USAID
FROM THE AMERICAN PEOPLE

AUGUST 2022

CREATING A SUSTAINABLE WASTE MANAGEMENT MODEL IN SAMANÁ PROVINCE, DOMINICAN REPUBLIC

Ocean plastic pollution has reached crisis level: every minute, more than an entire garbage truck of plastic makes its way into the world's oceans—roughly 11 million tons annually. While plastic waste presents an immediate threat to marine wildlife and ecosystems, this global challenge also has implications for major industries such as fishing and tourism, impacting the livelihoods of millions of people. The drivers and impacts of ocean plastic pollution also contribute to global challenges in food security, human health, and climate change.

Most ocean plastic waste is generated by rapidly growing cities and towns along rivers and coastal areas where reliance on single-use plastics and flexible plastic packaging produces high volumes of waste that are not easily recycled or recovered. The problem is then compounded by waste management systems, infrastructure, and governments that struggle to keep pace with the ever-increasing amount of waste. Waste management is typically the responsibility of cities and other local governments, which are often under-resourced and have limited capacity to address the magnitude of the ocean plastic pollution issue.

Given these realities, the most effective way to curb the flow of plastics into the ocean is to stop it at the source: on land. Focusing on regions and countries that contribute most significantly to this global challenge, USAID builds the capacity of local governments to promote the 3Rs—reduce, reuse, and recycle—while better managing their solid waste. USAID strengthens collaboration among the local actors responsible for waste management and recycling through technical assistance and capacity development support. To improve the livelihoods of the millions of people that are involved in the waste management sector, USAID supports training for independent waste collectors, connects them to strengthened recycling markets, and works to strengthen SWM systems so that they are responsive to the populations they serve; USAID also supports social and behavior change as needed to reinforce these systems.

USAID has gained valuable insights from six years of tackling plastic pollution in low- and middle-income countries. USAID's first dedicated ocean plastics reduction effort, the Municipal Waste Recycling Program (MWRP), was implemented from 2016 to 2021. MWRP provided 30 small grants collectively worth $5.5 million and technical assistance to local organizations for promising solid waste management (SWM) and recycling activities. In 2019, USAID launched Clean Cities, Blue Ocean (CCBO), the Agency's global flagship program to respond to the crisis of ocean plastic pollution. Drawing on valuable lessons from previous programs tackling plastic pollution in low- and middle-income countries, CCBO works in more than 25 cities in seven focal countries across Asia, Latin America, and the Caribbean. CCBO leverages local, national, and international technical expertise, paired with its $10 million small grants program to test and scale solutions at the local level, while also working with national-level counterparts to support national action plans, advance policy, and institutionalize best practices for national implementation.

THE BUILDING BLOCKS OF A CIRCULAR ECONOMY: A LOCAL SYSTEMS APPROACH TO REDUCING OCEAN PLASTIC POLLUTION

Building on experiences through MWRP, CCBO, and other programs, USAID's approach to reducing ocean plastic pollution is informed by a local systems approach built on a set of five building blocks that, together, create the conditions for a circular economy. USAID partners with national and local governments, civil society organizations, and the private sector to establish these building blocks using context-specific mechanisms and tools:

Data-driven policy and institutional environments that enable a circular economy: Progress towards a more circular economy requires evidence-based national policies and regulations, an integrated and coherent policy framework across national and local levels, and stakeholder input in the policy formulation process. Examples of policies to support a more circular economy include strengthening waste collection, creating recycling and labeling standards, introducing recycled content mandates, regulating and/or phasing out single-use plastics (SUP), or introducing Extended Producer Responsibility (EPR), in which producers help fund and manage the collection and recycling of their plastic products.

Increased infrastructure investment and improved solid waste services: Efficient systems for collecting, aggregating, and sorting solid waste are a prerequisite for maximizing investment in recycling facilities and sanitary landfills. A local government that has a comprehensive, data-based SWM plan, good quality financial management, local regulations that are enforced, well-trained staff, and strong connections to the community has the basis for increasing coverage and improving SWM service delivery as well as attracting external investment. The local government should commit to increasing its own revenues (e.g., through taxes or fees) to support the system's operations and maintenance and look for synergies to decrease expenditures, including through collaboration with neighboring jurisdictions.

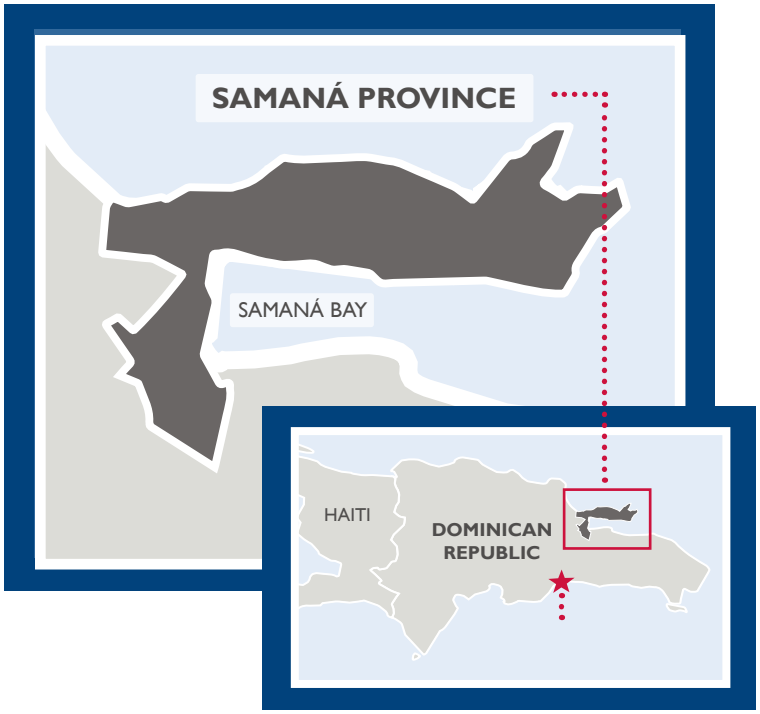
Developed markets for locally viable innovations and technologies: Robust, local markets for recycled materials support and strengthen SWM systems in developing countries. Growing markets require both clean, consistent feedstocks and secondary processors and manufacturers that are able to purchase and use these feedstocks. Hard-to-recycle materials like multi-layer and flexible plastic packaging need solutions that can be scaled appropriately on a local level, whether through alternative products or new processing technologies. Low labor costs can present opportunities to accelerate workforce and market development, especially for innovative and low-tech solutions, but must empower the most vulnerable segments of the population to be truly sustainable.

Widespread and sustained behavior change by increasing recycling and reducing demand for single-use plastics: Sustained social and behavior change (SBC) is at the core of increasing the quality and volume of materials collected for recycling and reducing the demand for single-use plastics (SUP). The effectiveness of awareness raising, education and outreach activities is dependent on a deep understanding of people's attitudes, priorities, and current behavior toward SWM and the 3Rs and what they are willing to do to change this behavior, not just one time, but on a regular basis. Any strategies for SBC must also take into account the capacity of the current SWM system, including appropriate infrastructure such as bins, collection trucks for different streams of waste, and policy regulations and incentives that reinforce the desired behavior. Youth trained in social/environmental activism can be powerful agents of change in catalyzing SBC and, especially in countries with a youth bulge, they will make or break grassroots movements and legislation efficacy.

An inclusive and equitable system that integrates all members along the solid waste management value chain: Informal sector workers are the foundation of the waste management pyramid, dominating the waste collection, sorting and recycling stages of the SWM value chain. A city's ability to create a more circular economy around SWM is a function of increased resource efficiency and material recovery, and inclusive integration of informal waste collectors (IWC), including minority groups and women. Examples of approaches to increase recovery and recycling rates with equity and empowerment include improving the welfare of IWCs by supporting safe working conditions, improving livelihoods through livable wages, and supporting women-owned recycling businesses.

THE OCEAN PLASTICS CHALLENGE IN SAMANÁ PROVINCE, DOMINICAN REPUBLIC

Approximately 13,000 tons of waste are generated in the Dominican Republic each day, 2,000-2,500 of which are plastic.[1] This waste is discarded in informal and open dump sites that present a range of serious environmental and human health concerns, including environmental degradation due to improper containment of plastics and other waste, water contamination from unlined dump sites, and air pollution resulting from gasses that emanate from the waste as well as landfill fires sparked by spontaneous combustion due to the build-up methane. The country's waste management challenges have historically been further perpetuated by limited waste collection services, a lack of coordinated local government resources for community engagement and behavior change, and the lack of a national legal framework to establish action plans, regulations, or enforceable policies.



In July 2020, the Congress of the Dominican Republic ushered in a new chapter of the country's SWM context with the passage of **Law 225-20 on Integrated SWM and Co-Processing,** which aims to promote the 3Rs and other forms of waste recovery. The implementation of the new law is being facilitated by the Ministry of Environment, with support from the Ministry of Strategic and Special Projects of the President (PROPEEP) through a newly established project called ECO5RD, named for the '5 Rs' that guide the initiative—recycle, reuse, reduce, repair, and refuse. The project's stated goal is to remediate open air dumps and build waste transfer stations across the country that will integrate collection, transportation, recovery, treatment and final disposal processes for solid waste. USAID is providing national-level support to the implementation and enforcement of the law, as well as engaging directly in specific sites in the Samaná Province to build a strengthened waste management system that can be used as a model throughout the country.

Solid waste from the Samaná Peninsula currently enters Samaná Bay and the Atlantic Ocean from multiple sources within and outside the peninsula.[2] In the last decades, the impacts of the waste management challenge in Samaná have been vast. Citizens living near disposal sites are often exposed to toxic fumes emanating from open burning of waste, odors related to decomposing organics, and water contamination due to leachate and stormwater. The island's biodiversity—including more than 1,500 humpback whales who inhabit Samaná Bay between December and March—has also been threatened by plastic waste leaking into the bay and the Atlantic Ocean.[3] This has created serious consequences for nationally significant economies such as tourism.

Transforming Samaná into a model province for SWM: In Samaná Province—a peninsula on the DR's northeastern coast— USAID's CCBO program is working to pilot solutions to stop the flow of plastic pollution into the region's large, semi-enclosed Samaná Bay and the Atlantic Ocean. With the new SWM law in place, there is high political will to demonstrate progress on addressing the DR's solid waste challenges. USAID is working closely with stakeholders in Samaná to test SWM approaches that show proof of concept and can be used across the rest of the country—a strategic approach that has received support from the country's president and other key entities at the national level. CCBO's role in transforming Samaná into a model province for SWM places USAID's work at the center of a key moment in the DR's fight against ocean plastic pollution.

APPLYING USAID'S LOCAL SYSTEMS APPROACH IN SAMANÁ PROVINCE

After just two years of operation, CCBO activities in Samaná have yielded several important developments and

accomplishments demonstrating USAID's local systems approach to reducing ocean plastic pollution. Highlights include:

- Partnering Strategically to Make the Most of Political Momentum
- Providing Right-Sized Solutions and Technical Guidance for Landfill Remediation
- Setting the Stage for Social and Behavior Change

1. PARTNERING STRATEGICALLY TO MAKE THE MOST OF POLITICAL MOMENTUM

In addition to the new SWM law, the current administration of the national government has also made SWM reform a key element of its platform. USAID is building strategic partnerships with key stakeholders to establish a foundation of tested, evidence-based approaches to inform this momentum and support the national government in meeting its goals. While these partnerships are essential in establishing all of the building blocks of USAID's approach to reducing ocean plastics, in Samaná they are especially important for **Building Block #1** (policy and institutional environments that enable a circular economy and the 3Rs) and **Building Block #2** (increased infrastructure investment and improved solid waste services).

Understanding the stakeholder landscape: USAID's stakeholder engagement strategy through the CCBO program is designed to support USAID's Local Systems Framework, which focuses on increasing the performance of multiple actors and the effectiveness of their interactions—both crucial elements in sustaining development outcomes rooted in a local system. As such, USAID works to continuously engage, map, and monitor stakeholders and systems that are influencing and being influenced by obstacles or solutions to 3R/SWM systems. With the support of Sostenibilidad 3Rs Foundation—a long standing environmental advocacy organization and subcontractor on the CCBO project—USAID drove two key stakeholder analysis processes that identified national and international stakeholders across both the private and public sectors in the DR with whom USAID could partner to support the implementation of the new SWM law. These analyses found that both the public and private sectors are highly motivated to work on addressing SWM challenges in Samaná—the former to demonstrate successful implementation of the new law, and the latter to distinguish Samaná as a tourist destination.

Leveraging and engaging with the private sector: Led by well-known destinations such as Punta Cana and Santo Domingo, tourism plays a key role in the DR's economy. The Samaná Tourism Cluster—an apolitical, non-profit organization that brings together public and private institutions related to the tourism sector—aims to add Samaná Province to the country's list of major tourist destinations, an effort which necessitates addressing the region's SWM challenges. Based on this mutual interest, USAID and the Tourism Cluster quickly established a partnership which granted USAID access to the Tourism Cluster's wide network of stakeholders both in Samaná and in the country as a whole. For example, the Tourism Cluster facilitated USAID's introduction to PROPEEP.

Partnerships with the government: USAID held several meetings with PROPEEP to discuss how best to collaborate on key government priorities. In June 2021, this effort culminated in a Memorandum of Understanding (MOU) providing a framework for continued collaboration on mutually-held priorities. To strengthen the partnership with the Government of DR, CCBO is preparing to formalize partnerships with the municipalities of Las Terrenas and Samaná. USAID is reinforcing these engagements by leveraging key global events to strengthen relationships with government partners. For example, on World Oceans Day 2021, representatives from the Ministry of Environment and PROPEEP participated in a USAID co-hosted event where the DR's progress addressing ocean plastic pollution was highlighted as a strong example of effective action addressing the plastic pollution crisis.

Similarly, during the 2022 Our Oceans Conference in Palau, the Minister of Environment and Natural Resources of the DR was a panelist for USAID's side event.

Rebecca Latorraca, USAID Director in the DR, signs the Memorandum of Understanding with PROPEEP.

2. PROVIDING RIGHT-SIZED SOLUTIONS AND TECHNICAL GUIDANCE FOR LANDFILL REMEDIATION

As a first step in implementing the new SWM law, the Dominican government is committed to remediating and closing the country's open dumps and replacing them with regional or provincial sanitary engineered landfills. To launch the landfill closure process, PROPEEP initially prioritized a legacy open dump in Las Terrenas, located in Samaná Province. Following a discussion between the Samaná Tourism Cluster and the president, however, PROPEEP added the Santa Barbara landfill as a priority site, also located in Samaná Province. USAID's support in this process served to establish **Building Block #1** (policy and institutional environments that enable a circular economy and the 3Rs), **Building Block #2** (increased infrastructure investment and improved solid waste services) and **Building Block #5** (all members of the SWM value chain integrated and empowered in an inclusive, equitable system).

The success of the closure process for the two landfills was informed by USAID's CCBO tailored technical guidance to PROPEEP and right-sized solutions addressing the unique challenges of the DR context. This guidance included:

Las Terrenas landfill before and after USAID remediation support

Before

After

- **Securing the landfill site to enforce greater controls:** Before PROPEEP's intervention, trucks carrying waste to the open landfills were driving with uncovered loads, leading to waste flying off of the truck and into streets and gutters, eventually leading to the bay. CCBO's technical team advised securing the landfill site by putting in gates and a fence to control access, and by covering truck loads with tarp or another kind of covering. These small changes allowed the government to enforce stronger control over the access of the site and prevented waste from flying off of the truck in transit.

- **Planning for wet weather:** Previously, the DR's high rainfall and wet weather climate were not accounted for in the country's waste management system, leading to stormwater and other wastewater traveling through the landfill and contaminating surrounding water sources. CCBO proposed several control techniques, including: 1) a liner that runs underneath the landfill to capture any wastewater leakage, topped by a leachate collection system, 2) a drainage system to divert water runoff when it rains heavily, and 3) a wet weather disposal area, composed of a controlled, paved surface where trucks can bring their loads during rainy weather without driving through mud and inadvertently carrying waste outside of the disposal site.

- **Designing for methane recovery and controls:** As waste decomposes, it generates methane gas—an explosive and flammable greenhouse gas that is 25 times more powerful than carbon dioxide at trapping heat in the atmosphere.[5] This process contributes to toxic odors, landfill fires, and spontaneous combustions that endangered residents living near the landfill sites. With CCBO's guidance, PROPEEP installed chimneys, an emissions control system that vents flammable gasses to prevent methane buildup and subsequent explosions. In addition, CCBO provided guidance to install an activated carbon filter on top of the vents to remove the volatile particles that create odors. USAID's technical guidance to PROPEEP on methane recovery also plays an important role in combating climate change, as landfills are one of the largest sources of methane emissions on the planet. Remediating open dumps, including both municipal, private and illegal dumps, is an effective pathway to advancing

climate action, particularly in developing economies.

A formal analysis of the waste secured at the two Samaná dumps as a result of USAID's technical assistance found that approximately 217,675 MT of waste (31,345 MT of which are plastic) was prevented from entering drainage canals, rivers, and streams. Focus group discussions with community members in Santa Barbara found that household members were pleased with the ongoing remediation efforts, noting relief from the toxic fumes that emanated from the dump due to waste fires. CCBO estimates that over 85,000 residents now have improved SWM services and quality of life as a result of the project. While community members responded positively to the landfill closures, it is important to note Independent Waste Collectors were not pleased with the landfill remediation work due to its negative impact on their incomes, which currently depend on the ability to sort through waste dump areas. This negative impact is temporary, however, as the continued implementation of the SWM law will create new opportunities for those economically displaced by the landfill remediation work. USAID, through CCBO, will continue to provide landfill remediation and closure guidance to PROPEEP as it pushes forward with the national effort to close the country's open, uncontrolled landfills.

In parallel, USAID is providing technical expertise as PROPEEP begins planning for regional or provincial sanitary engineered disposal sites, in alignment with the new national law. A key consideration in this effort is incorporating systems that support the inclusion of IWCs—especially women IWCs—in the country's SWM system. These considerations include creating Materials Recovery Facilities (MRFs), recycling centers, and transfer sites that provide controlled, safe areas for waste workers to operate, proper personal protective equipment, and provisions for additional responsibilities women waste workers might have, such as child care.

3. SETTING THE STAGE FOR SOCIAL AND BEHAVIOR CHANGE

One of the key objectives of USAID's work in Samaná is to develop a comprehensive social and behavior change (SBC) strategy for the region. However, there is little information published and available on Samaná's waste value chain, household waste practices, and communities' feelings and ideas about waste. To support **Building Block #4** (widespread sustainable behaviors for recycling and reduced demand for single-use plastics) and **Building Block #5** (all members of the SWM value chain integrated and empowered in an inclusive, equitable system), USAID partnered with Centro para la Conservación y Eco-Desarrollo de la Bahía de Samaná (CEBSE) to gather this information, which is crucial to any future SBC activity as well as local policy and waste infrastructure development. CEBSE conducted formative qualitative research to understand 1) how citizens of Samaná Province conceptualize, handle, and feel about waste, 2) how businesses handle waste and their opinions about it, and 3) municipalities' plans for SWM. Building on that research, CEBSE conducted Trials of Improved Practices (TIPs), a research method that combines research and implementation to see what behaviors or policies should be promoted.

Formative qualitative research: The research found that many residents of Samaná are disturbed by waste in the environment, including in the marine environment. All native born Dominican Samaná residents were already segregating their organic waste to give to pig farmers as feed, sometimes in exchange for pork during holidays. The research also found that a number of households were already separating metal and glass to sell to collectors. For households that did not engage in frequent waste segregation, the research revealed that they did not do so because they were aware that there was no segregated waste stream at present, and that all of their efforts to separate waste would end up in the landfill.

Another key finding of the research was that in the DR, household waste management is not a gendered responsibility as is typically assumed; women often dispose of household waste because they happen to be at home when waste collectors or trucks come by, but in contexts where men were home while women were out, men engaged just as frequently in household waste management. This finding has important implications for the field of SWM research as a whole as literature often refers to women as "household waste managers," almost always without data to support the claim.

Lastly, the research revealed important insights about community sentiments toward different kinds of waste. For example, communities generally consider bathroom waste as something that should be kept private and out of the public eye due to modesty and hygiene concerns. As a result, households almost always choose to burn their bathroom waste rather than leave it on the street to be collected by IWCs or rummaged by dogs.

Trials of Improved Practices (TIPs): TIPs are a rapid action, iterative research method in which a small population sample is asked to select and test a new or modified behavior for a brief period in their daily lives, with the goal of identifying what people are able and willing to do to support implementation of a program. In Samaná Province, CEBSE conducted two rounds of home visits in four municipalities to facilitate the TIPs process. During the first visit, TIPs researchers spoke

to participants about the environmental crisis in Samaná, the effect of mismanaged waste on the environment, and the benefits of recycling. The TIPs researchers then asked whether the person/household would like to do something with their household waste to help alleviate the problem and what behaviors they would consider adopting to do so. Using a 'menu' of trial behaviors prepared by the TIPs team, participants selected behaviors including separation of plastic, refraining from burning trash, separation of plastic and yard waste (i.e., leaves and grass), among others. TIPs researchers returned a week later to see how the participants had done and to understand their experiences with the trialed behaviors.

To ensure participants could effectively trial plastic separation behaviors, CCBO contracted a collector to pick up the recyclables and ensure that they would be recycled—a key addition to the research process because the collection of recyclables has historically been sporadic and unpredictable in the province. The need to set up this kind of system in order to conduct TIPs is unusual and possibly unique in the field of TIPs research.

The TIPs elevated several key lessons for the SBC strategy development process, including:

- **Plastic separation presents a significant opportunity for behavior change in accordance with CCBO's objectives:** Most participants committed and successfully adopted the behavior of separating plastic in a dedicated sack, indicating that residents are ready or at least open to engaging in a plastic separation program if the necessary collection support is provided. In fact, some neighboring households were so grateful that they could have their plastic waste recycled instead of dumped in the landfill that they contributed their plastic waste to the TIPs collection process even though they were not officially participating in the trial.

- **Trash burning practices can be reduced through direct educational campaigns and providing alternatives:** Relatively few TIPs participants chose to stop burning their bathroom waste, citing modesty and hygiene concerns. This finding suggests, however, that if it could be guaranteed that bathroom waste would be kept private (i.e.,: disposed of in a specific receptacle that is inaccessible to IWCs) then they might be willing to stop burning this waste. Similarly, participants who typically burn yard waste noted that if municipalities maintain this waste in a separate stream, they are willing to ensure no plastic enters their yard waste. As an application of this finding, a municipal government in Samaná will be piloting the use of compacting bins for waste disposal to provide individuals and families with an alternative to waste burning.

- **Awareness of the problem without working systems cannot yield results**: The formative qualitative research and TIPs indicated that communities were already aware of the plastic waste problem and were upset by it. Despite this awareness, however, the research also found generalized burnout on the topic of waste management in Santa Barbara due to several previous large-scale SWM projects that did not yield any significant results. During the TIPs, Samaná residents were encouraged to see that the contractors kept the different waste streams separate, indicating that large-scale awareness raising may not be as necessary as ensuring that Samaná residents can see that their waste segregation efforts translate into real change in the SWM system. This research finding has led to the inclusion of a household public information campaign in the SBC strategy to explain the new recycling system in Samaná once it is finalized, rather than an awareness campaign on the importance of recycling.

4. EXPECTED IMPACTS FROM CLEAN CITIES BLUE OCEAN IN DOMINICAN REPUBLIC

As the result of assistance provided under Clean Cities, Blue Ocean, USAID expects to see measurable progress towards establishing each of the building blocks of a circular economy in Samaná province, with the objective of creating a model that other provinces in the DR can follow. Each building block of USAID's systems approach is measured by a set of quantitative indicators with specific targets for the DR which will support the evaluation of the project's impact.

DATA-DRIVEN POLICY AND INSTITUTIONAL ENVIRONMENTS THAT ENABLE A CIRCULAR ECONOMY

Through CCBO, USAID technical assistance support to the Government of the DR in implementing the new SWM law will contribute to:

- **Increased adoption of data-driven practices and processes:** CCBO has provided technical assistance and guidance on landfill pre-closure, landfill post-closure, and new landfill development, as well as landfill standard operating procedures and a landfill safety and environmental compliance plan. CCBO also provided a Solid Waste Management

Planning Overview that was used by the national government and private sector partners. This guidance will be adapted into resources to provide long term support to PROPEEP's ECO5RD project.

- **Increased capacity to enable a nation-wide circular economy:** CCBO held multiple conference calls and training sessions with the PROPEEP Project Manager and field staff; these calls often included PROPEEP staff working at dumpsites located outside of Samaná Province. The project will continue to train staff of the local municipalities responsible for each of the closed landfills/transfer stations and the new landfill.

- Number of public policies and SWM plans that advance 3R/SWM supported by US Government assistance
  - Target for the Dominican Republic: 5
- Number of entities with increased capacity to assess or address 3R/SWM
  - Target for Dominican Republic: 10

INCREASED INFRASTRUCTURE INVESTMENT AND IMPROVED SOLID WASTE SERVICES

With USAID's guidance and technical assistance, the Government of the DR successfully secured an estimated 31,000 MT of plastic and an aggregate of over 200,000 MT of waste and recyclables from leaking into the environment. Building upon that success, USAID's CCBO continued activities in Samaná will contribute to:

- **Increased investment in SWM**: As of March 2022, CCBO successfully mobilized over $2.7 million for landfill remediation and other projects related to the implementation of the new SWM law. Money mobilized for the purposes of landfill remediation was guided by the technical assistance provided by CCBO. Additional investments will be mobilized through technical assistance in the siting, design and construction of the new site.

- **Strengthened SWM services at the national level**: While CCBO's initial work has been focused on the environmental mitigation of the two Samaná open dump sites, CCBO will also develop a monitoring program for the sites once they close, develop transfer stations at the old sites, and develop a new Regional landfill serving Samaná Province. The new transfer station infrastructure will require an estimated minimum of 20 employees and the new regional landfill will employ 40 – 50 people once constructed.

- **Increased tourism in the long term due to better maintenance of natural environments:** A cleaner environment resulting from a more efficient SWM system in the region will support both public and private sector stakeholders' goals to transform Samaná , Province into one of the DR's main tourism destinations.

- **Methane emissions reduction**: As a result of the improved SWM services to date, CCBO estimates that the net greenhouse gas in CO2 equivalent (CO2e) in pounds captured and destroyed through landfill remediation work in Samaná is 62,384,122 pounds CO2e. This is approximately equivalent to the annual emissions of burning about 14,154 metric tons of coal or 12,025,697 liters of gasoline. As PROPEEP continues to successfully remediate landfills across the DR using the technical guidance and practices provided by USAID, the methane emissions from these uncontrolled landfills will decrease.

AFFILIATED INDICATORS

- Metric Tons of plastic secured from leaking into the environment as a result of USG assistance
  - Target for Dominican Republic: 54,684 MT
- Amount of Investment mobilized for 3R/SWM supported by USG assistance
  - Target for Dominican Republic: $ 5,000,000

DEVELOPED MARKETS FOR LOCALLY VIABLE INNOVATIONS AND TECHNOLOGIES

A key component to successfully scaling the implementation of the DR's SWM law across the country will be to adopt appropriate technologies and approaches for establishing MRFs and transfer stations. Through CCBO's activities, USAID's activities will support this uptake by:

- **Piloting new technologies:** Based on the formative qualitative research findings that communities burn their bathroom waste due to privacy concerns, CCBO will support a municipal pilot using compacting bin technology, where bathroom and other waste will be immediately compacted and unable to be seen or recovered by IWCs.

In the long term, the DR's new SWM system will support:

- **New opportunities for economic activity:** The Samaná tourism cluster, for example, plans to develop commercial programs to facilitate and boost the recovery of recyclable materials that will be directed to the newly established MRFs

AFFILIATED INDICATORS

- Number of innovations supported through US Government assistance
  - Target for Dominican Republic: 3
- Metric tons of material reduced or recovered and diverted from disposal as a result of USG assistance
  - Target for Dominican Republic: 1,000

WIDESPREAD AND SUSTAINED BEHAVIOR CHANGE BY INCREASING RECYCLING AND REDUCING DEMAND FOR SINGLE-USE PLASTICS

Through CCBO's extensive research to understand attitudes and behaviors regarding waste, USAID will contribute to:

- **Widespread community understanding of the new SWM system and resources:** Building on both the formative qualitative research and TIPs findings that communities need a working SWM system to facilitate behavior change, CCBO's SBC Strategy will focus on boosting widespread understanding of the DR's new SWM system and resources.
- **Increased employment and training for MRF and transfer station employees:** The municipal government will employ and train individuals on monitoring factors related to MRF and transfer stations, and provide training for jobs at landfills and recycling segregation centers for informal sector workers.

AFFILIATED INDICATORS

- Number of households/establishments participating in 3R/SWM programs as a result US Government assistance
  - Target for Dominican Republic: 1,500
- Number of people trained in 3R/SWM supported by US Government assistance
  - Target for Dominican Republic: 50

AN INCLUSIVE AND EQUITABLE SYSTEM THAT INTEGRATES ALL MEMBERS ALONG THE SOLID WASTE MANAGEMENT VALUE CHAIN

Through CCBO's activities in Samaná USAID will contribute to:

- **Improved living conditions for communities living near former dump sites:** Community members in Santa Barbara noted that the landfill remediation efforts provided relief from the toxic fumes that emanated from the dump due to waste fires. CCBO estimates that over 85,000 residents now have improved SWM services and quality of life as a result of the project.
- **Greater access to economic opportunities for IWCs:** The DR's new SWM infrastructure such as recycling centers and transfer and sorting stations will provide increased job opportunities for IWCs in the waste value chain.
- **Improved working conditions for women IWCs:** Based on the findings of CCBO's formative qualitative research, the new MRF in Samaná has been designed to include separate bathrooms for women IWCs, as well as separate areas for men and women IWCs, to facilitate equal access to valuable waste and to prevent GBV and harassment.

AFFILIATED INDICATORS

- Number of women participating in US Government-assisted programs designed to increase access to productive economic resources (assets, credit, income or employment)
  - Target for the Dominican Republic: 10
- Number of legal instruments drafted, proposed, or adopted to promote gender-equality or non-discrimination against women or girls at the national or sub-national level.
  - Target for the Dominican Republic: 1

REFERENCES

[1] Proyectos Estragéicos y Especiales (PROPEEP). https://propeep.gob.do/transparencia/programas-y-proyectos/eco5rd/

[2] Plastic from rice production along the Yuna River flows into Samaná Bay through the municipality of Sanchez; household waste is deposited directly into streams and rivers in the towns of Samaná, Las Terrenas, and Sanchez; heavy rains carry trash from the hilltops of Samaná to low-lying areas in Sanchez; and trash left by beachgoers in Las Galeras, Las Terrenas, and Samaná is captured by high tides.

[3] Rainwater and wind carry plastic waste from streets and open dumps to the Atlantic Ocean through waterways such as streams and rivers.

[4] CO2 representing the base of 1

[5] US EPA https://www.epa.gov/gmi/importance-methane#:~:text=Methane%20is%20more%20than%2025,trapping%20heat%20in%20the%20atmosphere.