



Success Story: Compendium of Sanitation Systems and Technologies for the Wider Caribbean Region



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Figure 1: Illustrative photo in section U of the compendium

Background

This document describes the successful development of the first compendium of sanitation systems and technologies for the Wider Caribbean Region. Within the framework of the GEF CReW+ project, the NGO Bremen Overseas Research and Development Association ([BORDA](#)) in cooperation with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH succeeded in developing a compendium tailored to the needs of the region through prior research, active participation of regional stakeholders

Success Story: Development of the Compendium of Sanitation Systems and Technologies for the Wider Caribbean Region



and the contextualisation of technical and social aspects that will enable the effective implementation of the technologies presented.

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.

About the GEF: The Global Environment Facility (GEF) has provided \$22 million in grants and blended finance and mobilised nearly \$120 billion in co-financing for more than 5 200 projects and programmes. The GEF is the largest trust fund focused on enabling developing countries to invest in nature and supports the implementation of international conventions on biodiversity, climate change, chemicals and desertification. It brings together 184 governments, plus civil society, international organisations, the private sector and partners.

Relevance for development and challenges

Access to adequate and equitable sanitation cannot be provided without safe management of wastewater and faecal sludge. The discharge of partially treated or untreated domestic wastewater and faecal sludge remains one of the greatest threats to the marine and freshwater ecosystems of the Wider Caribbean Region. Together with inadequate or poorly designed wastewater treatment or sanitation facilities, they present one of the major contributors to the deterioration of public health, water security and pollution of the marine environment of the WCR.

While surface water runoff and groundwater leaching also contribute to the transport of pollutants from land-based sources and activities to freshwater supplies, as well as to the coastal and marine environment, there is a need to further improve the management of freshwater catchments to ensure water security and climate resilience, including the reuse of treated wastewater effluent, in order to protect surface and subsurface water sources.

The authors of the compendium believe that
“our on-going collective efforts in the region will help to ensure the achievement of the Sustainable Development Goal on sanitation (SDG6). Doing so, we will substantially contribute to achieving water security and enabling other SDGs, e.g., health and well-being, life on land and below water, as well as climate action.”

The sanitation sector has a compendium of relevant systems and technologies. However, experts identified a lack of contextualised information for the Wider Caribbean Region that takes into account its specific characteristics and needs. For this reason, the Inter-American Development Bank (IDB) and GIZ agreed that, within the framework of the GEF CReW+ project, GIZ would undertake the development of a compendium of sanitation systems and technologies for the Wider Caribbean Region. For this purpose, a partnership was established between GIZ and the NGO BORDA. After several months of careful preparation, a subsidy contract was concluded between the agencies whereby GIZ commissioned BORDA to develop the compendium. In this way, GIZ also strengthened the competencies of an NGO with profound experience in the sector and in the region.

To support the development of solutions to the above mentioned challenges and in continuing efforts with different regional partners to introduce sustainable sanitation solutions for wastewater treatment, the objective of the contract was to collect related experiences in the Wider Caribbean Region and generate specialised literature, contributing to increase specific capacities in the sanitation sector and contribute in general to the establishment of sustainable approaches to wastewater treatment.

The compendium was largely developed on the basis of the compendium on sanitation systems and technologies first published in 2008 by the Swiss Federal Institute of Aquatic Science and Technology ([EAWAG](#)). This new compendium is adapted to the specific needs of the sanitation and wastewater management sector in the Wider Caribbean Region. In addition, it integrates two new sections: Part 3 addresses planning and decision-making issues relevant to the implementation of the Regional Strategic Action Plan (RSAP) in the sanitation sector. Part 4 presents selected case studies from the region. Various systems and technologies are explained, including their outline, institutional, regulatory and financial aspects, as well as lessons learned.

The Compendium is a guidance document for engineers and planners in the Wider Caribbean Region and beyond and is primarily intended to be used for communicative planning processes involving local communities. It is also intended for persons/experts who have detailed knowledge about conventional high-end technologies (such as infrastructure implementers, contractors and consultants), requiring information on alternative/different system configurations.

Processes of change supported by GEF CReW+

From the outset, when thinking about the elaboration of this regional compendium, it was considered to include the knowledge and experiences of key actors in the sanitation sector in the Wider Caribbean Region. With this in mind, it was decided to open a participatory process open to all interested persons. This process started with an open access virtual meeting in order to learn about the expectations of the key actors of the sector in the region and to allow all stakeholders to contribute to the compendium. BORDA and GIZ leveraged their networks in the region to ensure the presence of key stakeholders through a call to action (Figure 2). The meeting was held in two sessions, one in Spanish and one in English. From the participants in the initial meeting, members were then identified for a working group and an advisory board.

The working group, responsible for developing the content, consisted of co-authors Gustavo Heredia, David Wilk, Dierk Demant, Stefan Reuter and consultant Pedro Kraemer. The advisory board was composed of Christoph Luethi (Eawag-Sandec), Ignatius Jean (Caribbean Water and Sewerage Association Inc., [CAWASA](#)), Sarah-Jade Govia (Caribbean Water and Wastewater Association, [CWWA](#)), Marlon Daniels (CWWA), Pedro Kraemer (BORDA) and Stefan Reuter and served for the overall coordination. Regular online meetings were held to coordinate the work. The process was left open to further external input, so that the expertise of the Mexican National Water Commission (CONAGUA), which had not participated in the initial meeting, was included through a professional

exchange.

You're invited!

Let us develop a **Compendium of Sanitation Systems and Technologies for the Wider Caribbean Region**

BORDA LAS AMÉRICAS **CReW+**

Call for Action by a new project partnership between **BORDA** LAS AMÉRICAS & **giz** Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

- Regionally contextualized and application-oriented
- Different components of the sanitation service chain at your fingertips
- Guidance on the selection of appropriate wastewater treatment solutions

To be launched during LatinoSan VI, April 2022!
Final Draft to be developed by December 2021!

You want to learn more about the What, Why, When, by Whom and How you can contribute?

Don't miss the **Kick-Off Workshop!**
Friday, Oct. 1st, at 09.00-10.30 Costa Rica time (UTC-6)

Sign up: <https://bit.ly/compendium-kick-off-registration>



- **BORDA** is active in the Latin American and Caribbean region since 2010
- First projects initiated in 2012 in Mexico and Nicaragua
- Activities then spread to Haiti and Cuba
- Regional office in Mexico City + country office in Managua 2015

Figure 2: Call for action, published by BORDA and GIZ

Through this structure, a regional compendium was created based on contributions and suggestions from key stakeholders in the Wider Caribbean Region. In addition, the document underwent a review by 12 recognized experts in the sector.

During the entire process, close and regular consultation was maintained between BORDA, represented by Regional Director Pedro Kraemer, and GIZ, represented by Junior Advisor Tizian Kümpel. In this way, issues of the subsidy contract, external communication, preparation of events, revision of the compendium, design, translation and printing, among others, were coordinated.

The development of the compendium was accompanied by the publication of a poster on the occasion of World Toilet Day (see Figure 3) on social media and the websites of BORDA and GIZ. In addition, BORDA contributed to the event "Special Course on Water Governance and Water Security in Central America and Mexico" held by the Central American Commission on Environment and Development (CCAD) and the Latin American Faculty of Social Sciences (FLACSO) in cooperation with the GEF CReW+ project in December 2021.

Lessons Learned

Working with local experts to identify appropriate technologies for the region according to its needs, including operating costs, technology, maintenance, ability to reuse treatment products, etc., has proven to be a valuable step in achieving alignment with practical realities in the region's wastewater sector.

Who cares about toilets?

19 November
WORLD TOILET DAY
Valuing Toilets

... 3.6 billion people do

because they don't have access to safe sanitation

And who cares about what toilets discharge?

BORDA Las Américas and GIZ do

... and are therefore developing a compendium of regional sanitation technologies for the Wider Caribbean Region

● **Elaboration**
Oct.– Dec. 2021

↓

● **Final Version**
Jan. 2022

↓

● **Launch event**
Apr. 2022

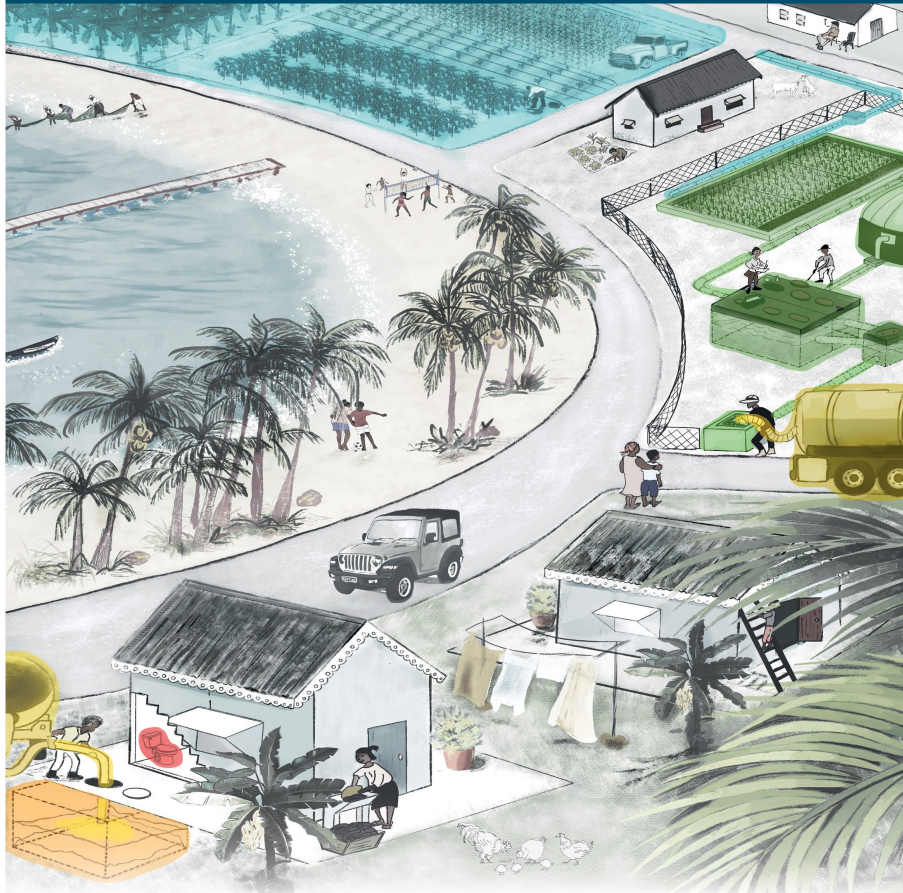
You want to find out more about the compendium? Please contact tripp@borda-la.org.

developed within



Figure 3: English version of the poster published on the occasion of World Toilet Day 2021

Compendium of Sanitation Systems and Technologies for the Wider Caribbean Region



In addition, the inclusion of regional case studies allowed a closer look at the technologies applied in the region and served to illustrate the advantages and disadvantages of certain systems and technologies in practice.

The organization and implementation of a so called massive online course (MOOC) provided greater visibility to the compendium and will be responsible for greater appropriation, use and application among stakeholders in the different countries.

Another lesson learned is that it is recommended to coordinate the placement of logos with all parties involved well in advance. In the case of this compendium, different views on the correct placement of logos caused delays and additional effort. The final version with all logos is presented in Figure 4.

Impact and sustainability

Following the vision of creating a freely accessible document for all interested parties, the compendium was published under the [Creative Commons](https://creativecommons.org/licenses/by-nc-nd/4.0/) BY-NC-ND license, which allows users to share the document freely, without adapting it or making a commercial profit.

The presentation to the professional public took place through two launch events. The first was held on 21 June 2022 in two sessions, one in English and one in Spanish. Input was provided by all stakeholders, including the lead authors, representatives of the regional wastewater associations involved in the process, BORDA, GIZ, IDB, the Sustainable Sanitation Alliance ([SuSanA](https://www.susana.org/)), EAWAG and IHE Delft (see Figure 5). The event was organised by SuSanA and prepared by BORDA in coordination with GIZ. At the end of the event, the link to download the

Finally here!!!

**Compendium of Sanitation Systems
and
Technologies for the Wider Caribbean Region**

Online-Launch

Tuesday, June 21st, 2022, 09:00 - 09:40 Mexico Time (UTC-5)

Program (English Session)

09:00	BORDA LA	Welcome address - Introduction
	IDB/CReW+	The Compendium in the context of CReW+ and beyond
	GIZ/CReW+	The Compendium in the context of CReW+ and S4M
	SuSanA	The Compendium in the context of sustainable sanitation
	CWWA	The need for collective action
	CAWASA	Utilities & Operators - drivers of sustainability
	Eawag	Relevance of the 10th Compendium
	IHE Delft	Sanitation education & emerging technologies
09:25	Main authors	Short tour through the Compendium: Stefan Reuter: Flip through the book Dierk Demant: Close the loop – Reuse Gustavo Heredia: Planning from the end
09:35	The Unveiling...	...look out for the online link and get the book! 📖👁️
09:40	Closure	

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Figure 5: Schedule of the online launch, 21 June 2022

compendium, illustrated by a graphic animation, was shared. The two sessions were attended by more than 150 people.

The second launch event took place in person at LatinoSan on 11 October 2022 as part of the SuSanA session. The compendium was presented by Stefan Reuter as lead author and Astrid Michels, programme manager of the programme "Scaling up Ecosystem-based Adaptation Measures in Rural Latin America - EbA LAC", representing GIZ.

In order to broaden the impact and offer the possibility to deepen in a didactic way the knowledge gathered in the document, a massive open online course (MOOC) was conducted in cooperation with the Instituto Centroamericano de Desarrollo (ICAP).

In addition, the [Global Sanitation Graduate School](#) of the IHE Delft Institute for Water Education, the Netherlands, was involved in the development of the compendium. This allowed the new Master's programme "Sanitation Engineering", established for students from Latin America and the Caribbean at the Technological University of Uruguay (UTEC) in May 2022, to work with the compendium from the beginning.

To ensure broad availability and easy access, the document was uploaded to the website of the global programme [Sanitation for Millions](#), where it can be downloaded free of charge with a single click. Links to the [English](#) and [Spanish](#) versions were shared by mail with all CReW+ project contacts. Among the many positive reactions, here is one example:

“Very grateful for the compendium.

It will be of great use to my people and to me personally.”

Geodisio Castillo, Centre for Environmental and Human Development, Panama

We are very pleased that the sanitation sector in the Wider Caribbean Region now has a compendium tailored to the characteristics and needs of the region. We hope that it will be of great use to the sector and that it will contribute to achieving the Sustainable

Development Goals.

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