical assessments and recommendations, its influence was noted primarily in strategic discussions. Target countries (El Salvador, Mexico and Panama) have expressed their interest in further exploring circular economy solutions for wastewater treatment and, more broadly, for the water supply and sanitation sector, as noted in finding 17. Moreover, following dissemination of the project's technical outputs in the Regional Water Dialogues in Latin America and the Caribbean, other national governments have signalled interest in receiving technical assistance from ECLAC in this area. Colombia, for example, formalized its interest in circular economy approaches and in further cooperation with ECLAC on elements such as wastewater treatment plant methane recovery, at least in part as a result of learning from the project's outputs. However, there is no direct evidence of new or revised formal policies in Colombia, Mexico, El Salvador or Panama that can be directly attributed to the project.

Evaluation question 11. What changes in procedures, technology and administration, whether positive or negative, expected or unexpected, can be attributed or linked to the project?

Finding 20. *The project introduced the Methane Calculator methodology, which enhanced technical capacities; however, there is no indication that these practices have been formalized in operational procedures at wastewater treatment plants.*
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

69. The capacity development seminars provided wastewater treatment plant operators and national institutions with tools to evaluate renewable energy opportunities through methane recovery assessments, as well as insights into innovative technologies such as nutrient recovery and methane utilization. However, these initiatives remained at the conceptual or planning stage. While stakeholders acquired knowledge and skills, there is no evidence that these practices have been formalized in operational procedures at wastewater treatment plants. Nevertheless, survey respondents indicated a readiness to adopt these technologies should institutionally support and funding opportunities become available.

4.4 COHERENCE

Evaluation question 12: What actors and initiatives related to water supply, sanitation, wastewater treatment and energy solutions for supply, sanitation, or treatment were identified in the project's locations? What contacts and collaborations were initiated with these actors and initiatives, including with the United Nations country teams in the three countries? What tangible synergies, including cost reductions, resulted from these contacts, and were any duplications or overlapping initiatives identified? What steps were taken to mitigate duplication and overlap?

Finding 21. *Under the project, United Nations coordination mechanisms were leveraged and cooperation with United Nations agencies and financial institutions was explored, enhancing visibility and facilitating national-level coordination, but failing to result in structured partnerships or co-financed activities.*
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

70. The project team actively engaged United Nations resident coordinator offices and United Nations country teams in El Salvador, Mexico and Panama to introduce the project objectives, align with national water and sanitation priorities and explore synergies with other United Nations agencies. These efforts included coordination meetings during implementation and participation in high-level events such as the United Nations Water Conference (March 2023) and the 2024 Regional Water Dialogues in Latin America and the Caribbean. While this engagement supported country-level operations and led to practical collaboration with the resident coordinator offices in El Salvador and Panama, they did not translate into formal partnerships or co-financed initiatives with individual United Nations agencies owing to differences in scope, administrative structures and national counterparts.

71. Beyond the implementation period, UNEP expressed strong interest in leveraging the project's findings. On the basis of exchanges during the Regional Water Dialogues in Latin America and the Caribbean, UNEP signalled its intention to build on the project's work by developing improved methodologies for methane emissions quantification at wastewater treatment plants, assessing methane recovery potential and exploring links with biodiversity and ecosystem health. These prospective alignments, however, were not associated with direct collaboration or contributions during the evaluated period.

72. In addition, the project involved engagement with international financial institutions —namely the Inter-American Development Bank, the Development Bank of Latin America and the Caribbean and the World Bank— identified during the design phase as potential investment partners. These institutions were invited to participate in discussions on wastewater financing mechanisms, particularly during the Regional Water Dialogues, but no structured follow-up or joint activities materialized.

Finding 22. *ECLAC demonstrated a programmatic approach by integrating multiple projects —including the project "Potable water, sanitation and renewable energies to improve the health conditions of the population and promote productive uses in the most lagging behind municipalities of the countries of the northern subregion of Latin America and the Caribbean" funded by the United Nations peace and development trust fund and the ROSA project funded by the United Nations Development Account— to maximize impact under financial constraints. This approach enabled the institution to leverage funding from separate sources while maintaining a cohesive thematic focus on water governance and investment planning.*
(Moderate evidence backed by multiple sources from project team and third parties)

73. ECLAC systematically linked activities across both projects, ensuring that technical outputs, capacity-building efforts and policy dialogues were complementary. The ROSA project (US$ 730,000) focused on broader water governance, policy development and monitoring Goal 6 indicators, while the United Nations peace and development trust fund project (US$ 511,300) concentrated on investment planning and circular economy practices for wastewater treatment and energy generation. This allowed ECLAC to extend project benefits beyond their original scope, ensuring continuity and depth with regard to its interventions despite limited individual project budgets. Stakeholders acknowledged that ECLAC utilized its financial resources effectively by integrating projects within its broader work programme. By leveraging both projects in parallel, ECLAC avoided duplicated efforts and optimized its technical team's expertise without requiring separate administrative set-ups. While this programmatic approach optimized resources, it also complicated tracking of specific programme-funded activities.

4.5 SUSTAINABILITY

Evaluation question 13. Have local or national governments incorporated lessons learned or good practices from the project into their policies or operations? Have any management or institutional arrangements been established to support the implementation of related investment plans, such as methane recovery initiatives?

Finding 23. *Despite the interest generated among national water authorities and utilities, there is no concrete evidence that preliminary drafts on wastewater treatment or circular economy practices have been produced by local or national governments in El Salvador, Mexico or Panama as a direct result of the project.*
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

74. While the project facilitated strategic discussions and influenced conceptual thinking, these efforts did not translate into formal policy drafts or concrete legislative proposals. El Salvador expressed interest in aligning national strategies with project results; however, this remained at the level of informal exchanges without formal documentation. Moreover, Colombia and the Dominican Republic have sought ECLAC support to implement capacity-building activities to promote methane recovery at wastewater treatment plants and, in the case of Colombia, to support the development of circular economy policies.

Finding 24. *The project contributed to strategic discussions around methane recovery and circular economy initiatives, which were valued by local and national project stakeholders. However, no formal institutional or management arrangements were established to support the implementation of related investment plans.*
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

75. The project enhanced capacity-building and contributed to conceptual frameworks. However, the weaknesses and limitations of established management structures, governance roles and institutional frameworks, which are needed to decisively advance the project's proposed solutions, hampered the impact of these discussions. Stakeholders noted the need for stronger management arrangements and clearer institutional roles.

4.6 CROSS-CUTTING ISSUES

Evaluation question 14. What measures did the project implement to ensure compliance with human rights standards, particularly in promoting non-discrimination in access to training, water and energy services? How did the project address gender equality, ensuring equal participation of women in training and capacity development activities? Additionally, what efforts were made to facilitate access for persons with disabilities? Did the project evaluate potential social or environmental externalities —both positive and negative— resulting from its activities, and if any were identified, what measures were introduced to mitigate them?

Finding 25. *Under the project, efforts were made to promote gender inclusivity and non-discrimination in access to training and water and energy services. However, it lacked a formal strategy to ensure gender equality in participation and no specific adaptations were implemented to facilitate access for persons with disabilities. Additionally, while the project aligned with human rights principles, it lacked measures to ensure compliance with human rights standards in implementation.*
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

76. The project adhered to a non-discriminatory approach in training and capacity-building efforts, ensuring that participation was open to all stakeholders. However, no structured mechanism was in place to actively promote gender equality or facilitate the inclusion of persons with disabilities in training and service access. Under the project, there were no intentional barriers to participation based on gender, disability or other factors. Stakeholders confirmed that training sessions and activities were accessible to all professionals, regardless of background. Despite this, there was no targeted strategy to reach underrepresented groups, particularly women in technical roles and individuals with disabilities. While some efforts were made to include women in training, gender-related participation barriers were not actively assessed or addressed. Attendance records from the project's capacity-building activities indicate that women represented 24.1% of participants, while men accounted for 75.9%, demonstrating that the sector remains male-dominated, particularly at the local level. Respondents noted that gender imbalances in technical roles remained but were somewhat mitigated at the national government level across the three countries. No significant change in male dominance was observed at the local level in any of the three countries.

77. Although the project aligned with human rights principles in intent, it did not include formal monitoring or reporting mechanisms to ensure compliance with international human rights standards. There was no evidence of evaluations or adjustments made to proactively address social inequalities, despite the relevance of such measures within the project's scope.

Evaluation question 15. How has the project contributed to achieving the Sustainable Development Goals (SDGs), particularly Goal 6 (Clean water and sanitation) and Goal 7 (Affordable and clean energy)? Has its contribution been reported? Additionally, how has the project contributed to regional policy initiatives such as the Central American Integration System (SICA) Sustainable Energy Strategy 2030 and the Regional Environmental Framework Strategy 2015–2020? Has this contribution been formally documented and integrated into policy frameworks?

Finding 26. *The project contributed to Goal 6 (Clean water and sanitation) and Goal 7 (Affordable and clean energy) through the promotion of circular economy practices in wastewater treatment, energy efficiency and improved governance of water resources. However, its alignment with regional policy frameworks, such as the SICA Sustainable Energy Strategy 2030 and the Regional Environmental Framework Strategy 2015–2020, was not explicitly documented or systematically reported.*
(Strong evidence backed by multiple sources from project team, beneficiaries at the national and local level and third parties)

78. The project facilitated technical training and investment planning to enhance the efficiency of wastewater treatment plants and the promotion of methane recovery for energy generation, supporting targets under Goal 6 and Goal 7. This aligned the project with target 6.3 (By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally) and target 7.2 (By 2030, increase substantially the share of renewable energy in the global energy mix) by advocating for waste-to-energy solutions in wastewater treatment plants. While project activities aligned with SDG targets, no structured framework existed to record contributions by the project, national governments or SDG custodian agencies.

79. The project's objectives and methodologies were thematically aligned with regional policy frameworks such as the SICA Sustainable Energy Strategy 2030 and the Regional Environmental Framework Strategy 2015–2020. However, there is no formal documentation confirming that project outcomes were aligned with or contributed to these strategies.

5. CONCLUSIONS

Observed changes and attribution (contribution analysis)

80. The United Nations peace and development trust fund project aimed to enhance potable water, sanitation and renewable energy integration in underserved municipalities in El Salvador, Mexico and Panama by:

- Strengthening governance and institutional capacities.
- Promoting renewable energy integration into wastewater treatment.
- Facilitating knowledge exchange and investment planning.

81. Through its capacity-building seminars, expert dialogues and investment planning support, the project influenced policy discussions, technical knowledge and investment considerations related to wastewater treatment and circular economy solutions.

82. Key observed changes include the following:

- Enhanced technical capacity at the national level, particularly among water authorities (National Water Commission in Mexico, ASA in El Salvador and IDAAN in Panama).
- Improved awareness and discourse on the circular economy and methane recovery among policymakers.
- Interest in policy alignment with circular economy principles in El Salvador, Mexico and Panama.
- Limited direct application at wastewater treatment plants owing to financial and institutional constraints.

83. Attribution to project actions

- Capacity-building and technical knowledge transfer:
  - Training sessions, the study tour and technical reports provided valuable knowledge on methane recovery and circular economy practices.
  - The proportion of project participants from national government agencies was 57.2%, indicating strong national-level engagement.
  - Wastewater treatment plant operators gained exposure to energy recovery solutions but faced limited ability to implement them.
- Policy and institutional engagement:
  - National water authorities expressed interest in incorporating circular economy elements into national policy.
  - Colombia formally requested technical assistance from ECLAC on wastewater methane recovery following the dissemination of project results.

- Investment planning influence:
  - The project supported investment discussions for water-energy integration.
  - However, only one wastewater treatment plant engaged in developing an investment plan, and none were fully implemented owing to financial, technical and institutional barriers.
- Cross-sectoral knowledge exchange:
  - The Regional Water Dialogues in Latin America and the Caribbean facilitated knowledge sharing across Latin America.
  - There was interest from UNEP and other stakeholders in building on project findings.
  - The study tour fostered a beneficial sharing of experiences among participants from the three project countries.

Conclusions for each evaluation question

Relevance

Conclusion 1. The project was successfully aligned with national and regional priorities in water and sanitation governance. Engagement with national agencies (National Water Commission of Mexico, National Water Council of Panama, ASA, IDAAN) reinforced its strategic relevance. However, local wastewater treatment plant operators' priorities (compliance with environmental standards and expansion of service coverage) sometimes diverged from the project's focus on the circular economy.

Effectiveness

Conclusion 2. The project effectively produced planned outputs, including technical reports, capacity-building seminars and expert discussions. However, actual implementation at wastewater treatment plants remained limited owing to institutional, financial and regulatory barriers.

Conclusion 3. The project contributed to national policy discussions, particularly around circular economy practices in wastewater treatment. However, no formal policy adoption directly linked to the project has been identified to date.

Conclusion 4. The Methane Calculator and technical reports were valuable and actionable, but local wastewater treatment plant stakeholders noted limitations in practical applicability, particularly for small-scale treatment plants.

Efficiency

Conclusion 5. The project adhered to its timeline and milestones, and activities were adjusted in response to institutional and political changes (e.g. government transitions in El Salvador, Mexico and Panama).

Conclusion 6. Under the project, internal resources at ECLAC were effectively leveraged, thereby minimizing external administrative costs. However, the participation of a local partner could have facilitated stronger coordination and local stakeholder engagement, particularly considering national and local government staff turnover and political processes.

Impact

Conclusion 7. The project influenced policy discussions at the national level and across Latin America via the Regional Water Dialogues in Latin America and the Caribbean. However, no direct changes in wastewater treatment plant operational procedures or national regulations were documented.

Conclusion 8. While the project introduced circular economy concepts, its impact on local investment and wastewater treatment plant modernization was limited by financial and regulatory constraints.

Sustainability

Conclusion 9. Under the project discussions on circular economy integration were initiated, but no formal institutional mechanisms were established to sustain or scale up investment plans.

Conclusion 10. Stakeholders expressed readiness to apply methane recovery methodologies if financial and institutional support became available. The project's knowledge outputs have long-term potential for informing policy and investment planning.

Coherence

Conclusion 11. The project team successfully coordinated with national authorities, ECLAC programmes and the United Nations system. However, direct collaborations with other United Nations agencies or financial institutions did not materialize.

Conclusion 12. The project complemented the broader work of ECLAC on the circular economy but required further integration into national and local investment frameworks to enhance coherence.

Cross-cutting issues

Conclusion 13. The project team promoted gender inclusivity and non-discrimination in training access. However, it lacked a structured gender strategy and the participation of women remained limited (24.1%).

Conclusion 14. The project's contribution to Goal 6 (Clean water and sanitation) and Goal 7 (Affordable and clean energy) was thematic rather than operational, as no direct service improvements were achieved.

Rating by criteria

84. The rating of the project across the different criteria is shown in table 12.

Table 12
Rating table

Findings	Conclusions	Lessons learned	Recommendations
Project generation and design			
Finding 6. The design assumption that national-level engagement would translate into local implementation was only partially validated. Access to financing was not systematically facilitated.	National-level engagement did not consistently lead to local implementation (Conclusions 2, 4, 7, 8).	Lesson 1. National engagement must be complemented with local implementation support.	Recommendation 1. Strengthen local-level implementation by enhancing direct support to wastewater treatment plants.
Finding 17. Persistent barriers —including financial limitations, unclear institutional arrangements and inconsistent support from national institutions (which the project was not designed to surmount)— hindered the development of investment plans	No formal institutional mechanisms were established to sustain or scale up investment plans (Conclusion 9).	Lesson 2. Financial barriers are a major constraint to circular economy implementation in wastewater treatment plants.	Recommendation 2. Improve access to financial resources for the modernization of wastewater treatment plants and the integration of circular economy approaches.
Project implementation			
Relevance (overall score at project level):	**Satisfactory**	**The project aligned closely with national water policies and circular economy principles, but implementation needs differed at the local level.**	
Finding 1. Strong engagement with national stakeholders; limited involvement at the level of wastewater treatment plants.	Conclusion 1. Aligned with national priorities but not always with wastewater treatment plant needs.	Lesson 1. National engagement must be complemented with local implementation support.	Recommendation 1. Strengthen local-level implementation by enhancing direct support to wastewater treatment plants.
Finding 2. Engagement with local government and wastewater treatment plant operators mediated through national authorities; limited private sector engagement.			
Finding 3. Project was responsive to national needs but misaligned with wastewater treatment plant compliance and maintenance priorities.			
Finding 4. Strong contribution to national policy discussions and regulatory frameworks.	Conclusion 3. Project contributed to national policy discussions, though no formal adoption.	Lesson 3. Regional knowledge-sharing events can be effective for policy dissemination.	Recommendation 5. Enhance policy uptake by strengthening the link between outputs and national regulatory frameworks.
Finding 5. Strong contribution to ECLAC programme of work through regional dialogue and applied policy work.	Conclusion 1. Reinforced strategic relevance and ECLAC regional positioning.	Lesson 3. Regional knowledge-sharing events can be effective for policy dissemination.	Recommendation 5. Strengthen regional coordination and scale up project results to other Latin American countries.
Finding 6. Theory of change assumptions only partially valid, especially regarding national-local causal pathways and financing.	Conclusion 1. Reinforced strategic relevance and ECLAC regional positioning.	Lesson 2. Financial barriers are a major constraint to circular economy implementation.	Recommendation 2. Improve access to financial resources for the modernization of wastewater treatment plants and the integration of circular economy approaches.

Findings	Conclusions	Lessons learned	Recommendations
Project implementation			
Effectiveness (overall score at project level):	**Satisfactory**	**Project performance was good overall in terms of capacity-building and policy influence, particularly at the national level. However, the project's practical impact at the wastewater treatment plant level was somewhat limited by local priorities and institutional barriers. The project team succeeded in creating momentum but did not institutionalize or scale up these changes.**	
Finding 7. Capacity-building activities were relevant but did not always align with practical needs at the wastewater treatment plant level.	Conclusion 1. Capacity-building was strong but was constrained by challenges in meeting operational needs specific to wastewater treatment plants.	Lesson 1. Capacity-building activities should be more contextually adapted to local operational needs at wastewater treatment plants.	Recommendation 1. Strengthen local-level implementation by enhancing direct support to wastewater treatment plants.
Finding 8. Strengthened national stakeholders' capacity to design and implement investment plans, but with limited local application owing to financial and institutional constraints.	Conclusion 2. National-level capacity was improved but translating that into local actions was constrained by resource limitations.	Lesson 2. Bridging the gap between national capacity and local application requires addressing local institutional and financial barriers.	Recommendation 2. Improve access to financial resources for the modernization of wastewater treatment plants and the integration of circular economy approaches.
Finding 12. Positive procedural changes attributed to the project, but they were not institutionalized or widely implemented across wastewater treatment plants.	Conclusion 3. While some procedural improvements were made, they lacked sustainability in the absence of institutionalization.	Lesson 3. Institutionalizing changes is critical for ensuring that project outcomes are sustained in the long term.	Recommendation 3. Develop strategies to institutionalize procedural changes and ensure their scalability across wastewater treatment plants.
Efficiency (overall score at project level):	**Satisfactory**	**Project performance was good in terms of respecting the timeline and meeting goals despite the political and institutional challenges encountered. While it did not involve formal evaluation of alternative strategies, it demonstrated cost-effectiveness through the leveraging of internal resources.**	
Finding 7. The project largely adhered to its planned timeline and milestones, with most activities being completed within the expected time frame despite external challenges such as administrative delays and institutional transitions.	Conclusion 5. The project adhered to its timeline and milestones, with adjustment of activities to institutional and political changes.	Lesson 1. National engagement must be complemented with local implementation support.	Recommendation 1. Strengthen local-level implementation by enhancing direct support to wastewater treatment plants.
Finding 9. The project demonstrated strong adaptability in implementation strategies, with successful adjustment to political and institutional changes in Mexico and Panama and navigation of administrative complexities.	Conclusion 6. The project management arrangements enabled the delivery of activities and outputs despite challenges. A local partner could have enhanced coordination.	Lesson 2. Financial barriers are a major constraint to circular economy implementation in wastewater treatment plants.	Recommendation 2. Improve access to financial resources for the modernization of wastewater treatment plants and the integration of circular economy approaches.
Finding 12. The selection of El Salvador, Mexico and Panama as target countries for the project was driven by the strategic priorities of the United Nations peace and development trust fund, not through a competitive assessment or formal evaluation of cost-effectiveness.	Conclusion 7. While there was no formal evaluation of cost-effectiveness, the project was still cost-effective thanks to the leveraging of internal resources and adaptation to constraints.	Lesson 3. Regional knowledge-sharing events can be effective for policy dissemination.	Recommendation 3. Enhance policy uptake by strengthening the link between project outputs and national regulatory frameworks.

Findings	Conclusions	Lessons learned	Recommendations
Project implementation			
Impact (overall score at project level):	**Moderately satisfactory**	**The project had limited impact in terms of concrete changes in procedures, technology, policy and the wastewater sector. While discussions occurred, no substantial or measurable changes followed.**	
Finding 19. The project contributed to national policy discussions through the Regional Water Dialogues in Latin America and the Caribbean, but no concrete policy adoption was identified.	Conclusion 7. The project influenced policy discussions, particularly in El Salvador, Mexico and Panama but did not lead to direct changes in wastewater treatment plant practices.	Lesson 1. National engagement is crucial but requires support from local-level adoption.	Recommendation 1. Strengthen local-level engagement by involving wastewater treatment plant operators more directly from the outset.
Finding 20. The project team introduced the Methane Calculator methodology, but no formal adoption occurred at the operational level.	Conclusion 8. Financial and regulatory barriers hampered the impact of circular economy concepts at the wastewater treatment plant level.	Lesson 2. Financial barriers are a significant constraint to circular economy implementation in wastewater treatment plants.	Recommendation 2. Develop financial mechanisms such as concessional funding or blended finance models to support wastewater treatment plants in adopting circular economy practices.
Finding 21. The project team leveraged United Nations coordination mechanisms but did not establish formal partnerships or co-financed activities with other United Nations agencies or financial institutions.	Conclusion 7. The project facilitated knowledge-sharing but lacked formal collaboration with key actors such as the United Nations Environment Programme and financial institutions.	Lesson 3. Regional knowledge-sharing can influence policy dissemination but requires more formalized partnerships.	Recommendation 3. Foster formal partnerships with United Nations agencies and financial institutions to ensure continued support and scalability of project results.
Sustainability (overall score at project level):	**Moderately satisfactory**	**Discussions on circular economy integration were initiated, but no formal institutional mechanisms were established to sustain investment plans.**	
Finding 23. The project sparked interest among national water authorities and utilities, but no formal drafts on wastewater treatment and circular economy practices were produced by the Governments of El Salvador, Mexico or Panama as a direct result of the project.	Conclusion 9. The project led to initial discussions on circular economy integration but not to the establishment of formal institutional mechanisms to sustain or scale up investment plans.	Lesson 1. National engagement must be complemented with local implementation support.	Recommendation 1. Strengthen local-level implementation, engaging directly with local wastewater treatment plant operators and ensuring tailored capacity-building programmes. Support pilot projects and practical demonstrations for circular economy adoption.
Finding 24. The project contributed to strategic discussions around methane recovery and circular economy initiatives but no formal institutional or management arrangements to support the implementation of investment plans were established.	Conclusion 10. Stakeholders expressed readiness to apply methane recovery methodologies but financial and institutional support remained a major barrier for local implementation.	Lesson 2. Financial barriers are a major constraint to circular economy implementation.	Recommendation 2. Enhance access to financial resources: collaborate with financial institutions to develop concessional funding and blended finance models to support wastewater treatment plants.
Finding 23. No formal policy drafts or institutional arrangements resulted from the project, although there was interest in aligning national strategies with project results.	Conclusion 9. The project had a strong influence on discussions but did not result in concrete actions or formal policy adoption.	Lesson 3. Clear institutional roles and management structures are necessary to ensure the sustainability of project results.	Recommendation 3. Formalize institutional mechanisms: develop institutional arrangements and governance structures to ensure the sustainability of circular economy initiatives.

Findings	Conclusions	Lessons learned	Recommendations
Project implementation			
Cross-cutting issues, if any (overall score at project level):	**Moderately satisfactory**	**Gender and inclusivity were considered but not systematically integrated into project activities.**	
Finding 25. The project team promoted gender inclusivity and non-discrimination in access to training and water and energy services. However, there was no formal strategy to ensure gender equality in participation, nor specific adaptations for persons with disabilities.	Conclusion 13. The project team promoted gender inclusivity but lacked a structured gender strategy. Women's participation remained limited at 24.1%.		Recommendation 4. Improve gender and social inclusion strategies in future projects on the water-energy nexus.
Finding 26. The project contributed to Goal 6 (Clean water and sanitation) and Goal 7 (Affordable and clean energy) through the promotion of circular economy practices, methane recovery and energy efficiency. However, it was not formally documented in relation to regional frameworks such as SICA.	Conclusion 14. The project contributed thematically to Goals 6 and 7 but lacked operational changes and was not aligned with regional frameworks like SICA.		

Source: Prepared by the author.

6. LESSONS LEARNED

National-level engagement must be complemented by support for implementation at the local level (based on conclusions 2, 4, 7 and 8)

85. Engaging national water authorities is necessary but not sufficient for successful local-level implementation. While the project effectively influenced policy discussions, this did not automatically translate into the adoption of practices by wastewater treatment plants owing to the limited direct engagement with local operators. Future projects should ensure both high-level policy alignment and on-the-ground technical and financial support for local wastewater treatment plants.

Financial barriers are a major constraint to circular economy implementation in wastewater treatment plants (based on conclusions 8, 9 and 10)

86. The biggest obstacle to methane recovery and energy efficiency solutions in wastewater treatment plants is not technical feasibility but financial viability. Even when knowledge and tools (such as the Methane Calculator) are available, wastewater treatment plants struggle to secure funding for implementation. Future projects should incorporate financial planning components, including access to concessional funding, blended finance models and partnerships with development banks to ensure that project recommendations can be implemented.

Regional knowledge-sharing events can be effective for policy dissemination (based on conclusions 3, 7 and 11)

87. The Regional Water Dialogues in Latin America and the Caribbean provided an effective platform for disseminating project findings beyond the three target countries. Colombia's request for technical assistance from ECLAC demonstrates that knowledge-sharing events can generate interest and policy uptake in non-project countries.

Local implementation partners can enhance stakeholder engagement and results (based on conclusions 5 and 6)

88. ECLAC employed a centralized implementation model that ensured a high level of technical quality. However, considering the challenges arising from staff turnover at the national and local levels, including managerial and technical personnel, and political developments during the project implementation period, the presence of a local partner could have ensured continuous engagement at the national and local levels, leading to broader adoption of project solutions and the consolidation of the delivered capacity development. Teams for future projects could consider partnering with implementation partners that have a presence in country institutions, such as United Nations entities or non-governmental organizations, or assembling a local team to enhance local coordination and responsiveness.

7. RECOMMENDATIONS

Recommendation 1. Strengthen local-level implementation by enhancing direct support to wastewater treatment plants

Linked to: Conclusions 2, 4, 7 and 8. The project team successfully engaged national water authorities, though direct engagement with local wastewater treatment plant operators remained limited, thus impacting implementation.
Responsible parties: ECLAC, national water authorities (National Water Commission of Mexico, National Water Council of Panama, ASA, IDAAN), local public and private (concessionaires), wastewater treatment plant operators.

Recommended actions:

- Engage with national water authorities and utilities to develop tailored capacity-building programmes for local wastewater treatment plant operators, emphasizing the practical application of circular economy principles, including preparing inventories of engineering solutions, services and vocational education hardware and the assessment of the supply chain and vocational education needs.
- Consider encouraging the creation of a wastewater treatment plant operators' mentorship network, linking larger, experienced wastewater treatment plant operators with smaller municipal operators to share best practices and implementation strategies.
- Facilitate hands-on pilot studies at selected wastewater treatment plants, including engagement with private operators that apply circular economy approaches, to demonstrate methane recovery feasibility and develop site-specific recommendations.

Recommendation 2. *Improve access to financial resources for the modernization of wastewater treatment plants and the integration of circular economy approaches*

Linked to: Conclusions 8, 9 and 10. Financial constraints prevented wastewater treatment plants from implementing methane recovery and circular economy solutions.
Responsible parties: ECLAC, national governments, financial institutions and funds (e.g. Inter-American Development Bank, Development Bank of Latin America and the Caribbean, World Bank, Mitigation Action Facility, Green Climate Fund), private finance institutions.

Recommended actions:

- Engage, together with national policy-making bodies and utilities (legislative bodies, ministries, water authorities, utilities), international financial institutions and international climate finance funds to design support programmes for circular economy approaches in wastewater treatment. These programmes should mobilize private finance by providing technical assistance for investment-ready project preparation, including cost-benefit analyses, and by establishing risk-sharing mechanisms, such as guarantees. Grants from bilateral, multilateral and United Nations donors can be mobilized to fund the initial technical assistance and risk-sharing mechanisms.

Recommendation 3. Enhance policy uptake by strengthening the link between project outputs and national regulatory frameworks

Linked to: Conclusions 3, 7 and 11. The project influenced policy discussions, but no direct policy adoption was observed.
Responsible parties: ECLAC, national water authorities, ministries of environment and energy, other policymaking and regulatory entities, local government bodies.

Recommended actions:

- Prepare national policy briefs to translate project findings into actionable policy recommendations that promote the integration of circular economy principles into national wastewater regulations.
- Promote the introduction of incentive-based instruments (such as tax benefits and subsidies) and regulatory measures for local wastewater treatment plant operators and authorities granting concessions authorities (such as municipal or State utilities) to facilitate the implementation of methane recovery and nutrient-recycling measures.

Recommendation 4. *Improve gender and social inclusion strategies in future projects on the water-energy nexus*

Linked to: Conclusions 13 and 14. The project team promoted gender inclusivity but lacked a structured gender and social inclusion strategy.
Responsible party: ECLAC, project stakeholders.

Recommended actions:

- Highlight success stories of women and members of historically marginalized groups in technical or management positions in the water, sanitation and energy sectors, including Indigenous populations, to increase awareness among students and the wider public of career prospects in the fields of water, sanitation and wastewater treatment.
- Expand community engagement efforts to raise awareness of the benefits of wastewater treatment and the costs associated with discharging untreated water into bodies of water.

Recommendation 5. *Strengthen regional coordination and scale up project results to other Latin American countries*

Linked to: Conclusions 11 and 12. The project team successfully engaged in regional dialogues, creating momentum for broader adoption of circular economy solutions.
Responsible parties: ECLAC, UNEP, Regional Water Dialogues in Latin America and the Caribbean, national water authorities.

Recommended actions:

- Formalize an annual "Water-Energy Nexus Forum" under the Regional Water Dialogues in Latin America and the Caribbean and establish a peer-learning exchange programme to sustain engagement among ministries and national policymaking and regulatory entities. In coordination with national authorities, invite and engage local-level (municipal, State, provincial or district) entities.

Recommendation 6. *Increase the practical utility of the Methane Calculator for wastewater treatment plants*

Linked to: Conclusions 4 and 7. While the Methane Calculator was a valuable conceptual tool, stakeholders found that its applicability to smaller wastewater treatment plants was limited.
Responsible parties: ECLAC, national water authorities, technical experts.

Recommended actions:

- Develop an online training module to help municipal wastewater treatment plant operators incorporate the tool into their investment planning processes.

Recommendation 7. *Optimize project management and local engagement for future ECLAC-implemented initiatives*

Linked to: Conclusions 5 and 6. The project was adapted effectively to political and institutional changes, but the involvement of a local project implementation partner could have enhanced stakeholder engagement and adoption of project solutions.
Responsible parties: ECLAC, United Nations resident coordinator offices, United Nations agencies, particularly UNEP

Recommended actions:

- Engage local or national partners to implement a decentralized project support structure, ensuring that local partners can manage logistical and operational aspects.
- Maintain the coordination with resident coordinator offices established through the project in order to bridge the gap between ECLAC regional oversight and local implementation.
- Consider leveraging the interest of United Nations agencies, such as UNEP, in methane emissions quantification and other aspects of the circular economy and wastewater impacts on freshwater ecosystems to develop a formal partnership (e.g. joint programme or initiative). This should include establishing implementation agreements that mobilize local and national partners of ECLAC and other United Nations agencies to enable national-level implementation of projects or sub-initiatives.

8. ANNEXES

ANNEX 1	EVALUATION MATRIX
ANNEX 2	LIST OF RESPONDENTS
ANNEX 3	DOCUMENTS
ANNEX 4	INTERVIEW GUIDELINES
ANNEX 5	SURVEY
ANNEX 6	EVALUATOR'S REVISION MATRIX

ANNEX 1

EVALUATION MATRIX

Evaluation Criteria	Evaluation Question (summarized)	Data Sources & Methods	Findings & Conclusions	Lessons Learned & Recommendations
Relevance	Did the project consult all relevant stakeholders?	Interviews, Document Review, Survey	The project engaged national authorities but had limited direct interaction with municipal WWTP operators.	Future projects should ensure direct engagement with local implementers to improve adoption.
Relevance	How well did the project respond to national and municipal stakeholder needs?	Stakeholder Interviews, Policy Review	The project aligned with national policies, but municipal operators prioritized compliance over circular economy approaches.	Investment plans should address local operational constraints and priorities.
Efficiency	How well did the project follow its timeline and milestones?	Project Reports, Interviews	The project adhered to the planned timeline despite minor delays due to political transitions.	Future projects should incorporate contingency planning for political shifts.
Effectiveness	Were the capacity development seminars delivered as planned?	Training Attendance Records, Surveys	Training was successfully conducted, but participation from WWTP operators was lower than expected.	Targeted outreach strategies should be used to increase operator engagement.
Impact	To what extent have the selected WWTPs implemented investment plans?	WWTP Interviews, Survey, Document Review	Only one WWTP developed a draft investment plan, but no implementation occurred due to financial barriers.	Future projects should integrate financial facilitation mechanisms, including links to concessional loans.
Coherence	What collaborations were initiated with other UN entities and external organizations?	Stakeholder Interviews, Project Reports	The project coordinated with UNEP and other agencies but did not establish structured partnerships.	Collaboration efforts should be formalized through Memorandums of Understanding (MoUs) to enhance impact.
Sustainability	What management or institutional arrangements have been established to sustain project outcomes?	Policy Review, Interviews	No formal institutional mechanisms were created, though national authorities expressed continued interest.	Policy frameworks should include regulatory incentives for long-term sustainability.
Cross-Cutting Issues	How did the project ensure gender inclusivity and human rights compliance?	Training Attendance Records, Interviews	The project promoted gender inclusivity but lacked a structured strategy, with only 24.1% female participation.	Future initiatives should integrate structured gender and social inclusion strategies.

ANNEX 2

LIST OF RESPONDENTS

Stakeholder type	Name	Title	Organization	Country
Project team	Silvia Saravia Matus	Economic Affairs Officer	Natural Resources Division (ECLAC)	OI
Project team	Rene Osvaldo Salgado Pavez	Senior Economic Affairs Assistant	Natural Resources Division (ECLAC)	OI
Project team	Natalia Sarmanto	Monitoring and Evaluation	Natural Resources Division (ECLAC)	OI
Project team	Elizabeth Coble	Project Manager ROSA	Natural Resources Division (ECLAC)	OI
Project team	Gabriel Pérez Salas	Oficial de gestión de programas	DPPO (ECLAC)	OI
Third party (UN)	Amaya Perez Cabero	Head of Resident Coordinator's Office	Office of the Resident Coordinator (ORC) Panama	OI
Third party (UN)	Silvia Vides	Partnerships and Resource Mobilization Officer of the UN Resident Coordinator's Office in El Salvador	Office of the Resident Coordinator (ORC) El Salvador	OI
Direct beneficiary (national)	Pamela Rojas	Deputy Manager of Cooperation	CONAGUA (Comisión Nacional del Agua) Mexico	Mexico
Direct beneficiary (national)	Mónica Camarena	Project Manager at the. International Cooperation Management	CONAGUA (Comisión Nacional del Agua) Mexico	Mexico
Direct beneficiary (national)	José Guzmán	Region Commander	CONAGUA Quintana Roo	Mexico
Direct beneficiary (local)	Ricardo Sánchez	Sanitation Advisor	CAPA Quintana Roo	Mexico
Direct beneficiary (local)	Hilario Ara Uco	Head of Department	CAPA Quintana Roo	Mexico
Direct beneficiary (local)	Raymundo Garduño	Head of the collection/WWTP department	CAPA PTAR Centenario, Centenario (Othón P. Blanco, Quintana Roo)	Mexico
Direct beneficiary (local)	César Che	Head of Department	CAPA PTAR Centenario, Centenario (Othón P. Blanco, Quintana Roo)	Mexico
Direct beneficiary (national)	Miriam Vides	Vice-president	ASA (Autoridad Salvadoreña del Agua)	El Salvador
Direct beneficiary (national)	Carlos Flores	Advisor to the president	ASA (Autoridad Salvadoreña del Agua)	El Salvador
Direct beneficiary (local)	Rolan Mesquita	Head	Municipalidad de Santa Ana Norte, Alcaldia de Metapán	El Salvador
Direct beneficiary (national)	Ruben Alemán	President (former)	ANDA	El Salvador
Direct beneficiary (national)	Mayela Guiteria	Water and sanitation project coordinator	CONAGUA (Consejo Nacional del Agua) Panama	Panama
Direct beneficiary (national)	Rafael R. Reyes Ávila	Executive Vice President	Instituto de Acueductos y Alcantarillados Nacionales de Panamá (IDAAN)	Panama

ANNEX 3

DOCUMENTS

Title	Type
Letter of Agreement (Project Document)	Project document
Preparing and Conducting Evaluations ECLAC guidelines	Evaluation guidance
Evaluation Terms of Reference	Evaluation guidance
Guidelines 2030 Agenda for Sustainable Development Sub-Fund	Evaluation guidance
Estrategia energética sustentable de los paises del SICA	Overarching strategy document
Aprovechamiento energético del metano en el tratamiento de aguas residuales: Casos de estudio en El Salvador, México y Panamá	Project output
Diagnóstico de la prestación de servicios de agua potable y saneamiento en El Salvador	Project output
Diagnóstico de la prestación de servicios de agua potable y saneamiento en Panamá	Project output
Diagnóstico de la prestación de servicios de agua potable y saneamiento en México	Project output
Oportunidades de la economía circular en el tratamiento de aguas residuales en América Latina y el Caribe	Project output
Incentivos y oportunidades en el marco regulatorio para el aprovechamiento energético del biogás producido en plantas de tratamiento de aguas residuales en países seleccionados de América Latina y el Caribe	Project output
Necesidades de inversión en agua potable y saneamiento en América Latina y el Caribe. Efectos en el empleo verde y el valor agregado bruto	Project output
Hoja de ruta técnica y financiera para la recuperación de metano y nutrientes de aguas residuales en América Latina y el Caribe	Technical document produced by project team
Regional Water Dialogues in Latin America and the Caribbean 2023. ECLAC, Santiago de Chile 1-3 of February 2023. Expert meetings UNPDF. Agenda and speakers	Project output
Agenda taller de desarrollo de capacidades para impulso de inversiones en el sector de agua potable y saneamiento con enfoque de economía circular	Project output
Latin America and the Caribbean Energy & Water Management Transitions. Presentation at Side event: Advancing Climate Change Mitigation and Adaptation through Integrated Innovative Sustainable Water and Energy Solutions- COP 28	Project output
Agenda: IV Edición de los Diálogos Regionales del Agua en América Latina y el Caribe 2024: Hacia el Foro Mundial del Agua 2024	Other CEPAL document
Tour de Estudio: Infraestructuras Hídricas Resilientes Comisión Económica para América Latina y el Caribe (CEPAL) Santiago, Chile Del 18 al 22 de noviembre del 2024 Agenda preliminar - Versión 25 de octubre de 2024	Project output
Agenda de misión de capacitación Economía circular en el sector de Agua potable y Saneamiento: Aprovechamiento de metano y recuperación de nutrientes en municipios seleccionados de El Salvador	Project output
Progress report January-March 2022	Project report
Progress report April-October 2022	Project report
Progress report October 2022 - March 2023	Project report
Progress report April-September 2023	Project report
Project report October 2023 - March 2024	Project report
Project report April 2024 – September 2024	Project report
Agenda de la misión de capacitación Economía circular en el sector de Agua potable y Saneamiento: Aprovechamiento de metano y eficiencia energética en municipios seleccionados de México	Project output
Agenda de la misión de capacitación Economía circular en el sector de Agua potable y Saneamiento: Aprovechamiento de metano y recuperación de nutrientes en municipios seleccionados de Panamá	Project output

Title	Type
Agenda de misión de capacitación Economía circular en el sector de Agua potable y Saneamiento: Aprovechamiento de metano y recuperación de nutrientes en municipios seleccionados de El Salvador San Salvador Martes 5 y miércoles 6 de septiembre de 2023	Project output
Encuesta cierre Diálogos Regionales de Agua 2023	Survey
Online participants Expert Meeting 1–3.2.2023	Project output
Misión de capacitación Economía circular en el sector de Agua potable y Saneamiento: Aprovechamiento de metano y eficiencia energética en municipios seleccionados de México Quintana Roo – México / 17 al 21 de julio de 2023 Resultados Encuesta de entrada	Survey
Agenda de la misión de capacitación Economía circular en el sector de Agua potable y Saneamiento: Aprovechamiento de metano y recuperación de nutrientes en municipios seleccionados de Panamá	Project output
Cuestionario final. Misión capacitación Panamá. 14 de Marzo 2024	Survey
Misión de capacitación Economía circular en el sector de Agua potable y Saneamiento: Aprovechamiento de metano y recuperación de nutrientes en municipios seleccionados de El Salvador. San Salvador. Cuestionario de Salida	Survey
Las protestas contra la explotación de una mina de cobre exhiben el choque entre dos ambientalismos en Panamá	Journal article
Protestas masivas en Panamá en rechazo a una concesión para explotar la mayor mina de cobre de Centroamérica	Journal article
La Cámara Minera de Panamá exige "imparcialidad" en una auditoría a una polémica mina de cobre	Journal article
Panama's 2024 Election: What to Know	Journal article
José Raúl Mulino gana las elecciones en Panamá impulsado por el expresidente Martinelli, condenado por corrupción	Journal article
Advancing Climate Change Mitigation and Adaptation through Integrated Innovative Sustainable Water and Energy Solutions	COP side event concept note
Carta Senado Mexicano	Official Communication
¿Quiénes ganaron los 44 municipios de El Salvador en el ¿Quiénes ganaron los 44 municipios de El Salvador en el ¿Quiénes ganaron los 44 municipios de El Salvador en el ¿Quiénes ganaron los 44 municipios de El Salvador en el período 2024-2027	Journal article
Asamblea aprueba reducir de 262 a 44 los municipios en El Salvador	Journal article
Menos concesiones, más infraestructura y el foco en el norte: el plan del Gobierno mexicano para garantizar el agua	Journal article
¿Quién es Efraín Morales López, próximo titular de Conagua?	Journal article
Plan Nacional Hídrico 2024-2030	Policy Document
Carta Autoridad Salvadoreña del Agua	Official Communication
Correo CONAGUA Mexico	Official Communication
Informe Visita a infraestructuras Hídricas Resilientes para América Latina y el Caribe	Official Communication
Carta CRA-Min Energía, Colombia	Official Communication
Carta de Agradecimiento por la Misión de Capacitación sobre la Adopción de Tecnologías Circulares	Official Communication
Agradecimiento por el Desarrollo de Capacitación Técnica en Economía Circular en el Sector de Agua Potable y Saneamiento	Official Communication
Agradecimiento al apoyo de CEPAL para la capacitación en economía circular en Panamá	Official Communication
ASA anuncia planes para la implementación de enfoques de economía circular en la PTAR de Metapán	CEPAL web article
Carta de Expresión de Interés - Bolivia	Official Communication
ROSA (Red y Observatorio para la Sostenibilidad del Agua) project brochure	Brochure
Regional Network and Observatory for Inclusive and Sustainable Water Management, ROSA, UNDA project document	Technical document produced by project team
Solicitud de participación en la Red y Observatorio para la Sostenibilidad del Agua (ROSA)	Official Communication

Title	Type
Aplicación de los principios de economía circular en el sector del agua potable y saneamiento - ROSA	Technical document produced by project team
ECLAC launches the ROSA project and organizes the first meeting for five pilot countries	CEPAL web article
Advances in the ROSA Project: Network and Observatory for Water Sustainability - Year 2	CEPAL web article
The Network and Observatory for Water Sustainability in Latin America and the Caribbean (ROSA) held its First Online Seminar	CEPAL web article
Progress of the ROSA Project: Network and Observatory for Water Sustainability - Year 1	CEPAL web article
Aguakan Norponiente II WWTP (Quintana Roo, Mexico) https://www2.aguakan.com/invierte-aguakan-mas-de-425-mdp-en-planta-de-tratamiento-de-ultima-generacion-en-cancun/	Third party document
Panama City WWTP (Panama) https://suezwaterhandbook.com	Third party document
Inventario Nacional de Plantas Municipales de Potabilización y de Tratamiento de Aguas Residuales en Operación en 2015	Third party document
UN-Water, SDG-6 Data Portal, Proportion of wastewater flow treated: El Salvador, Mexico, Panama	Third party document
Agenda Regional de Acción por el Agua 2023 América Latina y el Caribe. Link: https://www.cepal.org/sites/default/files/events/files/agenda_regional_de_accion_por_el_agua_alc_0.pdf	Other CEPAL document
Esto fueron los Diálogos Regionales del Agua 2023 de CEPAL. Link: https://www.cepal.org/es/eventos/esto-fueron-dialogos-regionales-agua-2023-cepal	CEPAL web article
Oportunidades de la Economía Circular en el Tratamiento de Agua en América Latina y el Caribe. Link: https://repositorio.cepal.org/server/api/core/bitstreams/3413ec71-7292-4ce7-95a8-a6b4aa53faae/content	Project output
Taller Desarrollo de capacidades para impulso de inversiones en el sector de agua potable y saneamiento con enfoque de economía circular.	Other CEPAL document
Regional Water Dialogues in Latin America and the Caribbean 2023. ECLAC, Santiago de Chile 1-3 of February 2023. Expert meetings. UNPDF. Agenda and speakers.	Other CEPAL document
IV Edición de los Diálogos Regionales del Agua en América Latina y el Caribe 2024: Hacia el Foro Mundial del Agua 2024.	Other CEPAL document
Exit survey Taller Desarrollo de capacidades para impulso de inversiones en el sector de agua potable y saneamiento con enfoque de economía circular 2023.	Survey
Encuesta Diálogos 2024. Participants exit survey of IV Edición de los Diálogos Regionales del Agua en América Latina y el Caribe 2024: Hacia el Foro Mundial del Agua 2024.	Survey
Lista Global de Participantes a Eventos UNPDF	Project output

ANNEX 4

INTERVIEW GUIDELINES

Project team

Relevance

During project preparation and implementation, did you identify and consult all relevant stakeholders from different sectors (national and local government, private, civil society, and communities)? How was this ensured? If all pertinent groups or persons were not included, why?

What measures were implemented to ensure the project responded to stakeholders' specific capacity and development needs? How did the project ensure alignment with the stakeholder's and beneficiaries' policies and strategies?

How did the project contribute to ECLAC's PoW and SP and collaborate with other ECLAC initiatives? How relevant were the PoW and SP during project implementation?

How well did the project activities and outputs align with the project's objectives and impacts? To what extent did the ToC assumptions hold, and was the risk matrix (identification and mitigation strategy) useful? Did you have to make any corrections or adjustments during implementation? To what extent did the project management structures provide the necessary resources (expertise, equipment, political reach and leverage) for the implementation of the project?

Efficiency

How well did the project follow the project document's timeline and milestones? What were the primary causes for delays, if any, and how did this affect the delivery of outputs and implementation of outcomes? How well did the project management arrangements (project team, implementing partners, governing structures, administrative procedures) enable the delivery of activities and outputs and facilitate the implementation of the outcomes? What were the main strengths and weaknesses of the implementation arrangements?

Were alternative implementation strategies considered, and costs estimated? What made this strategy the most cost-effective?

Effectiveness

Did the project finalize the reports on water and energy at the national level? If not, why not? To what extent did the reports contain a detailed analysis of the energy sources used for drinking water extraction, treatment and distribution and opportunities to generate renewable energy from wastewater treatment plants? Did you convene the expert groups as planned? How did the selected municipalities, departments or states comply with the selection criteria? Were the capacity development seminars delivered as scheduled to all relevant stakeholders at the national and local government? If not, or partially, why? What factors favoured or hampered the delivery of the capacity development seminars? To what extent did the project support the selected municipalities in designing and implementing the investment plans for water and energy? Were the plans completed? If not, or partially, why?

Impact

To what extent have the selected municipalities completed the design and started implementing the plans? If not, what barriers persist hampering plan design or implementation? To what extent can any water or energy supply changes in the selected municipalities be linked to the project? How are the observed changes related to the project? How many people are estimated to be affected positively or negatively by the

project? How has the project contributed to national and local policy? (National and local policies, plans, and legislative instruments will be identified).

Are there any other changes in procedures, technology, or administration, whether positive or negative, expected or unexpected, that can be attributed or linked to the project?

Coherence

Did the project identify and contact the main actors and initiatives (as policies, programs, and projects) related to the water-energy nexus in the project's locations, particularly within the UNCT? Were any collaborations, synergies, overlaps, and competition generated between the project and those other initiatives? Can the positive (synergies) and negative (overlap, competition) effects be quantified regarding reduced costs or time in achieving results?

What lessons learned, good practices and project solutions have been incorporated into policy or operations of the national and local governments, either in the project countries or elsewhere in the region? Can the project approach be exported to other subnational entities within the project countries or elsewhere?

Cross-cutting issues

What management or institutional arrangements have been established to implement the water and energy investment plans? Do those management or institutional arrangements respond to identified risks (environmental, social, economic, or political)?

Did the project implement measures to ensure full participation in project activities of vulnerable groups (e.g. Indigenous people and people with disabilities) and equal participation of women? Did the project implement any specific activity to promote women's empowerment and participation in the water and energy sectors? If not, why not? Did the project ensure no negative social or environmental externalities were derived from its implementation? If any were detected, what measures were taken to mitigate them?
Has the project contributed to national SDG indicator changes, especially under SDGs 6 and 7? Have any participating countries or subnational entities reported such contributions in a VNR or other communication? To which extent has the project contributed to actions under Topic 6 of the 2030 SICA SES (Nexos energéticos:nexo agua-energía-alimentos)?

Direct beneficiaries (national and local)

Relevancia

¿Hasta qué punto el proyecto consultó e informó adecuadamente a todos los actores relevantes entre autoridades nacionales y locales (municipales), ONG y comunidades implicadas? ¿Creen que hubo actores importantes no consultados? ¿Por qué creen que fue así?

¿Dio el proyecto respuesta a necesidades específicas de su organización, por ejemplo, a implementar su plan de trabajo o estrategia, o reforzando o actualizando sus capacidades, necesarias para mejorar el acceso a agua potable y a energía renovable?

¿Qué tan bien se ajustan las actividades del proyecto a los resultados esperados? ¿Hay actividades que deberían ser incluidas o evitadas para alcanzar los resultados esperados? ¿Qué bien equipado estaba el equipo de proyecto para ejecutar las actividades y alcanzar los resultados? ¿Tiene sugerencias de cómo mejorar la composición del equipo de proyecto?

Eficiencia

Cómo considera la eficiencia de la implementación de este proyecto: ¿se siguió el calendario previsto y se realizaron las actividades programadas de manera satisfactoria?"

¿Se consideraron estrategias alternativas para alcanzar los objetivos de este proyecto? ¿Qué hace que esta sea la manera más eficiente (costo-efectiva) de alcanzar los objetivos propuestos?

Efectividad

Direct beneficiaries (national):

¿Participó su organización en los grupos de expertos para la discusión de los informes de agua y energía producidos por el proyecto y en la selección de municipios? ¿Cómo evalúa la calidad de los informes y el proceso de evaluación? ¿Qué criterios se siguieron para escoger los municipios?

¿Qué medidas concretas a nivel institucional nacional o local han resultado del proyecto? ¿Cómo considera que el proyecto ha contribuido a mejorar sus capacidades en el sector de agua y energía? ¿En qué medida fueron adecuadas las capacitaciones y qué otras medidas podrían haber sido tomadas?

Direct beneficiaries (local):

¿Se ha conseguido completar el plan de agua y energía propuesto por el proyecto? ¿Era esta la solución que buscaban? ¿Se puede implementar el plan o ya lo están implementando y que necesidades o costos adicionales genera esta implementación? ¿Se están cubriendo estas necesidades? ¿Qué medidas concretas se pueden esperar en el plazo del plan?

¿Cómo considera que el proyecto ha contribuido a mejorar sus capacidades en el sector de agua y energía? ¿En qué medida fueron adecuadas las capacitaciones y qué otras medidas podrían haber sido tomadas?

Impacto

Direct beneficiaries (national)

¿En qué medida los municipios seleccionados han completado el diseño y comenzado la implementación de los planes? En caso negativo, ¿qué barreras persisten que impiden el diseño o la implementación de los planes? ¿En qué medida se han producido cambios en el suministro de agua o energía en los municipios seleccionados que puedan vincularse al proyecto? ¿Cómo se relacionan los cambios observados con el proyecto? ¿Cuántas personas se estima que se verán afectadas positiva o negativamente por el proyecto? ¿Cómo ha contribuido el proyecto a la política nacional y local? (políticas, planes e instrumentos legislativos nacionales y locales por identificar)

Direct beneficiaries (local)

¿Qué cambios han ocurrido en el tema de agua y de energía renovable han ocurrido en su localidad desde 2022? ¿Considera que ha habido una recuperación o mejora en estos aspectos tras la pandemia? ¿Los cambios citados, tienen relación con el proyecto?

Direct beneficiaries (national and local):

¿Qué cambios, además de los efectos previstos en aprovisionamiento de servicios de agua o alcantarillado han apreciado en su área de actuación que estén vinculados, o hayan sido causados, al menos en parte, por el proyecto? ¿Son todos estos cambios positivos? Si ha habido cambios negativos, explicar en qué consisten y cómo se relacionan con el proyecto.

Coherencia

Direct beneficiaries (national)

¿Qué tipo de coordinación o sinergias fueron establecidas entre el proyecto y otras iniciativas? ¿Qué individuos u organizaciones iniciaron estas colaboraciones o mediaron para mitigar conflictos o duplicaciones entre iniciativas?

Direct beneficiares (local)

¿Qué otras iniciativas se ejecutan en su localidad y cuál fue su relación con este proyecto?

Sustainability

Direct beneficiaries (national and local)

¿Hay alguna idea o mecanismo institucional sugerido por el proyecto en sus capacitaciones o planes que haya sido incorporada en políticas o procedimientos? ¿Cuáles y de qué modo?

Direct beneficiaries (national and local)

¿Cómo se está asegurando a nivel institucional que se implementen los planes de inversión desarrollados durante el proyecto? ¿Qué riesgos enfrentan estos planes y qué medidas se están tomando para evitar estos riesgos?

Cross-cutting issues

En los municipios donde actuó el proyecto: ¿existen asuntos de derechos humanos y género, tales como discriminación a grupos que puedan ser considerados más vulnerables (indígenas, personas con discapacidad), falta de empoderamiento de mujeres (menos acceso a servicios locales de agua y energía, mayor contribución de tiempo y trabajo para satisfacer las necesidades de agua del hogar, falta de lideresas en el sector agua y energía) sobre los que el proyecto haya influenciado de manera positiva o negativa? ¿Cómo describirían esta contribución?

¿Considera que el proyecto pudo haber causado algún daño ambiental o social, especialmente a grupos que puedan ser considerados vulnerables? De qué manera y qué medidas, si hubo, ¿se tomaron para mitigar estos efectos negativos?

¿Como valora la contribución del proyecto a los indicadores de los ODS 6 y 7 (u otros)? ¿Como valora la contribución del proyecto al tema 6 de la Estrategia Energética Sustentable del SICA?

Other stakeholders

Relevance

Indirect beneficiaries (research, NGO, private), Cooperating Entities within the UN system, Project Partners

During project preparation and implementation, did the project identify and consult all relevant stakeholders from different sectors (national and local government, private, civil society, communities)? How was this ensured? If all pertinent groups or persons were not included, why?

How did the project contribute to regional, national or local water, sanitation or energy policies, strategies or plans in the LAC region/ project country?"

What do you think is the best strategy to improve the capacities of the countries and municipalities in the Northern subregion of Latin America and the Caribbean to provide drinking water, sanitation, and energy services?

Effectiveness

Indirect beneficiaries (research, NGO, private), Cooperating Entities within the UN system, Project Partners

Did your organization participate in the expert groups to discuss the water and energy reports produced by the project and in the selection of municipalities? How do you assess the quality of the reports and the evaluation process? What criteria were followed when choosing the municipalities?

What concrete measures at the national or local institutional level have resulted from the project? How do you think the project has contributed to improving your capacities in the water and energy sector? To what extent were the trainings adequate and what other measures could have been taken?

Impact

Indirect beneficiaries (Research, NGOs, private)

¿Qué cambios han ocurrido en el tema de agua y de energía renovable han ocurrido en su localidad desde 2022? ¿Considera que ha habido una recuperación o mejora en estos aspectos tras la pandemia? ¿Los cambios citados, tienen relación con el proyecto?

Coherence

Indirect beneficiaries (research, NGO, private), Cooperating Entities within the UN system, Project Partners

Did the project establish collaborations or synergies or overlap and compete with your organization's initiatives? Can the positive (synergies) and negative (overlap, competition) effects be quantified regarding reduced costs or time in achieving results?

Indirect beneficiaries (communities, NGOs, other local)

¿Qué otras iniciativas se ejecutan en su localidad y cuál fue su relación con este proyecto?

Sustainability

Indirect beneficiaries (research, NGO, private), Cooperating Entities within the UN system, Project Partners

What lessons learned, good practices and project solutions have been incorporated into policy or operations of the national and local governments, either in the project countries or elsewhere in the region? Can the project approach be exported to other subnational entities within the project countries or elsewhere?

Cooperating entities within the UN system, Project partners

What management or institutional arrangements have been established to implement the water and energy investment plans? Do those management or institutional arrangements respond to identified risks (environmental, social, economic, or political)?

Cross-cutting issues

Project indirect beneficiaries (communities, NGOs, private sector, research):

En los municipios donde actuó el proyecto: existen asuntos de derechos humanos y género, tales como discriminación a grupos que puedan ser considerados más vulnerables (indígenas, personas con discapacidad), falta de empoderamiento de mujeres (menos acceso a servicios locales de agua y energía, mayor contribución de tiempo y trabajo para satisfacer las necesidades de agua del hogar, falta de lideresas en el sector agua y energía) sobre los que el proyecto haya influenciado de manera positiva o negativa? ¿Cómo describirían esta contribución?

¿Considera que el proyecto pudo haber causado algún daño ambiental o social, especialmente a grupos que puedan ser considerados vulnerables? De qué manera y qué medidas, si hubo, ¿se tomaron para mitigar estos efectos negativos?

Cooperating entities within the UN system, Project partners:

Did the project implement measures to ensure full participation in project activities of vulnerable groups (e.g. Indigenous people and people with disabilities) and equal participation of women? Did the project implement any specific activity to promote women's empowerment and participation in the water and energy sectors? If not, why not? Did the project ensure no negative social or environmental externalities were derived from its implementation? If any were detected, what measures were taken to mitigate them?

Has the project contributed to national SDG indicator changes, especially under SDGs 6 and 7? Have any participating countries or subnational entities reported such contributions in a VNR or other communication? To which extent has the project contributed to actions under Topic 6 of the 2030 SICA SES (Nexos energéticos:nexo agua-energía-alimentos)?"

ANNEX 5

SURVEY

1. Participant Information
Gender: (Male / Female / Prefer not to disclose)
Age Bracket: (Under 20 / 20–30 / 31–50 / Over 50)
Organization Type: (Public Sector / Private Sector / NGO / International Organization / Other)
Work Area: (Management / Technical / Other - Specify)
Professional Background: (Engineering / Economics / Administration / Environmental Management / Other - Specify)
Project Activity Participation: (Dropdown menu with options)
Consultation or Expert Meeting
Capacity-Building Seminar
Study Tour
Regional Water Event
Other – Specify

2. Relevance
The objectives of the training were very relevant to my professional field.
(Strongly Agree / Agree / Disagree / Strongly Disagree)
The training materials, themes, and topics are applicable to my country or local context.
(Strongly Agree / Agree / Disagree / Strongly Disagree)
The project was aligned with and contributed to national or local regulatory instruments, policies, or programs.
(Strongly Agree / Agree / Disagree / Strongly Disagree)
If applicable, name the policy or program and describe how the project contributed to it.
(Open-ended response)

3. Efficiency
Rate the logistics and organization of the training sessions.
(Scale from 1 to 5, with 5 being the highest)
What suggestions do you have for improving the training, delivery, or project strategy?
(Open-ended response)

4. Effectiveness
Rate the quality of training materials and delivery.
(Scale from 1 to 5, with 5 being the highest)
I have significantly improved my technical capabilities in planning and policies to promote energy efficiency in water and sanitation and renewable energy from wastewater treatment.
(Strongly Agree / Agree / Disagree / Strongly Disagree)
I can apply project solutions or capacity gained from the project in my work or professional area.
(Strongly Agree / Agree / Disagree / Strongly Disagree)
Please provide an example of how you are applying the project's capacities in your work.
(Open-ended response)

The training covered all the capacity gaps that prevented me from implementing renewable energy solutions for water, sanitation, or wastewater treatment services.
(Strongly Agree / Agree / Disagree / Strongly Disagree)
If gaps still exist, what additional capacity-building support do you need?
(Open-ended response)

5. Impact
There have been changes in the quality of water supply or sanitation services in my locality that can be linked to the project's training and activities.
(Strongly Agree / Agree / Disagree / Strongly Disagree)
Please provide an example of changes in the quality of services linked to the project.
(Open-ended response)

6. Sustainability
Project-suggested solutions have been incorporated into my organization's policies or work procedures.
(Strongly Agree / Agree / Disagree / Strongly Disagree)
Please provide an example of how your organization has incorporated project recommendations.
(Open-ended response)
My organization has established institutional arrangements to implement the water and energy investment plans or other project solutions.
(Strongly Agree / Agree / Disagree / Strongly Disagree)
If applicable, describe the institutional arrangements your organization has put in place.
(Open-ended response)

7. Cross-Cutting Issues
The project activities ensured full participation by all relevant stakeholders, including vulnerable groups and women at national and local levels.
(Strongly Agree / Agree / Disagree / Strongly Disagree)
Please provide an example of measures the project took to ensure access and participation by vulnerable groups and women.
(Open-ended response)
The project activities and results were aligned with and contributed to the Sustainable Development Goals (SDGs) and regional strategic frameworks such as the SICA Sustainable Energy Strategy.
(Strongly Agree / Agree / Disagree / Strongly Disagree)
Please provide an example of how the project has contributed to the SDGs or regional frameworks.
(Open-ended response)

ANNEX 6

Evaluator's Revision Matrix

Evaluation of the UNPDF Project
"Potable Water, Sanitation and Renewable Energies to improve the health conditions of the population and promote productive uses in the most lagging behind municipalities of the countries of the northern subregion of Latin America and the Caribbean"

Evaluation Report Feedback Form: PPEU/ECLAC

GENERAL COMMENTS		
REPORT SECTION (if applicable)	**COMMENT**	**EVALUATOR'S RESPONSE**
Coding of sources	This system of presenting sources is not easily understandable. It would be beneficial to add for example graphs with responses to the survey where applicable, which would strengthen the findings.	Yes, the codes are designed to avoid the identification of individual sources. The codes represent the stakeholders (project team, project stakeholder, third party) as defined in the inception report and the evaluation's methodology. The robustness of the evidence is gauged as strong or interim/ early/ limited based on the number and type of sources supporting the finding as explained in this paragraph added to the methodology section: "A finding was considered robust if supported by at least two independent sources from different stakeholder groups (e.g., an interview and a document): project team, project stakeholders and third parties. Hence, evidence for a finding is considered strong if it is supported by more than three sources from at least two stakeholder groups. Evidence for a finding is considered interim or early if supported by at least two stakeholders of the same type. However, minority and divergent opinions were documented where multiple perspectives existed"An additional paragraph has been added to expand the definition of the stakeholder categories: project team, direct beneficiary, and third-party
SPECIFIC COMMENTS		
PAGE NUMBER	**COMMENT**	**EVALUATOR'S RESPONSE**
9	Please include text on how gender mainstreaming was considered as part of the methodology	Paragraph on gender and human rights added

SPECIFIC COMMENTS		
PAGE NUMBER	**COMMENT**	**EVALUATOR'S RESPONSE**
10	Please present information on profile of survey respondents (disaggregation by gender, country)	Added
11	Please present information on profile interviewees (disaggregation by gender, country)	Added
Finding 2	EQ1 is about engagement, not about structured partnership or co-financing. Maybe delete from there and keep those considerations under Finding 22, where they seem more relevant (under coherence)	Finding has been moved to corresponding section
17	This "bottom-up" approach was atypical for ECLAC's usual work, which tends to focus on national-level policies. Maybe this statement could be qualified. ECLAC as a whole does a lot of work at the municipal level, but perhaps on different topics (see New Urban agenda, care maps in Bogota and Buenos Aires, etc.)	The report acknowledges ECLAC's work at the local level under the New Urban Agenda in the following paragraph: "To some relevant stakeholders, this "bottom-up" approach is atypical and innovative for ECLAC's usual work, which tends to focus on national-level policies. However, the ECLAC supports and works together with local level stakeholders in work at the municipal level, in the frame of the New Urban Agenda and the Urban and Cities Platform together with UN-Habitat and other partners". The uniqueness and innovativeness of the "bottom-up" (sic) approach came across strongly among some key project stakeholders.
Finding 12	There is no evidence that local presence would alleviate logistical challenges. ECLAC provides from Santiago procurement services to OCRs office across the region. Adding a local partner also means an additional layer of procurement, which adds to transactional cost	The finding's formulation did not match the evidence. The finding has been reformulated as: The absence of a local partner compounded coordination challenges in convening capacity building activities, and following up on actions, especially where local and national beneficiaries were affected by staff turnover at the management and technical levels, electoral processes or demonstrations (not related to the project's topic). This finding is based on several interviews with pr?)ct team, beneficiaries (national level) and third-parties
Page 25	The wording of EQ 10.2 is different from the one included in the inception report. Please replace with wording closer to the original (To what extent have there been any water or energy supply changes in the selected municipalities that can be linked to the project? How are the observed changes related to the project?)	Question 10.2. To what extent can water or energy supply changes in the selected municipalities be linked to the project? How are the observed changes related to the project? How many people are estimated to be affected positively or negatively by the project? Was based on the assumption, at evaluation inception, that the project, had contributed, at least partially to the outcome Strengthened technical capacities of the countries and municipalities of the selected countries to **implement investment projects in drinking water and sanitation** that allow a recovery from COVID-19 that is sustainable, resilient, and inclusive and that contribute to improving their conditions public health. However, review of the project reports and the stakeholder interviews quickly revealed that the project had a much limited scope during implementation than at design stage, as it tried to promote the design of investment plans for methane recovery at selected WWTPs, hence the outcome would have been: "Strengthened capacities (…) to implement investment projects for methane recovery for electricity generation in WWTPs under

		municipal or utility management in the selected countries". A line in methodology has been added to explain this. However, the formulation of the question has been modified to better conform with the original formulation as: **What changes in the wastewater treatment context in the respondents' area can be attributed to the project?**
Recommendation 7	See comment on finding 12. Consider revising this recommendation taking into account the fact that managing local partners can also be burdensome. 7.2 the ORC do not have an implementation role. The suggestion to link with UNEP is well taken but could be written as more of a suggestion, as one example of collaboration to explore, rather than the only possibility	

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Evaluation Report Feedback Form: UGP

GENERAL COMMENTS		
REPORT SECTION (if applicable)	**COMMENT**	**EVALUATOR'S RESPONSE**
D	Simplify redaction, avoiding the repetition of "Project documents"	Corrected
Finding 10	The protocols, particularly during procurement and financial disbursements were the usual for any ECLAC project. No special report requirements were requested by the Fund with the only exception of the ex-ante authorization for change funds between budget lines.	Finding 10 (now finding 9) slightly reformulated, avoiding negative wording: Finding 9. The project demonstrated strong adaptability in its implementation strategies, successfully adjusting to political and institutional changes in Mexico and Panama while navigating administrative complexities associated with the funding mechanism. However, while operational flexibility helped maintain momentum, the administrative requirements of the UNPDF funding mechanism required efforts to ensure compliance and enable adaptive management. However, the rigidity of compliance was mentioned during the interviews.
Finding 12	The delays in procurement and administrative processes have not been influenced by ECLAC physical presence. Indeed, ECLAC is the hub for the resident coordinator and their logistical process of purchase and hiring is managed by ECLAC in Santiago.	Finding 12 (now 11) reformulated to stress that a local partner might have facilitated coordination, as mentioned by several stakeholders: Finding 9. The project demonstrated strong adaptability in its implementation strategies, successfully adjusting to political and institutional changes in Mexico and Panama while navigating administrative complexities associated with the funding mechanism. However, while operational flexibility helped maintain momentum, the administrative requirements of the UNPDF funding mechanism required efforts to ensure compliance and enable adaptive management.

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Evaluation Report Feedback Form: DRN/ECLAC

GENERAL COMMENTS		
REPORT SECTION (if applicable)	**COMMENT**	**EVALUATOR'S RESPONSE**
	Changes in Authorities and Officials - The evaluation report criticized the low engagement of local partners and their lack of ownership of the project. - There was frequent turnover among interlocutors, with project stakeholders changing regularly. This resulted in a lack of comprehensive understanding of the project and made communication with local WWTPs more difficult, as contact persons kept changing over time. - Transitions occurred at both local and national levels, leading to inconsistent leadership throughout the project. This likely contributed to a lack of ownership and commitment from key stakeholders. - These changes disrupted the project's flow and made it impossible to establish a stable national partner who could ensure long-term engagement and leadership. This, in turn, complicated planning processes and hindered follow-up on progress, making it a significant challenge that we believe should have been given greater emphasis in the report.	The report does acknowledge the implementation challenges and suggests that the presence of a local implementing partner might have helped in surmounting said difficulties. However, staff turnover is a risk the project needs to consider, and strategies need to be designed to cope with it, as changes down to the local technical level responding to political changes will very likely remain a fact in the region. Moreover, the evaluation interviews reveal a divergence in objectives and priorities between national-level policy-making bodies and WWTP operators, as well as within them at the local and national levels.
	Importance of the Study Tour - **The final evaluation did not fully capture the significance of the Study Tour or the strong impact it had on participants. This was evident not only throughout the week but also in the numerous letters of appreciation received from participating institutions afterward.** - The primary objective of the Study Tour was to **highlight public and private financing practices** for sustainable water management. Given that **financial constraints** are a major challenge across the region, showcasing **alternative financing methods** used elsewhere (in this case, in Chile) was particularly valuable. - However, discussions during the tour also delved into **ideological and institutional aspects**, with participants analyzing governance models from other countries. Additionally, participants explored how **public enterprises finance their operations**, yet these key insights were **not sufficiently reflected in the final report**.	The text has been modified to highlight the importance of the study tour. The evaluation could have benefited from the participant lists, study tour report and exit survey.
Finding 20	Colombia's Interest in Developing a National Policy with ECLAC, Inspired by the Successful UNPDF Project - **Colombia's decision to join the project** marks a **major milestone** for the project and should be given much more visibility and emphasis in the evaluation report.	The report notes Colombia's and RD's interest in the project's model. While clearly linked to the implementation of this project, these countries' interests will play out

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	- The country is currently developing a **national plan**, a particularly complex process due to its **municipal water governance structure**, especially in Bogotá. - The Colombian government has **formally requested ECLAC's support** in drafting a **National Circular Economy Law for the water sector**. This is a rarely seen level of impact, which could extend even to the division's work program report, highlighting the political significance of developing a national policy. - This high level of success could serve as a model for other countries in the region. In this regard, it would be beneficial to document and track this process to create a replicable framework for the region.	outside the scope of the evaluation and with uncertain tangible results.
	The Dominican Republic Joins the Project - The Dominican Republic has **expressed strong interest** in adopting the project's **methodology** and integrating it into their **national framework (similar capacity building session for WWTPs in carried out in March 2025 in the Dominican Republic by ECLAC team).** - This decision is a direct result of the project and its dissemination efforts, particularly through the **Regional Dialogues and other events**, where project participants shared their experiences and insights. - This significant achievement **deserves far greater emphasis** in the evaluation report, as it highlights the transversality, **regional influence and scalability of the project.** - Given that the project has been successfully implemented throughout Latin America and is now expanding to the Caribbean, its flexibility, adaptability, and scalability represent a major success—one that was unfortunately not adequately reflected in the evaluation report	The report acknowledges now the capacity building activity in the Dominican Republic, noting at the same time that the activity is conducted in the frame of the ROSA project.
	Absence of Next Steps in the Evaluation - The work does not end here – there are ongoing plans and agendas for the next phases, yet this could be event more highlighted in the evaluation report. - Building on this project, efforts will continue to support countries in developing national circular economy policies for water across the region. - This issue has now been recognized as a key regional priority and has been formally integrated into DRN's work plan, ensuring long-term engagement and continuity. - Also, the fact, that ECLAC is working on those institutional frameworks together with the governments to be able to implement the project findings in a more efficient way – It is crucial to develop practical implementation strategies that effectively translate the gathered knowledge into action.	The evaluation report and executive summary have been reviewed to highlight the continuation of ECLAC's actions on this topic. Moreover, the evaluation report's conclusions and recommendations assume continued action by ECLAC in methane recovery in WWTPs. However, the evaluation cannot include actions implemented under other projects. The evaluation can benefit from any document or plan that refers to any changes that can be linked to the project. Additionally, it must be noted that the evaluation reflects the views and perception of a diverse array of stakeholders who were involved with the project.

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Finding 19	**Project goals** - The evaluation highlighted that wastewater treatment in the project areas continues to face technical, financial, and institutional challenges, which is correct. - As **ECLAC is neither an implementing entity nor a financing institution**, the project's objective was to strengthen the capacities of operators and national authorities to be able to tackle these problems. By enhancing their knowledge and skills, the initiative aimed to equip them with the necessary tools to effectively tackle these challenges in the long term, as well as to better understand how to access financing for the transformation of their wastewater treatment plants (WWTPs). - For this reason, we feel that the evaluation is a bit misleading on this point.	The evaluation findings are based on the project reports and interviews with various stakeholders at different levels, who shared their perceptions of capacity development needs, both technical and in terms of access to finance and process optimization, where ECLAC's support could be needed.
Finding 26	**Lack of gender equality in participation** - When inviting operators and authorities to the capacity-building sessions, a clear effort was made to encourage the participation of as many women as possible. This issue was discussed with local authorities, but despite these efforts, many wastewater treatment plants lack female operators, which was disappointing. - Interviews were conducted with the few women working at local WWTPs who participated in the sessions. A common theme that emerged was the severe underrepresentation of women in the sector—many interviewees were the only female technician at their plant. - Despite our strong efforts to include female participants, this is an issue that must be addressed at a public policy level. Female participation in technical positions within the wastewater sector remains extremely low, a fact acknowledged by all participants. - Given these efforts, we believe the project was not fairly evaluated on this matter, as significant steps were taken throughout its implementation to promote gender inclusion.	The challenges in having incidence in gender roles and promoting women empowerment are noted. The historical male bias in technical roles in the water sector, and, specifically in the wastewater treatment sector was clear from the interviews. However, the project could have introduced elements in the capacity building or socialization sessions e.g. highlighting women in the WWTP management and operation.
	Success Stories Were Not Given the Emphasis They Deserved - The project's key success story, the Metapán Wastewater Treatment Plant, was not adequately highlighted in the evaluation. - As a direct result of the project, several key meetings took place in November to advance plans for transforming the WWTP into a circular system. These meetings involved local authorities and the mayor to ensure effective long-term planning. - Given the long-term nature of such transformations, it is unrealistic to expect full implementation within the short project timeframe. We strongly believe that Metapán should have been showcased as a success story, rather than the report emphasizing the absence of formalized policies at this stage.	Unfortunately, and despite conversations with all pertinent local and national stakeholders, no concrete action towards plan formulation or implementation could be identified. Based on conversations held, the evaluation does not consider likely that a methane recovery system will be installed at the Metapan WWTP in the short term.

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