



# Report of Results

CAPACITY BUILDING PROGRAM

BLOCK 2

CREW+ ACADEMY



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The GEF CReW+ is a partnership project funded by the Global Environment Facility (GEF) that is being co-implemented by the Inter-American Development Bank (IDB) and the United Nations Environment Programme (UNEP) in 18 countries of the Wider Caribbean Region (WCR).

This project builds upon its previous successful phase “The Caribbean Regional Fund for Wastewater Management (CReW)” project (2011-2017). CReW+ is being executed by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, the Organisation of the American States (OAS) and the Secretariat of the Cartagena Convention (CAR/RCU) on behalf of the IDB and UNEP respectively.

The 18 participating CReW+ countries (Barbados, Belize, Colombia, Costa Rica, Cuba, Dominican Republic, Grenada, Guatemala, Guyana, Honduras, Jamaica, Mexico, Panama, Saint Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines, Suriname and Trinidad and Tobago) vary geographically from large, continental countries to small island states, with significantly different political, linguistic and cultural contexts.

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# The CReW+ Academy

The CReW+ Academy is a free platform which brings together all capacity initiatives of the GEF CReW+ project. Its purpose is to provide knowledge and a space for co-- creation of water and sanitation solutions in the Wider Caribbean Region. The CReW+ Academy was initiated by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and is accessible via [www.gefcrew.org](http://www.gefcrew.org)

GEF CReW+ is a collaborative project funded by the Global Environmental Facility (GEF) and co-implemented by the Inter-American Development Bank (IDB) and the United Nations Environmental Programme (UNEP) in 18 countries of the Wider Caribbean Region: Barbados, Belize, Colombia, Costa Rica, Cuba, Granada, Guatemala, Guyana, Honduras, Jamaica, Mexico, Panama, Dominican Republic, Saint Kitts and Nevis, St. Lucia, Saint Vincent and the Grenadines, Suriname, and Trinidad and Tobago. GEF CReW+ is executed by GIZ and the Organization of American States (OAS) on behalf of the IDB and by the Secretariat of the Cartagena Convention on behalf of UNEP.

The trainings provided by the CReW+ Academy are structured in three blocks. Block 1 was conducted as a series of webinars focusing on Integrated Water and Wastewater Management, including experiences of indigenous communities and promoting gender equality as well. Block 2 consisted of a series of 6 sessions focusing on the reuse of (treated) wastewater, which were held separately in English and Spanish.

The sessions in Spanish were organized and conducted by GIZ. This report summarizes the main achievements of GIZ in Block 2 of the CReW+ Academy in the Spanish sessions, which have contributed to reaching the indicators 1.3, 2.3, 3.3 and 4.2 of the GEF CReW+ results matrix.

The English sessions were realized in collaboration with UNEP and supported by GIZ regarding content, logistics and dissemination.

## Action Plan for Block 2

The CReW+ Academy offers courses of short duration aimed at key actors of the GEF CReW+ project. The target group consists of governmental entities and actors of the private sector (service providers, associations and regional organizations) of the 18 participating countries. The CReW+ Academy has the following objectives:

- Establishing strategic alliances between regional and/or local expert organizations which permit to improve the project implementation.
- Expanding knowledge through expert exchange and making it available to project partners and the region.
- Contributing to the water and sanitation sector at global level, sharing findings about relevant topics such as the reuse of domestic effluents as well as case studies of implementation of medium and large-scale treatment systems.

Block 2 of the CReW+ Academy consisted of a series of sessions dealing with the reuse of treated domestic effluents. The sessions were conducted in Spanish and English on different days of the week via the MS Teams platform. On Tuesdays, sessions were held in Spanish, on Thursdays, sessions were held in English. Moreover, a certificate was awarded to participants who attended 5 out of 6 sessions of the CReW+ Academy Block 2.

The sessions were conceptualized and conducted with the support of the regional water and sanitation expert Gustavo Heredia from Bolivia. Of the six sessions held in Spanish language, the support of Gustavo Heredia was financed by GIZ in four sessions and by UNEP in two sessions.



## BEFORE

1. Contact and meeting with the lecturer
2. Virtual session preparation in MS Teams
3. Update the website with the information for each session
4. Event announcement on social media
5. Send session links 1 day and 15 minutes in advance
6. Preparation of electronic event registration and evaluation surveys



## DURING

1. Execution of the sessions
  - a. Recording
  - b. Presentation of the CReW+ Academy
  - c. Lecturer presentation
  - d. Exposition of subjects
  - e. Space for questions and answers
2. Sending registration and event evaluation surveys



## AFTER

1. Prepare video recording in CReW+ Academy format
2. Upload video to Youtube
3. Upload video on CReW+ Academy website
4. Import session presentations and upload them to the CReW+ Academy website.
5. Prepare and send advertisement of uploaded resources through Mailchimp
6. Document and monitor feedback provided by attendees in the surveys
7. Send certificates of participation to those who participated in 5 or 6 sessions.

Figure 1. Activities before, during and after each session of Block 2 of the CReW+ Academy

The contribution to the fulfilment of the indicators 1.3, 2.3, 3.3 and 4.2 of the GEF CReW+ project and the main results were evaluated through the following means of verification (or data source):

**Registration survey.** At the beginning of each session a survey created by GIZ was shared via the platform “Wisembly”, with the aim to register the persons attending. Through the survey, information about the participants’ country of origin, type and name of the organization, gender, affiliation with an indigenous community and previous attendance to CReW+ events were collected. Moreover, the names of the participants were asked for to enable the verification of attendance for the later awarding of certificates.

**Evaluation Survey.** GIZ conducted an anonymous survey to evaluate the participants’ perception of the sessions and contents. Attendees were asked to fill

in this survey during each session using the tool “Wisembly”.

**Recordings of the sessions.** The number of attendees was verified through the participants section on the *MS Teams* platform. At the same time, this served as a complementary tool to the registration survey to verify the attendance for the delivery of certificates of participation. The recordings of the sessions conducted in Spanish are available on <https://academy.gefcrew.org/recurso>. The recordings of the English sessions can be found on <https://academy.gefcrew.org/en/resources>.

## General Results

### Creating Synergies for the Reuse of Treated Wastewater

**Six sessions were successfully developed in Spanish, aimed at capacity building and exchange of experiences and knowledge for the reuse of treated domestic effluents.**

Table 1 shows information about the sessions held. Please find below a summary of the relevant aspects:

- An initial session was held to introduce the topic of wastewater and general concepts of reuse and circular economy.
- Two sessions were held specifically to present case studies of medium-scale reuse systems and decentralized reuse systems in rural communities.
- Most sessions dealt with case studies from Latin American and Caribbean countries.
- The collaboration of 5 experts was obtained, who shared their knowledge and experience in two of the sessions.
- A training on technical aspects was provided, presenting different specific technologies to facilitate the recovery of water and nutrients.
- Training in design, strategic planning, establishment, and management of financing modules was offered in one session.

Table 1. Sessions held in Block 2 of the CReW+ Academy

| Number of session | Title - Indicator <sup>1</sup>  | Date       | Lecturers   |
|-------------------|---|------------|---|
| 1                 | Wastewater: A global challenge that requires local solutions - 1.3                      | 24/08/2021 | MSc Gustavo Heredia   |
| 2                 | How to start a wastewater reuse project? Technical aspects - 3.3                        | 31/08/2021 | MSc Gustavo Heredia   |
| 3                 | Governance in wastewater treatment and reuse: Management models and regulations - 1.3   | 07/09/2021 | MSc Gustavo Heredia, Sirly Castro, Henry A. Moreno, Indhira de Jesús. |
| 4                 | Towards socio-economic and environmental sustainability of reuse: Business models - 2.3 | 14/09/2021 | MSc Gustavo Heredia   |
| 5                 | Case studies: Implementation of medium-scale reuse systems - 3.3                        | 21/09/2021 | MSc Gustavo Heredia   |
| 6                 | Case studies: Implementation of decentralized systems and rural communities - 3.3       | 28/09/2021 | MSc Gustavo Heredia, Blanca Castro, Gustavo Cubero.                   |

1. Project indicator according to the results matrix associated with the content of the webinar. 1.3: Capacity building workshops to drive regional national reforms in Integrated Water and Wastewater Management and reporting on relevant SDGs. 2.3: Training specific individuals and agencies in the design, strategic planning, establishment and management of financial mechanisms. 3.3: Training in innovative and low-cost Integrated Water and Wastewater Management. 4.2: Improved access to information, including knowledge of experiences and lessons learned, as well as improved information sharing capacity with the GEF, local and national communities in general.

## Trained Beneficiaries

Block 2 of the CReW+ Academy reached 1856 registrations. 854 persons joined the training on the reuse of treated domestic effluents, and participants filled in 643 registration surveys

as well as 487 evaluation surveys. Figure 2 shows the number of registrations, beneficiaries and participants who filled in the registration and evaluation surveys for each session. The large number of participants confirmed the wide reach of the activities realized in the course of the GEF CReW+ project.

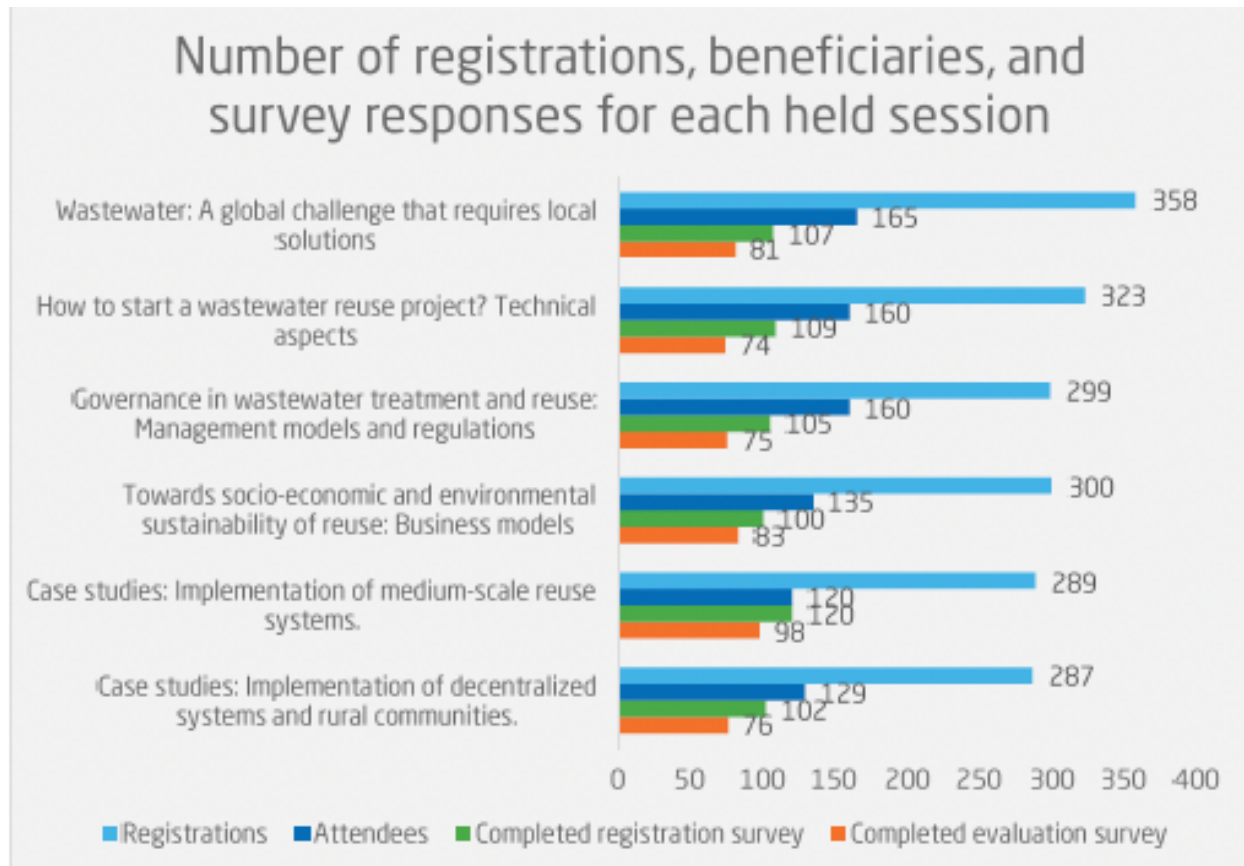


Figure 2. Number of registrants, beneficiaries, and survey responses for each held session.

325 beneficiaries received two training sessions on governance in wastewater treatment and reuse, with regional experiences in the implementation of management models and regulations (Component 1). 135 people were trained in the design, strategic planning, establishment, and management of business models (Component 2). In addition, 160 people were trained in innovative and low-cost solutions for wastewater reuse. Finally, 249 were trained in two sessions to analyse different experiences with reuse systems (Component 3).

### ***Strengthening Capacities in the Wider Caribbean Region***

The second Block of the CReW+ Academy received attendance from at least 25 countries, as shown in Figure 3. The origin of the participants was found through the registration survey, the main participating countries being Costa Rica with 34%, Bolivia with 14%, Mexico with 12% and the Dominican Republic with 6%. 94% of participants were from Latin America and the Wider Caribbean Region, 4% from Europe, 1 % from Asia and 1% from North America. Participation from 8 of the 18 GEF CReW+ countries was achieved (Costa Rica, Dominican Republic, Mexico, Guatemala, Colombia, Honduras, Panama, and Grenada).



Figure 3. Countries participating in Block Z of the GEF CReW+ project.

## Assuring Gender Equality

The GEF CReW+ project promotes gender equality and the empowerment of women in the field of Integrated Water and Wastewater Management. For this reason, a gender perspective was integrated into the programme blocks on capacity development. As can be seen in Figure 4 and Annex 3, a gender balance was achieved in the sessions of block 2. More than half of those who registered in the survey were women.

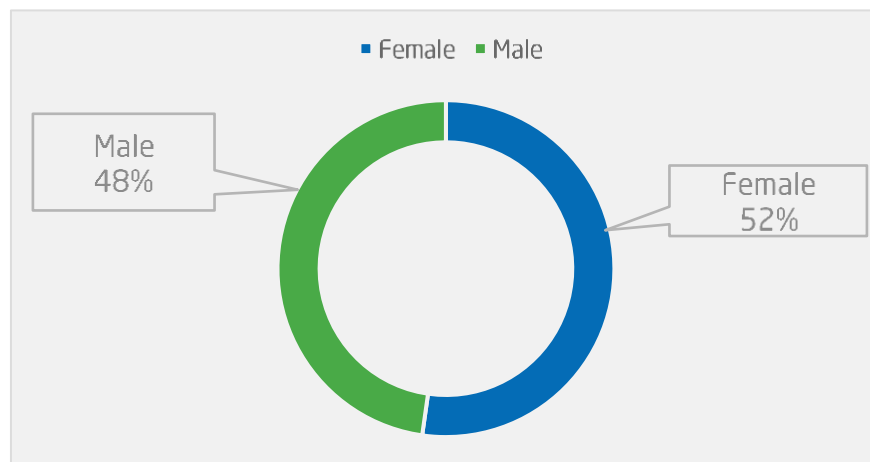


Figure 4. Gender distribution of participants

# Affiliation with an Indigenous Community

In the GEF CReW+ project, indigenous communities are actively included and participate in the development of Integrated Water and Wastewater Management solutions. The survey allowed to determine the number of people affiliated to an indigenous community (Figure 5).

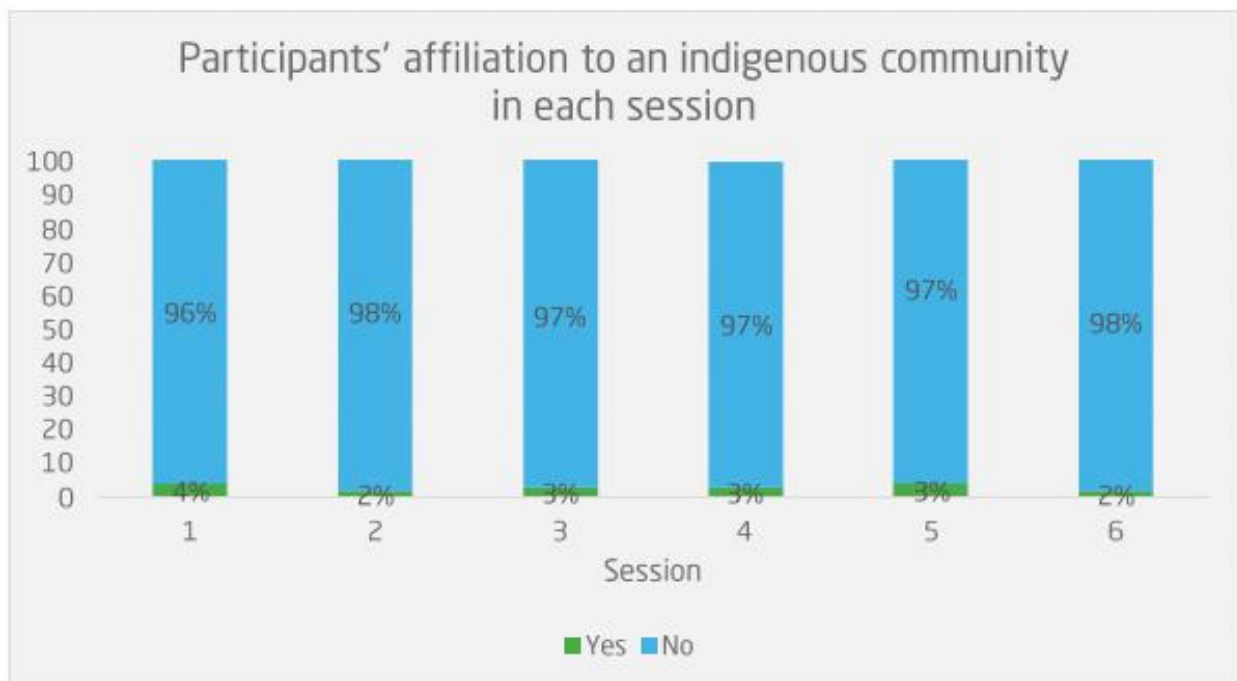


Figure 5. Affiliation to an indigenous community of the participants in each session.

# Organizations to which Participants Belong

Block 2 of the CReW+ Academy served as a nexus between a wide range of actors, among them governmental and international organizations, academics, the private sector, NGOs, and the civil society. Figure 6 shows that the CReW+ Academy managed to effectively train many participants who represented the project counterparts and relevant institutions in the water and sanitation sector in the region. This indicates clearly that the CReW+ Academy reached the target group of the project.

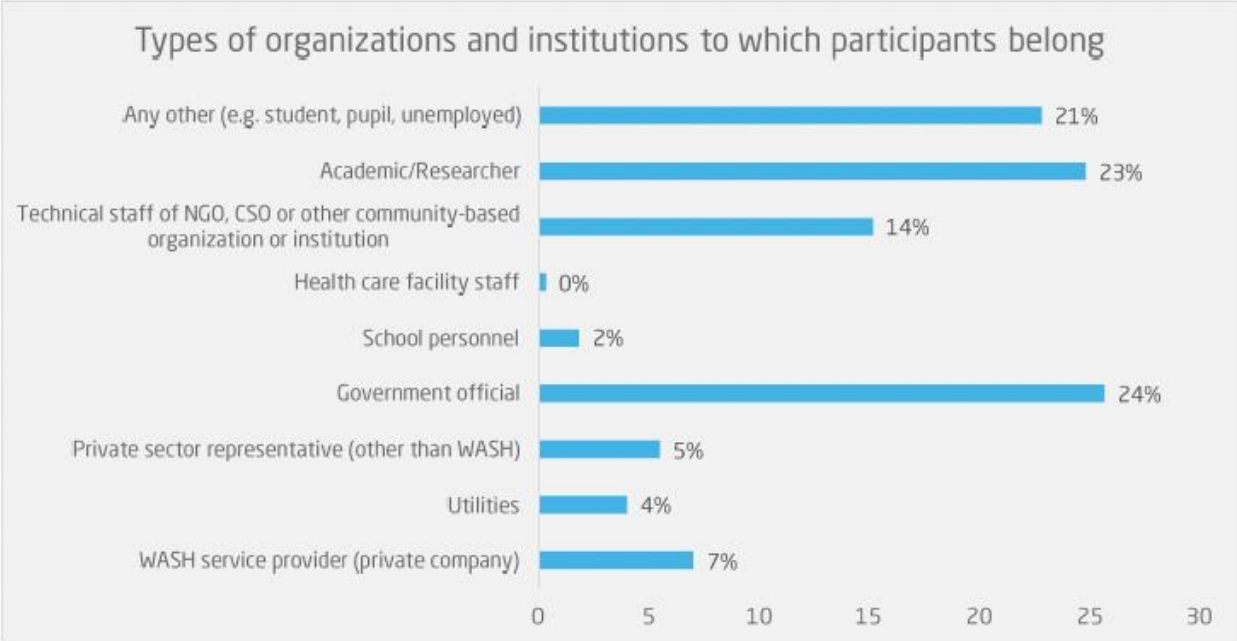


Figure 6. Types of organizations and institutions to which participants belong.

# Feedback on Block 2

The exchange of experience and the dissemination knowledge about the reuse of treated domestic effluents is essential for the project’s advocacy on the importance of Integrated Water and Wastewater Management and to develop and strengthen capacities in the water and sanitation sector in the Wider Caribbean Region. To assess the impact of the CReW+ Academy, participants’ perception was evaluated through a voluntary survey on the platform “Wisembly” at the end of each session. The feedback of the participants demonstrates the success of the offered trainings and the fulfilment of the relevant indicators 1.3, 2.3 and 3.3.

100% of the participants “strongly agree” or “tend to agree” that the sessions improved their skills and knowledge in the field of sanitation and/or the management of wastewater (Figure 7).  
99% of the participants do “strongly agree” or “tend to agree” that the sessions allowed them to increase their knowledge on the specific topic of the event (Figure 8).

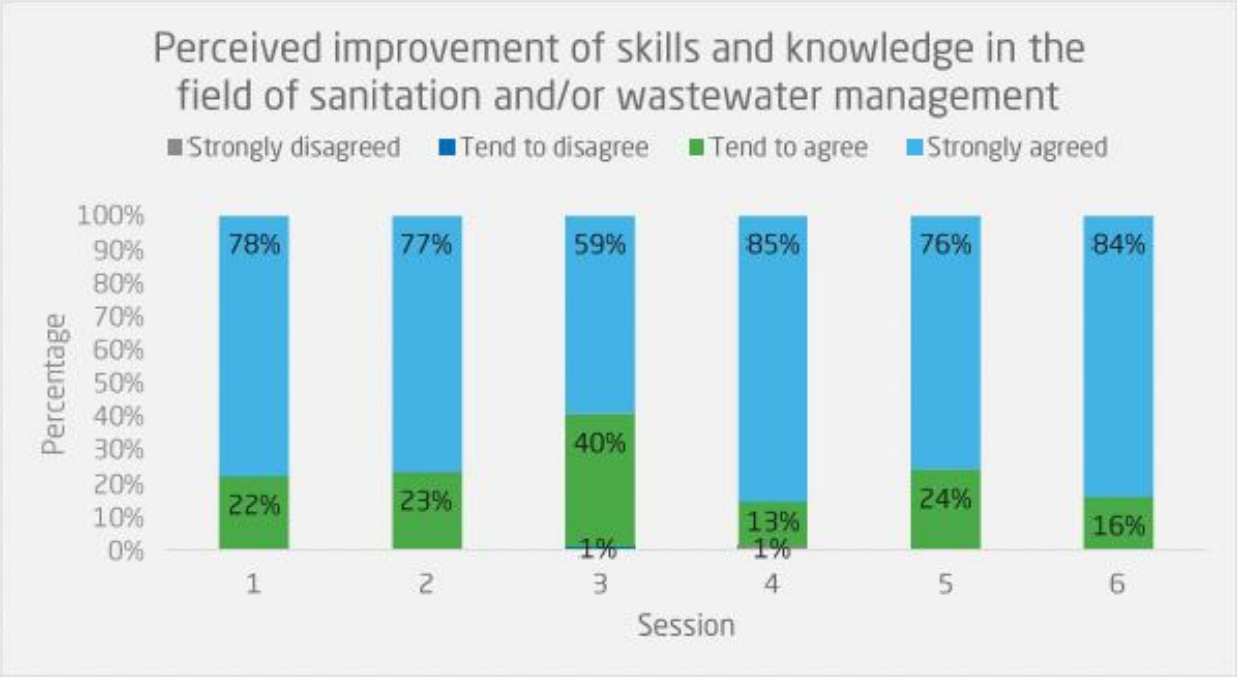


Figure 7. Perceived improvement of skills and knowledge in the field of sanitation and/or wastewater management.

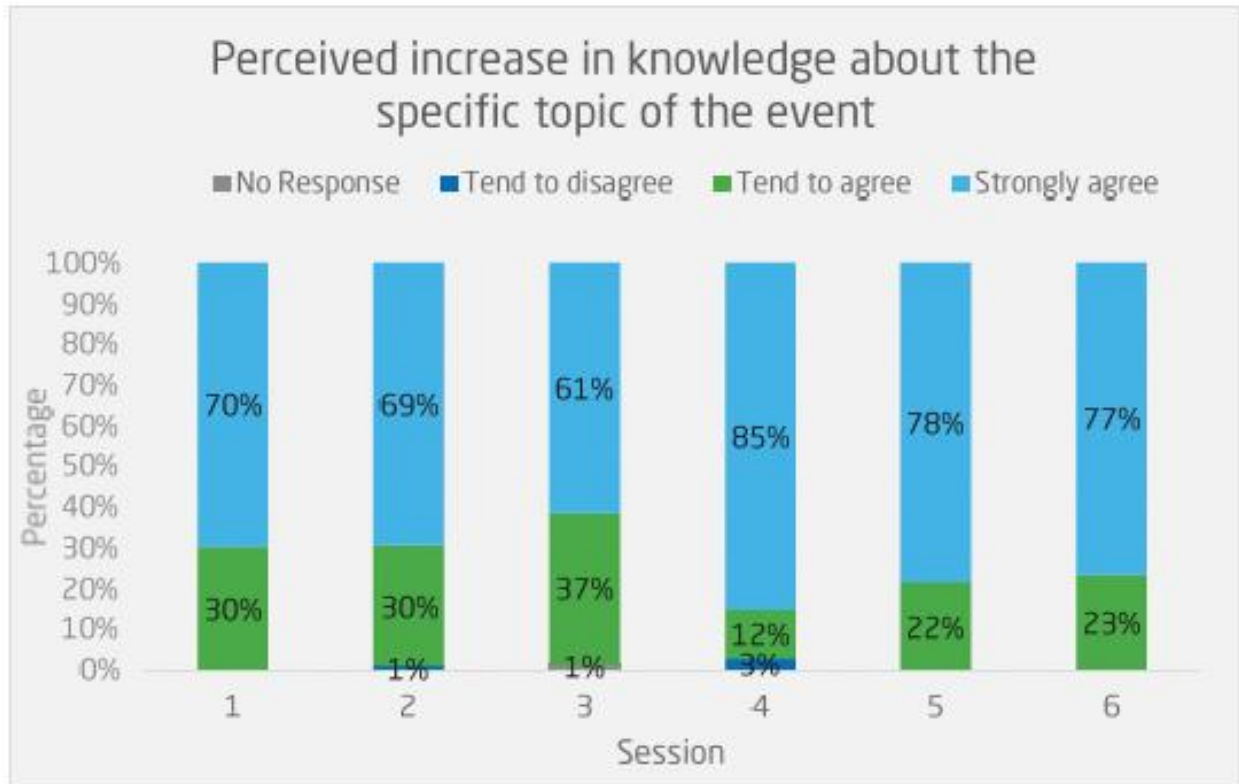


Figure 8. Perceived increase in knowledge about the specific topic of the event.

In general, the feedback of the participants on the sessions was strikingly positive. Of the total number of additional comments, 50% are positive comments about the event, of which the majority is aimed directly at the good performance of the lecturer, his/her great experience and managing of the topics. Figure 9 shows the rating of the lecturer by the participants.

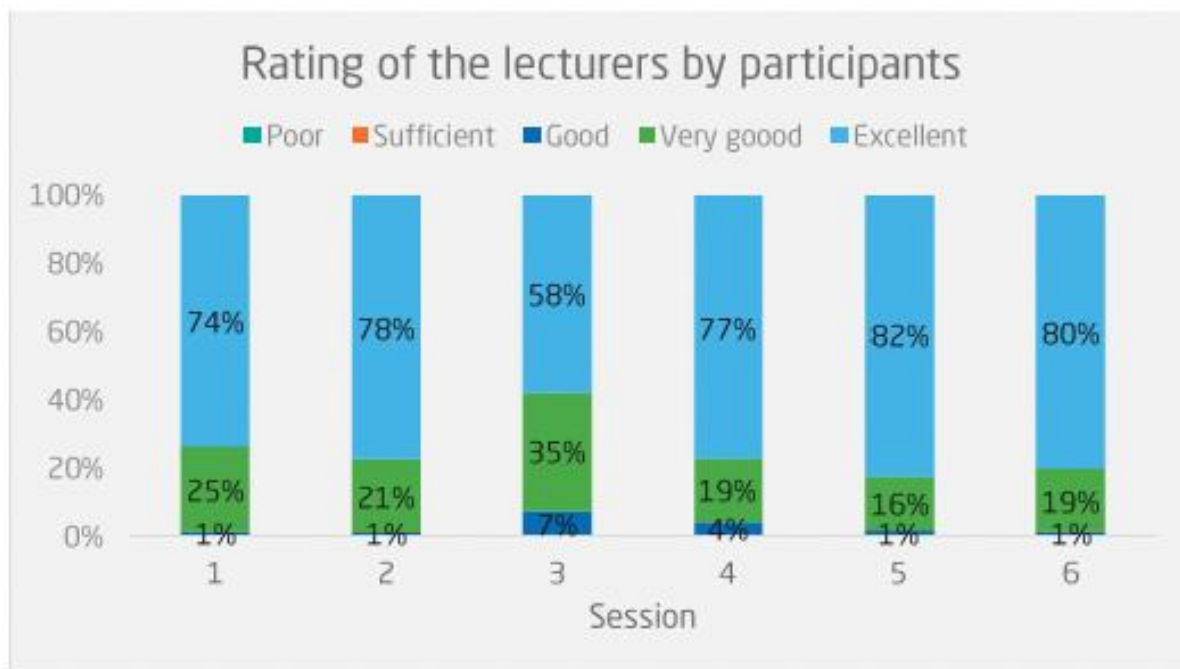


Figure 9. Rating of the lecturers by participants in each session.

The positive comments can be grouped in 4 categories, of which most comments highlighted the excellence of the event (33%), followed by positive comments on the lecturer and his/her good management of the topic, and comments suggesting more events in the same manner with 24% each. Finally, positive comments on the used methodology make up 19% (Figure 10).

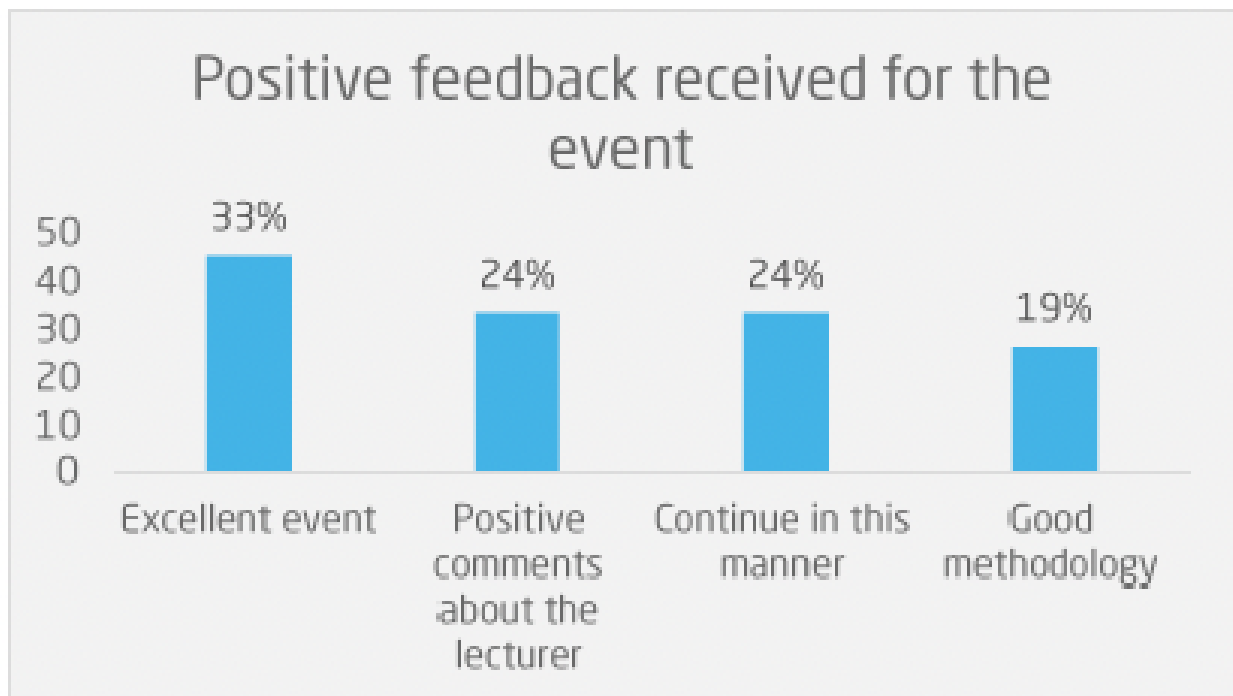


Figure 10. Positive feedback received for the event.

In addition, Figure 11 shows the participants' willingness to participate again in events of the Academy, revealing that the attendees were satisfied with the realization of Block 2.

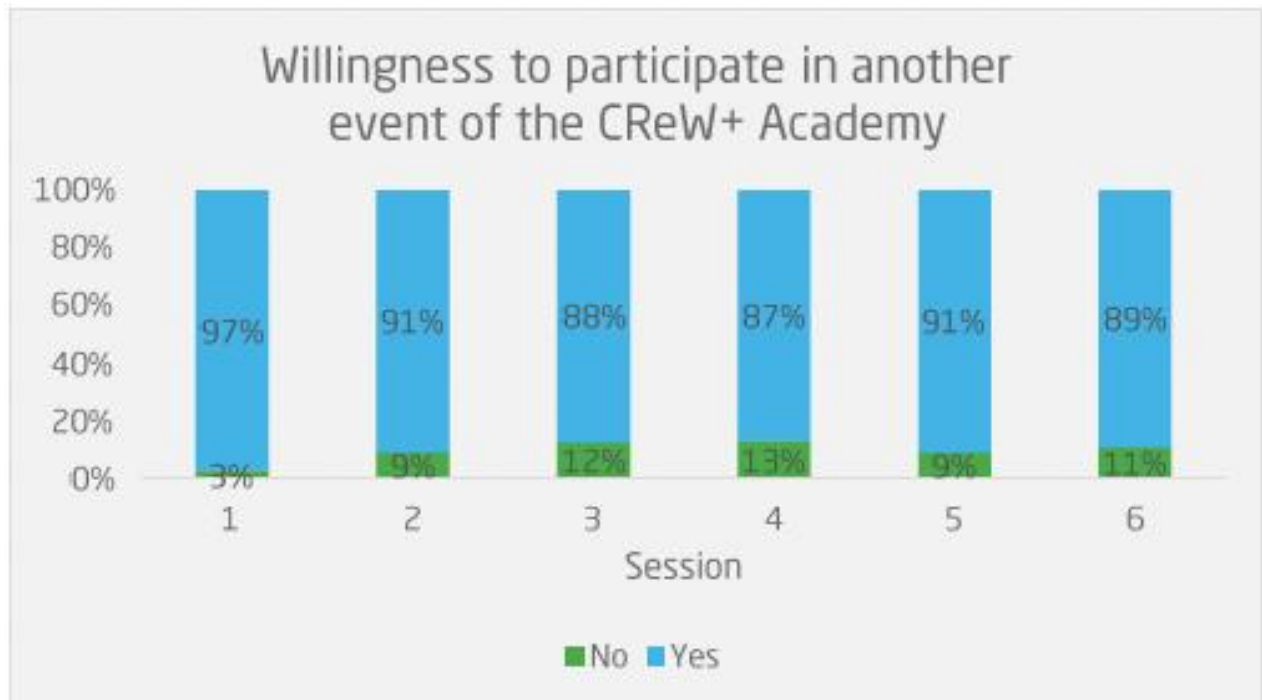


Figure 11. Willingness to participate in another event of the CReW+ Academy.

# Previous Participation in Block 1 of the CReW+ Academy

Block 1 of the CReW+ Academy consisted of a series of 9 webinars on Integrated Water and Wastewater Management. The webinars of Block 1 were conducted simultaneously in English and Spanish between February and April 2021.

Block 1 of the capacity development programme saw 691 registrations and 471 attendees in total. Figure 12 shows the percentage of participants for each session who had already attended Block 1 of the CReW+ Academy. A majority of the Block 2 participants affirmed this. In total, 392 of the Block 2 participants had already attended Block 1.

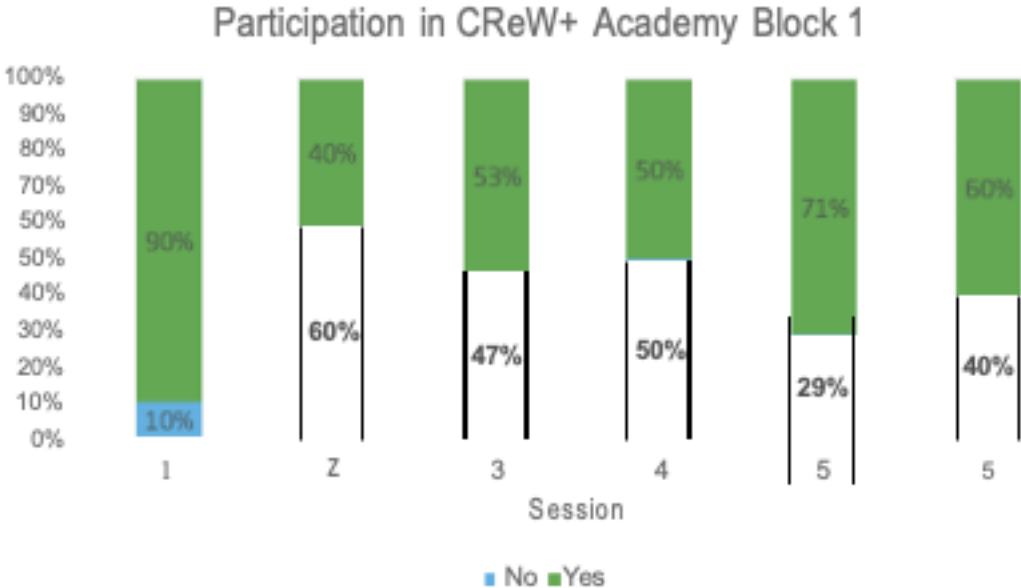


Figure 12. Participation in CReW+ Academy Block 1.

# Annexes

## Annex 1. Information about Sessions Held

| Name  | Description  |
|---|--|
| Wastewater: A global challenge that requires local solutions  | Pollution of water bodies has become a global problem. This session explored the status of wastewater treatment and the necessity to rethink how we treat and dispose of wastewater, so that it is no longer seen as a problematic waste but as a recoverable and reusable resource.   |
| How to start a wastewater reuse project? Technical aspects  | There are various forms of wastewater treatment. In this session, guidelines and specified technologies which facilitate the recovery of water and its nutrients were presented.   |
| Governance in wastewater treatment and reuse: Management models and regulations                     | The sustainability of wastewater treatment and reuse services require strong governance systems. During this session, different regional experiences regarding the implementation of management models and regulations were presented.   |
| Towards socio-economic and environmental sustainability of reuse: Business models                   | The treatment and reuse of wastewater generates a series of costs, but also opportunities and benefits. In this session, financing models and tools for the determination of costs, quantification of benefits and various business models to guarantee the socioeconomic and environmental sustainability of the projects were presented. |
| Case studies: Implementation of medium-scale reuse systems  | The objective of this session was to analyse different experiences in the field of collective treatment and reuse systems in agricultural and industrial applications at the urban level.  |
| Case studies: Implementation of decentralized systems and wastewater solutions in rural communities | In this session, different experiences of small scale, decentralized treatment and reuse systems in Latin American and Caribbean countries were presented.   |

## Annex 2. Participants' Countries of Origin and Organizations Present in Sessions

### *Number of Participants' Countries of Origin per Session*

| Session | Indicator | Number of participating countries |
|---------|-----------|-----------------------------------|
| 1       | 1.3       | 19                                |
| 2       | 3.3       | 21                                |
| 3       | 1.3       | 17                                |
| 4       | 2.3       | 19                                |
| 5       | 3.3       | 17                                |
| 6       | 3.3       | 21                                |

## Organizations Present in at least one Session

---

**Germany:** AKUT, GIZ

**Argentina:** Universidad Nacional de Cuyo (UNCuyo).

**Brasil:** Universidad de São Paulo (USP), Universidad Estatal Paulista (Unesp).

**Bolivia:** Universidad Boliviana de Informática (Ubi), Universidad Mayor de San Simón (UMSS), Universidad Autónoma Gabriel René Moreno (UAGRM), Asociación Boliviana de Estudiantes de Comunicación (Asobec), Universidad Pública de El Alto (UPEA), Universidad Mayor de San Andrés, Gobierno Autónomo Municipal de La Paz, Fondo para la Paz I.A.P. Ministerio de Medio Ambiente y Agua (MMAyA).

**Colombia:** Instituto de Investigaciones Marinas y Costeras (INVEMAR)

**Costa Rica:** Hidrogeotécnia, Tecnológico de Costa Rica (TEC), Municipalidad de Sarapiquí, Ministerio de Salud, Municipalidad de Curridabat, Instituto Costarricense de Puertos del Pacífico, Universidad Nacional de Costa Rica (UNA), Universidad Estatal a Distancia (UNED), Universidad de Costa Rica (UCR), Instituto Costarricense de Acueductos y Alcantarillados (AyA), Industrias Químicas Altamira SA.

**Grenada:** Ministerio de Salud

**Guatemala:** Empresa Municipal de Agua (EMPAGUA).

**Honduras:** Universidad Zamorano, Universidad Nacional Autónoma de Honduras (UNAH), Para todos por siempre.

**International:** GIZ, Helvetas Swiss Intercooperation, Fundación Avina, Consulting Engineers Salzgitter GmbH-CES, OXFARM, Diwö Ambiental.

**Mexico:** Comisión Nacional de Agua (CONAGUA), Universidad Autónoma de Guadalajara (UAG), Urban Waters GmbH, Instituto Mexicano de Tecnología del Agua (IMTA), Presidencia Municipal Apan Hidalgo, Amigos de Sian Ka'an.

**Nicaragua:** Cemex, Fondo de Inversión Social de Emergencia (FISE).

**Panama:** Ministerio de Ambiente de Panamá, Universidad Tecnológica de Panamá (UTP).

**Paraguay:** Universidad Nacional De Villarrica Del Espíritu Santo (UNVES).

**Peru:** Universidad Nacional del Callao, Programa Nacional de Saneamiento Urbano, Universidad Nacional Agraria La Molina, Universidad Nacional Santiago Antúnez de Mayolo (UNASAM).

**Dominican Republic:** Instituto Nacional de Aguas Potables y Alcantarillados (INAPA), Universidad Autónoma de Santo Domingo (UASD), Ministerio de Ambiente.

### Annex 3. Distribution of Participants by Gender

| Session | Indicator | Female | Male | Diverse or no answer | Total |
|---------|-----------|--------|------|----------------------|-------|
| 1       | 1.3.      | 61     | 46   | 0                    | 107   |
| 2       | 3.3.      | 52     | 57   | 0                    | 109   |
| 3       | 1.3.      | 53     | 52   | 0                    | 105   |
| 4       | 2.3       | 56     | 44   | 0                    | 100   |
| 5       | 3.3       | 51     | 51   | 0                    | 102   |
| 6       | 3.3       | 53     | 49   | 0                    | 102   |
| Total   |           | 336    | 309  | 0                    | 645   |

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