



CLEAN CITIES, BLUE OCEAN

Ethnographic Research on Solid Waste Management in Samaná Province, Dominican Republic

Households, Businesses, and Women's Role in the Waste Sector



Photo: Kathleen Skoczen / Clean Cities, Blue Ocean

Submission Date: May 18, 2023

This publication was produced for review by the United States Agency for International Development by Kathleen Skoczen, Ph.D., in collaboration with el Centro para la Conservación y Eco-Desarrollo de la Bahía de Samaná (CEBSE) under the Clean Cities, Blue Ocean Program.

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Contract Number: AID-OAA-I-14-00059/7200AA19F00016

Contract Period: August 29, 2019 to August 27, 2024

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Submission Date: May 18, 2023

This publication was produced for review by the United States Agency for International Development by Tetra Tech, through USAID Contract No. AID-OAA-I-14-00059/7200AA19F00016, USAID Clean Cities, Blue Ocean Program.

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Acronyms and Abbreviations

3Rs	Reduce, Reuse, Recycle
CCBO	[USAID] Clean Cities, Blue Ocean
CEBSE	Centro para la Conservación y Eco-Desarrollo de la Bahía de Samaná
DR	Dominican Republic
GBV	Gender-Based Violence
HDI	Human Development Index
ISWMA	Initial Solid Waste Management Assessment
IWCs	Informal Waste Collectors
MRF	Materials Recovery Facility
SBC	Social and Behavior Change
SBCC	Social and Behavior Change Communication
SW	Solid Waste
SWM	Solid Waste Management
TIPs	Trials of Improved Practices
USAID	United States Agency for International Development

Acknowledgments

This report is based on data collected by a consortium led by Centro para la Conservación y Eco-Desarrollo de la Bahía de Samaná y su Entorno (Center for Conservation and Eco Development of the Samaná Bay, CEBSE) and including local organizations, Foro Ambiental de Samaná (Environmental Forum of Samaná, FAS) and Ecoservices. The project was supported and funded by the United States Agency for International Development's (USAID) Clean Cities, Blue Ocean (CCBO) program, under the direction of its Director of Social and Behavior Change and Gender, Laurie Krieger, Ph.D. of the Manoff Group with the assistance of Kathleen N. Skoczen, Ph.D, Social and Behavior Change Consultant. The consortium brought together a broad team of professionals who supervised, managed, collected, recorded, analyzed data, and implemented communication strategies and trials of improved practices. The goal was to understand Samañeros' perceptions of waste and litter and their actions concerning waste as well as to map and gain insight into women's role in the solid waste value chain in order to develop a social and behavior change program to help the residents of Samaná to address the crisis of ocean plastic pollution and other environmental waste leakage that is threatening the communities and ecosystems of Samaná Province, Dominican Republic's once-pristine tropical environment.

A large team effort produced the data upon which this report is based. Patricia Lamelas and the employees at CEBSE, including Wilfredo Benjamin, provided administrative and logistical support. Maria Caram of Ecoservices provided project management and logistical support for the team, and oversaw the data collection and preliminary analysis for the solid waste management value chain and women's economic empowerment section of the study. Daniel Abreu and Natividad Pantaleon served as supervisors for team members; assisted in collecting data; collated and offered a preliminary analysis of sections of the household data; assisted in training the research assistants; and supervised, analyzed, and developed a report for the study's Trials of Improved Practices (TIPs). Research assistants, Fatima Manzueta, Yocasta Medina Salas, Indhira Gil Cueto, and Shiara Orbe Jiménez, collected data on the ground in Samaná; Yocasta's rich experience in both the province and solid waste management was invaluable to the team's work. Yocasta, Indhira, and Shiara implemented the TIPs. Noemi Araujo of FAS collaborated with Dr. Krieger to develop the SBC strategy based on the ethnographic research findings and TIPs. Felipe Beltran of Ecoservices provided logistical and technical support and Eduardo D. Pitts Araujo provided support for data collection and logistics. Alejandro Matás Navarro of Ecoservices was instrumental in the conception of the CEBSE Consortium partnership with CCBO and significantly contributed to the initial proposal.

In Samaná, residents willingly, and often enthusiastically, welcomed researchers into their homes, often on multiple occasions. The same response was offered at focus group discussions meetings, where attendees took time from their schedules and sometimes incurred travel expenses. During the solid waste management value chain section of this project, interviewees took time and energy from their daily routines to accommodate researchers and their schedules, particularly informal waste pickers who are at the lowest end of the pay scale. Higher level aggregators and the business community also offered their time and attention to assist the team in gaining a better understanding of local solid waste management challenges.

From Clean Cities, Blue Ocean, Dr. Krieger's conception, design, and guidance brought this study to life and maintained it through to its completion. Additionally, she provided invaluable support, guidance, direction, and encouragement through every step and was directly responsible for the training, implementation, analysis of data, and final production of the [TIPs report](#). CCBO Grant Manager, Amy Kirk, and Monitoring, Evaluation, and Learning Manager, Set Oya, provided invaluable guidance and logistical support. CCBO consultant, Dr. Kathleen Skoczen, was responsible for the training and supervision of the consortium research team, overseeing and organizing the collection of data, the final analysis of data, and writing this report.

Executive Summary

Background

The Dominican Republic (DR) is one of seven focal countries in the USAID CCBO program. CCBO aims to stem the flow of plastics into the world's oceans. In the DR, CCBO provides national-level support as well as engages directly in Samaná Province, including through a 2020 grant to a consortium of three local organizations (Centro para la Conservacion y EcoDesarrollo de la Bahía de Samaná y su Entorno, Foro Ambiental de Samaná, and Ecoservices). The consortium, supported by a Social and Behavior Change Consultant, conducted this ethnographic study to inform the program's social and behavior change initiatives as well as to gain further insights into women's roles in the solid waste management (SWM) value chain in Samaná Province.

The introduction of a wider variety of packaged items for consumption, along with a growing middle class and an expanding formal workforce, has changed patterns of consumption across the country, including in Samaná. Given the problems with the SWM systems in the province and practices of littering, massive amounts of waste, particularly plastic trash, from across the peninsula are washing into ravines, streets, streams, rivers, and ultimately the ocean. Samaná's biodiversity and delicate ecosystems are threatened. Key economic activities—tourism, fishing, and shrimping—are in jeopardy. For this study, ethnographic interviewing followed by Trials of Improved Practices (TIPs)—a kind of behavioral trial—was carried out to gain a holistic and in-depth understanding of SWM with households, businesses, and with independent waste collectors. The two methods, with TIPs based on the results of the ethnographic research, constitute the formative research. This formative research aimed to understand how various ethnic and social classes in Samaná manage their solid waste and how different household members perceive and classify waste in public and in the home. Researchers set out to discover what people are doing now; why they are doing it and how this fits into the context of their lives, communities, and culture; what they can do; and what they will do in regard to reducing, reusing, and recycling (3Rs) and SWM.

Key Findings

Throughout this study, there was a widespread recognition in households and across the solid waste value chain that Samaná has much more waste especially plastic waste contaminating the environment, an environment that Samaná residents have been proud of. Many sample members expressed a sense of sadness and frustration because they don't see what they can do to fix this problem.

Gender

Household waste is not highly gendered: anyone at home when the collection truck comes puts out the waste. However, the commercialization of waste is highly gendered due to structural and cultural factors. Women are mostly found at the lowest level of the waste value chain as IWCs in the landfills (where they face the threat of sexual harassment, assault, and being deprived by male IWCs from collecting the most valuable waste), and they are entirely missing as owners of aggregation businesses. Some women work at larger aggregation facilities as sorters or doing administrative work.

Households

The household participants in this study spoke frequently of having limited options and no alternatives for plastic trash. All members of the household contribute to putting waste into the household's waste containers. Households already segregate waste to a certain degree, although they were unaware of what segregation is. Study participants all recognize the problems associated with garbage—particularly plastic waste and the significant amounts of waste being publicly discarded—and expressed concern about environmental harm and the belief that education is key to improvement. However, burning bathroom waste and yard waste is still practiced by most households in much of the province. There is widespread enthusiasm for separating waste and widespread practice of repurposing discarded items and reusing plastic bags. Household waste is left outside in plastic bags (often torn open by dogs) to be collected by the municipality because collection times are unpredictable and a household member may not hear the collection truck. Some residents pay motorcycle taxis to collect their waste and take to the landfill, but, in practice, the drivers usually dump the waste in ravines and other inappropriate areas.

Native Dominican women save kitchen waste for pig owners/farmers who collect their buckets of kitchen waste and replace them with clean buckets. In fact, pig husbandry in Samaná is dependent on this source of free pig food. The TIPs indicated that other women living in Samaná may be willing to adopt the practice. Composting, an alternative to pig food provision, generated some interest, especially among men, but will require a training program and access to tools and perhaps containers to implement.

Businesses

Women are present in the business sector, but the large majority of business owners interviewed and their employees are men. Most businesses practice some form of the 3Rs and all members of the business sample decried public waste, emphasizing the importance of education and often placing blame on vendors for plastic waste. Business participants also expressed frustration with both national and local governments over insufficient support regarding SWM, as well as inadequate communication of laws and policies.

Community

Public waste, especially plastic waste, is widely recognized by residents, business owners, and their employees in Samaná as a danger to the environment and to human health, however most people feel that public waste (i.e., litter) is the responsibility of the municipality and tend to drop waste wherever they generate it in public. The dearth of public bins and timely collection from the few existing bins reinforces this behavior. The people of Samaná draw a distinction between public and private, which reverberates throughout their culture. Residents' behavior regarding littering is one expression of this cultural dichotomy. People feel great responsibility for household waste, but virtually none for waste they generate or see in public. Study participants' comments suggested support for strengthening neighborhood associations as vehicles for public education and community projects, including the organization of composting projects. Participants also stressed the need for the education of children regarding waste management.

Internal Tourists and Tourism Companies

Tourism—both internal and international—provides most formal sector (and some informal sector) jobs in Samaná Province. International tourists are not a major source of public waste, but Dominicans

visiting from other parts of the country are, arriving through tourist companies by bus and car and leaving significant trash behind to be cleaned up by local residents.

Aggregators: Informal Waste Collectors

Researchers identified five levels of aggregators based on the selling and buying of recycled materials as well as on access to equipment, transportation, and processing of the materials. IWCs who collect waste in landfills to sell to higher level aggregators are at the bottom (level one). Most of the IWCs interviewed are either illiterate or have low levels of education. Women are found at the lowest levels of the value chain as IWCs and many rely on their IWC income to support themselves and their families. In the city of Samaná, IWCs had organized into an association, while in other areas they had not organized. Women IWCs earn less than their male counterparts and are at heightened risk of sexual harassment, sexual or physical assault, and verbal harassment from male IWCs and others. IWC study participants all reported working as IWCs in order to earn a living and valuing the work's flexibility. Many also value that the work provides freedom, and women value IWC work because it enables them to be self-sufficient, and independent. Several of the IWCs, both men and women, said their work was important for the environment and their city. There is an almost complete lack of communication between IWCs and government, with no warnings or information provided to IWCs about dumpsite closures during the start of the recently begun landfill remediation.

Aggregators: Higher Levels

As with the overall business community discussed above, higher level aggregators (levels two-five) recognize the need for improved SWM in Samaná. Aggregators complained that they do not learn of rules and laws that affect them except through mass media. They want government to communicate and explain to them applicable laws and policies. It is a very competitive industry and most aggregators expressed frustration with the lack of government support. Although aggregators are in competition with each other, some said that they want to form an association that would give them a voice and help them to better coordinate. Aggregators capitalize their businesses either through self-financing, borrowing from male friends and relatives, or taking bank loans when possible—though many interviewees stressed the difficulty of accessing bank loans. All owners of aggregator businesses in the study were men; the lower-level aggregators (levels two and three) do not employ women. However, the manager of one of the largest aggregation/upcycling businesses in Santo Domingo is the daughter of the owner and is running the business for him.

Key Recommendations

- Support to women IWCs could include trainings on literacy and numeracy, livelihoods, gender and gender-based violence (GBV) (training for men as well as women) and the development of CCBO's training and grants program for women at the lowest level of the SWM value chain (already established in the Philippines and Indonesia), although not through CCBO because time is insufficient.
- An improved SWM system that systematically and predictably collects trash and maintains separate waste streams for recyclables is crucial before anyone is asked to recycle, along with household-level training and the capacity for composting. IWCs could be enlisted to collect recyclables.

- The requisite materials (detailed in section 8) will need to be provided to residents and critical social and behavior change (SBC) programming will need to take place (also detailed in section 8) to ensure improved understanding of recycling, composting, segregation, trash collection times, and to promote safe alternatives to burning bathroom/garden waste that address the reasons for the behavior rather than focusing on the behavior.
- A holistic SBC program at the community level will be needed to reduce public waste. Since this will require socio-cultural change because of the public/private dichotomy, the program must be long-term.
- Sufficient public bins should be provided to make waste disposal convenient and sufficiently frequent collection must be ensured. A system that can handle segregation of waste at the public source could be established. SBC will first require sufficient public bins in places where most waste is generated and adequate collection to prevent bins from overflowing.
- Since native Dominican women segregate organic kitchen waste for pig owners or representatives of pig farmers and the TIPs indicate that other Samañeras are willing to adopt the same practice, local or national government should investigate the practicality and safety of asking all households to adopt this practice or to compost their kitchen and yard waste, where practical.
- The national government and/or donors should establish programming to encourage more women-owned businesses and provide further support/training for businesses regarding the 3Rs.
- The IWC association in Samaná should reconnect with local business associations to arrange for plastic and other valuable waste collection.
- The new landfills/transfer station should include systems for safely disposing of hazardous waste.
- Improved communication between the national/local governments and businesses regarding relevant laws and policies would help businesses to adhere to them. The government could also start a program to procure plastic substitutes for vendors.
- Children should be part of the solution to public waste with relevant education incorporated into school curricula as part of a holistic SBC program, possibly with discussion among mothers' clubs and neighborhood associations.
- Anti-littering laws should be made known and enforced; a system of deposits on bottles could be established, and laws to abolish improvised dumpsites should be enacted as the SWM system improves.

- Norms for tourist and bus companies need to be developed and/or disseminated. Tourism taxation could add to municipalities' revenue and be spent on improving the SWM system. Attention-grabbing bins and containers for larger waste should be provided along with handouts explaining laws and consequences as well as SBC materials that tap into culturally salient underlying themes. CCBO could also conduct a brief qualitative study with internal tourists to focus a potential SBC program or a public-private initiative.
- The government should institute public information initiatives for IWCs so they understand what is being done and why, and local government environmental officers should consider holding regular sessions to respond to IWCs' suggestions and complaints. Local governments could help IWCs to obtain cédulas (IDs) as needed.
- The IWC association in Santo Domingo, NGOs, and CCBO should consider helping IWCs in Samaná Province to organize associations.
- NGOs and donors should consider working with the private sector and government to establish a loan program with business training and/or a special grant or loan program for women (similar to the CCBO newly established program for women discussed above). Additional programs that target women's needs (facilitating more women entering the industry at higher levels) should also be considered.
- Aggregators should consider forming a trade association to set standards and represent aggregators to the government and larger buyers of plastic waste. The association could also provide courses in business training as well as gender awareness-raising and GBV.



Plastic household items destined for sale in the city of Samaná. Photo: Kathleen Skoczen for Clean Cities, Blue Ocean

The Need for Action

Everyone who calls Samaná home has concerns over the plastic trash confronting them on the beaches, back trails, and streets and in the rivers, creeks, ravines, and empty lots. Residents on the peninsula have long recognized the uniqueness and beauty of the region, take pride in being from this area, and are highly concerned about the environment. Sánchez is known for its shrimp, Samaná for its vistas, and Las Terrenas for its beaches. All are in jeopardy if no solution to the current situation is found. That residents across all six locations and through the four different groups spoke about this problem in emotional terms suggests they are ready and willing to get to work to clean up their peninsula. Furthermore, the TIPs showed that many, especially poor residents, experienced segregating waste as empowering: finally, they were able to do something to control the waste in their environment and to have the ability to be important by making a difference in their community. While household waste segregation will most likely be easy to implement once the SWM system can support it, ending public littering will almost certainly require a full, long-term socio-cultural and behavior change program.



Trash, primarily in plastic bags, destined for the open landfill in Samaná. Photo: Kathleen Skoczen for Clean Cities, Blue Ocean

I. Introduction

On August 28, 2019, Tetra Tech was awarded the Clean Cities, Blue Ocean (CCBO) Program, a five-year, \$53 million contract from USAID. CCBO is the Agency's flagship program to respond to the global crisis of marine plastic pollution. The objectives of CCBO are to:

- Objective 1:** Promote the 3Rs and strengthen local and regional markets for recycled plastics;
- Objective 2:** Build SBC for the 3Rs and sustainable solid waste management (3R/SWM);
- Objective 3:** Increase capacity and effective governance of solid waste management (SWM) and recycling systems; and
- Objective 4:** Support international fora, public-private partnerships, and multi-stakeholder alliances.

As a crosscutting objective, CCBO also works to support and enhance the livelihoods of those working in the waste and recycling sectors, particularly women, as well as advance gender equality within the sector and opportunities for women's economic empowerment.

The Dominican Republic is one of CCBO's seven focal countries, which also include: Indonesia, the Philippines, Sri Lanka, the Maldives, Vietnam, and Peru. In the Dominican Republic, CCBO is providing national-level support as well as engaging directly in Samaná Province. To support its efforts, in 2020, CCBO awarded a grant to a consortium of local organizations led by the *Centro para la Conservación y EcoDesarrollo de la Bahía de Samaná y su Entorno* (CEBSE) and joined by *Foro Ambiental de Samaná* (FAS or

Environmental Forum of Samaná) and Ecoservices—three agencies with substantial experience in the Samaná region and/or with SWM experience.

The consortium, supported by a Social and Behavior Change Consultant, conducted research to inform the program’s social and behavior change program, as well as research to gain further insights on women’s role in the SWM value chain in Samaná Province, Dominican Republic—for which there was no published information available to CCBO. CEBSE’s research objectives were designed to inform CCBO’s approach and **future** programming, particularly as the program awaited the passage of the country’s National Law for Solid Waste Management (which was then passed in late 2020). As one of the program’s first grantees, CEBSE worked together with CCBO to develop a research model that could be used by other grantees and adapted to other countries and cities.

SWM and the flow of plastic into the environment of Samaná has risen to a crisis level due to massive amounts of trash, particularly plastic trash, from across the peninsula washing into ravines, streets, streams, rivers, and ultimately the ocean. Citizens have faced contaminated air and water as well as noxious odors and smoke. The peninsula’s biodiversity and delicate ecosystems have been threatened with serious impacts resulting from poor waste management practices across the peninsula. Key economic activities on the peninsula—tourism, fishing, and shrimping—are being seriously jeopardized as the local population begins to assess the costs of uncontrolled plastic waste. Formative research was carried out over more than five months to gain a holistic and in-depth understanding of SWM at the household, business, and government levels. A more complete picture of the situation from the perspective of the local population is the first step in implementing programs and strategies. This report presents the results of this research and makes recommendations for priority next steps and activities to strengthen local systems and reduce local ocean plastic pollution.

2. Background

2.1 Governmental Organization of the Province of Samaná

In the DR, municipalities are responsible for SWM. The peninsular province of Samaná is divided into three municipal districts and their immediate outlying areas. The capital district, Santa Barbara de Samaná (referred to as “Samaná” going forward), is responsible for three rural subdistricts that encompass the remainder of the peninsula. Below are brief profiles of the municipal districts:

Las Terrenas (population 18,829): The municipality of Las Terrenas is primarily a touristic zone on the north coast of the peninsula. It was established in a rural and sparsely populated area of the province. Until the early 1990s, overland travel by two roads was extremely rough and slow. With increased travel and the expansion of a small airfield, Las Terrenas has exploded. A toll road opened in the early 2000s, further augmenting touristic development. An organic Dominican governing system did not exist prior to the expansion of the population and the accompanying environmental and ecological pressures.

Sánchez (population 24,509): The municipal district of Sánchez was once the location of the important Sánchez-La Vega railroad that was key to Dominican exports in the early to mid-20th century. The railroad was abandoned at some point in the mid-20th century. Sánchez is situated on the Samaná Bay

near the mouth of the Yuna River where the silt buildup has prevented larger boats from penetrating deep into the Bay and the town dock has significantly deteriorated. The area is inundated with garbage along the coast, which locals attribute to other coastal cities and garbage that runs down the Yuna River. Notably, the Gri Gri River runs through the city and is recognized by some residents as a significant source of pollution on the Sánchez coastline. Sánchez, nonetheless, continues to have an important and thriving fishing and shrimp industry via small fishing vessels. Thus, the population has a specific sensitivity to the state of the coastline and the quality of the water in Samaná Bay.

Santa Barbara de Samaná (Samaná, population 33,196): The province's capital municipality engages in fishing, but also has had a long-term stake in the region's tourism industry. The dictator, Rafael Trujillo, who ruled from 1933-1961, noted the beauty of the region. His protégé, President Balaguer, built a hotel overlooking the city that became an early beacon for tourism and still plays an important role. The city of Samaná experienced a fire in the 1960s and subsequently rebuilt. This rebuilding oriented the city toward Samaná Bay and created a large "*malecón*" (more boardwalk than pier, that runs along the waterfront in the city of Samaná). The *malecón* is used heavily by the local population for everything from daily exercise to weekend *fiestas* to regional and seasonal events. From the *malecón*, tourists embark on excursions for whale watching, visiting Los Haitises National Park, sunning and bathing on the beaches of *Cayo Levantado*, and other excursions after being bussed into the area from other tourist centers around the country. Cruise ships disembark here for passengers to do shopping, strolling, and sight-seeing. Thus, Samaná Bay's pollution is a visible concern, particularly when rains stream waste directly into the Bay in front of the *malecón*.

Subdistrict El Limón (population 7,024): Different degrees of tourism infrastructure exist among the subdistricts. El Limón to the north is situated on one of the main roads from Samaná to Las Terrenas. An early and key ecotourism project, the *Asociación de la Cascada de El Limón* (the El Limón Waterfall Association), was established through CEBSE, which has successfully managed this local resource to the benefit of tourists and the local economy. The Association has been effective in addressing numerous issues, including dealing with waste. Beaches near El Limón have taken on more visitors as accessibility has improved and the popularity of Las Terrenas has created more crowding on those beaches.

Subdistrict Las Galeras (population 6,929): Las Galeras is located at the eastern tip of the peninsula and, like Las Terrenas, hosts a large expatriate population. Unlike Las Terrenas, growth has not exploded, although there are several hotels and many privately-owned properties. One large development, dating back to the 1980s, privatized the most accessible and attractive beach in the town. An outlying and much harder to reach beach, El Rincón, has of late benefited from better management of its road and is likely to see more touristic investment, but for now is mostly an "ecotourism" adventure for those willing to risk traveling with 4-wheel drive trucks and all-terrain vehicles.

Subdistrict Arroyo Barril (population 11,007): Arroyo Barril, just west of Samaná, has a very dense population along the primary highway. A municipal airport and military dock and installation are located on the periphery of Arroyo Barril. This district is located largely along the road and southern coastline of the province, and there are many privately-owned estates and tourist development projects. The water quality of Samaná Bay in Arroyo Barril has been compromised due to its proximity to Sánchez and the mouth of the Rio Yuna.

2.2 Local Ocean Plastic and Solid Waste Management Challenges

There are many other touristic projects dotting the coastline of the peninsula, and a projected new road promises to further open the north coast. Tourism in Samaná Province has become the most important source of employment (26 percent of business), along with the ancillary industries that accompany it.¹ Agriculture on the peninsula is primarily coconut trees and smaller subsistence plots (243 km² and 211.9 km² respectively out of a total 525 km² devoted to agriculture²). Fishing is also an important source of income for many families. The province ranks among “medium low” regions on the Human Development Index (HDI), along with the majority of provinces across the DR. There is a significant discrepancy in wealth between the owners of tourist infrastructure and foreign expatriates generally and the typical Dominican born and raised in Samaná.³ This suggests, as is the case, that many residents across the peninsula are living in substandard conditions that potentially impact health outcomes as well as quality of life.

According to the UNDP, the DR overall has experienced improvements in the HDI. Life expectancy and years of schooling have increased and the per capita gross national income nearly tripled from 1990 to 2017.⁴ The World Bank notes that the DR is one of the fastest growing economies in Latin America and the Caribbean.⁵ This economic expansion has translated into a reduction in the national poverty rate from 34.4 to 19.9 percent and an expansion of the middle class from 24 to 37 percent. The percentage of the population living in urban zones has increased from 30 percent to over 80 percent from 1960 to 2019. At the same time, the overall population has more than tripled from 3.2 to 10.7 million.⁶ An expansion in tourism, the increase in income, and a middle-class lifestyle has resulted in a significant increase in the consumption of commercial goods. During the same period, debt service and economic policies have created a context that challenges the abilities of the national government, and hence municipalities, to address services such as solid waste.⁷

Thus, the pressure on SWM has been increasing from several fronts: population growth, urbanization, tourism development, and expanding consumption. Meanwhile, the capacity of local municipalities to handle SWM is hampered by challenges that are common to many developing countries. Aside from budget deficits, there are concerns with short-term goals, corruption, and an overwhelmed infrastructure. Services are inequitable, with poorer areas neglected to the benefit of wealthier areas and touristic zones.⁸ Vulnerable populations living around open dumps are most at risk, as these dumps are situated close to wetlands, rivers, streams, and delicate ecosystems. They are currently situated precariously close to human dwellings.

Samaná Bay is a critical site and plays a key role in the ecology of the Caribbean and Atlantic Ocean. It is one of the deepest bays in the Caribbean. Boaters have been weathering hurricanes in Samaná for decades. An estimated 85 percent of North Atlantic humpback whales breed and give birth to their

¹ ONE 2015.

² Ibid.

³ Dominican Today, 2019.

⁴ UNDP, 2018.

⁵ World Bank, 2020.

⁶ World Bank 2020; Purdue 2016.

⁷ Goffi, Clader, and Osti 2020; Sletto & Nygren 2015.s

⁸ Bogaert Villanueva, 2013.

young in the DR's waters, with an estimated half spending the winter in Samaná Bay. The coastal zones of Samaná Bay are important to the ecology of the oceans due to their dense mangrove forests—it is estimated that 75 percent of all tropical fish spend some part of their life cycle in mangrove forests. The mangroves in Samaná Bay are threatened by development, as well as strangled by the influx of plastic waste, although their resiliency is also remarkable. Primary economic activities, notably fishing and shrimping, are also under threat. One longtime resident of Samaná reported that when Samaná Bay was being dredged near the city, the equipment pulled up lasagna-like layers of plastics, which were subsequently dumped further out in the Bay.

These impacts are visible and have motivated national and local advocates to action, but with the current infrastructure, regulatory environment, and financial system in place, they cannot enact or pay for improved SWM. Financing for improved infrastructure is critical if the DR is to shift from its current 352 informal and environmentally dangerous waste dumping sites to better-managed regional waste collection, recycling, and disposal systems. The DR's National Law for the Integrated Management and Processing of Waste was passed in a 2020 legislative session and provides the legal framework necessary to improve the solid waste system and encourage investment in SWM systems, including material recovery facilities (MRFs), transfer stations/aggregation points, and environmentally sound landfills. The law's effectiveness, however, is not only dependent on the national government, but also on its implementation in local provinces and municipalities.

2.3 Previous and Current Solid Waste Management Efforts in Samaná

The study included all city departments and city department districts in order to gain a holistic understanding of household, community, and regional waste disposal management in the province. As of 2010, the province had a population of over 101,500 inhabitants and more than 180,000 visiting tourists.⁹ The household waste disposal system is poor or, in some areas, nonexistent due to a lack of access. As of 2021 and at the time of this study, solid waste was handled in three municipal open-air dump sites within the province, which were not regulated and did not comply with health and safety or environmental standards. Additionally, waste was often not separated in these sites, although there have been efforts to do so in the past. Many improvised dump sites exist within cities and across the peninsula. In late 2020, the national government committed to improving SWM and began the process of remediating and closing the dumps and replacing them with a state of the art, sanitary landfill. CCBO SWM technical experts have become technical advisors to the government on this project, which will serve as a model for national replication and expansion.

Samaná's three open dumps are located in unsuitable areas. In Sánchez, the landfill is inside a national park (Parque Nacional Manglares del Bajo Yuna), in a swampy area and adjacent to several dikes where water, carrying waste, is channeled into the dense mangrove forests. The Samaná landfill is located close to the city center and borders the Barril basin, which feeds into a mangrove forest, and the waterfront where a multi-million dollar tourist project is under construction. In Las Terrenas, the landfill is again close to the city center—just above the town and within sight of two smaller communities—and 350 meters from the headwaters of the María Alcalá River.¹⁰

⁹ ONE, 2015.

¹⁰ USAID, 2013.

In January 2020, CCBO conducted an Initial Solid Waste Management Assessment (ISWMA) of the Province of Samaná to assess existing SWM programs, processes, and sources of ocean plastic pollution in the province. The report found that waste collection in the province varies, depending on the municipality, and recycling or recovery of material is limited. Organized collection of residentially generated waste is largely the responsibility of the municipalities, as it is in most of the world. The districts in close proximity to a city have services connected to that city, e.g., Las Galeras and Arroyo Barril are intended to use the Samaná dump. This research project found that in the cities, garbage pickup is somewhat regular and dependable, although infrastructure issues exist surrounding narrow streets and the locations of dumpsters. In the outlying districts, garbage pickup can be chaotic and is sometimes dependent on private garbage pickup, and thus can result in more problems around disposal—including being thrown onto riverbanks, tipped into improvised sites, and/or burned.

Much has been attempted to improve conditions in the province surrounding waste collection. In the past, a program called *Dominicana Limpia* attempted to have people recycle and in Las Terrenas there were Centros de Acopios (collections sites) for people to leave their plastic. Approximately four years ago in Sánchez, JICA instituted a recycling program, providing color-coded sacks for houses and color-coded dumpsters for separating trash, plastic, etc. The program was initially successful but not sustainable long-term, as residents became aware that the garbage ended up all together in the same place: the local landfill. In Sánchez, the lack of an accessible SWM system results in people who live near a river wrapping up their garbage in a plastic bag and throwing it directly into the river. While a majority of the population now has “pozo septicos” (septic systems), there are still many people whose toilets discharge directly into a river.

Several investigations and public and private initiatives have taken place in Samaná Province over the last 30 years, with limited concrete and lasting results. This includes USAID community-based projects from the 1990s, a recycling project sponsored by EcoRed (2013-2017), different government interventions (both from central and municipal administration) and many research projects (GIZ, JICA, UNDP, and others). As far as CCBO is aware, none of these attempts tried to modify the SWM system to support waste segregation.

There have been successes and there is plenty of optimism to think sustainable waste management in the province is possible. For example, for decades the DR had a closed loop for glass soda and beer bottles. Consumers paid a small deposit on the bottle. Some people collected bottles in their homes, but often young boys circulated neighborhoods or parks and were given or picked up bottles. They would turn in the bottle and buy something for themselves or their families. Few bottles ended up lying around, as they were highly valued by these young people. The system appeared to work efficiently until markets moved to bottles without deposits and with no system for recycling. As recently as five years ago, there was a campaign to discourage people from burning their garbage and, today, municipal workers in Sánchez estimate that 70 percent of people do not burn their garbage and have learned to put it in the trucks. There are also native practices such as recycling bottles for the “bottle man” or metals or cardboards. In homes, women have long practiced reusing gallon jugs for storing water and when spent, turn them into containers for clothespins, soap, or planters. Native Dominican women across the peninsula also commonly set aside food scraps for pigs, not because they are paid to do this, but as a means of keeping “putrid” waste out of the waste stream. This practice keeps a considerable amount of refuse out of the dumps. Current efforts include the international NGO, Parley’s roll out of a

project in Sánchez to collect only high value plastic bottles, which the NGO sells, keeping any sales proceeds. A national brewery has also rolled out a project in the province to collect used glass bottles.

3. Research Purpose and Methodology

In Samaná Province, there are no institutional policies promoting social or behavior change for responsible and sustainable practices, like the 3Rs. To ultimately improve SWM in Samaná and encourage the uptake of the 3Rs, it is critical to understand how waste is currently managed as well as the social and logistical background for these practices. This project aimed to understand how various ethnic and social classes in Samaná manage their solid waste and how different household members (i.e., women, men, girls, and boys) perceive and classify waste (particularly plastics) in public and in the home. Clean Cities, Blue Oceans' goal is to appropriately engage residents to encourage their participation in voluntary waste segregation and waste collection schemes, i.e., bringing their waste to a neighborhood aggregation point (where these exist), segregating their waste in the home, or in some way providing support for a household waste collection service.

The country's recently passed SWM bill has the potential to permanently address SWM issues. However, solutions that meet the needs of the residents of Samaná are critical to its ultimate success. To better understand the needs of residents and what they can sustain, this study used qualitative research methods to explore waste management across Samaná Province, focusing on the three major municipalities and three smaller associated districts cited above. Researchers set out to discover what people are doing now; why they are doing it and how this fits into the context of their lives, communities, and culture; what they can do; and what they will do in regards to the 3Rs and SWM.

Specifically, the team set out to understand, identify, and explore:

- Peoples' perceptions of trash at the household, neighborhood, and community level—what is trash, what is not, how it is handled, and how people feel about trash in general
- Existing and historical practices surrounding the 3Rs and SWM at the household and community levels, as well as to bring to light related distinctions between ethnicities, gender, socio-economic classes, and religious groups
- Local perceptions surrounding *public* trash and litter at the neighborhood and community level, particularly as it affects the environment, and the economic and social costs of plastic pollution across the peninsula
- The human aspects of the entire SWM value chain—who is working in this sector, what they perceive as obstacles and challenges, how they think the system can be improved, what are the existing strengths and weaknesses, what is the role and what are the experiences of women in this sector, and what are the potential opportunities for women to work their way up the value chain
 - The potential and practicality of implementing the 3Rs at the household and community level, including Practices and perceptions related to recycling and composting as methods to control and manage household waste.

This research included multiple phases, beginning with training a local research team, developing research tools, implementing a household study of waste, interviewing IWCs holding focus group discussions and interviewing businesses. Finally, data informed TIPs, which are described below and which served as a method of understanding the potential and limitations of what the Samaná population could and would do in relation to plastic waste recycling. This formative research study consisted, in total, of 208 interviews and nine focus group discussions between February and June of 2021, with follow-up research into October of 2021. The social and behavior change portion of this research is documented and annexed at the end of this report. A summary of the populations engaged in this research is presented in Table I.

Table I. Population Sample

Study	Total	Males	Females
Household Study			
	154	57	97
Focus Group Discussions			
Informal Waste Collectors	16	7	9
Aggregators	11	10	1
Businesses	15	11	4
TIPs (Residents)	26	n/a	n/a
Total	222	85	111

At all levels of data collection and presentation, the team ensured that all identifying information would be kept confidential and anonymous. In some sections of this report where there was a larger number of participation (e.g., the household data), narratives are identified by city, gender, and age. Among smaller samples, or where identifying information is likely to be revealing about the speaker, the city, and at times gender and age have been removed. Thus, the inconsistency in presentation is intentional and in the best interests of the many people who volunteered their time and energy to this project.

3.1 Household interviews

Household interviews were conducted in each city and corresponding district and employed in-depth, open-ended interview schedules—30 in each city and 20 in each district, for a total of 154 interviews.¹¹ Three interviewers carried out the household interviews, each of whom also had a supervisor monitoring the data collection. Among the business and SWM value chain (IWCs and aggregators) sections of this project, there was a primary advisor and one assistant who worked together to collect data.¹²

¹¹ Four additional interviews were conducted in El Limón to balance out a gender bias. Four interviews were discarded in certain analyses in the Sánchez data due to the participants' location beyond the city boundaries. Thus, the total of 150 interviews remained in place.

¹² Of the eight researchers, six were Dominican nationals, one a Dominican-American, and one a U.S. based anthropologist (with over 35 years of experience in the region). One researcher was male; the remainder were female. Three team members had significant experience with social science research in Samaná. One had extensive administrative experience working on social/development projects and four (one a physician) had experience in data collection; one of these had extensive experience

Household interviews took place over six weeks and were approximately 90-120 minutes long with 23 open-ended questions. Within each city, and to some degree in outlying districts, the team selected neighborhoods to ensure that all sectors of the community were included. For example, in Las Terrenas and Las Galeras, the two locations with significant non-Dominican populations, efforts were made to include expatriate neighborhoods and households. In Samaná and Sánchez, efforts were made to include different socio-economic classes by targeting specific neighborhoods. In general, there was an effort to bias our participants toward more women than men, and where this was unsuccessful, as in El Limón, additional households were added (four in El Limón).

Table 2. Demographic data for household interviews

City	Total	Female	Male	Age	Religion*			Nationality		Education		
					E	C	O	Dominican	Other	Primary	Secondary	University
Sánchez	30	23	7	25-70	14	12	4	30	0	10	7	13
Arroyo Barril	20	14	6	18-68	3	16	1	20		11	7	2
Las Terrenas	30	13	17	18-72	10	8	12	22	8	3	15	9
El Limón	24	8	16	20-60	5	14	1	19	1	2	12	6
Samaná	30	24	6	18-73	7	13	10	30	0	6	14	10
Las Galeras	20	15	5	30-54	2	1	17	13	7	2	7	11

*E = Evangelica, C = Catholic, O = other

3.2 Focus group discussions

During a preliminary analysis of the household data, important ethnographic data points and questions emerged that were not addressed in the household research instrument and therefore not explored consistently across the peninsula. An example of this was the practice of setting aside organic kitchen waste for either one's own pig, a neighbor or friend with pigs, or a farmer or his employee who retrieves the waste; farmers or their employees exchange a clean, empty bucket for a bucket with kitchen waste. Through focus group discussions, we were able to discover this is a widespread custom among native Dominican women across all research locales. To explore themes or further questions that surfaced during household interviews, seven focus group discussions were held. The focus groups were mixed gender groups, with the exception of Las Galeras, where despite invitations to a broad range of community members, only expatriate women attended. The team then added another focus group discussion to hear from the Dominican community, and in this focus group only Dominican men attended.

The research team constructed an instrument that further explored appropriate topics, which included approximately 17 questions, but was also open-ended and enabled participants to explore themes they felt were relevant to the study. Participants generally consisted of household participants and individuals who were also extended an invitation based on knowledge and interest in the project. One focus group

in SWM and the Samaná peninsula and one was a relative novice to the field. Two members of the team were born and raised in Samaná and two moved to this region recently.

was held at each site, and an additional focus group in Las Galeras, which was held to ensure inputs from the local Dominican population as well as achieve gender balance. In total, 33 women and 24 men participated in the focus group discussions.

Focus group discussions were also held among the IWCs. Again, key themes were explored, and these groups focused on getting women together. In Las Terrenas, only women attended, but in Samaná, where there are close family ties, three men also attended, in addition to seven women. The focus groups confirmed some of the key findings and provided more in-depth understanding about how things have changed in the dumps and what accommodations might improve working conditions for women.

3.3 Open-ended interviews

Open-ended interviews were also conducted with nine female and eight male IWCs; eleven local, regional, and national aggregators; seven local authorities; and 15 tourist and local business owners and operators. These open-ended interviews were carried out either in person for participants who are located in the province or over the phone for those located in other areas of the country. Two focus groups were held with the waste pickers, one in Las Terrenas and one in Samaná. With those two exceptions, the focus groups included approximately equal numbers of men and women, and ages varied from those in their 20s to those in their 70s. Approximately half the members of the Las Terrenas focus group were expatriates and half were Dominicans. Other than Las Galeras, all other attendees were Dominican. Efforts were made at every level to include Haitians, regardless of their immigration status. These efforts failed again and again.

In all in-person interviews, researchers followed Covid protocols, wearing masks and social distancing. Participants were offered masks and hand sanitizer. Researchers went out singly or in groups of two.

3.4 Trials of Improved Practices (TIPs)

To complement and build on the in-depth interviews, focus group discussions, and other methods, the team conducted TIPs, a rapid research method developed by The Manoff Group that has been used for over 40 years in the health sector to help answer questions about what people are able and willing to do to support implementation of a program. TIPs combines research and implementation to learn what behaviors or policies should be promoted. Since it is an action research approach, the TIPs itself can sometimes generate longer term behavior change, as it did among some in Samaná.

TIPs is an iterative research technique in which a small sample of a population is asked to select and try out a new or modified behavior in their daily lives for a brief period. In this case, a sample of households that were interviewed earlier during the qualitative research was asked to select and try new/modified behaviors that would support improved SWM and recycling. TIPs is always conducted after completion of qualitative research so that researchers have a thorough understanding of the research results and know which behaviors might be feasible for TIPs participants to try out. From the research, TIPs researchers develop a menu of possible environmentally supportive behaviors.

In Samaná Province, CEBSE conducted two rounds of TIPs home visits in four municipalities (see Table I). Prior to the first TIPs visit, CEBSE researchers reviewed the qualitative research interview information from each TIPs sample household to gain an understanding of what might be possible.

Members of the CEBSE research team then visited each participating TIPs household and spoke to participants about the environmental crisis in Samaná, the effect of mismanaged and public waste on Samaná's environment of, and the benefits of recycling. The TIPs researcher gently pointed out the household's behavior that might be contributing to the problem and 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. The research team knew from the qualitative research that plastic waste in the environment was a source of distress to almost everyone in the household interview sample. If the person or household could not think of any behaviors, the interviewer suggested some to try from the TIPs menu that was developed by the research team.

To ensure participants could segregate waste with assurance that it would be recycled, the CEBSE consortium needed to contract with someone to pick up and recycle the recyclables. At that time and currently, collection of recyclables is sporadic and unpredictable in the province. The need to set up a system to conduct TIPs is unusual and possibly unique in TIPs research. This approach became particularly relevant as, during the study, the DR began planning for a new SWM system in the province, including closing legacy open dumps and beginning to develop a sanitary landfill and related facilities.

A week after the first visits, CEBSE returned for a second visit to see how the participants had done. Members of the CEBSE team made it clear to the participants that this wasn't a test of them; it was a test of the behaviors to see which are the most practical to ask people to do to support improved SWM.

In total, 26 households participated in the TIPs, with only four households not completing the full trial process. While TIPs generally involves at least three household visits, TIPs participants in Samaná Province were able to be interviewed only twice because the qualitative research conducted provided the information that is usually gathered during the first TIPs visit.

4. Gender

Es con mujeres que hay que trabajar, el hombre hace cosas, pero las mujeres mayormente es que llevamos de todo. Estamos pendientes de todo, y mas con esas cosas. Y como el hombre anda en la calle trabajando y uno esta en la casa mayormente, uno tiene mas control de las basuras y le dice a quien viene a tirar basura, ¡no lo tires ahí! ¡Cuidado con tirar basura! Que cuando tu sales y dices eso, viene otro y sale y dice lo mismo y viene la otra, y dice mira no lo tires que ella te lo esta diciendo que no lo tires, entonces la gente no se atreve a ensuciar.
(FGD Sánchez participant, female)

It is with women that you have to work, men do things, but women mostly take on everything. We are aware of everything, and more with these things [household waste]. And since the man walks in the street working and [the woman] is in the house mostly, [the woman] has more control of the garbage and tells whoever comes to throw garbage, do not throw it there! Be careful with littering! Then when you go out and say that, another woman [comes out] and says the same and the other comes, and says look, don't throw it away, she's telling you not to throw it away, so people don't dare to make a mess. (Sánchez, female focus group discussion participant)

Across Samaná Province/Peninsula, gender roles are distilled through the complex history of the region. This unique region of the DR is home to descendants from a variety of countries. There are Spanish, African (including Cocolos or non-Hispanic Africans), and African American (resettled on the peninsula in the 1820s) descendants as well as those whose ancestors are from other Caribbean Islands, including Haiti. The peninsula has also been sparsely populated relative to other regions of the country. This rich mix of ancestry complicates a division of labor between the genders that is both rigid and fluid.

Domestic/private spaces are reserved as proper places for women as public spaces are mostly male spaces. This is evident when we examine those professions considered to be proper for women. One never sees women operating any type of public transit, although running motorcycles for hire is a relatively inexpensive and relatively profitable way of making a living for people without other options. A woman might use her resources to sponsor such an enterprise, but she herself would never be the operator. Indeed, power in public spaces is generally limited to men, despite status or age, as evident in the quote above. It is also evident in the shifting values introduced with touristic development. While a man in Las Galeras or Las Terrenas would not tolerate his sister, wife, or daughter walking around in a bikini, this behavior is overlooked—and sometimes welcomed by the male gaze—as long as the woman is not Dominican. A Dominican woman would likely be labeled a “*puta*” (prostitute) and endure the stigma that affects her reputation and identity. In a machismo culture, there are obvious concerns about women’s safety in public spaces where she is not protected, but this risk and the consequences are assigned to women’s lack of judgement and hence reputation.

Nonetheless, gender roles are also fluid and flexible and are in transition with the influx of tourism over the last two decades. Although there have been struggles over changing gender roles, many sources of work and income are open primarily to women. Employment in free trade zones and tourism as maids or servers, and as hairdressers, etc. has offered women more opportunity to earn an income. While women work professionally in banks, hotels, and shops, work for them is also expanding in the informal sector of preparing food, drinks, crafts, and services for tourists. Formal employment in tourism has offered men fewer options—particularly for unskilled labor. Women’s work in the formal workplace is more likely stable and steady, even as it too, is limited and thus competitive. Men can turn to agriculture or fishing as traditional forms of earning a living, and some compete for the few jobs in tourism with lawn work, maintenance, construction, and sometimes work as servers and cooks. Many men work as “*motoconcheros*” (motorcyclists) in public transport, running errands, or as independent tour guides. Nonetheless, without education—and women outperform men in reaching higher education in the DR—men have limited choices. Dominican women can and do have success in public milieus, with enough cultural capital (access to wealth and prestige) to overcome gendered barriers. This is evident in the evolving roles women take on in both the private and public sectors. With the introduction of free-trade zones in the 1980s and tourism development in the 1990s, women are moving into the labor force in ever greater numbers. Women’s participation in the labor force rose to 54 percent, as of June 2021¹³

In these circumstances, women are important breadwinners in the family and are given freer reign. While it is unusual to find men cooking, cleaning, or caring for the children in the home, they have nonetheless stepped up their participation in household chores. Thus, one would expect that they are active participants in the handling and disposing of household waste. “Chopping” the grass and bushes in

¹³ World Bank Group, June 2021, “Labor Force Participation Rate, Female (% of Female Population Ages 15+) (Modeled ILO Estimate)” Downloaded January 18, 2022. <https://dataworldbank.org/indicator/SL.TLF.CACT.FE.ZS>

the patio or garden is usually done with a machete, and machetes are generally male tools. Thus, by extension, this is the man's job, whether husband, father, brother, son or hired help. In contrast, the broom is a woman's tool and is used to sweep up the patio (the home's yard; the space behind, in front, or on the side of the house). This may help to explain why a few men embraced composting during the TIPs and no woman reported trying composting, although one assigned a servant to try it. Thus, the complementary and overlapping gendered tasks, as well as changing roles of breadwinners, reinforce a context where men's and women's roles are fluid and are adapting to changing economic and domestic arrangements, even as they are rooted in stereotypical models of the ideal Eurocentric "traditional" family.

Girls, boys, men, and women within the household all deposit their solid waste in the appropriate container. However, women in Dominican families native to Samaná are responsible for the organic kitchen waste and fruit and vegetable peelings, which they put in a bucket and leave out for those with pigs or pig farms to collect. (In the case of pig farmers, it is often someone hired by the farmer who collects the organic waste.) Pig owners use these scraps to feed their pigs. The day before TIPs was scheduled to begin, collection of pig food was eliminated from the TIPs menu due to a pig pandemic and counsel from the UN Food and Agriculture Organization (FAO) to avoid collection of food waste for pig farmers. Nevertheless, all the native Dominican households said that they would do this and even some women whose households were not originally Dominican Samanese volunteered to save waste for pig food, although it was neither on the menu nor suggested.

Across this study, what is perhaps most remarkable is what is not gendered. For example, as discussed below, the role of handling household waste is not a woman's task. Men and women are motivated by practicality when managing when and by whom the waste in the house will be taken to the passing truck, dumped into a dumpster, or taken to another location. Men gave long lists of household trash, similar to the women. When expressing concerns about the trash entering the ecosystems, men were as likely as women to discuss the environment and feelings of frustration, sadness, and so on. Men may be, to some degree, more exposed to the visual impacts of the garbage crisis when they are working as fishermen in the bay, in agriculture, in public transport, and especially as tour guides where they can see the beaches through the eyes of the tourists. Thus, it is not an invisible or hypothetical concern, but something that is very real and impacting their daily lives. Men and women were both as likely to participate in a community cleanup, and to identify what is recyclable, etc.

In the workplace, the team observed many gendered distinctions almost everywhere. Among IWCs, men earn more than women, even as, with the exception of Sánchez, the team found more women than men working as IWCs. Men are also more likely at this level to supplement their work with more remunerative activities, such as driving a garbage truck for the municipality, driving a truck to collect from other locales (e.g., hotels), or in administrative work at the dump. When remunerations were explored further, explanations cropped up that are related to gender ideologies. Women are seen as not physically strong enough to handle heavier, more valuable materials and unable to withstand the difficult conditions for as long as men. The research also revealed that women are sometimes bullied by male IWCs so per force relegated to less rewarding areas to collect. They are often restricted in accessing the dumps out of safety concerns, such as risks of being sexually harassed by fellow IWCs or criminals. Collecting alone was thought to put women at higher risk. Women are also hampered by heavier domestic duties that limit their time and hours for collecting. In addition, some women are only

comfortable working on the landfill/dump when men were not there in order to minimize their exposure to sexual harassment, which further limits their working hours and income. There was no evidence a woman would be paid less, for example, for a bucket of pig food, than a man. Yet her ability to collect that bucket is hampered by factors tied to her gender.

In the SWM value chain, the roles of men and women were also shown to be significant. Women were not represented as owners of any of the aggregator businesses that the team identified as working on the peninsula or even in other areas of the country, although CCBO staff identified one woman-owned large aggregator/exporter in Punta Cana, DR. Women were poorly represented among employees. One owner said women are more detailed and better workers, but only two of the eleven aggregators employ women who are *not* relatives. One aggregator discussed the job of cleaning and sorting recyclables by the women, noting their good work. Yet in an international environmental NGO where half of the work is dedicated to sorting recyclables in a warehouse, this sorting is done exclusively by men, with one female employee (a Spanish national) working at the administrative level. Owners cited women's lack of physical strength as a reason not to employ them. Other aggregators offered no explanation. However, the one woman who was identified as running a large aggregator/upcycling business in Santo Domingo for her father reported that she specifically hires women and more women were found working there than in any other aggregator business at any level of the value chain. Other aggregators at most levels reported that their wives work with them, largely as bookkeepers, but CEBSE interviewers were not permitted by husbands to interview their wives.

Women's initiative and motivation, as well as a lack of other options, brings them to work at the lowest end of the value chain. Women have demonstrated their willingness to participate in this sector, embracing it not only as a way to make a living and support their families, but also as a root to "freedom." Worldwide, IWCs value the flexibility and freedom from supervision that informal waste collection provides, and the Samaná IWCs are no exception.

While both men and women value the flexibility and freedom that informal waste collecting allows, flexibility for women is crucial as they carry out their roles as financial earner, wife, homemaker, and often mother and/or caregiver to other family members.

To work as aggregators, women would likely need access to start-up funds. Here, business connections and family money seem to be key. Unfortunately, the IWCs interviewed lack both. Even larger aggregators reported having problems securing bank loans, and these loans would be even more difficult for IWCs to secure. Even where resources are available, however, as in the EcoRed/Ciudad Saludable project, men ran the equipment and utilized the truck, with women as supportive agents, although the head of the IWC association Samaná municipality had been a woman, now deceased.

It may be that women are restricted in this business for two reasons. The first is the challenge in accessing capital and resources to move into more profitable levels of the industry. Securing funding and loans is more difficult for these women due to their education and economic status and lack of the appropriate networks. Secondly, women are disadvantaged by cultural perceptions about what is and is not appropriate work for them. Women are, generally, excluded from work driving trucks, a necessity for advancing to a higher-level aggregator in this industry. Women are hampered by expectations surrounding male/female domains. Almost all small and medium level male aggregators borrowed money

from male family members to open their businesses. Women may be less likely to be able to borrow from male family members to start a business, such as aggregation, that is outside traditional women's gender roles. Women have shown a willingness and necessity to work outside the home, and the ability to move into higher levels in this industry could bring significant benefits to them. Structural constraints are rooted in cultural bias and long practiced discrimination, but they are neither natural nor inevitable.

5. Household Study

5.1 *Basura* (Trash, Waste, Garbage)

“I think of plastics, when you speak of trash, the only thing that comes to my mind is all the plastic and foam plates I see.”

Sánchez woman

Basura translates to trash or garbage. Other words used for trash, offered by participants, included *residuos*, *desperdicios*, and *desechos*. However, on the Samaná Peninsula, *basura* is the most common term and *residuos solidos* is generally considered septic waste. Perceptions and definitions surrounding “trash” were explored in several different questions such as: “What do you think of when you hear the word trash?”, “What kind of trash do you have/make in your house?”, “What is in the trash you throw away from your home?”, and “What do you put in your trash?” Consistently, there was a negative association with trash, with only a few people suggesting it was an opportunity. Approximately 50 percent of participants (with the exception of those in Sánchez and Arroyo Barril) used the term “organic,” suggesting they recognized discreet categories. All participants recognized distinctions in regard to trash, yet mixed into garbage receptacles were all types of trash, including biowaste, plastics, cartons, etc., with two exceptions: many Dominicans, but not all, set aside organic, edible waste for pigs and people frequently burned yard and bathroom waste together.

5.1.1 *What do you associate with trash?*

The question “What do you think of when you hear the word trash?” evoked multiple responses that were generally consistent across all six locations. For example, there were universally negative associations when people thought of trash. Terms offered included contamination/pollution, sickness, foulness, and/or dirtiness (*suciedad*), lack of hygiene and adversely affecting health. Trash was frequently associated with problems of one sort or another. Many people qualified their definition as “things that are no longer useful.” People often spoke of the potential to cause harm and bring illness and disease.

Daño a la naturaleza. La basura lo único que hace es contaminar. Sucio. Esta la basura que se pudre, como la comida. Y la basura que no se pudre, las fundas plásticas, botella de vidrio, papeles, cartón.

It damages nature. The only thing trash does is pollute. Dirty. There is garbage that rots, like food. And the garbage that does not rot, the plastic bags, glass bottle, papers, cardboard. (Samaná, man, 43)

Cuando hay mucho basura las personas se enferman.

When there is a lot of garbage, people get sick. (Las Terrenas, woman, 29)

He peleado con el Medio Ambiente por muchos años. Cada farmacia debe tener un contenedor especial para su basura.

I have fought with the Department of the Environment for many years. Every pharmacy should have a special container for its trash. (Las Terrenas, male, 72)

Contaminación, me da pena cuando miro hacia fuera, eso trae muchas enfermedades. toda era basura que se me de aquí enferma hasta mirarla. la basura trae mal olor. aquí llega todo (se refiere a la orilla de la playa done vive próxima.)

Pollution, it makes me sad when I look outside, it brings many diseases. I am sick of seeing all this trash. The garbage smells bad. Everything ends up here (referring to the beach next to her house). (Sánchez, woman, 37)

Enfermedad de los pulmones. Problemas a la salud. Falta de higiene.

Disease of the lungs. Health problems. Lack of hygiene. (Samaná, woman, 59)

A significant number of responses classified trash in different ways, for example, separating out plastics, paper, and food scraps. In Samaná, all but two household participants suggested there are different types of trash. This widespread distinction suggest that people have already organized or classified trash in their minds, drawing on technical terminology. This was a consistent pattern. In Las Terrenas, El Limón, Samaná, and Las Galeras, people often made the distinction using the word “organic.” In these locales, the word organic was used by foreigner and Dominican alike, although the people who used the word are all minimally educated through high school and are likely to have a university education. In Las Terrenas, four of the seven expatriates who used organic have a university level education or beyond as do six of the nine Dominican participants who used the term. This suggests that more highly educated people are more likely to understand and appreciate the classifying of trash and that they also have some technical exposure to this idea. Surprisingly, no one used this language in Sánchez where there was a recent program of classifying and recycling waste. Nor was the language used in Arroyo Barril. It may, therefore, be an artifact of data collection as Sánchez and Arroyo Barril shared the same interviewer. It may also be related to education levels. Sánchez was the city with the largest reported percentage of participants with a university level education, but it was also the location with the highest number of people (one third of participants) who reported having only a primary school education.

Table 3. Participants who use the word “organic”

Location	Dominican	Expatriates	Education Level		
			Primary	Secondary	University
Sánchez	0/30	N/A	10	7	13
Arroyo Barril	0/20	N/A	11	7	2
Las Terrenas*	9/23	7/7	3	15	10
El Limón	18/23	1/1	2	12	6
Samaná	17/30	N/A	6	14	10
Las Galleras	8/13	4/7	2	7	11

*Las Terrenas - one participant declined to respond; another reported no education.

Participants also identified non-organic trash as being the primary ingredient they associate with the word trash, recognizing that the unfolding environmental crisis grows out of certain types of trash. A 28-year-old Dominican woman in Sánchez responded to “What do you think about when you hear the word trash?” with this:

Pienso en plásticos, cuando me hablan de basura solo viene a mi mente todo el plástico que veo y los platos de foam.

I think of plastics, when you speak of trash, the only thing that comes to my mind is all the plastic and foam plates I see.

There were also several people who had something positive to say about trash, even if it was folded into an otherwise negative association. For example, the following responses reflect that participants from across different locations are thinking about trash, how trash is used, and that it may hold potential.

*Falta de organización. La basura es un trauma. Preocupación. Hay mucho trabajo para hacer. Los industrias tienen toda la responsabilidad en el tema de la basura. **Una oportunidad de negocio.** La basura no tiene ningún uso.*

*Lack of organization. Trash is a trauma. Worry. There is a lot of work to do. Industries bear full responsibility for garbage. **A business opportunity.** Trash has no use. (Las Galeras, woman, 43)*

*Contaminación, la basura en si tiene doble efecto. **Puede ser beneficiosa si la usamos bien ... hay diferentes, cuando un árbol se de gastas abono.** El plástico no se degrada. Si la mujer va al colmado cinco veces, son cinco funditos plásticos que trae. Ahora en el mar huele a plástico, no huele a vegetación. En la mañana cuando salgo a pescar, en el agua se pueden ver cenizas que parecen venir del caño que viene del vertedero.*

*Pollution, the trash has a double effect. **It can be beneficial if we use it well, there are different types. When a tree (dies), it provides fertilizer.** Plastic does not degrade. If a woman goes to the store five times, she comes home with five plastic bags. Now the ocean smells of plastic, it doesn't smell of vegetation. In the morning when I go fishing, in the water you can see ashes that appear to come from the dump. (Sánchez, man, 62)*

El recipiente de plásticos no son basureo porque son reusable y porque permiten una vida mas útil.

***The plastic containers are not garbage because they are reusable and because they allow for (another) useful life.** (Las Terrenas, woman, 38)*

5.1.2 What's in your Trash?

When people think about trash, they recall *plastic* primarily and putting plastic in their trash. The table below illustrates what people recalled was in their trash; plastic packaging and containers stand out as the most important items. Indeed, plastics are the three most commonly listed items—plastic packaging and containers (112/154), plastic bottles (94/154), and plastic bags (87/154). Biowaste, both food waste and yard waste, is the next most cited item, even though a significant number of people set aside food waste for pigs. Few people compost. There are data gaps between locations regarding hygiene products. For example, hygiene products are not listed by anyone in Sánchez, Las Terrenas, or El Limón. However, there was a lengthy discussion during the Samaná focus group discussion regarding the fact that toilet paper is often burned rather than thrown out in the garbage. Additional inquiries indicated

that this practice is not uncommon and is reportedly born out of concern over “fecal material” and modesty around hygiene. The other missing item is “pampers” (generic term for disposable diapers) which were rarely mentioned by the participants. This may be a result of their age range. One woman in the Sánchez focus group discussion told of finding a plastic bag consisting only of used pampers.

Table 4. Participant descriptions of items in their trash

City	Total participants	Cans, metal	Hygiene products, toilet paper	Plastic packaging containers	Plastic gallon jugs	Plastic bags	Plastic bottles	Foam	Glass bottles & jars	Cartons, juice, tetrabrick	Paper, cardboard	Biowaste, food, peelings, yardwaste
Sanchez	30	9		16		19	19	6	13		19	
Arroyo Barril	20	13	3	11		11	13	8	7		14	8
Las Terrenas	30			20		12	12	6	6			25
El Limon	24	4		18		8	14				10	13
Samana	30	5	19	29		20	25	4	19		19	18
Las Galeras	20	12	18	18	7	17	11	7	12	11	7	15
Grand Total	154	43	40	112	7	87	94	31	57	11	69	79

Based on field observations and discussions with interviewers, all members of the family use garbage bins. Women primarily prepare food, cook, and serve meals. It follows that they are the individuals in the households that use bins most frequently and also separate out organics for pig food. Meal preparation is primarily women’s work in Samaná. Daughters or other young women in the household may also prepare meals and assist with cleanup, segregating waste for animals. Separation of organic or biowaste for pigs does not necessarily include all biowaste. For example, 11 of the 16 participants in Samaná who reported separating organics for pig food also reported including biowaste in their trash. Yard waste and some other select organic items are not seen as edible food for pigs.

Participants reported removing trash from their homes with significant regularity, e.g., daily, every other day, or several times a week, and, in some locations, once a week. Daily removal, it was reported, is because it is hot and the garbage smells quickly. The question may have been confusing at times because participants in several locations mentioned taking trash directly to the truck, especially in Samaná where collection is consistent and frequent—garbage pickup is either on a Monday-Wednesday-Friday schedule or a Tuesday-Thursday-Saturday schedule. Garbage removal correlates to the trucks’ schedules, even in the outlying districts where garbage pickup is often only once a week or unreliable (Arroyo Barril, El Limón, and Las Galeras). Garbage removal, however, may also have referred to moving garbage from the house to the patio into a larger container that was later removed from the property.

Table 5. Participant reports on how often trash is collected

City	Total participants	Daily	Every other day; 3-4/week	2 times per week	Once a week or more	When the truck passes
Sanchez	30	13		2	6	2
Arroyo Barril	20	4		5	9	1
Las Terrenas	30	18	5		1	
El Limon	24	5	2	5	11	
Samana	30	6	24			
Las Galeras	20		4	7	9	
Grand Total	154	46	35	19	36	3

Garbage is kept in *zafacones* (garbage bins) that generally do not have tops, depending on the type of bin. These bins may have plastic bags—purchased at grocery stores or, more likely, reused from shopping trips—that are then closed and removed from the house. El Limón participants reported that garbage goes from the bin directly to a larger bag (e.g., a rice sack) that is then recycled (left at the curb) for the next pickup. Pig food is left in a bucket without a top so that it does not rapidly decompose before it is picked up.

5.2 Public Trash

During the Samaná focus group discussion, participants directly stated they thought that household waste was not the problem, but rather the problem was what happens to waste in the public milieu. The problem of public trash was also brought up and emphasized in other focus group discussions and was widely mentioned in the household data. In the Samaná focus group discussion, a man in his mid-30s, who worked for previous government administrations, reported that “the problem is not with household waste. In the public places, people throw their garbage, because people aren’t educated.” In El Limón, a woman in her late 20s remarked, “people eat at my food stand, and even with a garbage bin right there, they drop the trash on the ground.” The primary problem, many agreed, is public waste—i.e., what people do on the streets, beaches, and other public spaces, or, more accurately, what they *can* do with their waste in those spaces. There was a concern that people in the streets throw their waste everywhere and people with take-out food leave their foam containers on the streets or in the few overfilled bins.

It is not only the local community that is faced with this dilemma and the mounting problems it creates (unhygienic conditions, clogged drains, etc.). Inappropriately discarded waste is also a major problem on beaches in the region, affecting tourism. In the second focus group discussion in Las Galeras, tour guides complained that 25-30 buses arrive each weekend from Santo Domingo and visitors leave their garbage on the beach. The same complaint was voiced about the beaches in Las Terrenas, specifically Punta Poppy, where a concession for a parking lot on the beach was given to a private entity. In Las Galeras, tour guides spend hours on Mondays picking up trash with their unprotected hands. Many participants in Las Galeras referred to community projects undertaking this work. As witnessed elsewhere, except for the occasional community activity or independent volunteer, there is little infrastructure dedicated to the problem of plastic litter in public spaces.

5.2.1 Garbage in the Streets and Parks

“If you see garbage in the park or the street, what do you think happens to it? What kind of garbage is it, and can you tell me where it comes from?”

Table 6. Perceptions of types of waste in the parks and streets

City	Total participants	Plastic bottles	Styrofoam cups & containers	Plastic bags	Glass bottles & jars	Plastic plates/cups	Packaging, sm plastic bags	Cans and metals
Sanchez	30	24	25	17	17			
Arroyo Barril	20	20	16	17	12			2
Las Terrenas	30	27	25	27	7			
El Limon	24	21	15	17	11			
Samana	30	22	19	22	25	22	22	1
Las Galeras	20	17	11	17	16	15	15	
Grand Total	154	131	111	117	88	37	37	3

Universally, participants reported seeing trash in the streets and parks. Almost all participants mentioned foam cups and containers, plastic bottles and, to a lesser extent, glass bottles—items easily visible in public spaces across the peninsula. For example, 85 percent of participants mentioned plastic bottles, 76 percent mentioned plastic bags, and 72 percent mentioned Styrofoam or “foam.” Glass bottles, specifically beer and rum, were mentioned by 57 percent of participants. Less frequently listed items included plastic cups, plates, smaller bags from snacks, and cans. In Las Galeras, several participants mentioned clothes and shoes plastic bottles from hair products, and plastic herbicide containers. One respondent in Las Galeras replied to a question about garbage: “*Plástico, mas que nada, muchas cosas plásticos.*” (“Plastic, more than anything, many plastic things.”) In Samaná, two participants mentioned garbage bags tied and full of trash; another mentioned “dead dogs and pampers.” In Sánchez, there was also mention of garbage bags full of garbage in the streets and parks, confirming there is an intersection between public litter and poor household waste management strategies. In Sánchez, several focus group discussion participants referred to bags tied up and left in public spaces, such as the beach and in front of houses (also referenced in the household data). In Samaná, there was reference to people taking their plastic trash bags to an empty lot, but others mentioned people leaving it on the *malecón*. Plastic and trash were synonymous. Many participants would remark, “when you say trash, all I think of is plastic, all types of plastic.”

In general, participants across all locations recognized that people are responsible for this public trash. In addition, many mentioned wind, rain, and animals also facilitating the dispersal of trash. There was near unanimous recognition that the garbage ends up in the ravines, in the rivers, on the beaches, in the mangroves, and in the ocean where some participants mentioned it is eaten by fish. In Samaná, there were several participants who reported that the trash in the streets and parks runs into the gutters and culverts and creates flooding in the city. Reportedly, this began in 2010 in this city that slopes down to Samaná Bay. The city has attempted to address the problem by placing fencing upstream of the Bay, but this has created flooding in nearby neighborhoods.



Fencing on the Rio Pueblo Viejo, that runs through the city of Samaná. Right Neighborhood Zapatica in Samaná. Photo: Kathleen Skoczen for Clean Cities, Blue Ocean

Al mar va directo. Por la calle va directo y cuando llueve al mar va a parar.

It goes straight to the sea. It goes straight down the street and when it rains the sea is its last destination. (Sánchez, male, 59)

Mucha contaminación, la gente no va a querer sentarse en los parques por la contaminación, la basura se riega y se va a otros sitios.

A lot of pollution, people will not want to sit in the parks because of the pollution, the garbage is spread around and goes to other places. (Samaná, woman, 40)

Bueno, para me que si. Antes cuando era niña no vera tanta basura como veo ahora. Primero – La gente no tiene higiene en su casa. Segundo – La parte de los síndicos, los políticos antes se ocupaban. Ahora no se empeñan en limpiar el pueblo. Tercero – Falta de educación. Tanto nosotros, la humanidad, seres humanos, no tenemos esa regla de tener higiene, que va primero en las casa. No hay ley que multe a los que tiran basura.

Well, for me, yes. Before when I was a child I would not see as much garbage as I see now. First - People have no hygiene at home. Second - The part of the mayors, the politicians used to take care of it. Now they do not insist on cleaning the town. Third - Lack of education. All of us, humanity, human beings, do not have that rule of having hygiene, which starts in the house. There is no law that fines those who litter. (Samaná, woman, 38)

Hay contaminación, contamina al medio ambiente. Depende si son plásticos no se deshacen y la brisa se lo lleva al mar, y la hace daño a los peses.

There is pollution, it pollutes the environment. It depends if they are plastic, they do not fall apart and the breeze carries it to the sea, and it hurts the fish. (Samaná, woman, 52)

Mientras no se le dé solución al problema de la basura como la que está en el caño, eso no se arregla.

As long as the problem of garbage like the one in this ravine is not solved, then it is not fixed. (Arroyo Barril, man, 52)

Por aquí hay gente que tira fundas cuando llueve.

Around here there are people who throw bags with garbage when it rains. (Sánchez, woman, 25)

5.2.2 Garbage in the Rivers and on the Beaches

Participants were asked if they see garbage in the rivers and beaches, and how they felt about this. It was again nearly unanimous that people observe trash in rivers and on beaches. This too represents an intersection of public and household waste, as much of the garbage, according to participants, is washed down ravines, streams, and rivers and ends up on the beaches and in the sea. In some communities, this problem stems from the large number of weekend visitors, often from the capital district of Santo Domingo, who leave their trash on the beaches. The trash itself is slightly different than that seen on the streets. Participants identified plastics of all kinds, including those kinds found on the streets and parks, such as plastic bottles, plastic bags, Styrofoam, etc. However, on the beaches, participants also reported broken chairs, diapers, shoes, flipflops, clothes, plastic bottles, parts of washing machines, and products from fishers and other industrial activities, such as motor oil containers, etc.

Participants across the different locations discussed how inappropriately discarded waste has changed their relationship with beaches and the ocean. Several people reported they do not like to swim because they do not want to encounter garbage in the water and four participants from Sánchez told the interviewer they no longer go to the beach because of the waste problem. “I feel uncomfortable because if one goes swimming and collides with garbage, that is uncomfortable.” (Samaná, man, 56) Similar to questions regarding garbage on the streets, participants responded emotionally. Many identified concerns about the environment. People expressed rage, anger, annoyance, sadness, shame, powerlessness, helplessness, and grief. Although all participating communities discussed concerns about trash in the rivers and on the beaches, there were distinct issues in each location.

In Sánchez, participants mentioned the Rio Juna, a major river whose mouth and delta are near the city. Sánchez residents also mentioned trash of all kinds washing down canals and streams from the town dump, which is in close proximity to a series of waterways and Samaná Bay. This garbage flows into the Bay and some of it washes back on the beaches. It is evident in town along the coastline that the amount of trash increases significantly as one moves west toward the dump.¹⁴ The main beach in town, near the old dock, was once frequented by young boys either swimming or fishing for crabs, but this sight has become relatively rare, according to local residents who described the waves of garbage as a testament to a new era for the town. “Our beach was clean, it got contaminated after the plastic arrived.” (Sánchez, man, 59). Garbage on the beach in Sánchez, however, also comes from the town. In an interview, a longtime environmental activist described how much of the trash on the beach comes from activities in town. On Sundays, when people are enjoying fiestas, much of the waste produced from these activities (e.g., eating at fast food stands and drinking at bars or on the streets) ends up in the Gri River and washes down to the outlet near the town dock. This river also contributes to waste on the beaches due to the density of housing along its banks. This activist further described problems with household waste being released into the river:

¹⁴ It is important to remember that the fieldwork for this study was carried out before the province’s dumps had been remediated.

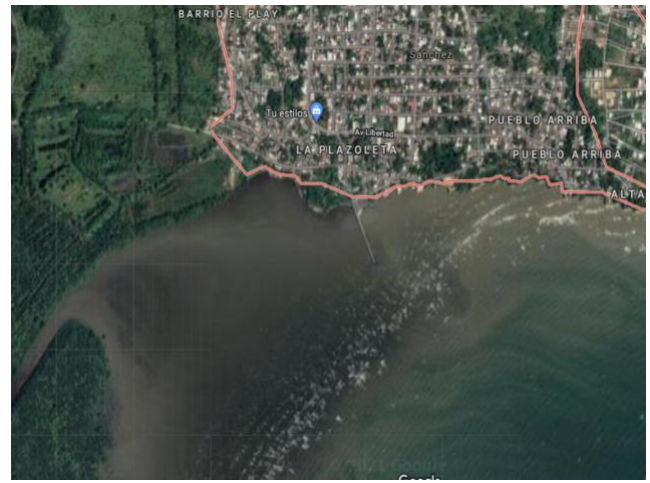
Kathleen: The Gri Gri river is parallel to the main street going into town. If people are in La Play it goes into [this river] too?

Participant: Exactly and that happens too with people living in the Plazoleta; they have a lot of new buildings over there and people used to throw the garbage from the fourth or the third floor directly to the river, tied in a plastic bag.

Kathleen: Does this still happen?

Participant: Yes, it still happens, people from the 3rd and 4th floor throw their garbage directly to the river, it's incredible. It is hard to see that, but it happens, it happens.

(Sánchez, woman, 6/28/2021)



Left: Aerial view of Sánchez and Los Haitises shoreline. The Rio Yuna mouth is to the right. Other outlets for the Rio Yuna are further southeast on the coastline of Los Haitises National Park. Photo: Kathleen Skoczen for Clean Cities, Blue Ocean

Right: Google Map image of the western shoreline in Sánchez, note the location of Plazoleta and the mouth/delta of the Rio Yuna.

Other residents, particularly those in neighborhoods with close proximity to the coastline, see people throwing garbage onto the beaches:

En la playa de aquí eso es siempre, mucha gente la usa como vertedero. Los “buscones” improvisados recogen y botan la basura. Se han dado muchos enfrentamientos.

On the beach here, always, many people use it as a landfill. The improvised “buscones” (hustlers) collect and throw the garbage (there). There have been many confrontations. (Sánchez, man, 49)

En esta misma playa de aquí es de todo que se ve. Deberíamos preguntarnos que no hay. Y en la calle ni se diga. Fijese que estamos en el frente y eso es un “basural” donde quiera.

From here on this beach, you see everything. We should ask ourselves what ISN'T here. Don't even get me started on the street! Note that we're here, in front (of the house), and it's a “garbage dump” everywhere you look. (Sánchez, man, 59)

In Samaná, participants cited streams, ravines, and canyons as sources of much plastic waste, as well as people leaving or throwing garbage in the streets and particularly—as observed by researchers—leaving waste on the *malecón*. Most evenings, but especially on weekends, the Samaná *malecón* becomes an

outdoor festival. Since the start of the pandemic, the *malecón* has been overwhelmed by visitor. Cars, SUVs, and trucks, more numerous and expensive than most local residents can afford, are parked all along the main road, making transportation hazardous. Locals reported that families and groups from Santo Domingo, avoiding curfews, come to the province for the weekend and “party” on the *malecón* at night. There are frequently people playing music, sometimes bands, people playing games, family gatherings, and many small restaurants and a line of fast-food stands. Across from the *malecón* is a gathering place that is akin to an outdoor disco, where hundreds of people sometimes congregate to dance, eat and drink, and play music. The amount of trash generated is significant. Unless it is cleaned up by the municipality—which is the expectation—the waste is vulnerable to being blown or washed into Samaná Bay. Frequently, participants referenced trash washing out of the dump, dogs ripping open bags, and the wind and water dispersing waste into the environment. The town itself rises up above the coastline so trash in the streets can easily flow down to the Bay.

No me siento bien porque esa basura lo hace daño a uno y a la naturaleza.

I don't feel good because that garbage is damaging to people and to nature.
(Samaná, woman, 62)

Si, Me siento mal porque eso se ve muy feo y esa basura se va al agua y hace daño a los peces pero eso también le hace daño a uno.

Yes, I feel bad because that looks very ugly and that garbage goes into the water and hurts the fish but that also hurts everyone.
(Samaná, man, 51)

Viene porque la gente la tira en algún lado, en la misma playa o en otro lado y la corriente la trae. Me siento mal porque eso contamina la naturaleza y también a nosotros. Nos hace daño a la salud y los peces y animales que viven en el mar.

It comes because people throw it somewhere, on the same beach or elsewhere and the current carries it. I feel bad because that contaminates the nature and also us. It hurts our health and the fish and animals that live in the sea. (Samaná, woman, 43)

Se riega, los perros la riega, puede traer enfermedades. Trae moscas de todo. La gente la tira o la brisa la trae.

It is spread around, the dogs spread it, it can bring diseases. It brings flies and everything. People throw it or the breeze brings it. (Samaná, woman, 69)

Mayormente plásticos, foam, botellas. De los calles y las personas cuando van a la playa la tiran y son arrastres al mar.

Mostly plastics, foam, bottles. From the streets and people when they go to the beach, they throw it and it is dragged into the sea. (Samaná, woman, 29)

Si, siempre veo. Llegan ahí porque la gente la tira, la tira en los ríos, el mar y la marea la trae a las playas. La gente la deja tirada cuando visita la playa.

Yes, I always see. It gets there because people throw it away, they throw it in the rivers, the sea and the tide carries [trash] to the beaches. People leave it thrown around when visiting the beach. (Samaná, woman, 33)

In Las Galeras, there has been heightened concern about public trash. Participants in the focus group discussions told of community pressure and actions that have improved the situation. However, a particular concern in Las Galeras is the increased number of “Metro” buses arriving on beaches, bringing 800-1,000 visitors in one weekend who have no appropriate way to dispose of their trash so they leave it on the beach.

No es que nosotros tenemos basura aquí, sino que...la gente de aquí de Las Galeras no consume tanto plástico como las personas que vienen, porque todo el que viene es sábado y domingo en la playita, vienen 800 personas, 1000 personas, toda esa gente traen una fundita o una funda, otros traen una nevera, se beben 10 cervezas 4 agua, se queda aquí esa basura, ellos no se la llevan, ese es el problema que hay con la basura en las playas, en la playa aquí no hay en todas partes zafacones que eso es otra problemática. Tendría que haber zafacón, una personas encargada en las playas de recoger esa basura y no lo hay, esa es la problemática que hay en las playas que nos afectan a nosotros, no somos nosotros.

It is not that we have garbage here, but that ... the people here in Las Galeras do not consume as much plastic as the people who come, because everyone who comes Saturday and Sunday are at the beach, 800 people come, 1000 people, all those people bring a bag, others bring a cooler, they drink 10 beers, 4 water bottles, that garbage stays here, they do not take it away, that is the problem with garbage on the beaches; here there are not trash cans everywhere, that is another problem. There should be a trash can, [and] a person in charge of collecting that garbage on the beaches and there is none, that is the problem that exists on the beaches that affects us, it is not us. (FGD2-Las Galeras, man)

Me siento frustrada, impotente, triste. Quisiera que hubiera un cambio. Pienso en la biodiversidad, tanto en la tierra como en el mar como en todos los seres vivos. El micro-plásticos y el micro-foam son mis mayores frustraciones

I feel frustrated, powerless, sad. I wish there was a change. I think of biodiversity, both on land and in the sea as in all living things. Micro-plastics and micro-foam are my biggest frustrations. (Las Galeras, Woman, 37)

5.2.3 More or Less Trash?

Participants were asked about the amount of garbage in the community. Almost two-thirds reported there is more trash today than when they were young. This question is subjective yet provides insight into how individuals perceive the garbage situation in their communities. Across all locations, participants felt there was a lack of awareness and a lack of education about trash. Other causes mentioned in all locations were increases in population, a lack of consciousness, a lack of respect, and a lack of values. Participants also mentioned poor socialization in the home. It was also common for people to comment on the increase in plastics. Some individuals discussed the increase in plastic packaging and the increase in consumption of commercial goods.

The data may also suggest some locations have seen a more significant increase in public litter and/or provide insights into where the situation has visibly deteriorated. For example, all the Las Galeras participants thought the situation had worsened, even as two participants qualified their responses with

the fact that they have not been in the country since childhood. The once sleepy outpost of Las Galeras is now a popular beach destination, with an expanding expatriate population. It was reported in the two focus group discussions that most public trash is brought in by tourists from Santo Domingo. At the first Las Galeras focus group discussion, participants noted that items left on the beach often are expensive brands that are not sold or consumed locally and are found only in Santo Domingo. In the second focus group discussion as described above, tour guides reported that buses from Santo Domingo arrive and visitors, having no immediate alternative for disposing of waste, leave their trash on the beach.

Participants also observed an increase in visible trash in the city of Samaná. There are more visitors from Santo Domingo—the number of visits grew during the pandemic—but there are not a significant number of international tourists staying in the city except for the all-inclusive resort on a hill above the city. This contrasts with Las Terrenas and Las Galeras which are situated along wide beaches. The only beach in Samaná is located on the grounds of the all-inclusive resort and is difficult to access. Tourists come from many places via buses to board water transport for Los Haitises, whale watch trips, or Cayo Levantado; rarely do they spend much time in the city itself. In the last few years, cruise ships have been dropping passengers off in town, but there are few of them and they do not generally stay long. More often, these passengers are picked up by a tour guide for an eco-excursion somewhere on the peninsula. Thus, aside from the weekend parties on the *malecón*, the garbage generated and left in the streets is reported to be from three sources: 1) people throwing their garbage directly in the streets and parks; 2) garbage, intended for the dump, being left in piles or on improvised dump sites and then being spread around by the wind, rain, and animals; and 3) garbage that is washed out of the dump.¹⁵ It is worth noting that the level of affluence in Samaná has increased, leading to an increase in the availability and consumption of commercial goods.

Participants who reported thinking there is less trash or the same amount also often noted that there is now municipal garbage pickup that was not present in the past or that the pickup has improved. A small number of individuals suggested that there is more consciousness around garbage than in the past.

Table 7. Perceptions around the increase of trash

More or less trash today?

City	Total participants	More trash today	Less trash or same	Did not respond
Sanchez	30	23	5	2
Arroyo Barril	20	10	10	
Las Terrenas	30	17	13	
El Limon	24	16	6	2
Samana	30	16	6	8
Las Galeras	20	20	0	
Grand Total	154	102	40	12

¹⁵ The dump is being remediated and should not still be leaking solid waste. The national government plans to replace the dump with a new sanitary landfill in the next five years or less.

5.2.4 Cleaning Up

Both the Dominican and expatriate communities and households have noted the plague of plastic in their communities, on their beaches, in the rivers, in the streets and parks, and in their households. Throughout this report, there are comments and summaries of the many concerns around plastic trash in public spaces—it was a consistent complaint and concern. Clearly, the Dominican population sees this problem and is very concerned about it. Plastic was singled out by several participants as a major contributor to trash in general, a visible problem in their communities, and a major factor in their own waste management. From the very start of interviews, participants mentioned plastic as the primary product in their trash, particularly when considered from a historical perspective. Many household residents reported removing organic waste for pigs (see section 5.4.4). and described separating out their glass bottles and other specific items for recyclers who circulate through town.

Nonetheless, as noted by many participants, plastic packaging—and consequently plastic waste—has increased noticeably: “People now want everything in containers, little jars, plastics, soft drinks; people forgot how to buy in bulk.” (Las Galeras, woman, 43) Indeed, the little corner *colmados* (small mom and pop shops) and big *almacenes* (large warehouse stores) have been replaced by the modern grocery store. People no longer buy a pound of beans or rice from a large sack in bulk. Instead, the item is wrapped in packaging that is, with rare exception, plastic: “...everything is wrapped in materials that become garbage.” (Las Galeras, woman, 53) Additionally, several “China stores” have opened across the peninsula that specialize in all things plastic: plastic chairs, plastic shoes, storage containers, plastic decorations, etc. The question becomes how to manage this onslaught of plastic at the household level and how it impacts public space.

Participants were questioned about who should be responsible for the trash in the streets and on the beaches. Fifty-eight percent responded that it is the town government’s responsibility; another 28 percent said the town government and people (residents); and 16 percent said it was up to people alone. Many participants added to or qualified their response by stating that people need to take more responsibility and/or behave more responsibly in public.

Table 8. Perceptions of responsibility for collecting and disposing of public waste

City	Total participants	Ayunamiento/ govt	People & govt	People
Sanchez	30	16	11	3
Arroyo Barril	20	11	9	
Las Terrenas	30	17	6	6
El Limon	24	4	8	8
Samana	30	21	9	8
Las Galeras	20	20	0	
Grand Total	154	89	43	25

Causes identified for the public plastic crisis revolved around public and private accountability. While participants clearly thought that local governments (*ayuntamientos*) bear responsibility, they also realized that individuals are responsible, because 1) they are reckless and dispose of trash irresponsibly and 2) they are not educating or socializing their children as they should or had done in the past. Participants were specific that people (nowadays) lack education, do not socialize children, and do not practice or learn appropriate hygiene. Nonetheless, there was also recognition that plastic is a game-changer for waste management at the domestic and community level. A few responses mentioned that companies and businesses need to do more or that there should be alternatives. Many individuals acknowledged not only are there more people than before, but there is also more packaging and more plastic than ever before. Education about garbage was raised repeatedly in response to the problems with trash being put in places it should not be. A fisherman in Arroyo Barril reported that he had thrown his garbage into the river until he participated in the interview for this study. It struck him then that he was causing harm to the place where he earns a living. Although a few participants volunteered that they do not think about trash in public spaces, a majority voiced strong concerns over it.

Si, cansada, pienso que tengo rabia, impotencia. Ahora hay mas. Antes la producción de productos de consumo no venia tanto en plástico. El consumismo también me luye.

Yes, tired, I think I have anger, helplessness. Now there is more. Before the production of consumer products did not come so much in plastic. Consumerism also hurts me. (Las Galeras, woman, 30)

Los turistas ven eso y no se quieren comer nada por la basura.

The tourists see this and they don't want to eat anything because of this trash. (Samaná, woman, 40)

Me gustaría que alguien cogiera mando de los potes (envases plásticos), hay muchos.

I would like someone to take control of the jars (plastic containers); there are a lot. (Arroyo Barril, woman, 49)

Plásticos, contaminación. La mejoría de la basura que se produce es del plástico.

Plastics, pollution. Most of the garbage that is produced is plastic. (Las Galeras, woman, 48)

Bueno yo, yo corroboro con ella, porque la basura se está recogiendo, donde yo veo una inquietud es que hay personas que, la basura como refresco, ese tipo de cosas que a veces no hay muchos contenedores en la calle, y a veces la obligación de tirar la basura donde quiera así y eso es algo que aqueja mucho porque, la basura que se recoge en la casa si la están recogiendo y la están botando el día que pase el camión, pero, esa que la gente, que toma mucho refresco, por la falta de conciencia, que no se concientizan, muchas veces, una fundita de agua, me bebo un refresco, lo tiro ahí y eso no importa, que

Well, I corroborate with (another female participant), because the garbage is being collected, where I see a concern is that there are people who that, with garbage like soda bottles - that kind of thing, that sometimes there are not many trash bins on the street, and sometimes they are obliged to throw the garbage wherever they want like that and that is something that is very bothersome (harmful) because the garbage that is collected in the house, if they are collecting it and they are throwing it away the day the truck passes, (that's one thing) but the

hay que ver como se concientiza un poco mejor, para la gente, para que la gente no siga haciendo ese tipo de cosas.

people, who drink a lot of soda, due to the lack of awareness, who do not become aware, many times, (for example they have) a small bottle of water, or drink a soda, (and) throw it there and that does not matter. You have to see how to raise their awareness a little more, for the people, so that people don't keep doing that kind of thing. (FGD Arroyo Barril, man)

5.2.5 Community Work

Table 9. Participants who have participated in a community trash cleanup

City/District	Yes	No
Samaná	2	28
Las Galeras	3	14
Sánchez	11	18
Arroyo Barril	4	14
Las Terrenas	19	11
El Limón	13	11

The answers to this question varied significantly with location. In Samaná, there were very few individuals who reported participating in community activities. There was ample discussion around this topic in the Samaná focus group. A woman who had been president of her neighborhood association reported that it completed several neighborhood cleanups before she left and the association fell apart. A young man in the focus group discussion stated he was the president of his neighborhood association but had not organized any cleanups. Finally, another man in the focus group discussion proclaimed there are no neighborhood associations in his area, suggesting that there is little activity by these associations (which seem to be more active in other locations).

In Las Galeras, when asked about participating in a community cleanup project, only three household participants responded positively. However, the most enthusiastic community participation was documented during focus group discussions. This is perhaps due to the relatively sudden and significant increase in plastic trash—much resulting from increased visitors from Santo Domingo in the time of the Covid curfews. The participants all thought the local government should be responsible for cleaning up the waste. This may indicate the absence of the government and the frustration of local residents who are left to resolve these issues with no government support. The community is relatively small and seems to be tightly integrated. In the first focus group discussion, participants reported that there is a Facebook group, Sana Vida (healthy life), that regularly communicates and organizes activities, including beach cleanups. The beach cleanups happen with significant regularity, according to the women present who had started the Facebook group.

The second focus group discussion in Las Galeras was attended by men who were either fishermen or tour guides. The participants all said the Facebook group was very successful and they had participated in some of these activities. The tour guides discussed cleaning up the beaches on Mondays after the bus

passengers leave their trash from their weekend excursions. The tour guides, sometimes referred to derogatorily as *tigres* or *buscones*, offered an array of potential solutions. They talked about handing each group of tourists a bag when they get off the bus for their visit to the beach, locating more garbage bins on beaches, and holding drivers accountable. They described “a brigade” that addresses hidden waste by searching where the trash is not easily found.

Nosotros hicimos una brigada con, vinieron hasta gente de medio ambiente con nosotros y en una hora, que hicimos la ruta del diablo, que es donde menos personas van, ahí nosotros fuimos y llenamos dos vehículos de basura, de plásticos que la gente tira. Una parte vino aquí a la playa, sacando. Pero hay poca preocupación con la basura.

We made a brigade, even people from Department of the Environment came with us, and in an hour we did the devil's route, which is where fewer people go; there we went and filled two vehicles with garbage, with plastics that people throw away. Some came here to the beach, taking out [the garbage]. But there is little concern with garbage. (FGD-I Las Galeras, Man)

Sánchez participants mentioned more activity regarding associations, with 11 people reporting they have worked on beach and street cleanups. Several participants mentioned that there have been community activities, supported by CEBSE, in the nearby hamlet of Las Garitas (~11 km from Sánchez).

Si nosotros buscamos revistas para hacer vestidos para un desfile. Recogíamos los tapitas de cerveza para hacer vestidos. [Interviewers note: Sobre el desfile - ecofashion es un grupo que hace desfiles de moda ecología. Recogíamos cosas que para otra persona es basura se le puede dar otra utilidad. El vestido se usa en muchos desfiles. Lo hacíamos desde 2016. Se cancelo el desfile ano pasado por el pandemia.]

We look for magazines to make dresses for a parade. We collect beer caps to make dresses. [Interviewers note: About the show - ecofashion is a group that does ecology fashion shows.] We collect things that to someone else is garbage and can be given another use. The dress is one example in many parades. We have been doing it since 2016. The parade was canceled last year due to the pandemic.] (Sánchez, woman, 28)

In Arroyo Barril, only a few people stated they have participated in community activities. Activities are less proactive in this community and instead are aimed at addressing other neighborhood problems.

Nos hemos reunido porque hay una vecina que quema cosas. Me queda cerca y la hija mía se congestiona con el humo.

We have met because there is a neighbor who burns things. It is close to me, and my daughter gets congested with the smoke. (Arroyo Barril, woman, 17)

Cuando hay que destapar el caño nosotros somos que lo hacemos. Cuando llueve da pena (se tapa de basura.)

When it is necessary to unclog the stream, we are the ones who do it. When it rains it is a pity (it is clogged with garbage). (Arroyo Barril, man, 52)

Arroyo Barril, unlike Las Galeras, is a heavily populated, diverse area with no clear town center. It is, nonetheless, a community that is frustrated and saddened by the lack of a structural solution to waste. The success of the TIPs research made this clear. Participants in Arroyo Barril acted as informal educators, recruiting neighbors while other neighbors, looking on, asked to participate.

Across the peninsula/province, many localized attempts to deal with public plastic waste were reported; yet it was also reported that the trash on tourist beaches is only the tip of the iceberg. As described in nearly all focus groups and among many household participants, the garbage left on small inlet beaches, in neighborhood creeks, streams, and ravines, and in farmers' fields, generally far removed from view, is mounting: Abandoned trash is piling up and participants expressed concern. **If the CCBO participants are representative of the general population, Dominicans and expatriates alike recognize this problem and are ready to do what they can to solve it.**

5.3 Household Trash

Trash inside the household is kept primarily in the kitchen, the bathrooms, and occasionally in the patio. When trash is removed from the house, it is often stored in the patio if it is not taken directly to a truck or dumpster. Less frequently, the waste is burned or thrown into a river (or a combination of both). It is more often women who remove trash from the home, but it depends on who is available to perform the chore. There is no strict division of labor around household waste management. Instead, it seems to be driven by practicalities.

Separating or classifying trash is neither new nor unfamiliar across the peninsula. Separating out bottles for either deposit or to give or sell to a collector is universal across the peninsula. Setting aside other items for collectors is also normative behavior across all Dominican households, and rarely is it done with an expectation of payment. There is a long-standing practice of setting aside certain items to either recycle or sell to someone collecting them. Soda and beer bottles can be returned to the vendor or saved for the “*botellero*” (bottle man). There is also a widespread practice of setting aside other bottles for the bottle man (rum, etc.) and metal or cardboard items. Trucks roam through the streets and main arteries that connect cities blaring “metals, metals, money for metals” through crackling speakers. Many Dominicans separate out trash for pig food and occasionally to make “*abono*” (fertilizer for plants). Separating out certain waste to burn is not uncommon; yard waste and bathroom waste are still burned with alarming regularity.

Frequently, participants identified themselves as the person who takes out the trash. This was a significant trend in the data and may be an artifact of the interview process. Only a few respondents (three in Las Terrenas and one in Sánchez) reported having hired help. Eleven households in Arroyo Barril reported men are in charge of taking out the garbage and eight reported women are in charge. Eight participants also qualified that the trash is taken out by anyone who is available—further confirmed by several participants who reported that women take out the garbage because they are in the house when the truck passes.

5.3.1 Who takes out the trash?

Table 10. Demographic correlated with who is responsible for the trash

City	Total	Female	Male	Age	Religion*			Nationality		Who takes out the trash?		
					E	C	O	Dominican	Other	Female	Male	Other/Anyone
Sánchez	30	23	7	25-70	14	12	4	30	0	18	8	6
Arroyo Barril	20	14	6	18-68	3	16	1	20	0	8	11	8
Las Terrenas	30	13	17	18-72	10	8	12	22	8	16	12	6
El Limón	24	8	16	20-60	5	14	1	19	1	12	12	0
Samaná	30	24	6	18-73	7	13	10	30	0	19	6	5
Las Galleras	20	15	5	30-54	2	1	17	13	7	10	5	5
Totals	154									83	36	30

*E = Evangelical, C = Catholic, O = Other

There is no strict division of labor in taking out the trash. The responses suggest it is more likely to be a woman, but also indicate it is whoever is available at home when the task needs to be completed. This is a pragmatic and obvious resolution to trash disposal in the province where trash pickup is not necessarily consistent or reliable, leaving it curbside is not desirable, and where employment patterns are in flux and women are increasingly working outside the home. The fact that trash can quickly smell and become a nuisance and potentially a problem also suggests that a pragmatic, flexible response is warranted. But even when it is not a time-restricted activity, waste disposal is still a household task that is shared across genders and generations.

Por ejemplo, en la casa de nosotros, la saca papi, la saca mami, el que quiere y este ahí, como es un día a la semana.

For example, in our house, papi takes it out, mami takes it out, whoever wants to and is there, as we do it one day a week. (Las Galeras, FGD2, man).

Mi mama, yo casi nunca estoy en casa cuando el camión pasa.

My mom, I'm hardly ever at home when the truck passes. (Sánchez, man, 50)

Mi, mamá. La que puede, a veces hasta mi nina. Pero mi mamá vive al lado y como yo trabajo mami la saca.

My mama. Whoever can, sometimes my daughter. But my mama lives next door and as I work, she takes it out. (Sánchez, woman, 28)

Un día mi mama, un día mi hermano, y otro día yo.

One day my mother, one day my brother and another day me. (Las Terrenas, man, 20)

<i>Mi hija y yo. Casi siempre me toca a mí. Si no la saco es probable que se quede por una semana más. (La hija responde: “Eso pesa mucho, yo sin ayuda no la saco.</i>	My daughter and me. It's almost always my responsibility. If I don't take it out, it is likely to stay for another week. (The daughter responds: “That is very heavy, I won't take it out without help.” (Sánchez, woman, 46)
<i>El que puede; pero de tarde es casi siempre la señora mía (esposa) que barre</i>	The one who can; but in the afternoon it is almost always my wife who sweeps the yard. (Sánchez, man, 47)
<i>Mi nuera. Vive detrás. Ella es que casi siempre lo hace. No, la saca quien puede, pero como ella siempre esta aquí lo hace frecuentemente.</i>	My daughter-in-law, she lives behind us. She almost always does it. No, whoever can take it out, but since she's always here, she does it frequently. (Arroyo Barril, woman, 62)

5.3.2 Where do you keep your trash?

A summary from an interviewer:

People very often reuse shopping bags to put garbage in trash cans. These trash cans are very diverse, some with a lid, others not. Most are old tanks or broken buckets that are reused as trash cans. Some people put all the garbage that is already in a reused plastic bag inside other bigger sacks (such as those of rice or sugar) and the truck takes it (the big sacks) with everything inside.

Garbage is stored primarily in a family's patio located behind, in front, or on the side of their house. This response was fairly consistent across all participants and locations. In city settings, it was often reported that trash goes directly to the trucks while participants in other settings reported taking their trash to a *contenedor* (a plastic dumpster or tank [50-gallon drum]) or a location on a main street. However, trash may be placed first in the patio then taken to the truck or dumpster. The placement in the patio, particularly if not in a covered container, is most likely why illegal dumping of garbage is reported to accelerate when it rains. In the Samaná focus group discussion, a woman described an empty lot in the center of the Samaná where people throw their trash. The municipal garbage truck comes regularly and removes it.

Participants reported the reasons for using dumpsters or improvised locations include the lack of a set truck schedule, the inability of trucks to fit down narrow streets at times, and/or for household convenience. In these settings, where people reported irregular pickups, some may also report that people throw their trash in rivers, hand it off to *motoconchos* (motorcyclists for hire) or burn it. In Las Galeras, some people pay to have their garbage removed by private citizens either regularly or sporadically. Participants were asked how they dispose of household waste.

Como te dije la basura de comida va a un cubo para los cerdos. Toda la otra basura va a un tanque pequeño que hay atrás de la casa, ahí se va echando todo hasta que pas el camión. [nota: tiene un tanque plástico mediano sin tapa que se pone detrás de la casa.]

Like I said, food waste is put in a bucket for the pigs. All the other trash goes to a small tank that is behind the house, there we throw everything until the truck comes by. [note: he has a medium plastic tank without a top that is behind the house.] (Samaná, man, 42)

Viene un señor con una carreta, 4 veces a la semana, se la paga. Hay un señor que tiene mas o menos 30 anos recogiendo la basura de alrededor 15 familias que viven en esa zona. El señor anda en un caballo con un oparejo y ahí pone la basura que colecta.

A man comes with a cart, four times a week, and I pay him. There is a man who has been collecting garbage for about 30 years for 15 families that live in this area. The man has a horse with a cart and puts the garbage in that. (Las Galeras, woman, 48)

5.3.3 Separating Trash

“Classifying garbage” has been introduced at various times in the recent past; however, separating out types of garbage has deep roots in Dominican communities. There is a long-standing practice of setting aside certain items to either recycle or sell to someone collecting them. Soda and beer bottles that can be returned to the vendor or saved for the “bottle man.” There is also a widespread practice of setting aside other bottles for the bottle man (rum, etc.) and metal or cardboard items. Trucks roam through the streets and main arteries that connect cities blaring “metals, metals, money for metals” through speakers. These items are rarely set aside with an expectation of payment. Among residents in this rural region of the DR, payment is not an expectation¹⁶.

Another widespread practice is setting aside food waste for neighbors who keep pigs or for pig farmers or intermediaries who collect the food to deliver to the farmer. A seemingly disparate practice exists across the peninsula of collecting this biowaste. People also practice different degrees of using biowaste in their houses, for example, putting coffee grinds on plants or using specific items in a similar fashion.

The issue of separating plastics was discussed by some interview participants and by some focus group participants. A project (in President Leonel’s first administration 2008-2012) called *Dominicana Limpia* was recalled by several individuals. In Las Terrenas, there were *Centros de Acopias* (collection points) where people brought plastics. Focus group participants spoke enthusiastically about this practice, considering it a practical solution to the problem of plastic waste; they also expressed frustration that the program ended. In Sánchez, there was a mention of a man who had been collecting plastics, driving around in his truck to retrieve them, and taking them out of the province to sell. He has since stopped

¹⁶ The author’s ethnographic experience over 30 years finds that people are more likely to ask, ‘why would we expect to be paid?’ Children collecting bottles to retrieve deposits is seen as a service to dispose of unwanted clutter and there is an understanding that is the bottles are worth little to the owner, but much to the children. This ethos is extended to itinerant recyclers—domestic residents rarely expect to be paid by the “bottle man,” the “metalero” (someone who collects metals), or a truck that comes by to collect plastics. On the one hand, it is a service to the household, taking away unwanted clutter, and on the other hand, it is helping someone at no cost to the homeowner. extended to itinerant recyclers—domestic residents rarely expect to be paid by the “bottle man,” the “metalero” (someone who collects

this practice. In Samaná, participants remembered the program *Dominicana Limpia*, but did not recall any drop-off places for plastic. The report on aggregators confirms that collectors continue to operate on the peninsula.

In Samaná, TIPs suggested that residents are “burnt out” because of the many projects that have come and gone without concrete results. There have been previous studies and efforts at recycling that have not realized long-term solutions. Samaná is also the location with reliable and frequent household trash pickup by the town, assuming the residents have good access to the truck route.

In Sánchez, there is presently a small warehouse (operated by Parley for the Oceans) that collects only polyethylene terephthalate (PET or PETE) plastic bottles (leaving foam and other plastics in situ) from streets, parks, beaches, mangroves, and the water. Individuals do not bring their bottles to this warehouse. Rather, the employees retrieve bottles themselves. The NGO then separates the plastics appropriately. A truck comes from Santiago approximately every other week to return the plastics to Santiago for processing. This project is going to expand to include schools in the Sánchez district and Arroyo Barril. School children will earn points for their schools based on how many plastic bottles they bring in. These points will be used to secure technology for their schools. There will be competitions between schools, with winning schools awarded bigger prizes. The most recent report from a municipal employee (who also worked on this research project) confirmed that Parley for the Oceans has agreed to let Sánchez residents drop their plastic bottles at its warehouse.

Perhaps more importantly, the current government administration is prioritizing garbage pickup. Thus, household trash is less of a concern according to participants in the focus group discussion and motivation to separate out recyclables may be part of this larger attitude.

It is important to note that many participants mentioned the desire and necessity to classify trash. Individuals not only expressed a willingness to do this, but were also certain that, with enough education, leadership, and communication, people would readily participate and prepare house waste for proper recycling. The TIPs (see Annex A) strongly suggested that segregating waste is not only readily accepted, but is perceived as empowering, especially for poor people who have little control over their environment or their cities. Segregating waste, with the assurance that recyclables will actually be recycled, is a kind of antidote to the helplessness, sadness, and frustration that many residents associate with plastic waste in their environment,

“Me dio una sensación como que estaba haciendo algo por el planeta, como que soy importante para mi comunidad, a la vez una sensación de orgullo y orden.”

“It gave me a feeling like I was doing something for the planet, like I’m important to my community, at the same time a sense of pride and order.” (from a poor woman)

“Para mi esta experiencia fue como organizar las gavetas y/o closet de mi habitación, me siento organizada y me siento importante por hacer algo por el medio ambiente.”

“For me this experience was like organizing the drawers and/or closet in my room, I feel organized and I feel important to do something for the environment.”

5.3.4 Burning Trash

Burning is indiscriminate across all six locations where people were interviewed. Participants discussed burning garbage as something that bothers them, for example when their neighbors do it or if it is being done at the dump. A small number of participants reported that they themselves burn trash, yet the comments around trash being burned suggested it is happening in all locales. A countryside practice is sweeping up yard waste (due to the constant shedding of leaves, for example) and burning it. Since yard waste is be considered “*basura*,” it may not be accurately reported in the data. Anecdotal reports suggest that people sweep their patios or in front of their houses and burn the pile, which may include incidental trash, such as plastic bottles and snack packaging. In Samaná, one respondent stated that certain kinds of trash—papers, for example—are good for burning. As discussed previously, in some locations, people may dispose properly of household trash, but take their bathroom trash, in a plastic bag, and burn it with the yard waste.

In Sánchez, four household interviewees reported they burn their trash. In Arroyo Barril, eight household interview participants reported burning their trash and, in Las Terrenas, three reported burning their garbage. However, only one person in El Limón and one in Samaná made the same report. In Las Galeras, although no one reported burning their trash, two participants reported paying a man to take their trash. One of those participants described how the man then burns it. This man came up in the focus group discussion also. Participants reported the man walks by a municipal dumpster to a field where he burns trash regularly. A municipal worker in Sánchez reported that, approximately five years ago, a campaign to stop people from burning trash was largely successful. But while the practice may be greatly reduced, it is not uncommon even today, possibly because the campaign never addressed the reasons that people burn certain waste.

During TIPs, three residents of Arroyo Barril agreed to stop burning their trash for the two weeks of the TIPs. Two of the three followed through (see Annex A). The man who did not stop burning waste reported that he had tried and succeeded in burning less waste. He said, ““*Sabemos que no es bueno quemar, ahora lo hicimos con menor frecuencia.*” **“We know that it is not good to burn, now we do it with less frequency.”**

In Sánchez, none of the TIPs sample participants reported burning their waste. In Samaná de Santa Bárbara, two of the TIPs participants (half) reported burning their trash. Only one agreed to try to stop burning it and was successful but said that the household would resume burning trash after the end of TIPs. This response fits with the rest of the sample from Samaná de Santa Bárbara tying other behaviors. No one seemed enthusiastic about continuing any of the new behaviors they had tried, even though several felt the behaviors are important for the environment. This may be the result of the experience of several previous unsuccessful SWM and 3R projects or a biased, small sample or other less obvious reasons.

In the Las Terrenas TIPs sample, half of the participants (three of six) reported they burned their waste. Two of the three agreed not to burn their waste for the week of the TIPs and were successful. The other household found it too difficult to refrain from burning waste and would not commit to trying it.

Se nos hizo fácil no quemar la basura, ya tiene un mes detrás de la casa y no la hemos quemado.”

“It was easy to not burn trash; we have had it for a month in the back of the house, and we haven’t burnt it.”

“Respecto a la quema de basura, tendré que volver a quemar porque hay muchas ramas y eso genera muchos mosquitos.”

“Regarding the burning of trash, I’ll have to burn again because there are too many branches and that generates a lot of mosquitoes.”

A member of the CEBSE team who lives fairly near Las Terrenas explained that people sit in the patio in the late afternoons and evenings and the smoke from yard waste is believed to keep mosquitoes away. Mosquitoes in the peninsula are not merely an annoyance; they transmit dengue, Zika, and other viral diseases.

Many respondents recognized the health risks and consequences of burning trash. It was common for focus group participants to complain about neighbors burning trash. How widespread this practice is remains unclear. Burning has been a way of eliminating garbage in the DR for generations, and this is true in Samaná where much of the peninsula’s agriculture has been devoted to coconut palm production. *Pencas* (palm fronds) are large (usually more than 5’ long) and break down slowly, as do coconut husks. Coconut workers have a practice of husking the coconuts, collecting up coconut branches, letting them dry, and then setting them ablaze. In both the household interviews and focus group discussions, participants recalled burning trash and biowaste for a long time. One individual suggested that the reason there is so much garbage in the streets and the environment is because people no longer burn their garbage. Most respondents, however, discussed with distress the practice in their neighborhoods. In Sánchez, 12 participants expressed annoyance and concern over trash burning, but four reported they have no option and that they burn it so that the garbage does not cause problems.

Estoy consciente de que la forma de como elimino la basura no es la mejor, pero es la única opción que tenemos.

I am aware that the way we dispose of garbage is not the best, but it is the only option we have. (Sánchez, man, 27)

Se que la que va al vertedero también la queman, otro cause muchos problemas. Causa problema en los pulmones. Cuando la quemo se que oladora problemas, trato de no hacerlo pero a veces no hay opción.

I know that the [trash] that goes to the dump is also burned, and also causes problems, problems for the lungs. When I burn it, I smell problems, I try not to but at times I don’t have [another] option. (Sánchez, woman, 58)

Hay un tipo de basura que se quema: hojas, pencas. [Nota: Hace referencia a la quema de basura como una buena practica. Dice: Porque la gente en vez de quemar la basura produce lo que hace es que la tira a cualquier lado?]

There is a type of garbage that burns: leaves, coconut fronds. [Note: refers to burning garbage as a good practice. He says: Why do people instead of burning the garbage they produce just throw it wherever?] (Samaná, man, 53)

Yo no la saco, yo la quemo porque así no vuelve al patio.

I don't take it out, I burn it so it doesn't come back to my patio. (El Limón, woman, 46)

Researcher: Por ejemplo, en la zona donde tu vives [R1] ¿hay problemas de quema de basura?

Researcher: For example, in the zone where you live [R1], are there problems with burning trash?

Respondent 1: Algunas veces sí porque cuando son hojas, la juntan, o sea la barren, la juntan a un lado, cuando se secan de noche, la prenden.

Respondent 1: Sometimes because when they clean up leaves and sweep them together to one place, they dry and then set them on fire.

Respondent 2: Y los plásticos de los pica pollos y los desechables.

Respondent 2: And plastic containers from takeout fried chicken and other waste.

Respondent 1: Eso lo van echando en fundas, hay una vecina que lo tira al río, como ustedes dicen, espera que llueva mucho y se lleve esa basura.

Respondent 1: They throw that in bags, and there is a neighbor who throws it in the river and, like you all said, hopes that it rains a lot and carries the garbage away. (Las Galeras FGD2)

5.4 The 3Rs (Reduce, Reuse, Recycle)

The practice of recycling, reusing, or repurposing is not new to the province of Samaná. It is perhaps the phrase that is not familiar. While some people cannot define recycling, when asked if they have bought, sold, or given away discarded items, the answer is a resounding “yes!” People happily set aside something they no longer want or need for someone whom they know will take it, e.g., a truck passing by announcing it is collecting metals, people buying or simply collecting glass bottles, etc. People frequently buy reused items as varied as silverware, phones, refrigerators, clothing, and cars. Only in the last couple of decades have people had an abundance of durable items that end up in the dump, coinciding with an onslaught of plastic goods. These plastic goods include everything from personal products like hair clips and sunglasses to household items like plastic dishes and bottled products to larger items, such as chairs, tables, and washing machines. According to participants, when a proper recycling program, in any form, has been introduced into communities, people enthusiastically participate.

5.4.1 What is recycling?

Table 11. Participants' knowledge of recycling

City	Total participants	Provided a definition	Do not know	Did not respond
Sanchez	30	15	9	
Arroyo Barril	20	16	4	
Las Terrenas	30	27	1	2
El Limon	24	23	1	
Samana	30	28	2	
Las Galeras	20	10	7	3
Grand Total	154	119	24	5

Seventy-seven percent of participants were able to provide a definition of recycling. Many participants, particularly those in focus groups, mentioned that having better infrastructure in the home, e.g., a system with stackable bins for separating out the recyclables, would facilitate the practice. In Las Terrenas, when participants were asked if they were satisfied with the way they dispose of their trash, 14 of the 30 respondents spontaneously volunteered that they would like to recycle.

In the household interviews, participants were asked if they had space to collect and store bottles, and most answered positively. The question asked if participants were willing to store bottles to earn money. Some respondents understood they were being asked to start or establish a business in their homes. In that context, there were a small number of participants who stated they did not have the time or space, nor did they want to bother. People also responded to this question saying they did not need to earn money from recycling and would participate to help the environment. In the follow-up focus groups, all participants responded they would have space to separate their waste if there was a recycling program. Many people mentioned they would like to recycle, but there needs to be a system or destination for the recyclables.

Que se aplicara el tema de clasificación, uno quisiera clasificar pero el problema será siempre el destino final. De nada vale que se clasifique si el camión se la lleva junta.

That the classification of waste is applied, one would like to classify but the problem will always be the final destination. It is useless to be classified if the truck takes it together. (Sánchez, woman, 42)

A mi no me gusta quemar basura, yo creo que el vertedero debería tener un sistema de reciclaje y a veces hay gente que le afecta ese mal olor.

I don't like to burn garbage; I believe the dump should have a system for recycling and at times there are people affected by the bad odors. (Las Terrenas, woman, 21)

Many participants told of separating beer and rum bottles. Beer bottles can be exchanged at local stores for a discount on the next bottle of beer. This had also been widely practiced with soda bottles in the

past and many participants reported not being clear why the practice had changed. One local business owner who runs whale watching trips reported that the Coca Cola delivery truck driver, upon request and for a deposit fee, will deliver cases of glass bottles. This participant exchanges empty cases for full cases. Today in the region a significant number of beer bottles are stored on patios even though people have been told not to keep them. Large heaps of bottles are seen throughout the peninsula. However, residents said that the trucks that usually collect the bottles have not been coming regularly, perhaps due to the pandemic. In early June, a President Beer truck was seen on primary roadways collecting bottles from small vendors. Bottles are often simply given to local collectors or people are paid a minimal price. Local collectors in turn sell to the company trucks for a set price (when the trucks do arrive). Participants were asked about their willingness and ability to store recyclables. Nearly all participants responded positively, though some reported space is an issue.

Aqui no hay mucho espacio, pero como mismo se llevan a los contenedores, se puede llevar separada y poner las botellas plásticas abajo en un espacio que se habilite.

In my home there is not much space, but the same way [plastic bottles, trash] are taken to the containers, they can be carried separately and we can store the plastic bottles where there is space. (Sánchez, male, 27)

5.4.2 Space for keeping recyclables

Across the peninsula, participants agreed they would have space to keep their recyclables, even if they were unwilling to use them to start a business or make money, though many people embraced the idea of making money from their recyclables. Hence, it seems unlikely that a recycling program would be hampered by a lack of space. In the focus group discussion in Sánchez, the researcher asked, “Would you keep recyclables?” and a woman replied, “For a couple bucks, I’ll do it!” The following excerpt merits being repeated at length. It demonstrates peoples’ willingness to recycle when they have a purpose, their willingness to rinse out their recyclables, and that most people have space to do this. This was a consistent theme across the peninsula. As mentioned elsewhere, residents were emphatic about the need to address the garbage crisis in a sustainable way.

From the focus group discussion in Sánchez: (All participants were Dominican; R is the researcher; W is a woman; M is a man.)

Researcher (R): Si hubiera alguna institución o el mismo ayuntamiento, que les diga a ustedes, como ciudadanos, que pueden clasificar y poner los plásticos en un lado, los cristales en un lado y los residuos orgánicos, como la comida y las cáscaras en otro ¿ustedes creen que lo harían? ¿Estarían dispuestos?

Todos: sí, claro

R: Pero eso hay que reunirnos todos en el pueblo, hacer unas cuantas reuniones para informar y enseñar como hacerlo.

M1: Incluir la junta de vecinos. Como dijo la joven ahorita, yo entiendo que los barrios, deben tratar de llevar y mantener el orden a través de la junta de vecinos, un presidente de una junta de vecinos si asume su responsabilidad tiene que hacerlo con dignidad y decoro. Es importante tener contacto permanente con los presidentes de las juntas de vecinos.

R: Para poder clasificar, ¿ustedes tendrían espacio donde guardarlos o tendrían que llevarlo a algún lugar para poder hacerlo? ¿ya sea en el pueblo o en su sector o barrio?

W1: Yo tengo espacio donde ponerlo. La casa donde yo vivo tiene un patio bien grande atrás.

W2: Todos tenemos espacio.

W3: En un pedacito de patio se puede hacer de todo.

R: Solo es cuestión de querer hacer.

R: Ustedes saben que para esto de clasificar y reciclar los recipientes (botellas de cristal, de plástico, potes de varios tipos) hay que enjuagarlos. Si a ustedes se les pide que antes de llevarlos a un sitio deben enjuagarlos. ¿Estarían dispuestos? Esto se hace porque si tienen líquido dentro y se le seca, se le queda pegado al recipiente y a veces se hace imposible de limpiar y si es vidrio, durante la limpieza se puede romper. (Explica que el proceso de reciclaje implica a veces el triturar el plástico o el vidrio, para hacer nuevos: sea la uno igual o un producto diferente (sillas plásticas, botellas, tablas, etc.), si son botellas de cristal como de refresco y cervezas, generalmente la reutilizan sin necesidad de triturarlas)

W4: Si se lo van a comprar, uno lo enjuaga, pero si es para botarlo uno lo nota así. Con la goma de vehículo se hacen muebles lindísimos.

R: If there were any institution or the town itself, that would tell you, as citizens, that you can classify and put plastics in one place, glass in one place and organic waste, such as food and peels on the other? Do you think people would? Would people be willing?

All: yes, of course

W4: But we all have to meet in town, hold a few meetings to inform and teach people how to do it.

M1: Include the neighborhood associations. As the young woman said right now, I understand that the neighborhoods should try to bring and maintain order through the neighborhood associations, a president of a neighborhood association, if he assumes his responsibility, has to do so with dignity and decorum. It is important to have permanent contact with the presidents of the neighborhood associations.

R: In order to classify, would you have space to store the items or would you have to take it somewhere to do so? Either in the town or in your sector or neighborhood?

W1: I have space to put it. The house where I live has a very large backyard.

W2: We all have space.

W3: In a little patio you can do everything.

W4: It's just a matter of wanting to do it.

R: You know that in order to classify and recycle containers (glass bottles, plastic bottles, jars of various kinds) you have to rinse them. If you are asked to rinse them before taking them to a site. Would they be willing? This is done because if they have liquid inside and it dries, it sticks to the container and sometimes becomes impossible to clean and if it is glass, during cleaning it can break.

W4: If they are going to buy it, you rinse it, but if it is to be thrown away, you notice that. With car tires you can make beautiful furniture.

5.4.3 Reusing, repurposing, recycling goods

Participants were asked whether anyone has requested recyclable items from them, such as bottles, metals, plastics, cartons, or other items. The majority of people across the peninsula have been asked and have given and less often, sold, such items. Out of 154 participants, 127 (82 percent) reported that they have been asked for items by people who wish to recycle or reuse them. The most common item is glass bottles, then metals, and then plastics with a few other less common items, such as batteries.

Only 43 of these 127 participants were paid for these items; the other participants reported simply giving them to the collector. It is common for trucks with loudspeakers to drive through neighborhoods announcing they are looking for items like metals and the men who collect bottles sometimes go door to door. Many households set aside bottles, often on their patios, to keep for collectors.

Of the participants, 128 (about 83 percent) reported having purchased used items in the past. Items listed included a wide range of commercial goods, such as shoes, clothes, kitchen items (jars, dishes, etc.), small appliances (blenders, irons), large appliances (washing machines, refrigerators, freezers), cell phones, toys, furniture, and cars. This recirculation of items and the small businesses that fix and resell such items are readily found throughout the peninsula as evidenced by the number of businesses that are operated out of participants' homes. Approximately 43 percent of the interviewees reported operating small businesses out of their homes. Businesses included *colmados* (a small shop selling food essentials found in neighborhoods throughout the country), selling small amounts of certain items (fruits, vegetables, baked goods, cooked food, beverages, salons, used or new clothes, shoes, and arts and crafts), mechanics, repair services, and so on. It was also reported that these small businesses, particularly those making foods or other small items for sale, grew significantly during the pandemic¹⁷ and people turned to foam containers as cheap packaging, accelerating the problems with public litter.

Table 12. Participants who had businesses in the home

City	Total participants	Business in the home?	Total percent
Sanchez	30	17	
Arroyo Barril	20	11	
Las Terrenas	30	12	
El Limon	24	14	
Samana	30	2	
Las Galeras	20	10	
Grand Total	154	66	43%

Reusing items in the home is likewise widespread across the peninsula. Of the 154 participants, 127 discussed reusing plastic bottles for storing drinks in the refrigerator; plastic and glass containers for storing food; buckets and old clothes for cleaning; larger containers, such as gallon jugs, for storing water; and containers for planters.

5.4.4 Pig Food

Some biowaste is set aside in some households. Not all biowaste goes to pigs, only appropriate items such as vegetable peels, fruit peels, leftover rice, meat scraps, and other pig-edible items. People have

¹⁷ In Las Galeras, FGD participants spoke of increased agriculture activity due to the pandemic and a rise in the use of pesticides and fertilizers, whose containers are now littering the countryside.

“*cubos*” or buckets that are filled, left for the person collecting the waste, then traded for an empty, clean bucket when the collector comes by. A local solid waste expert recounted that women typically set aside this food, but it is usually a man who collects it. On the receiving end, it is often a woman tending to the pigs and feeding them. Of course, those who own their own pigs feed their waste to their own pigs. This practice was identified in every location in the study, but only among Dominicans with roots in the local community.

The practice of separating out food scraps and leftovers for pigs first became apparent in the data from Samaná and was less obvious in other locations. For example, in answer to the question, “How do you dispose of trash from your home?” 22 of 30 responses in Samaná mentioned setting aside food for pigs, yet only eight of 30 mentioned this in Sánchez and just four of 30 mentioned it in Las Terrenas. The topic was explored in focus group discussions. Among Dominicans with roots in the local communities, this practice appears to be near-universal. Expatriates and upper or professional class Dominicans who moved to the area from elsewhere in the country were unaware of the practice.

Samaná participants described the practice in detail. They put out a five-gallon paint bucket which is exchanged by the person retrieving the food. Sometimes, the pig farmer picks up the food. Other times, a middleman (who may be paid by the farmer) picks up the food and a neighbor does. The farmer may return at Christmas and give the participants gifts of pork. This is neither obligatory nor universal. This type of exchange appears to happen unpredictably and was the only documentation of an exchange. The people who set aside pig food do it to minimize their trash and “why not?”

In Sánchez, two women discussed setting food aside for pigs. One woman described how people give her food and also give food to other people who have pigs:

Ellos nos lo regalan a nosotros los que tenemos puercos. Los cerdos míos se comen el desperdicio de las jaibas. Yo llevo los cubos, y cuando ella termina con las albóndigas me echan los desperdicios en los cubos, cuando los busco lo pongo en una carretilla y los puercos se dan un banquete con eso.

People give (gift)¹⁸ us leftovers (to those of us who have pigs). My pigs eat the leftovers from crabs. I bring buckets and when she is done making the (crab) meatballs, they put the waste remains in the bucket and then I collect it in a wheelbarrow and the pigs have a feast. (Sánchez, FGD, woman)

La suerte que para ese lado a mi no me perjudica porque yo brego con jaiba y los cerdos míos se la comen, las cascaras de los cangrejos el esposo mío lo buscan y se lo echa y cuando usted viene a ver ya están molidos por los cerdos. Lo único que yo no le echo son los cachos grandes porque no tienen nada dentro; pero la concha, el pecho, todo eso se lo comen los puercos que ahí no hay desperdicios.

It is good luck for me because I clean the crabs and my pigs eat the shells. When my husband comes with crabs they are going to be given to the pigs. They eat everything except big pieces with nothing in them, but the shells and the breast are eaten by the pigs and not wasted. (Sánchez, FGD, woman)

¹⁸ Two words used in Spanish to give, *dar* and *regalar*, are synonyms. However, *regalar* is more frequently associated with a gift or with giving a gift (e.g., *un regalo* is a gift). The choice of *regalan* here suggests these are gifts from people, without the expectation of a return gift.

In the focus group discussion in Las Terrenas, the same practice was identified by the two men with roots in the local community. A young man who was born in a local hamlet and later moved to Las Terrenas explained the practice occurred extensively in his neighborhood. Another older local Dominican (born in Las Terrenas and in his 60s) described the practice in several Dominican neighborhoods in the municipality. He also collects organic waste from hotels and sells it to pig farmers. This commercial business was the only time an explicit economic component was documented among participants, with the exception of the waste pickers in Samaná who reported being paid RD\$50 per bucket of food for pigs.

In Las Galeras, where a second focus group discussion was held with local Dominicans, six men attended. When questioned about the pig food, they described a robust network in the community. In Las Galeras, pig food is set aside by households. Pig owners retrieve it on a first come, first served basis. The owners are both men and women, and both men and women may show up in small trucks or other forms of transport. One local restaurant on the beach also sets aside its food waste to be collected by a large pig farmer. In this focus group, participants described people being proactive and sometimes delivering the food to the pig owners. They also reported that sometimes roasted pork is promised for Christmas, but this does not seem to happen and is definitely not the motivation for participating in the process.

5.4.5 Composting/Abono Casero

There were mixed results in response to questions about the definition of compost or *abono casero* (household fertilizer). Few people identified what compost is at the household level beyond using coffee grounds and eggshells for plants. One man in the Samaná focus group discussion, however, was well versed on the topic. He had taken a course on it with a woman who has since died and learned about composting on a larger scale (for his farm) from his father and grandfather. Focus group discussion participants demonstrated significant enthusiasm during and after the discussion, including two young men who approached him in the reception for a lengthy discussion.

There are also many practices related to using organic waste that are within living memory of the population but may not be practical to utilize in denser urban environments. In the Sánchez focus group discussion, a woman described using dried banana peels as fertilizer for root crops. This same practice was described in Las Terrenas for plantains, but as an insecticide. There appeared to be enthusiasm for composting even in urban settings: When household participants were asked if they would be willing to carry organic waste to a compost site, there was a near universal positive response. The household sample reported that in Samaná, 100 percent of participants said yes; in Las Galeras, 76.2 percent; in Sánchez, 84.6 percent; in Arroyo Barril, 65 percent; in Las Terrenas, 100 percent; and in El Limón, 96 percent. This positive response, combined with the prevalence of individuals who do set aside food for pigs, suggests a willingness, ability, and the space to compost.

Few households during the TIPs chose to try composting (five out of 22), perhaps because they did not know enough about the practices, as the household interviews and focus group discussions revealed. Several of those households were unable to follow through, again possibly due to lack of knowledge. It was the men who volunteered to compost and, in at least one case, simply threw yard waste on top of banana and other plants.

5.5 What Happens to the Trash?

Participants in the study are content with household waste management as evidenced by the responses to the question, “Are you satisfied with your trash removal?” A majority replied positively—100 percent in Samaná and 90 percent in Las Terrenas. The lowest response from a city was Sánchez with 53.8 percent. Fifty-four percent were satisfied in El Limón, 85 percent in Arroyo Barril, and 66.7 percent in Las Galeras. The study shows that people are, in general, better served in urban settings, perhaps with the exception of some neighborhoods in Sánchez. In Sánchez, seven of 30 respondents reported that they would like the truck to go down their street; six of 30 that they would like the truck to pick up more times per week; five of 30 that they would like to see more dumpsters; six of 30 that they would like to qualify [classify, separate]; and six of 10 that nothing needs to change because everything is fine. Issues around difficulties accessing trucks directly came up in other locations. In Las Terrenas, 14 participants mentioned they would like to classify their trash. The issue of classifying trash was brought up by participants in every location.

According to participants, trucks pick up garbage regularly in most locations. In Samaná, trucks come by every other day. In Sánchez, trucks reportedly come by on irregular schedules. However, people who live on a street that is on the route to the dump in Sánchez have daily pickup. Other participants mentioned fewer regular pickups and recounted different strategies for storing their trash. A significant number of participants were concerned about the dumpsters in the town that are poorly managed or maintained. These dumpsters are left overflowing and emitting a stench when regular pickup fails. Two participants reported dead animals being thrown into dumpsters.

In Las Galeras, where participants were least satisfied, some people pay for trash pickup. These independent private trash collectors have been seen walking by municipal dumpsters and burning the trash from the households they service. In the Las Galeras second focus group discussion, when asked what people do when the truck cannot get to their house, “They burn the garbage.” Many participants in the focus group discussion thought more dumpsters would solve much of the problem, particularly since garbage pickup happens primarily on the main street. The participants from Samaná and Las Terrenas—and to a lesser degree, Sánchez—all complained about smoke from the city dumps. Of course, this information was collected before remediation of the open dumps. The locations of the dumps were most often discussed among Samaná and Las Terrenas participants. In Sánchez, participants voiced additional concern over the location because of run-off onto nearby beaches. Even as participants reported they are satisfied with the management of garbage, there were reports of people handing off waste to *motoconchos*, throwing it in the river, throwing things into the dumpsters that should not be there, and leaving waste in makeshift collection sites. This is a problem in cities because of access and in the outlying districts due to less frequent garbage pickup.

5.5.1 Who should remove the trash, who pays, who should pay, and how much are people willing to pay?

While most participants reported not paying for trash collection, there were different interpretations of this question. In Sánchez, five people discussed paying RD\$25 pesos (about US\$0.43) to municipal employees per pickup. Such payment is common for an unusual pickup, like large items or brush.

Another participant from Sánchez reported paying if they miss the truck, presumably paying someone such as a motorcyclist. In Samaná, people pay municipal employees under similar circumstances as in Sánchez—when there is an unusually large amount of trash or a larger item such as a broken washing machine. In Las Terrenas, eight participants reported paying for trash pickup, with two reporting they pay RD\$500 (US\$8.50) and one paying RD\$1000 (US\$17.00). In El Limón, one person reported “tipping” the garbage collectors. Otherwise, no one pays unless the cost is hidden as part of taxes. Two participants reported paying in Las Galeras, with one paying RD\$600 (US\$10.20). In Arroyo Barril, 14 participants have their garbage picked up by the municipality and six do not (but reported not paying anyone to take it regularly). The alternative is to pay a *motoconcho* to take away the trash, throw it into a pit or a river, or burn it.

When participants were asked if they would pay to have their trash removed, 123 (82 percent) reported their willingness to pay. The majority suggested that the cost should be in the range of RD\$150 monthly. However, outliers in Las Galeras and Las Terrenas are willing to pay much more while Samaná and Arroyo Barril participants suggested lower amounts, in the range of RD\$25-100 (about US\$0.43-1.70). Many participants commented that if there would be a charge, then the service should be reliable and improved. There were also several participants who cautioned if the cost is too high people will not pay and “will burn again.” Participants also suggested it should be based on what a person can afford or it should be minimal, such as RD\$50 (about US\$0.86) per pickup.

Yo pagaría hasta mil pesos si el servicio es permanente, uno tiene mucha lucha sobre todo con los pampers (pañales desechables) para evitar que los perros rompan la funda.

I would pay up to a thousand pesos if the service is permanent, one has a lot of struggle especially with the diapers to prevent the dogs from tearing the bags. (Arroyo Barril, woman, 30)

Pienso que habría personas que por no pagar van a quemar de nuevo y se va a complicar. Eso habría que meditarlo bien.

I think that there would be people who would not pay and will burn again and it will get complicated. That would have to be well thought out. (Arroyo Barril, man, 57)

5.5.2 Improvised Collection Points

Informal collection locations become a nuisance to the neighborhood, particularly to an unlucky household if in front of someone’s property. After a pile of trash is left, it becomes a welcome center for anyone who wants to throw trash someplace. Thus, several participants reported *not* putting garbage out curbside in front of the house. The waste pile also draws dogs and/or rodents, creates bad odors, and is generally a mess. It becomes a potential source of public waste that ends up in the environment. At times, municipal employees may ask the property owner to pay extra to remove the large pile that accumulates. Thus, people are more likely to keep their trash bags close to their houses and meet the truck or look for a container, dumpster, or other collection point. In some cases, as demonstrated in the excerpts below, streams or empty lots become improvised dumps. Alternatively, people burn their trash.

While the situation is apparently much improved, significant problems remain. In Arroyo Barril, participants reported that they sometimes give their trash to *motoconchos* for a fee with the expectation

that they will take it to a dumpster. However, it was reported as common knowledge that the *motoconchos* throw the waste in a ravine or stream instead. The same practice was identified in the focus group discussion in Las Terrenas. During the focus group discussion in Las Galeras, expatriates discussed paying to have garbage picked up and voiced significant concerns regarding its disposal. One focus group discussion participant reported that the man who collects her garbage is seen burning it. In a focus group discussion with Samaná waste pickers, participants mentioned that trucks from Las Galeras dump trash long before they reach the dump in Samaná. This fact was confirmed by the Las Galeras focus group discussion participants who also reported dumpsters have been stolen from public spaces to be used to store water. Considering the importance of this issue for the project, it is worth hearing from several participants who expressed frustration with the current situation.

El problema de la frecuencia es que uno trabaja y aquí no puede, ni debe dejar la basura en fundas afuera. Nadie quiere contenedores en frente de su casa porque vienen y le tiran de todo. así que la basura se saca cuando estamos aquí y el camión pasa.

The problem of frequency is that you work and here you cannot and should not leave the garbage in bags outside. Nobody wants containers in front of their house because people come and throw everything there. So, the garbage is taken out when we are here and the truck passes. (Sánchez, man, 59)

Sinceramente no solo la de la casa hay que eliminar, para acá mandan mucha gente a botar basura para la playa y cuando la dejan uno tiene que encargarse. Los plásticos se queman, todas las fundas de basura que tiran hay que quemarlas, uno no sabe lo que viene ahí. El camión solo pasa por la calle principal. aquí no baja. ... Hace tres días había una pila de basura y fundas que vienen y tiran de noche o gente que manda viciosos” (Nota entrevistadora: Se refiere a los adictos y personas con problemas mentales. Observe algunos en la zona hacienda recogidas de basura en algunos frentes de negocios y hogares)

Sincerely, not only the garbage in the house has to be eliminated, many people send them (people carrying garbage for others) here to dump garbage on the beach, and when they leave it, you have to take care of it. The plastics are burned, all the garbage bags that they throw away must be burned, one does not know what comes there. The truck only goes through the main street. It does not come down here. Three days ago there was a pile of garbage and bags that people come and throw away during the night or send people who are “vicious” (Interviewer note: Refers to addicts and people with mental problems. Interviewer observed some businesses and households in the area collecting garbage.) (Sánchez, man, 33)

Los vecinos que viven de aquel lado del caño tienen un hoyo donde ponen la basura, y la que no se quema va dentro del caño.

The neighbors who live on that side of the stream have a pit where they put the garbage, and what doesn't get burned goes into the stream. (Arroyo Barril, woman, 31)

Con honestidad todo este barrio tira todo para el caño”...esto que esta ahí es con la lluvia que baja, pero esa gente no entienden; aquí abajo eso se tapa”

Honestly, this whole neighborhood throws everything to the stream... What is there is what happens when it rains but people don't

intervención del hermano de mujer entrevistada.

understand; down here it accumulates.
(Intervention of the brother of the woman interviewed.) (Arroyo Barril, man)

Eso es que la gente lo tira. Ese pedazo de aquí a Rio de los Cocos que no vive nadie, ahí vienen carros con fundas de basura y motores que mandan a botar y la tiran ahí. Como no vive gente, nadie sabe quién lo hizo”

That is what people throw away. That land from here to Rio de los Cocos where nobody lives, cars with garbage bags and motorcyclists (with garbage sent to dump) throw it there. Since no people live there, nobody knows who did it. (Arroyo Barril, woman, 68)

Honestamente la tiramos al hoyo (cañada). Si uno se da cuenta que va a pasar el camión uno la saca. El problema de los vecinos de este lado es que si uno saca la basura y el camión no pasa o pasa tarde, los perros rompen las fundas buscando comida. No hay contenedores ni tanques suficientes. tendría uno que ir a sentarse ahí a esperar que llegue el camión. La basura no se puede dejar en frente a una cas ajena.

We honestly threw it into the ravine. If you realize that the truck is going to pass by, you take it out. The problem for the neighbors on this side is that if one takes out the garbage and the truck does not pass by or passes late; the dogs tear the bags looking for food. There are not enough containers/dumpsters or tanks. One would have to go sit there and wait for the truck to arrive. Garbage cannot be disposed of in front of someone else's house. (Arroyo Barril, man, 52)

El camión pasa muy rápido, no tiene hora fija, no hay forma de saber cuando viene. Hay gente que ni cuenta se da y es semanal que pasan.

The truck passes very quickly, and it doesn't have a fixed time, there is no way to know when it comes. There are people who do not even notice and it only comes weekly. (Samaná, woman, 39)

Garbage collection points In Las Terrenas, also referred to as *contenedores* (dumpsters), are three-sided cement structures that were built during an earlier administration. They have been knocked down in most locations across the peninsula. A focus group discussion participant displayed pictures on his phone that showed overflowing garbage. His female companion insisted that when the dumpsters are full, people should look elsewhere to leave their trash. The man described how *motoconchos* drive by, barely or not slowing down at all, and throw trash bags near the dumpsters, often missing it entirely, and hence leaving trash completely strewn along the road. These piles of trash then become improvised collection locations, attracting the inappropriate disposal of waste from others.

5.5.3 Contenedores – Containers, Trash Containers, Dumpsters

Contenedores are literally containers, but here refer to the plastic dumpsters found throughout the peninsula. They are generally more concentrated in urban settings. The dumpsters are frequently used by people as a place to throw their garbage when they remove it from their homes. However, the frequency varies by location. In the household interviews, Five of 30 participants reported using dumpsters in Las Terrenas, none in El Limón, while 13 of 20 people reported using them in Las Galeras, and no one mentioned them in Samaná. There is not an abundance of dumpsters in any location, and

participants mentioned increasing the number of them as a way to improve waste management. There were many references to the need for them, the abuse of them, and the history of having them. The discussions indicated that dumpsters seem to come and go depending on the local administration. The focus group discussions on the topic were animated. The Dominican men in the second focus group discussion in Las Galeras described weekend visitors from Santo Domingo who leave their trash on the beach. However, as discussed above, it was also reported in this focus group discussion that people steal the dumpsters from the beach to store water.

*La basura trae enfermedad. Por eso no se puede dejar amontonar. El ser humano es malo. Contenedores y los rompieron. Estaban del lado arriba y uno lo echaba ahí (se refiere a la calle de mas arriba.) **Cuando estaban los contenedores uno no tiraba tanto a la mar.***

Garbage brings disease, because of this we cannot let it pile up. Humans are bad. [We had] dumpsters and they broke them. They were on the street above and you could throw your garbage there. **When we had dumpsters you would not throw so much [garbage] in the ocean.** (Sánchez, woman, 37)

5.5.4 Los Camiones-Garbage Trucks

In the cities, trash pickup is more frequent and more dependable. Trucks apparently circulate throughout the city six days a week and most residents have a three-day-a-week schedule for trash pickup. While many streets are narrow and inaccessible, there appear to be more options for the trucks to reach the residents consistently. Participants from all three cities voiced concerns about accessing smaller streets and options to address this problem, such as dumpsters. Trucks were a concern in Sánchez, where participants discussed the problem of garbage falling off and leaving litter. The large amount of garbage on the road to both the Sánchez and Las Terrenas dumps suggests that this is occurring to an alarming degree. Moreover, this trash enters the aquatic ecosystems in both locations because rainwater washes down from the road to the sea.

In the outlying districts of Arroyo Barril, El Limón, and Las Galeras, trash pickup is once or twice per week and access is a problem because the trucks only go down principal streets. Research participants were concerned that the trucks in Las Galeras dump garbage before it reaches its destination, the Samaná landfill. Members of both Las Galeras focus group discussions reported that the municipality has purchased two new trucks, one larger truck and a smaller one for accessing the secondary roads in the area. Data collected suggest that residents in both Las Galeras and Las Terrenas also employ private garbage services.



Left: On the road to the Sánchez dump. Right: On the road to the Las Terrenas dump. Photos by K. Skoczen for Clean Cities, Blue Ocean

5.6 Summary: To the Dump (*Vertedero*)

The three primary dumps on the peninsula are each located in close proximity to a city center. Sánchez is the furthest removed from the city but located partially within the boundaries of Los Haitises National Park. Complaints of smoke and lingering fog from burning at the dumps were made consistently in each city. The run-off from the dump into waterways and eventually onto beaches is also a concern in each city. Descriptions of combining all waste into one bin and sending it to the dump were verified by observation at each dump. Layers of plastics mixed with yard waste, cans, cardboard, and more were seen at all three locations. Impromptu visits to the three dump sites found waste collectors at only the Samaná and Las Terrenas landfills.

Convincing people to access municipal waste collection does not seem to be a challenge. Participants in this study were all eager to find ways to dispose of their trash, specifically their plastics, in a safe manner. People on the peninsula have been managing and devising ways to eliminate trash (even if at times in ways that outsiders could deem problematic). This suggests that significant time and thought has gone into SWM at the household level. Moreover, many participants—many for decades—have been devising ways to reduce their “garbage” by setting aside items for the metal collector and the neighbor with pigs finding new uses for the gallon jug, and so on. Ultimately, it is the structural challenges that complicate proper disposal and make it difficult for residents to get their garbage to the truck or a safe intermediate location rather than disposing of it inappropriately. Poor decisions are made at times, but they are made in the context of restricted choices, with often limited or no alternatives. Many of the available alternatives are damaging to the environment and environmental systems and, ultimately, to human health.

The problems do not end once the garbage reaches the dump. Unfortunately, a new array of problems begins there. The pointlessness of classifying trash curbside and often unpredictable management of garbage collection is replicated at the dump. At the time these data were collected, trash in the dump might be dispersed by animals or weather, buried when it could be retrieved and returned to the recycle loop, and/or simply neglected for lack of an organized or safe environment for sorting it. Too often, trash, even valuable items like metal refrigerator frames and plastic bottles, ends up in the environment. IVCs are willing to confront the noxious conditions and retrieve items, but they are too often met with rejection and inhospitable conditions instead of being embraced as environmental heroines and heroes. Before examining IVC working conditions, the business community’s management of its challenges with solid waste management will be considered.



Sánchez dump. Branches placed on trash piles and set ablaze. Photo: Kathleen Skoczen for Clean Cities, Blue Ocean



Canal adjacent to the Sánchez dump—a discarded refrigerator is acting as a filter, collecting waste that has ended up in the water. Photo: Kathleen Skoczen for Clean Cities, Blue Ocean

6. Businesses and Solid Waste Management

This study’s research on businesses focused on urban contexts. Researchers interviewed employees and owners of privately-owned businesses and association members (board members, church groups, etc.). Fifteen participants were questioned about the type of “business,” number and gender of employees or members, what the business defined as waste, what types of waste it generates, how it manages waste, interactions with various sectors of the communities including the local government, knowledge of classifying and recycling waste, knowledge of laws and policies, and where owners and/or members receive information about SWM.

Of the 15 individuals interviewed, only one is independent, a fisherman. All others either work for or own a private business or are members of a professional association, i.e., a business or fishers association. Four of the 15 participants were women. For those businesses that reported the number of women working in their business (one participant did not offer these data, and it was irrelevant for the independent fisherman), 140 of the 901 employees of the businesses were women. Interviewees were all Dominican nationals, although several participants reported employing or having association members who were from outside the DR, most often Haitians. Over half of the people interviewed have a university level degree, while four have only a primary school education—three fishermen and one male transportation worker. One participant was 29 years old at the time of the study, but all other participants were 39 years old or older; the eldest was 62 years old. Eleven participants were from Samaná, two from Sánchez, one from Las Terrenas, and one from El Limón.

The private businesses are primarily owned by men, but women are present in this sector. Three fishers’ associations volunteered that women members own boats and equipment, implying they do not go out and fish themselves. In the province, fishing is seen primarily, although not exclusively, as male work. A woman who owns a small restaurant on the *malecón* in Samaná reported that most businesses

on the boardwalk are owned by women. Thus, women are not only actively working in businesses throughout the province, but they are also business owners.

A primary concern expressed was the local government's (*ayuntamiento's*) need to do more regarding collecting public waste, providing more resources, and educating the citizenry. This concern echoed the data collected in the household study. Business participants also reported that the government should do more to support and educate businesses about solid waste management, especially regarding communication surrounding laws and policies. An equally important concern surfaced on the types of waste generated by businesses. Most of the business participants reported producing and managing typical waste. However, a few businesses discussed producing potentially dangerous waste, having no way to dispose of it properly and safely, and receiving no institutional or structural support to address the problem. For example, boat building and repair businesses use fiberglass and there is concern about how and where they can safely dispose of the waste they generate.

80% de los negocios en el malecón de Samaná, son manejados por mujeres.

80% of the businesses in El Malecon of Samaná are managed by women.” (woman, business owner)

19 somos las directiva... 2 extranjeros Cubanos tienen embarcaciones. Mandan a pescar en sus embarcaciones con los pescadores miembros. 2 mujeres tienen embarcaciones.

There are 19 of us on the (board of) directors... 2 foreigners – Cubans have boats. They send them out to fish with fishermen members (of our association). (fisherman)

Somos mas de 200 pescadores que somos miembros de la asociación y solo hoy 2 mujeres que son dueñas de embarcación.

We have more than 200 fishermen as members of our association and today, only 2 women who own boats. (fisherman)

Table 13. Distribution of business participants by type of business number of employees disaggregated by gender of participant

Type of Business	#Employees/ Members	Gender
Association of Fisherman SM1	200+ (2 women)	M
Fisherman	no employees	M
Association of Fisherman SM2	30 (2 women)	M
Boat Building	22 (5 women)	M
Association of Businesses	8 (6 women)	F
Neighborhood Association	13 (5 women)	M
Association of Businesses	60 (8 women)	M
Restaurant	7 (3 women)	F
Church Organization	12 (9 women)	F
Association of Public Transport	48 (no data on gender)	M
Agriculture Cooperative	24 (10 women)	M
Association of Fisherman SZ1	150 (30 women)	M
Association of Fisherman SZ2	117 (3 women)	M
Resort (Hotel & Restaurant)	7 (4 women)	F
Hotel	230 (53 women)	M

and participants reported it is separated out from the general waste and either given to pig owners (e.g., an employee) or composted. Business participants also reported recycling bottles, selling them back to companies, or reusing them. These types of behaviors are common to the hotel and restaurant industries.

Como pescadores, generamos 7-8 fundas de hielo; las ponemos juntas para que el barredor las busque y se las lleve.”

El Plástico es nuestro mayor residual en Los Haitises, es donde se genera mayormente el plástico (vasos y botellas plásticas).

6.1 Waste and Businesses

There are primarily three categories of waste generated by businesses and associations. The first type is the general waste that is common to all types of locations and consistently reported across all sectors: plastic. This category of waste includes plastic bottles, cups, plates, bags, etc. Fishermen and fisher associations mentioned the significant number of plastic bags used for ice and storing fish. Some business participants also mentioned commercial packaging, both plastic and cardboard. A second type of waste is industrial waste, a significant health concern. Here, fiberglass was specifically mentioned and other substances included chemical containers that are left over from insecticides, fertilizers, and motor oil. The concern over agricultural containers was brought up in the focus group discussion in Las Galeras where a participant reported there has been an increase in farming due to the pandemic (people returning home from employment in urban centers). This increase has resulted in more agricultural containers being left in the environment: “those pesticide containers are everywhere.” Construction materials were a concern because of difficulties disposing of them, e.g., concrete, iron and PVC pipes. The final category is reused or recycled waste. Organic waste was mentioned

As fishermen, we generate 7-8 bags of ice; we put them all together so the sweeper picks them up and takes them away. (fisherman)

Plastic is our greatest waste; in the Los Haitises (National Park) is where we mostly generate the plastic (plastic bottles and cups). (fisherman)

El ayuntamiento no quiere recoger el concreto, y si loogramos que se lo lleven, hay que pagarles aparte.”

The municipality does not want to collect the concrete, and if we can get them to take it away, we have to pay separately. (man, association member)

Residuos de fibra de vidrio; un poco de botellas (como 40 semanales), las cuales regalamos; los orgánicos, se lo regalan a un trabajador que tiene cerdos; como 20 cajas de cartón al mes; metales, hierro, tubos PVC; muchos plásticos (en este caso, fundas plásticas) y las vamos apilando en un área.”

Fiberglass waste; a few bottles (about 40 a week), which we give away; the organic residues, we give it to a worker who has pigs; about 20 cardboard boxes per month; metals, iron, PVC pipes; many plastics (in this case, plastic bags) and we stack them in an area. (man, employee, private business)

Generamos envases plásticos de los insumos químicos, como insecticidas y fertilizantes.

We generate plastic containers for chemical products, such as insecticides and fertilizers. (man, farmer)

6.2 The 3Rs and Business

In general, there is an inconsistent recognition and understanding of the definition and significance of “the 3Rs.” Eight respondents did not know or had not heard the term 3Rs and only four participants were familiar with the phrase (three in Samaná, one in Sánchez, and one in Las Terrenas). However, many participants—even those unfamiliar with the phrase—were able to describe or they themselves practiced recycling and reusing strategies in their businesses. Participants were also asked if they would be interested in training regarding recycling, and all responded positively. There was an enthusiasm for more education and training as well as for better communication regarding SWM. In two cases, business participants reported trying to train employees or association members in improved waste management. Two hotels reported that they had trained employees but were open to more trainings in the future.

No he escuchado de ese programa; yo veo a buzos buscando ropa, yo la separo cuando boto algo. Como organización nos ocupamos de que nuestra área se mantenga limpia y bonita; de cuidar y mantener la limpieza de nuestra área en el malecón; de pintar los botes y barcos de pesca; limpiar el espacio donde estamos si, habría mayor conciencia y educación para enfrentar la situación de la basura aquí.

I have not heard of that program; I see waste pickers looking for clothes, I separate them when I throw them out. As an organization we take care that our area is kept clean and beautiful; to take care and maintain the cleanliness of our area on the *malecón*; to paint the boats and fishing boats; clean the space where we are, yes, there would [need to] be more awareness and education to face the garbage situation here. (fisherman)

No, una vez hicimos el intento de capacitación pero no se logro; nuestras actividades ayudan a disminuir pues cuidamos el manejo de consumo de residuos en

No, once we made an attempt at training but it was not successful; our activities help to reduce (waste) because we take care of the management

los barcos turísticos, y tratamos de usar la menor cantidad de plástico...

of waste consumption in tourist boats, and we try to use the least amount of plastic...
(fisherman)

Si, lo he escuchado; por ejemplo, he hecho flores con botellas de Coca-Cola; envases para sembrar matas. Entiendo que si se reduce es algo menos que va a ser tirado a la basura y que tiene una nueva función Cuidando donde colocamos la basura y recibir educación sobre esto; hemos hecho operativos de limpieza de barrios, limpiamos todo, concientizando la gente de que no ponga la basura antes del camión pasar para evitar que se vea acumulada y los perros realengos no la desbaraten.

Yes, I've heard it; for example, I have made flowers out of Coca-Cola bottles; containers for planting plants. I understand that if it is reduced it is something less that will be thrown away and that it has a new function: Caring where we put the garbage and receive education about it; We have carried out neighborhood cleaning operations, we clean everything, making people aware not to put the garbage out before the truck passes to avoid it being accumulated and so the street dogs do not destroy it. (man, public transport worker)

No he escuchado de este programa; hemos tratado de reducir buscando piezas viejas para reducir la basura; no siempre se puede pero hacemos el intento. SI, claro que seria bueno tener un programa de reciclaje

I have not heard of this program; We have tried to reduce by looking for old parts to reduce waste; it is not always possible but we try. YES, of course it would be good to have a recycling program. (man, employee, private business)

No he oído programas de 3R pero entiendo de la clasificación de los residuos. Debemos ofrecer entrenamiento de 3R; quiero que mi comunidad tenga consciencia de cuidar su medio ambiente. No ofrecemos calimetes (a menos que nos lo pidan) si, claro; No tengo el conocimiento en detalle o especializado sobre este entrenamiento y por eso no lo puedo ofrecer.

I have not heard of 3R programs but I understand the classification of waste. We should offer 3R training; I want my community to be aware of caring for its environment. We do not offer straws (unless they ask us) yes, of course; I do not have detailed or specialized knowledge about this training and that is why I cannot offer it. (female, business owner)

Entiendo la importancia de separar los residuos, lo entiendo muy bien, el cartón aparte, las botellas y fundas de hielo aparte. Nosotros ayudamos a disminuir; estamos claros que hay que cuidar el mar. Esta mas limpio cuando sacamos basura del mar; con guantes y rastrillo en la orilla del mar, retiramos los residuos que encontramos; no he escuchado de las 3Rs. Pero en cierto modo, estamos tratando de no usar tantas fundas de hielo; es un compromiso de todos.

I understand the importance of separating the waste, I understand it very well, the cardboard apart, the bottles and ice bags apart. We help to decrease; We are clear that we must take care of the sea. It is cleaner when we remove garbage from the sea; With gloves and a rake on the seashore, we remove the waste we find; I have not heard of the 3Rs. But in a way, we are trying not to use so many ice bags; it is a commitment of all. (fisherman)

Si, claro. Nosotros mismos entrenamos a nuestro personal si se presentara la oportunidad de recibir un entrenamiento relevante, si participaríamos. El ayuntamiento recoge los residuos; los días de las recogidas, los bajamos a la calle principal. Nos hemos acercado varias veces para solicitar servicio de recogida directa, pero aun no los tienen organizados los medios de comunicación.

Yes of course. We train our staff ourselves; if the opportunity to receive relevant training presents itself, yes, we will participate. The city council collects the waste. On the days of the pickups, we take them down to the main street. We have approached (the government) several times to request a direct collection service, but they (the government) have not yet organized it. (female, business owner)

Si, nuestros colaboradores han participado de entrenamientos diversos sobre el manejo de medio ambiental. Cogeríamos cualquier entrenamiento para concientizar a nuestros colaboradores en base a la importancia de reciclar los residuos para el cuidado del medioambiental.

Yes, our collaborators have participated in various trainings on environmental management. We take any training to raise awareness among our business associates based on the importance of recycling waste for the care of the environment. (male, hotel employee)

6.3 Businesses, Government, and Waste

Businesses participants spoke at length about the role of the municipality in waste management. In general, the business community has a mixed relationship with local government. In Samaná, participants described more difficulty and at times benign neglect related to SWM and communication with local government. In Sánchez, participants were more likely to report good working relationships with the local government but were not aware of new laws. Communication and sharing information about new laws, changes and/or information about collecting waste is lacking. Some participants cited “the media” and television and radio as their sources while many others reported they do not learn about new laws. One participant reporting hearing about new laws when he goes to pay his taxes. There was a consensus that the local government is not helpful in this regard.

Most participants voiced suggestions and concerns about the role of local government in addressing and managing trash collection, separation, and public trash. Education was a consistent theme, particularly surrounding waste in public spaces and among people living close to the rivers and beaches: “They should offer education; we are open to receive education.” Beyond education, participants discussed structural problems, such as garbage bins and traps on rivers, to keep waste out of sensitive ecological zones. Across the board, participants thought the government could do more to address the garbage crisis, and education was nearly always at the center of those comments.

The participants who spoke most frequently about public waste were those individuals whose businesses might be most impacted by the environmental consequences, for example, fishermen or tourist related business owners.

Todas las municipalidades viven divorciadas de la sociedad; no tenemos apoyo del ayuntamiento. La liga municipal controla los ayuntamientos, y estos a su vez, responden muchas veces a compromisos políticos mas que a los ciudadanos; si hay una nueva ley, la oigo en tv, radio o en las redes sociales. La recogida no esta regulada adecuadamente en quistión de los horarios, los días y horas específicas de recoger la basura. Todo se recoge junto.

All municipalities live divorced from society; we do not have support from the city council. The municipal league controls the municipalities, and these, in turn, often respond to political commitments more than to citizens; if there is a new law, I hear it on tv, radio or on social media. The collection is not regulated adequately in question of the hours, days and specific hours to collect the garbage. Everything is collected together. (fisherman)

Hemos también apoyado con ideas que ayuden a evitar la contaminación del rio pueblo viejo, como por ejemplo, una vez se coloco un reten para que la basura se quedara atrapada ahí, y el ayuntamiento apoyara en retirar los residuos que se quedaran atrapados en el reten; pero no hubo respaldo de la municipalidad. estoy muy de acuerdo con los entrenamientos y capacitaciones ya que mejoran la calidad de vida y el bienestar de la provincia, en este caso.

We have also shown support with ideas that help prevent the contamination of the Rio Pueblo Viejo (runs through the center of Samaná), for example, once a fence/trap was placed on it to trap the garbage and the city council was to support this by removing the waste that was trapped in the fencing; but there was no support from the municipality. I very much agree with the trainings and qualifications since they improve the quality of life and well-being of the province, in this case. (fisherman)

Nuestro sindico no tiene poder de decisión; es excelente persona pero no se involucra con la problemática del problema del manejo de la basura. Me entero por los Periódicos si hay alguna noticia..

Our mayor has no decision-making power; he is an excellent person but he does not get involved with the problem of garbage management. I find out from the newspapers if there is any news. (female, business owner)

Tenemos muy buena relación con el alcalde y con el ayuntamiento; cuando necesitamos limpiar el contorno de la iglesia, nos apoyan mandando nos la ayuda debida.

We have a very good relationship with the mayor and with the city council; when we need to clean up the church, they support us by sending us the necessary help. (female, church organization)

El ayuntamiento hace lo que puede; tenemos buena comunicación con la municipalidad, con respecto al aseo diario, la limpieza de los zafacones, cañadas y obtenemos buenos resultados. Nos enteramos de cualquier cosa por medios televisivos y radios..

The municipality does what it can; we have good communication with the municipality, regarding the daily cleaning, the cleaning of the garbage cans and ravines, and we obtain good results. We find out about anything through television and radio. (male, business owner)

El ayuntamiento debería darnos zafacones que se pueda clasificar la basura; buscar como manejar los residuos clasificados; ellos están recogiendo pero no

The municipality should give us trash cans where the garbage can be classified; find out how to handle classified waste; they are collecting but

hay un reciclaje y eso esta dañando el medio ambiente pues todo se tira junto al vertedero, y luego se incendia (sobretudo en el verano), lo cual genera problemas respiratorios.

there is no recycling and that is damaging the environment because everything is thrown away next to the landfill, and then it catches fire (especially in the summer), which generates respiratory problems. (woman, business owner)

El ayuntamiento debería hacer una campaña educativa para concientizar a la comunidad y dar apoyo a la gente. También, deberían de invertir en una planta tratamiento de agua residuales; comprar mas equipos; limpieza de las cañadas; tratamiento de la basura del rio; implementar un sistema cloacal, y hacer un relleno sanitario. Lo demás seria que el gobierno central provea mas fondos para cambiar el vertedero a otro lugar.”

The municipality should carry out an educational campaign to raise awareness in the community and give support to the people; also, they should invest in a wastewater treatment plant; buy more equipment; cleaning of the ravines; treatment of river waste; implement a sewerage system, and build a sanitary landfill. The rest would be for the central (national) government to provide more funds to move the landfill to another location. (male, business owner)

El ayuntamiento debería dar educación, lo recibiríamos con brazos abiertos, eso es progreso. Que los puestos de nombramiento del ayuntamiento sean realmente reales, no botellas.

The municipality should provide education; we would welcome it with open arms, that is progress. And I wish the positions appointed for municipality would do real work, not just on paper. (fisherman)

El ayuntamiento debería trabajar con la educación de la sociedad. Dividir los residuos, enseñar a toda la población; tener leyes locales que, por ejemplo, aquí en Samaná, prohíba el uso de fundas plásticas en los colmados y supermercados.

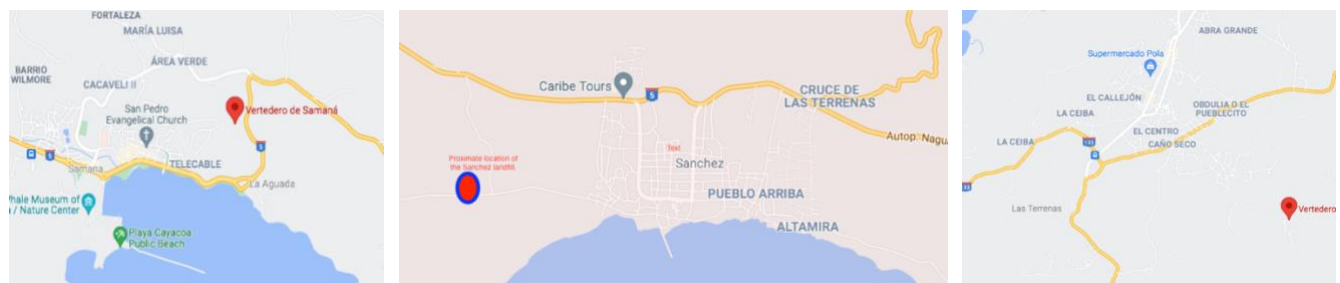
The municipality should work with the education of the society: to divide the waste, to teach the entire population, to have local laws that, for example, here in Samaná, prohibit the use of plastic bags in grocery stores and supermarkets. (man, business employee)

7. Women in the Solid Waste Management Value Chain

This section explores the SWM value chain across Samaná Province and beyond. The SWM value chain here refers to the different steps recyclable waste—plastic, glass, metal, and cardboard—go through from when it is discarded until it is either used domestically or exported to an international market. An explicit goal of this part of the formative research was to understand where women participate in the value chain, where they do not, and what obstacles and support exist to employ them as full partners in the sector. Two researchers were responsible for data collection, which took place in February and March of 2021, with follow-up work into October of 2021. Researchers made 21 attempts to locate, interview, and identify actors in this sector of the economy, as well as to understand larger issues and concerns. The sector is in significant disarray at various levels due to the implementation of a national law and changes in landfill operations. The lack of public information about this is a large part of the cause.

Landfills/Dumps: The three cities on the peninsula—Samaná, Sánchez, and Las Terrenas—all have landfills or dumps, although proximity to their city centers varies. Samaná’s dump is located close to the city. It is easily accessible from a primary road i.e., neither isolated nor hidden. The dump is a problem for residents when the landfill is set ablaze or the smell and flies assault nearby neighborhoods, sometimes the entire city (before the current dump remediation). In Las Terrenas, the landfill is a few kilometers from the city and near two communities, one of which is adjacent to Las Terrenas. Nonetheless, the landfill is relatively isolated because it is far from a main road on a dead-end road going up into the hills. In Sánchez, the dump is even more isolated, located many kilometers from the city line down a road that becomes increasingly desolate. These sanctioned dumps are the primary destination of waste throughout the peninsula, although, as noted earlier, a significant amount of waste is thrown or inadvertently washed into fragile environmental ecosystems (streams, creeks, and beaches) and other waste is burned. Through focus group discussions, the team learned there are two other locations where trash accumulates on the peninsula. One is near the El Limon waterfall, the most well-known land-based ecotourist destination in Samaná; the other was not located by the team but was reported as an informal location on the road between Las Galeras and Samaná. There, trucks tip their loads to avoid the longer journey into the city. This inappropriate waste disposal may happen in several locations.

Figure 1. Locations of the Samaná landfill (vertedero), the Sánchez landfill, and the Las Terrenas landfill (from left to right)



Aggregators who collect, bundle, and sometimes process recyclable materials extend from those who work on the municipal landfills to those who work out of the capital district of Santo Domingo and the second largest city of Santiago in the center of the country. Thus, recyclable waste from Samaná is likely to begin in Samaná but will, if successful, end up in the largest urban centers to be processed and/or upcycled and eventually exported. However, transportation is a significant challenge and expense, so sending waste to Santo Domingo may be impractical,

Researchers identified five levels of aggregators based on the selling and buying of recycled materials as well as on access to equipment, transportation and processing of the materials.

Level one workers are the IWCs, also referred to and/or self-identified as *recicladores* or *buzos* (recyclers or divers). Recycling/diving is the primary occupation of most IWCs, and they work primarily in the landfills. Level two workers may collect waste directly from businesses, consumers, or even the environment, but may also buy from the IWCs. At this level, half of the aggregators have a truck for transporting recyclables and all aspire to own one. Level three aggregators are based in the province or the nearby large city of Nagua. They buy from levels one and two which may be junk shops or entrepreneurial collectors. All level three aggregators have a vehicle and two of three have equipment

for baling or processing waste plastic. Level four aggregators function at a national level. They buy from levels two and three and are likely to have more sophisticated equipment (e.g., grinders), a vehicle, and a warehouse. Level five aggregators are at the national level in Santo Domingo. They sell to an international market and further process or upcycles waste plastic into furniture or other articles. These aggregators buy from level four aggregators. Levels four and five recyclers have established businesses with a significant operation, including transportation. These levels may buy from other levels as circumstance allows. For example, in Sánchez, Parley for the Ocean runs an operation that retrieves plastic directly from the environment, packages it, and then takes it to a level five aggregator in Santiago, bypassing any local or regional aggregators. This unique operation cuts out many mid-level recyclers and retrieves plastic from difficult environments where plastic is rarely recovered and may be degraded (making it be difficult to fashion into something else).

As mentioned, researchers focused on finding women in the SWM value chain. They found women are active in this sector across the peninsula and in other locations throughout the country. Women are more visible and present in this work in some locations than others, and at different levels. Among level one IWCs, the team interviewed nine women and seven men and held a focus group interview in Samaná to attract additional women participants. Among levels two through five, researchers were only able to secure an interview with one woman, although male owners reported that their wives and other women work in their businesses. Attempts to contact women at levels two through five, with one exception, were unsuccessful and the team felt unwelcome in their attempts. For example, the researchers met with one participant and his wife, but when his wife tried to comment, he silenced her. The researchers were thwarted in speaking to all but one woman working above the IWC level.

A note about research: All interviews with IWCs were conducted outside of the landfills. In-person interviews used COVID-safety protocols (PPE masks and sanitizers) and social distancing. The same COVID safety procedures were followed for the focus group discussions in Las Terrenas and Samaná. Interviews with higher level aggregators took place by phone or, when possible, in person, following COVID safety protocols. Due to the sensitive nature of the data, the small number of participants, and the inability to maintain full anonymity among aggregators (except for the IWCs), any identifiers were removed from participant narratives.



Samaná dump before the dump was remediated. Photo: K. Beddall



Samaná dump after the dump was remediated (2021). Photo: Kathleen Skoczen for Clean Cities, Blue Ocean

7.1 Level One Recyclers

Level one recyclers, the IWCs, have minimum education. They turn to waste collection and recovery as a primary source of income. This work is informal and demands a minimum skill set. It is a profession open to many people who are seeking employment but have a hard time securing something better. Other people may be open to an easy, noncommittal way to make “a few bucks.” As such, it is difficult to be certain how many people work in the landfills across Samaná Province. IWCs, it was implied and sometimes stated by participants, seem to come and go and the number of men and women varies across time and locations. Samaná is the only location on the peninsula/province where there has been a formal organization of IWCs, and hence a confident report about who is working in the landfill. Other factors, described below, influence who will work in this profession. Working conditions are often difficult, but IWCs take pride in their work. For most IWCs, the meaning of this work extends beyond the money they earn; IWCs expressed pride in their role in keeping their city clean and helping the environment.

Training and Organizing: ARESAPRO in Samaná

Only the city of Samaná had a formal organization of any kind. This association, ARESAPRO, was established less than a decade ago, but has influenced the attitudes and perspectives of IWCs who participated in the association. For example, in Samaná, IWC study participants were much more likely to self-identify as “recyclers” instead of the more stigmatized “divers.” Women in Samaná have experienced less harassment and have had the security of their fellow association members. While the Association has been struggling of late, it has clearly been an advantage for Samaná IWCs. The lack of such an association was mentioned among interviewees in both Las Terrenas and Sánchez.

In 2015, EcoRed’s “*Reciclaje Inclusivo*” program, with the support of Peru’s “Ciudad Saludable” organization, helped the waste pickers in the city of Samaná to create an association called ARESAPRO (Asociación de Recicladores Samaná Los Progresistas). (<https://opencorporates.com/companies/do/412261>)

According to ONAPI (Oficina Nacional de la Propiedad, Dominican Republic), the Association was created for the following purposes:

“Gestionar y Promover la recolección selectivo de materiales reciclables en Samaná mediante educación a la población y formalización de recolectores.”

“To manage and promote the selective collection of recyclables in Samaná, through educating the population and formalizing waste collectors.”

Mirlanda Hernandez Morris led the Association but passed away in 2019. When ARESAPRO was created, the Association offered training to waste pickers in basic concepts of waste management and on how to use recyclables for art. The Association was able to procure a small compactor for cardboard and received a donated small truck which the waste pickers used to go to hotels and collect recyclables. In general, the Association reinforced good working relations between members, and they worked together cooperatively for the good of all.

“When [the Association] was formed, we would pay RD\$75.00 (approximately US\$ 1.27) every three months, depending on what we sold; now, we aren’t contributing. When we used to sell cardboard together, we would get good money.”

“The money we would get from the sale of the cardboard, we would decrease the share we had to pay for the truck we have; we would use it to pay down the truck and to save. When someone would retire, we would pay them what they put in.”

“Before, we’d pay RD\$75.00 we’d help each other, whatever need the group had. If we were going to buy food, we’d buy it for everyone.”

Today, the Association is in a state of disarray. Challenges include the impact of the pandemic, a change in the local government administration, being displaced from the landfill due to various factors, and the loss of their strongest leader. Nonetheless, in their meetings with the researchers, ARESAPRO Association members reaffirmed their commitment to their work and to the Association. They are eager to resolve these problems and get back on track. The two other cities on the peninsula look to the successes in Samaná as proof that conditions can be improved and that there is a benefit in working together.

7.1.1 Demographics

The research team was able to interview 16 IWCs, although there were others who were not approached or would not agree to be interviewed. For example, in Las Terrenas, the team was told about three Haitian women, but researchers could not contact them, although they tried. It was difficult to track down men in Sánchez due to work schedules. There were also people the team did not pursue because of the goal of including more women IWCs. In total, the team interviewed nine women IWCs, five in Samaná and four in Las Terrenas. The team interviewed seven men, three in Sánchez, three in Las Terrenas, and one in Samaná. The team was told that there are no women working as IWCs in Sánchez, although in recent memory there had been two; one died and the other is ill. Ten women attended the Samaná focus group discussion, thus the team heard from an additional four women in that city. The proximity of the landfills undoubtedly plays a role in who feels safe and secure at a landfill—it was not a surprise that no women currently work in the isolated Sánchez landfill.

Unfortunately, the number of Haitian IWCs working in the Samaná landfill is unknown. Haitian IWCs lose their IWC source of income when municipalities formalize IWC work since Haitians are not able to obtain *cedulos* (Dominican identification cards). The only information available to the team about these informal waste workers comes from female Dominican IWCs who reported that the amount of sexual harassment and GBV experienced by Haitian women working as IWCs in Samaná exceeded that even of Dominican IWCs. Since these Haitians are usually in the country illegally, the women have no recourse.

Of the 16 IWCs interviewed who provided their ages, ages range from 24-66 years old. Two IWCs are young (24 and 25 years old); three are 60 or older. The average age of those interviewed is 46.4 years old. The median age is only slightly higher. The amount of time working at the dump ranges from four to 40 years, with the majority of IWCs having worked on the dump for at least 10 years. Only one waste collector has finished high school, and one 66-year-old man has no formal schooling. Several women have formal training with EcoRed in other professions but have been unable to secure employment so have continued working in this sector. In Samaná and Las Terrenas, many of the IWCs are related to each other through either blood relations or marriage ties. Many of the IWCs identified family as a way of entering this type of work. Two women reported they started this work when they were nine years old, and one man at the age of 12.

Yo empecé joven, lo hizo mi mamá. Ahora yo voy al vertedero a diario, cuando consigo a alguien que se quede con mis hijos.

I started young, my mother did it. Now I go to the landfill every day when I find someone to stay with my children. (Las Terrenas, woman, 24)

Supe del trabajo cuando le traía la comida a mi marido y decidí quedarme

I knew of the job when I'd come to bring my husband his lunch, and I decided to stay. (Samaná, woman)

Mi mamá también es recicladora; empecé a ir porque vivo cerca [del vertedero].

My mother is a recycler; I started going, because I live close [to the landfill]. (Samaná, woman)

Before becoming IWCs, women held a variety of jobs outside the home, working as maids and nannies, selling lottery tickets, and preparing and selling food. Two worked for the city government but lost their

jobs when a different administration was elected. The men had been gardeners, farmers, or farm workers or had worked in public transportation; or construction. The IWCs who were interviewed had worked in the landfill for a range of four to 40 years with an average of 16.2 years and a median of 15 years. Some of the IWCs in Samaná had been trained by the ARESAPRO Association in other jobs such as massage therapy, candle making, and making decorations out of recycled materials. One IWC mentioned she would like to start her own business but lacks preparation: “I lack education and I cannot aspire to run a business if I do not have an education.” (Samaná, woman, 60). Many reported that they would like to start a microenterprise, such as selling foods or making decorations. Other women would like to work at a restaurant or laundromat, work as a nanny or housekeeper, or work in some sort of customer service. One wished to receive training to be a hairdresser. The men aspired to other careers such as lawyer, farming, chauffeur, and tire repair. However, at least two participants reported that, given the option, they would like to stay in recycling.

7.1.2 Terminology: *Buzo/a* or *Reciclador/a*?

The terms “*Buzo/Buza*” (diver) and “*Reciclador/Recicladora*” (recycler) are sometimes used somewhat interchangeably depending on the gender of the speaker and how they define the tasks at hand. However, based on responses in Samaná proper where training had been offered to the IWCs in the past, all five women preferred *recicladora* over *buzo/a*; whereas in Las Terrenas, the four women who were interviewed didn’t see a difference and referred to themselves as *buzas*.

Even so, IWCs made a distinction between these two terms, telling researchers *buzos* collected from landfills while *recicladores* retrieve recyclables from the streets, *colmados*, hotels, and restaurants. Thus, a *buzo/a* works at a landfill while a *reciclador* works outside this venue collecting recyclables before they reach the dump. Nonetheless, many of the female waste pickers working on the Samaná landfill said they preferred to be called *recicladoras*. The participants implied or outright stated that there is a stigma attached to *buzo*, while *reciclador* is generally seen as more respectable and less stigmatized. It is also noteworthy that in Samaná there was more sensitivity to the stigma attached to *buzo* than in Las Terrenas. This may be associated with the educational work of EcoRed. Also, male waste pickers in Samaná call themselves *recicladores* and reported that they are proud of this work as it helps the environment. Participants stated that *buzo* has a dirty connotation while *reciclador* extends a sense of dignity to the work.

Como Buza – iba al vertedero; rebuscaba la basura y recogía orgánicos para la venta; Como recicladora, vamos directo a los colmados y hoteles de la zona. Recicladora, es un trabajo mas digno.

As a waste picker, I used to go to the landfill and dig through the waste for organics to sell; as a recycler, we are going directly to the hotels and markets in the area and pick up recyclables. Being a recycler is a more dignified job. (Samaná, woman, 47)

Me identifico como “Recicladora”; haciendo esta labor, ayudo a impedir la contaminación que hay y me gusta aportar a la mejoría de mi pueblo

I identify myself as a “recycler;” doing this work, I help stop contamination and I like contributing to the improvement of my town. (Samaná, woman, 57)

“Buza” para mi indica un medio de sustento, mientras que “recicladora” es mas amplio: es un medio de sustento económico y ayuda al medio ambiente. Cuando terminábamos de reciclar en el pueblo y en el vertedero juntábamos todos los residuos, los vendíamos y nos repartíamos el dinero.

Me identifico como “Buza” porque recojo solo en el vertedero. Yo empecé joven; yo subía con mi mama, con mi hermana, con amigas. Yo creía que eso era suave, pero no lo es, es un tremendo trabajo.

Me identifico como buza porque recojo en el vertedero. Solo lo hago porque necesito dinero, y a mi edad, no me cogen en ningún otro sitio, o los trabajos que hay, son muy forzados.

Me identifico como reciclador; antes se decía buzo, y algunas [personas] nos insultaban, pero ahora, ellos mismos, están de buzos también. Pero para mi, yo reciclo. Yo reciclo plásticos, botellas, hierros, aluminio y cobre.

“Buza” means to me a way to make a living; “recycler” has a wider concept, not only a way to make a living, but also it is a help to the environment. We used to finish gathering recyclables from the landfill and the town, sell them and split the money. (Samaná, woman, 60)

I identify as a *buza* because I pick in the landfill. I started when I was young. I’d go up to the landfill with my mother, my sister or with friends, I thought it was easy, but no, it is tremendous work. (Las Terrenas, woman, 24)

I identify myself as a *buza* because I pick at the landfill. I only do it because I need money as at my age, I can’t find work anywhere else, and the jobs that I can find are very straining. (Las Terrenas, woman, 54)

I identify myself as a recycler; before we were called *buzos*, and some [people] would insult us but now, they too are working as *buzos*. But in my mind, I am a recycler. I recycle plastics, bottles, iron, aluminum and copper. (Samaná, man, 49)

7.1.3 Why Do I Work Here? Money, Liberty, and the Environment

There were three themes that emerged from the data, with some gendered trends, in reference to why people do this work. There was a unified consensus that people work for the money, even as they acknowledged the work is difficult due to the stench and foulness. Yet, it emerged in the narratives from women that they work for *libertad*, freedom. Not only was it implied that the extra money gives them freedom, but that *going to work* gives them a sense of freedom. The final theme that emerged, more frequently with the men, was that they are helping the environment and caring for their town or the ocean, and that this brings them a larger sense of purpose and pride. Hence, although there is clearly an element of economic necessity, it became clear that this type of work, disparaged by so many, has significance for IVCs that far exceeds a financial transaction.

Money - Both men and women stated that they work to earn money or because it is a job. Both men and women talked about working to support their families: “You have to put food on the table.” (Las Terrenas, male, 43). There were five women who reported they like this work and three who do not; four men reported they like it while three said they do not. All the women who like this work live and work in Samaná; none of the women in Las Terrenas told interviewers they like the work, mentioning

the heat, stench, and difficult working conditions (see below). In Las Terrenas, only one man reported liking this work.

While women generally said that they like earning money, they also acknowledged that men earn more than they do, stating men are stronger, can work longer, and can endure the heat better than women. One woman suggested that although men earn more, it is irrelevant they benefit less because they spend money on alcohol:

Ellos ganaban mas; pero le rinde menos porque lo gastan en alcohol pero nosotros ganabamos menos pero no rendia menos.

They earn more; but it profits (pays/yields) them less because they spend it on alcohol, but we earn less but we do not profit less. (Samaná, woman, 60)

Among the men, only one acknowledged that women may earn less. Most men did not respond to this question or pleaded ignorance: “I don’t know how much women make.” In one case, an IWC reported that his wife looks for clothes while recycling which is slower work. Even with these distinctions, there was recognition that men earn more money. Both men and women mentioned looking for different things and earning differently based on this. For example, metal may generate more money than plastic or cardboard. In general, however, women and men reported that they were happy to earn enough to support themselves and their families.

Yo me siento contenta y capaz cuando gano mi dinero así puedo comprar lo que necesito y valerme por mi misma.

I feel happy and capable when I earn money as I can then buy what I need and fend for myself. (Las Terrenas, woman, 24)

Me sentía contenta porque tenia como buscarme la vida; ganaba mi dinero; aunque no me gustaba, hay que trabajar.

I felt happy because I had a way to earn a living. I earned money. Even though I didn’t like the job, one has to work. (Las Terrenas, woman, 46)

Uno se defiende mejor económicamente trabajando en el vertedero.

One can fend for herself better financially when working at the landfill. (Samaná, woman, 57)

Me gusta porque uno desempeña cuando necesita dinero; es una forma de ganarse la vida.

I like it because one can get by when one needs money; it is a way to earn a living. (Samaná, woman, 25)

Me gusta porque puedo conseguir dinero y yo mismo decido mi horario.”

I like it because I can get money and I decide my schedule (Sánchez, man, 36)

Even so, women earn significantly less than men. Physical stamina and strength play a role. Additionally, men stop less frequently, work faster, and can keep longer hours, according to the women. Some women are not able to start first thing in the morning due to preparing meals, cleaning their homes, and/or getting children off to school. Men were reported to collect any type of waste, but one woman told researchers men are more likely to pick up plastics and metal while women collect pig food and cardboard. However, women are sometimes bullied into working in less desirable spots (in Las

Terrenas, for example). Men may supplement their income from other related jobs. Two of the three men interviewed in Sánchez drive trucks or operate street carts. They garner tips on the side for picking up extra trash and then can go to the landfill and collect recyclables to sell. While male IWCs reported earning US \$18-35 per day, the women reported earning US \$5-8.80 per day. Because of their domestic responsibilities, these women do not have the ability to take on a job in the morning and can only supplement income in the afternoon. Nor are they able to capitalize on the heavier, more valuable items in the landfills.

Liberty - Distinct themes based on gender emerged from participants' responses. Four women used the term *libertad* (freedom) when describing how they felt about working. They also stated they feel better and happy earning their own money, are working because they want to, and value the flexibility and free time. One woman (47 years old) in Samaná mentioned that she was at home all day and lives near the dump. Waste picking became a way to earn “*mis chelitos*,” a little extra money to help out her household “economically.” Women mentioned being able to make their own schedules. Several women spoke of being able to cover expenses for the family which makes them feel good and calm (*tranquillo*). One woman said it allowed her to leave the house: “(There is) less time in the house; I like to work; I like my freedom.” (Samaná, 41). Even if a woman reported she did not like the work, she stated she is happy because “you have to look for life” (Las Terrenas, 46) or “I earn my own money” (Las Terrenas, 24). One woman stated, along with the freedom and liking to work, she feels safe and secure: “*Me siento seguro*.” (Samaná, 41). Women reported being able to make significant economic contributions to their families through this type of work, and this in turn makes life more comfortable and less stressful. Throughout the interview responses, women, with a surprising degree of consistency, expressed that this work gives them freedom, self-sufficiency, financial security, and independence that translates into being happier, even if the working conditions are not always ideal.

Me siento contenta, tengo mi libertad, nadie me manda y me siento segura y menos tensa en la casa. Salgo de casa y tengo libertad para hacer mi horario y tengo acceso al dinero.

I feel happy, I have my freedom, no one bosses me around and I feel secure, less stressed at home. I leave the house, and I have freedom to make my own schedule and I have access to money. (Samaná, woman, 41)

Me siento contenta. Ser recicladora cambio mi vida. Pude hacer mi casita. Puedo producir dinero y pude levantar a mi familia.

I feel happy; being a recycler changed my life. [With the money I made] I was able to build my house. I was able to make money and better my family.

El trabajo me da libertad, nadie me impide hacer mi trabajo.

[This] work gives me freedom, and no one stops me from doing my job. (Samaná, woman, 57)

Environment -

“I am a street sweeper; I pick up waste in wheelbarrows and take them to the trash cans located on the streets of the town; I knew this job would be hard; one has to feel love and this is my town, and I want to take care of it. I am worried about the bay, where people fish, as they aren’t taking care of it. It is dirty, and not being loved.” (Sánchez, man)

Several responses demonstrated that participants recognize the environmental crisis unfolding on the peninsula and that, while their work is a way to earn money, it is also, and perhaps sometimes more so, a way to care for their city, the ocean, and the environment. One man in Sánchez (53) reported a concern with the pollution in the bay and one man in Samaná (49) stated he works to improve his town. There was a slight bias toward men talking about their town or the environment, but women also brought up this theme. It is noteworthy that none of these comments were offered by the IWCs in Las Terrenas. Sánchez and Samaná are both long established cities in the province, while Las Terrenas, as mentioned above, is a city that was built in the last 30 years around tourism development. Thus, the Samaná and Sánchez IWCs may be more rooted in “place” while the IWCs in Las Terrenas may not have a strong family network nearby and may be more economically desperate.

Soy Barrendero; recojo la basura en carretones y echamos la basura dentro de los zafacones colocados en las calles principales del pueblo. Yo sabia que este trabajo seria duro; hay que tenerle amor y este es mi pueblo y yo quiero cuidarlo.

I am a street sweeper; I pick up waste in wheelbarrows and take them to the trash cans located on the streets of the town; I knew this job would be hard; one must feel love and this is my town, and I want to take care of it.
(Sánchez, man, 53)

Me preocupa la bahía, donde las personas pescan, y no la están cuidando; esta sucia y no se le pone amor.

I am worried about the bay, where people fish, as they aren’t taking care of it. It is dirty, and not being loved.
(Sánchez, man, 53)

Me gusta porque aporto al medio ambiente y eso me hace sentir orgulloso.”

I like it because I contribute to the environment and that makes me feel proud.
(Samaná, man, 49)

Paramos la contaminación, y contribuimos al desarrollo del pueblo y del medio ambiente de una forma positiva.

We stop contamination and we contribute to the development of the town and the environment in a positive manner” (Samaná, man, 49)

Me identifico como “Recicladora”; haciendo esta labor, ayudo a impedir la contaminación que hay y me gusta aportar a la mejoría de mi pueblo.

I identify myself as a “recycler”; doing this work, I help stop contamination and I like contributing to the improvement of my town. (Samaná, woman, 57)

“Buza” para mi indica un medio de sustento, mientras que “recicladora” es mas amplio: es un medio de sustento económico y ayuda al medio ambiente.

“Buza” means to me a way to make a living; “recycler” has a wider concept, not only a way to make a living, but also it is a help to the environment. (Samaná, woman, 60)

7.1.4 Challenges for IWCs

He [a male IWC] has never been nasty to me, in terms of offensive or obscene words, but he does bother the Haitian girls and says, from his own mouth, that he touches the private parts of the Haitians who go to the landfill. (Las Terrenas, IWC woman)

Although women and men spoke of the satisfaction, pride, and calmness they experienced being able to earn a living through recycling, they also expressed frustration. Women reported more problems, concerns, and dissatisfaction than the men did. These concerns surfaced on several fronts, including dissatisfaction with the work in general due to working conditions that are “foul” and hazardous and concerns over physical security while working at the landfills and gendered harassment and assault. Relationships between IWCs are critical for the security of their working conditions. While only three of seven men reported having relatives working as IWCs, all the women in Samaná have relatives working with them in the landfill and many discussed the importance of being able to work alongside family. While a strong family network extends a sense of security for women, those women without such a network may find their livelihood and personal safety in jeopardy.

Working Conditions - Las Terrenas women IWCs reported that they were dissatisfied generally with working conditions, suggesting, or sometimes stating, that they find the conditions unacceptable and unappealing. They reported working on the landfill out of necessity, if not desperation.

No me gusta mucho el trabajo pero al menos me gano el pan de mi comida

I don't like the work much, but at least I am earning [money] for food. (Las Terrenas, woman, 60)

No me gusta, era apretado en ese sol, con la lluvia. Yo recogía un chin de todo. Era muy sucio y el sol calentaba mucho.

I don't like it; it is really difficult [to work] with the hot sun and with rain. I would pick up a bit of everything. It was very dirty and hot. (Las Terrenas, woman, 46)

No me gusta, es muy asqueroso y huele mal; solo lo hago porque necesito dinero. No tengo educación ni cedula para buscar otro trabajo.

I don't like it; it is disgusting and it smells horrid. I only do it because I need money. I don't have any education nor a 'cedula' (Dominican identification card) to look for another job. (Las Terrenas, woman, 24)

These “foul” working conditions are not simply a nuisance. In the absence of safety standards and personal protective equipment, the IWCs can put their health at risk. There was no evidence of personal protective equipment (PPEs) being used in the landfills. The Samaná IWCs discussed boots and gloves, but these are not consistently available to them. However, CCBO brought masks and gloves (in men's and women's sizes) to the landfills and collaborated with city administrations to provide them to all the workers. Women demonstrated to researchers that they had suffered infections (for example, in

their hands) and had been cut on their legs. The terrain in the dumps is neither stable nor predictable and poses significant hazards for the workers. There is no space in Las Terrenas landfill for IWCs to escape the weather. Additionally, the waste in Las Terrenas is buried rapidly, affecting IWCs' ability to collect recyclables.

Ninguno tenemos guantes ni botas. Tengo miedo a cortarme ya que no tenemos protección, y uno se puede cortar fácilmente con agujas y vidrios, o infectarse con comida con hongos.

None of us has gloves or boots. I am afraid of cutting myself since we don't have protection and I can cut myself easily with needles or glass, or I can get infected touching food with mold. (Las Terrenas, woman, 24)

Es asqueroso trabajar en el vertedero; hay gusanos que se meten en la manos, uñas y pies. Los hombres tampoco usan guantes.

It is disgusting work in the dump; there are worms that get inside the hands, nails and feet. (Las Terrenas, woman, 54)

Security - IWCs recognize that security is an issue in the landfills. One man in Sánchez emphasized that it is unsafe to be at the dump alone. Thus, security is not only an issue for women, but for men as well. The fact that a man reported this concern in Sánchez may explain why no women participate in this type of work there. As mentioned earlier, the Sánchez landfill is in an isolated location, down a long road out of town. The dump is not only far from the town and its outskirts, but there are no nearby neighbors and no guard shack of any kind. The landfill is located partially inside Los Haitises National Park, an area that is sparsely populated by design. Both Samaná and Las Terrenas landfills are located near communities, and in both cases the majority of IWCs live in these nearby neighborhoods. Nonetheless, women in these unprotected, yet public, spaces are vulnerable to criminal elements. They are seen as easy victims and are very dependent on each other and male companions, even as these male companions can themselves pose a threat.

Yo me siento bien. Lo que lo no me gusta es estar solo en el vertedero. Prefiero ir cuando hay otros compañeros por si acaso aparecen delincuente o algo.

I feel good about this work. What I don't like is being alone in the landfill. I prefer to go when there are other companions in case criminals or others show up. (Sánchez, man, 36)

No hay seguridad; Cuando comencé, unos tipos encapuchados me amenazaron con machetes para robarme el material. Fuimos a poner una querrela a la policía, pero yo no se si hicieron algo, o si fue que los buzos los asustaron pero se fueron.

There isn't security; when I started, some guys with a mask threatened me with machetes to steal the material I had gathered. We went to the police but I don't know if it was the police or that the other *buzos* fought them, but they left. (Las Terrenas, woman)

En una ocasión vinieron dos hombres, que eran buzos en otro lugar, con capas escondiéndoles las caras, y atacaron a una buzo con un machete para robarle la mercancía (metales); los buzos los amenazaron y logramos sacarlos de aquí

One time, two men came and they were *buzos* in another location; they wore masks that covered their faces and they attacked a female *buzo* to steal her materials (metals). The male *buzos* threatened them and finally got them out of here. (Las Terrenas, woman)

A more persistent concern in Las Terrenas was how women's security is at risk because of underlying sexism in their workspace. While women reported being relegated to less desirable areas, there were also serious accusations of sexual harassment and assault. These vulnerable working conditions put some women, for example, undocumented women, at greater risk than those who have male relatives to offer some form of protection. One might also imagine that some women, who might need or desire this type of work, are discouraged from pursuing it under these conditions.

El nunca se ha pasado conmigo, en términos de ofensas ni palabras obscenas, pero si molesta a las haitianas y dice, de su propia boca, que le toca las partes privadas a las haitianas que van al vertedero.

He has never been nasty to me, in terms of offensive or obscene words, but he does bother the Haitian girls and says, from his own mouth, that he touches the private parts of the Haitians who go to the landfill. (Las Terrenas, woman)

Los hombres que trabajan allá que se ponen de perros y nos dicen palabras obscenas y a querer agarrarme las nalgas.”

The men that work there are jerks, and they tell us obscene words and want to grab my behind. (Las Terrenas, women, 24)

Otro problema es que los hombres tratan de sacarnos o echarnos a sitios donde hay menos, diciéndonos cosas obscenas.

A problem is that men try to push us out to places where there is less to pick from, telling us obscene words. (Las Terrenas, woman, 54)

While it is often fellow IWCs in Las Terrenas who harass women, these women, like the women in Samaná, are to some degree reliant on their fellow IWCs to protect them from landfill administrators, other IWCs, or outside threats in the form of criminals. Younger IWCs are at greater risk and, as emphasized above, their vulnerability is exacerbated if they do not have relatives working alongside them. Security, even at the most secure landfill, is arbitrary and unpredictable for the women working as IWCs. Participants reported that women are at serious risk of bodily injury in Las Terrenas. The researchers observed less cohesion in Las Terrenas, in part because women do not necessarily live in close proximity to each other, nor are they necessarily related to each other.

Structural Support - Samaná IWCs benefit from both the security of family relationships but also the formation of the association, ARESAPRO (Asociación de Recicladores de Samaná Los Progresistas or the Association of Progressive Recyclers of Samaná), The Association still exists, although the strong leader who was key to the initial organizing efforts has died. ARESAPRO has other challenges, but the most important problems arose with a changed political administration in the city. The new administration has displayed not only a lack of understanding regarding the role of IWCs, but it has purportedly worked to undermine the existing infrastructure that facilitates IWCs' ability to work. The administration moved to eliminate support that was available in the past, a place that served as a sorting station, and a small shack for escaping and resting from the elements. At one point, the administration closed the landfill to IWCs completely. The new law complicated the situation as the national government took steps to remediate problems (that were decades in the making) with the provincial landfills. These moves often benefited local communities, particularly neighborhoods surrounding the landfills, but they came at great expense to the IWCs.

Thus, key obstacles in Samaná are related to structural support through the government, changes in the management of the landfill, and lack of safe working conditions in the context of COVID. Landfill remediation, while crucial for the environment, means quickly burying garbage along with valuable recyclables. This affects Las Terrenas and Sánchez. Neither the municipal nor national government has ever communicated to IWCs that the situation is relatively temporary; that new sanitary landfills with transfer stations/material recovery facilities (MRFs) with a covered space for men and women IWCs to pick are planned to be constructed. One day, IWCs arrived at the Samaná landfill to find armed guards preventing them from entering. While it was necessary for remediation to close the landfill temporarily, the experience with armed guards was frightening and extremely frustrating for IWCs. IWCs were not informed that this would happen and still have not been told the reason or informed about future plans, although these plans may involve hiring IWCs to retrieve recyclables at the two planned new sanitary landfills. Researchers were not provided any information indicating that IWCs were aware that the existing dumps/landfills would be closed.

The IWCs in Las Terrenas and Sánchez mentioned the importance of having structural support from the government, in both cases in reference to security at the dumps. In Sánchez, the street sweeper who also visited the dump discussed the need for the government to take waste picking more seriously. He has experienced a lack of security around his equipment (e.g., wheelbarrow) and he wishes the government would show more interest in supporting this type of work: “[Neither] the government nor the mayor have ever visited or talked to us; they should have a representative report on the reality of our problems” (Sánchez, man, 31).

Complaints by both women and men in Samaná concerned the fact that a new administration and new policies at the landfill are limiting their access to the dump and a policy to bury the trash means there is not enough time to collect recyclables. Limited access is a significant problem, but working conditions also changed when a shack used as a respite from the sun and heat was destroyed. A parcel of land was set aside for the IWCs with the help of the previous mayor and a MRF was established on it to separate, bundle, and store recyclables. Unfortunately, the MRF was removed without providing the IWCs with an alternative location when the current mayor took office. IWCs were told the MRF was on land that was leased and the owner wanted the land back. So, they were left without a collection center. This is a great source of concern among the IWCs, particularly as the compacting machine has been left exposed to the elements. Moreover, the IWCs can no longer take advantage of value it can bring to their business. Thus, an expensive piece of equipment, secured with the help of EcoRed when ARESAPRO was being established, is now exposed to the elements and is sitting idle. A truck, secured under similar circumstances, is not being maintained for lack of funds. These problems are exacerbated by other activities in the dump, which the IWCs were not made aware of, leading to frustration, confusion, and fear around their ability to continue to make a living by retrieving recyclables from the dump.

Le hemos dicho al sindico que nos consigan un local para el reciclaje; ellos dicen que hubo que devolver el terreno al propietario.

We have told the mayor to find us a transfer station that we can use to recycle; they say they had to return the land to its owner. (Samaná, woman, 47)

El sindaco nuevo no nos apoya. Hablamos con Eligio, supervisor de medio ambiente. El gobierno nos quito el sustento de mi familia.

The mayor doesn't support us. We also talked to Eligio, supervisor of environment. The government took away the income we need to sustain our families. (Samaná, woman, 60)

Hemos tenido alguna dificultad con los representantes del ayuntamiento en el vertedero; he tenido pérdida de materiales pues nos lo botaron y ya lo teníamos contratado con alguien... La situación es que ahora están haciendo relleno, y las palas están recogiendo el material [antes que se clasifique y se saque]. Todos tenemos el mismo problema, todo es igual entre nosotros

We have had some difficulty with the town hall's representatives in the dump; we have had materials thrown away when we had them already sold... The situation is that now, [the government] is filling the dump, and the machines are covering the materials [before they are classified and removed]. We all have the same problem; all is the same amongst us. (Samaná, man, 49)

El administrador del vertedero, me hacia la vida imposible; Mi hermano hablo con el y fue aflojando (cediendo a molestar menos); todo esto porque yo reclamaba mis derechos para recoger mi material. Siento que hacia eso porque éramos mujeres.

The dump administrator made my life crazy; he would throw away material I had separated. My brother talked to him and the administrator started easing up on me. All because I was claiming my rights to gather materials. I think he did that because we are women. (Samaná, woman, 57)

The ARESAPRO Association, even in its attenuated condition, is the problem and the solution to many challenges the IWCs face across the peninsula. The Association is a problem because it needs to be reconstituted and, more importantly, recognized and respected by local and regional authorities. The Association can then play a pivotal role in resolving the many issues discussed above. This is evident when comparing the working conditions of IWCs in Las Terrenas and Sánchez with those of the IWCs in Samaná. Even in its current condition, ARESAPRO benefits IWCs by imbuing them with a sense of cooperation and solidarity. Moreover, ARESAPRO has emboldened the IWCs in Samaná to attempt to work with authorities, in some cases successfully (e.g., stopping the harassment of women by dump officials). An association would provide members with a process to address the lack of security at the dumps, including, critically, the sexual harassment and assaults. An organization of this type would have a system to hold all its members accountable, including those who misbehave. IWCs across the peninsula are aware of ARESAPRO and voice a need for a similar association. Their stated need is certainly evidence enough that this is a reasonable way to maintain justice and accountability in a sector where workers can be vulnerable to pressures between workers (e.g., harassment), pressures from other actors in the supply chain (e.g., unstable pricing), and pressures from the larger society (discrimination and stigma).

In summary, women working as IWCs view this type of work as a good way to make a living, allowing them some degree of freedom and flexibility to accommodate their lifestyles. Nonetheless, women who are related to other IWCs fare much better and those in formal associations even more so. There are many risks associated with this work. Health hazards abound, but so too do threats from outside the

workers (criminals) and those from within, such as sexual harassment that can escalate to sexual assault and intimidation and bullying by other workers, dump administrators, and government officials.

7.2 Aggregators Levels Two - Five

As mentioned above, there is considerable range between levels two and five in terms of the size and scope of the operation. The distinctions are organized not only by the size of the workforce, but also the level of equipment and sophistication of the operation. For example, is this aggregator simply passing on recyclables or are they cleaning and sorting or are they transforming them? Where an aggregator sold and to whom was also a consideration in organizing these levels; some aggregators work locally and others work on a national scale. All the aggregators in this study are Dominican, all work *only* in recycling, with one exception (a level five aggregator business that upcycles pellets into other items, such as furniture), and of those owning and operating businesses, only two do not include family members as workers in their business. It is important to note that the only woman interviewed is technically an employee of her father, but she works at a high administrative/management level and has done so for many years: As she is part of this family-owned business for purposes here she is considered an owner “...but I can offer answers as if I own it [the business].” One of the interviewees is an employee of an international nongovernmental organization.

Aggregators were not amenable to being interviewed in general, and any attempts at learning the quantity of recyclables handled or their incomes were observed to be sensitive topics and therefore not pursued. It was clear that this has become a competitive business with winners and losers. In addition to price fluctuations, loyalty of the client base—who is selling to whom—is also key. The data, though limited, provide clear evidence that this is an important sector of the economy that maintains the livelihoods of the owners and their employees. According to those interviewed, the sector does not receive the attention it is due.

If this study’s sample of aggregators represents the larger industry—which requires capital investments—women are effectively cut out. It appears to be a staunchly male dominated sector, although women are represented to varying degrees in the workforce (e.g., male aggregators reported that their wives work in the office with administration, but this could not be corroborated by direct interviews with the wives). Aggregators borrowed money to start their businesses from family members, but a few relied on borrowing from financial institutions. The industry, however, is aware of social issues. Many aggregators spoke of the value of employing more women. The daughter of the level five aggregator volunteered that she specifically tries to hire women for the business. As is echoed in all interview samples—households, businesses, informal waste collectors—there is a concern for the environment and an understanding that they are providing a service as much as running a business, a service that supports the environment and the community. This understanding can be seen in the context of several comments in the narratives below. Many of the aggregators were drawn to the industry by factors related to the environment. Of course, one has to earn a living, but it is also satisfying to contribute to improving society: “It is our goal to reach the entire population and achieve the participation of the younger generations.”

Table 14. Demographic data of aggregators

Gender	Years in business	Level	# of Employees	Family works in business?	Woman employees	Financing	Own Truck	Own Equipment	Own Building (factory, warehouse, shop)
M	17	2	4	male relatives	no	Bank loan	no	no	no
M	10	2	1	wife	relative	Bus associate	yes	no	no
M	3	2	0	brother/uncle	no	Family loan	no	no	no
M	7	2	2	son/brother	no	Bus associate	yes	no	no
M	15	3	4	sons	no	Family loan	yes	no	no
M	8	3	4	wife/daughter	relative	Bank loan	yes	yes	yes
M	10	3	4	wife	relative	?	yes	yes	yes
M	11	3	9 (30 pre-pandemic)	no	(yes, pre-pandemic none now)	Savings	yes	yes	yes
M	7	4	15	no	1	n/a	Company owned	Company owned	Company owned
M	20	4	50	wife	relative	Bank loan	yes	yes	yes
W	20	5	50	family business/ daughter & father	yes	Family inheritance	yes	yes	yes

7.2.1 Levels and Aggregators

Four of the interviewees are classified as **level two** aggregators. These aggregators usually are self-employed and usually enlist family members to work with them or support them in some fashion, although one has four employees. Two of these aggregators own trucks, one owns used equipment in need of repair, and one has a building dedicated to storing recyclables. At the time of the interviews, one had been working in the hotel business as a security guard but soon quit to pursue this profession full time. Another remains employed. No other aggregators interviewed work outside this sector. Level two aggregators have worked in this business from three years to 17 years. Two of these aggregators sell to Nagua and two others within the peninsula. Below is a profile of how one man, a level two aggregator, who has been collecting plastic for three years, came to work in this industry:

Aggregator three is a young man who worked in the hotel industry and was sensitized to the issue of plastic waste by tourists. After taking note of this problem, his concern grew to an obsession. Using a motorcycle, he began collecting plastic from beaches, roadsides, and the El Limón improvised dump and bringing it to his family’s land in El Limón. After collecting a considerable quantity, he secured a compactor that needed repairs. He eventually quit his job at the hotel, purchased a truck with the help of an uncle, and has turned to aggregating and selling plastic full time. This young man has benefitted not only from the generosity of relatives, but also by mentoring from an NGO in Punta Cana that is a partner on the CEBSE consortium grant.

Four aggregators are classified as **level three**. Each of these aggregators owns trucks; three of them own other waste processing equipment. Three have four employees and one has nine, although before the pandemic he had up to 30. These men have been working in this business from eight to 15 years. Three have family working alongside them as employees—one has his wife and another his wife and daughter; the third only has his sons; the fourth did not offer this information. These aggregators apparently sell to Santiago or Santo Domingo and are likely to buy from IWCs or level two aggregators but were vague or evasive about to whom they sell their products.

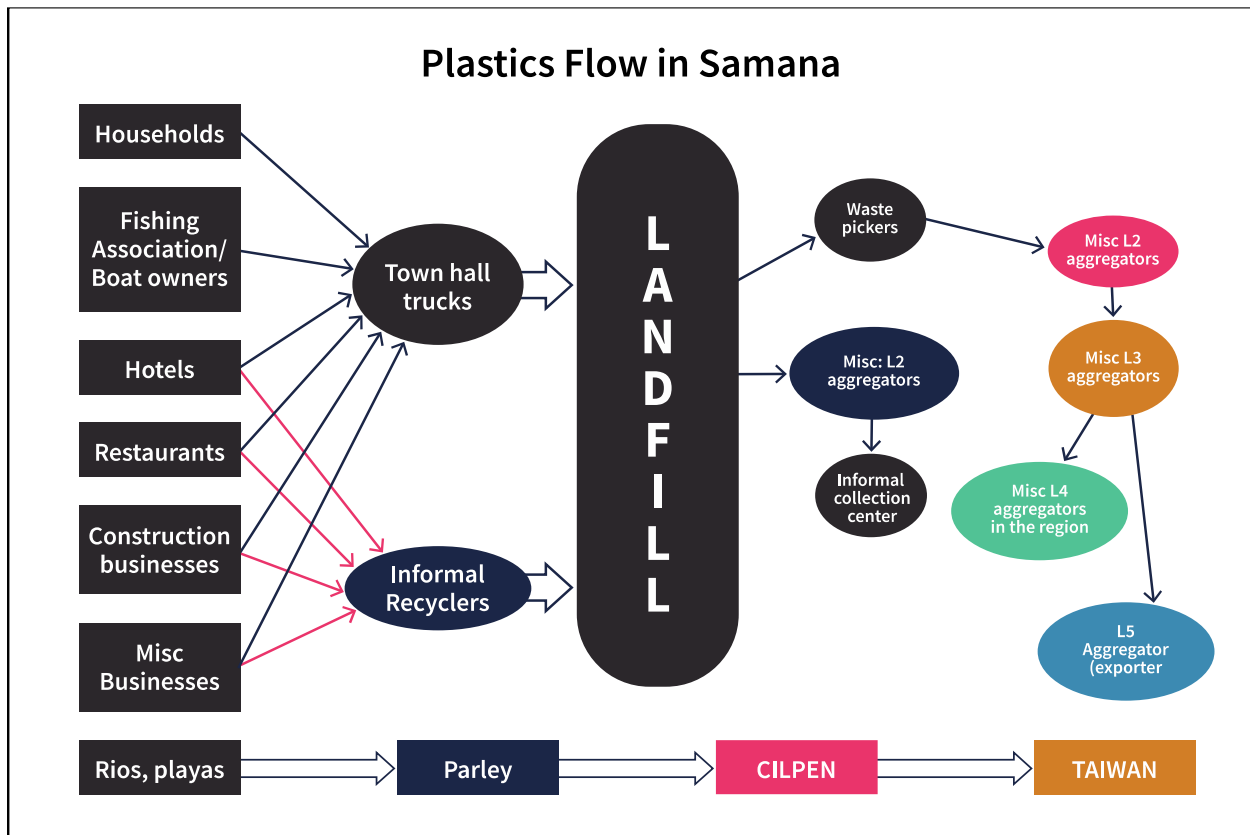
Two aggregators are classified as **level four**. They both own trucks and equipment. One's wife g with him, along with 50 other employees; the other has 15 employees and no family involved. The larger level four aggregator (with 50 employees) has been working in the industry for 20 years and the other for seven years. The larger aggregator buys from level three, grinds down the plastic, and makes new items from it (upcycling).

Finally, the only aggregator classified as **level five** was also the only woman who was interviewed. She is the owner's daughter. She has been working in this business for 20 years and is happy to continue. They have 50 employees and export their cleaned, sorted recyclables. They buy from various other aggregators.

7.2.2 Getting Started and Funding

Participants reported they often got started in the industry by being introduced to it through a friend or relative. These connections are often forged through working in recycling or in a related industry. Several of these aggregators stated explicitly that they were mentored. One aggregator was sensitized about the impact of recyclable waste and then became dedicated to addressing the problem of plastic in the environment. Some aggregators learned for themselves and decided it was a good way to earn a living. For one, it was important to work independently.

Figure 2. Samaná Value Chain



The ability to be able to harness resources to dedicate oneself to this industry is important. All but one of the aggregators who owns their businesses described needing start-up funds. Only three secured some sort of bank loans, one of which was from a cooperative bank. Others secured loans from family or business associates. One man worked in construction and saved money to start his business. The woman whose father owns the company reported that the business was started with money from an inheritance. Even at the lowest end of the aggregator value chain (levels two and three), aggregators accessed resources to launch their business ventures.

Empecé en el 2009, a través de un amigo; antes de eso era empleado de la Coca Cola, y de Barco Plas. Luego del trabajo en Barco Plas, mi amigo me enseñó el mundo del reciclaje; me entusiasme y decidí poner mi propio negocio. Soy el dueño. Tengo maquinarias para triturarlas y luego vendo los pedacitos molidos.

I started in 2009, through a friend. He had been an employee of Coca-Cola, and Barco Plas [A tourist boat]. After working at Barco Plas, my friend taught me the world of recycling; I got excited and decided to start my own business. I am the owner. I have machinery to crush them and then I sell the ground pieces.

Empecé hace 10 años ayudando a un señor que estaba en el negocio. entre a un solar y he empezado a crecer poco a poco; Capitalizarme fue lo peor

I started 10 years ago helping a man who was in the business. I entered alone and I have started to grow little by little. To grow capital was the

sumando clientes un día a la vez. Puedo hacer mas empleos mientras mas vendo. He hecho muchas cosas antes, pero ahora tengo pasión por este negocio y por el medio ambiente, así que por ahora, me quedo en esto.

Soy hija del dueño. Lo empezó mi papa; cuando una tiene padres en esta empresa, uno empieza a involucrarse mas. No soy la dueña oficial porque mi padre aun esta involucrado. Me dedico a la parte administrativa y comercial de la empresa. Me gusta lo que hago, no quisiera cambiar.

Mi padre ha sido dueño de una compañía de exportación de metales. Desde joven, trabaje con el hasta hace como 5 años que decidí iniciar mi propio negocio. Soy el dueño de [Company name], y como quien dice, todólogo. Yo vengo de un mundo de reciclaje, y quiero agregar valor. Me gustaría participar en promover un cambio en la sociedad.

Me puse a trabajar en construcción para reunir el dinero que me ayudo a arrancar. Yo mismo puse mis fondos, nadie me ha dado apoyo. No tuve que coger préstamo. Fue muy difícil. Inicie al paso con muy poco, y mudándome a Las Terrenas.

Si tenemos un préstamo; no fue fácil, pero obtuve un préstamo poniendo mi casa como colateral. Mi esposa esta conmigo en el préstamo. Aquí los bancos requieren mucho, hubiese sido igual con cualquier persona.

worst by adding clients one day at a time. I can do more jobs the more I sell. I've done a lot of things before, but now I have a passion for this business and for the environment, so for now, I'm sticking with this.

I am the owner's daughter. My dad started it. When you have parents in this business, you start to get more involved. I am not the official owner because my father is still involved. I am dedicated to the administrative and commercial part of the company. I like what I do, I would not want to change.

My father owned a metal export company. Since I was young, I worked with him until about 5 years ago when I decided to start my own business. I am the owner of [Company name], and as they say, a jack-of-all-trades. I come from a recycling world, and I want to add value. I would like to participate in promoting a change in society.

I went to work in construction to raise the money that helped me get started. I put up my funds myself; no one has supported me. I didn't have to borrow. It was very difficult. I got started with very little and I moved to Las Terrenas.

Yes, we have a loan; It wasn't easy, but I got a loan by putting my house as collateral. My wife is with me on the loan. Banks require a lot here; it would have been the same with anyone.

7.2.3 Family Business, Women, and Workers

As discussed above, the majority of these businesses include family members; it is the way many businesses begin and are sustained in the Dominican Republic. All but two of the 11 participants employ family members or have relied on their generosity. One of the two aggregators who does not involve family is a management employee of a large NGO that does not employ any of his relatives. Of the 10 business owners, four employ their wives and one also a daughter. One other is herself the daughter of the owner and appears to run the company. One who does not employ family or women averred that he had women working for him before the pandemic (when he had a sizable workforce) and would like to employ women again. Another discussed his desire to expand so that women could be hired for

more than front office operations. Here, he discussed adding facilities for privacy and showering, etc. Another claimed he would like to add more women workers because women are well suited to the job, would help in “marketing our products,” and are more detail oriented (so presumably would do a better job). An aggregator also felt that women who work for him come with better qualifications while the men have little education. Therefore, women work in the front office and men perform the hard labor. Many aggregators attributed the “hard work” or “heavy work” as a reason they do not employ women, yet others spoke of women’s work ethic as a reason to include them.

No tengo mujeres en el negocio. Es un trabajo muy pesado, se requiere de mucha fuerza. Tengo 4 hombres y son 4 familiares; vienen y recogen conmigo la selección de reciclaje y luego [ayudan en] el proceso de moler ese plástico que compran.

I have no women in the business. It is very heavy work; it requires a lot of force. I have four men and they are four relatives. They come and pick up the recycling with me and then [help in] the process of grinding that plastic they buy.

Mi mujer ayuda en lo administrativo; mi hija también esta aquí, ella cocina para los muchachos que trabajan aquí. A ella le gusta trabajar aquí porque se turna con su mama cuidando los nietos. No se me ha acercado ninguna mujer para trabajar aquí.

My wife helps with administrative matters. My daughter is here too; she cooks for the boys who work here. She likes working here because she takes turns with her mother taking care of the grandchildren. No woman has approached me to work here.

Mi esposa trabaja conmigo, lo compartimos todos; hacemos lo mismo los dos.

My wife works with me, we all share it; we both do the same.

En RD, somos 16 empleados entre Sánchez y Santo Domingo. Somos 15 hombres y 1 mujer (española). Son 13 pescadores, los cuales reciben un salario base por hacer el trabajo, y adicionalmente, se les da un incentivo por cantidad de botella que recojan. Estamos trabajando para incluir mas mujeres. Queremos contratar a gente de la comunidad para que se sientan identificados en mejorar su municipio. La única mujer que hay, se encarga de la intercepción y jornadas de limpieza desde Monte Cristi hasta la Romana, en las playas. Ella lleva a cabo el proceso completo (el cronograma), durante todo el año y busca voluntarios.

In the DR, we have 16 employees between Sánchez and Santo Domingo. We have 15 men and one woman (Spanish). There are 13 fishermen, who receive a base salary for doing the work, and additionally, they are given an incentive for the number of bottles they collect. We are working to include more women. We want to hire people from the community so that they can identify with improving their municipality. The only woman there is, oversees the interception and cleaning days (beach cleanups) from Monte Cristi to La Romana, on the beaches. She runs the entire process (the schedule), throughout the year and finds volunteers.

Yo empleo mujeres en el área de oficina (recepción, conserje, recursos humanos y contabilidad). Vienen con experiencia o con cierta educación. Estoy ampliando el área de producción y voy a incluir baños

I employ women in the office area (reception, janitor, human resources and accounting). They come with experience or with some education. I am expanding the production area and I will

para que las mujeres tengan su ducha y privacidad. Ahí espero contratar mas mujeres, para darles oportunidad para que usen las maquinarias y sean parte del área de producción. Creo que las mujeres dan mas atención a detalles, y eso seria algo positivo para el mercadeo de nuestros productos. Mi esposa trabaja conmigo, ayuda en cuentas por pagar, y dice que le gusta.

include bathrooms so that women have their own shower and privacy. There I hope to hire more women, to give them the opportunity to use the machinery and be part of the production area. I think women pay more attention to detail, and that would be a good thing for the marketing of our products. My wife works with me, helps with accounts payable, and says she likes it.

Los números varían. Ahora mismo, en la administración tenemos mitad hombres, y mitad mujeres. En el pasado, hemos tenido todo un departamento de un genero o de otro. La mayoría de la carga pesada la hacen los hombres (choferes, operan maquinarias, lavan, trituran, etc.). Las mujeres las contratamos para limpiar, clasificar, recibir materia prima, pesar, etc.

The numbers vary. Right now, in the administration we have half men and half women. In the past, we have had an entire department of one gender or another. Most of the heavy lifting is done by men (drivers, operating machinery, washing, shredding, etc.). Women are hired to clean, classify, receive raw materials, weigh, etc.

No hay mujeres, solo mi hermano y yo.

There are no women, only my brother and I.

Solo mi esposa me ayuda; lleva la contabilidad en la metalera. Tengo como 26 hombres recolectando en camiones, y como a 14 adentro de la metalera. Los hombres son mas fuertes y pueden cargar.

Only my wife helps me; she runs the accounting; I have around 26 men picking up in trucks, and around 14 inside the factory. The men are stronger and they can lift.

7.2.4 Challenges

Several themes emerged regarding the challenges of the aggregator industry. Although not mentioned by all aggregators, the theme of better education (a theme that runs throughout this report) of the public and private sectors was emphasized. A second theme is the concern with accessing and securing resources—financial resources that can improve the scope of the business. Finally, aggregators asked for support in establishing some kind of trade association so they can work together to improve conditions for all. Most of these objectives, many participants suggested, could be achieved through governmental support. Only one participant mentioned increased scrutiny by public health authorities. Otherwise, the participants felt the government needed to take an active role in supporting this sector, rather than neglecting it, or worse, allowing corruption to make their ability to stay solvent more difficult or make conditions worse for everyone.

Education - Education as a means of improving the industry was mentioned by only a few aggregators, but that it came up at all is noteworthy. The aggregators recognize that they cannot do their work alone and that Dominican society and its people need to buy into the importance of recycling and become disciplined and dedicated. Ultimately, according to aggregators (demonstrated below in the “government

support” subsection), the government needs to take responsibility and support the advancement of this sector.

Aquí no hay educación en la gestión de residuos. Por ejemplo, se ponen zafacones de colores en diferentes puntos, pero la gente bota lo que tengan en el zafacón que mas vacío ven; o, aun hay ciudadanos que botan cosas en la calle.

Here we don't have education on solid waste management. For example, the government establishes colored coded trash cans in collection centers, but people throw what they have in the one they see empty or they throw on the street.

Cuando los camiones recogen, mezclan todo en el mismo camión y todo va al vertedero.

When the trucks pick up, they mix everything in the same truck, and it all ends up in the dump.

También quisiera ver mas educación e iniciativas en los colegios, que hayan camiones que recojan específicamente el plástico, y nos vendan a nosotros.

I'd also like to see more education and more initiatives in schools; like, hiring a truck to specifically pick up the plastics generated at schools, and bring directly to us.

En este país, los negocios no tienen cultura de reciclaje; por ejemplo, yo tengo que pagar por la materia prima que recibo. En países mas avanzados, los negocios le pagan a los recicladores por llevarse la materia prima.

In this country, businesses don't have education or a culture of recycling; for example, I have to pay for the waste I receive to recycle; in other countries, the businesses pay the recyclers to remove the waste.

Funding - The ability to access funding in this sector is crucial, as it is a means to access necessary equipment and land for storing recyclables that can allow a business to grow. It is a defining factor in the difference between those individuals who work as informal waste collectors and those who can strike out on their own and advance. The gender discrepancy between these two groups—IWCs (half or more are women) and the higher-level aggregators (all are male-owned and all but one is male-operated)—may be reflective of the difficulty business owners have in obtaining and securing these vital resources. Women are at a disadvantage. The fact that only three aggregators had received bank loans is indicative of how difficult (and expensive) bank loans can be, particularly in light of the comments by many aggregators for the need to access money. Family, friends or close business associates step in to fill the gap where the formal finance sector cannot or will not. Importantly and interestingly, one aggregator mentioned the challenges of a formal business buying from the informal sector, e.g., tax records.

La falta de fondos, me limita económica-mente. [si tuviera] mas dinero, me permitiría comprar un camión, y alquilar un local para tener mas espacio y me permitiría negociar mejor.

The lack of funds limits me financially; [if I had] more money, I could purchase a truck, rent a piece of land so I can have more space and be able to negotiate better.

Me hace falta fondos: quisiera tener suficiente para comprar un solar y otro camión para recoger galones y botellitas PET.

I need money: I would like to have enough to buy land and to buy another truck so I could pick up PET gallons and bottles.

A nivel de empresa, si pudiera tener mas maquinas, pudiera hacer y vender mas productos en el mercado local.

At the business level, if I could have more machines, I could make and therefore sell, more products in the local market.

No tengo capital para ampliar; quisiera procesar foam, pero no tengo la maquinaria.

I don't have money to expand; I wish I could process foam but I don't have the machinery.

Problemas en cuanto a la DGII: Proveedores informales no nos dan facturas, y para tener costos actuales, necesitamos las mismas. Esto descalifica a mucha gente que pudiéramos usar como suplidores. La informalidad de nuestros suplidores: La mayoría son buzos o recicladores pequeños que quieren que se les pague en efectivo; pero ganan tan poco que no les da para pagar impuestos. Esto trae problemas porque como empresa, el gobierno requiere que paguemos en contra de factura, y esos suplidores no tienen como dar factura.

Problems with the Tax Authorities (DGII): the informal sector doesn't give us invoices, and to have actual costs to report, we need them. This disqualifies a lot of people we could use as suppliers. The informality of our suppliers: The majority are waste pickers or small/informal recyclers that wish to be paid in cash. On the other hand, there isn't enough money for them to pay taxes and still make their delivery to us worthwhile. This brings problems to us as a business because the government wants us to pay against invoices and those suppliers don't or can't give us one.

Government Support - Many of the aggregators declared that solutions could be achieved with improved governmental support even as they identified problems with the government as accentuating their challenges. The government could step in to support this sector in multiple ways. First, local governments could stop allowing violations or bad actors to operate with impunity. Second, they could implement policies and/or laws that create a culture of recycling.

No hay suficientes puntos de acopio; quisiera ver mas.

We don't have enough collection centers; would like to see more.

No hay valorización en las fundas plásticas y botellas PET.

There isn't money attached to plastic bags or to PET bottles.

Hay muchos intereses políticos que influyen decisiones. Por ejemplo, no se puede importar desechos/residuos, lo que provoca competencia porque hay que comprar la materia prima localmente. O, la nueva ley iba a prohibir el uso de foam, pero tengo entendido que por fin se aprobó seguir usándola, demostrando que los intereses de compañías privadas no siempre van con el interés del medio ambiente.

There are a lot of political interests that influence decisions. For example, one can't import waste into the country, which creates competition as one can only buy waste generated locally. Or, the new law was supposed to prohibit the use of foam, but as I understand it, at the end, it didn't pass and people can still use it, demonstrating that the interests of private companies don't always go alongside the interest of the environment.

El gobierno nos maltrata; no dan apoyo ni incentivos aun cuando generamos empleos y ayudamos al medio ambiente. Ellos solo mandan inspectores y ponen multa.

The government mistreats us. They don't support us nor give us any incentives, even though we generate employment and we help the environment. They only send inspectors and give us fines.

Resolving Problems: Organizing Aggregators - The aggregators recognize that just as some of their problems come from within the sector, so too can solutions. An aggregators' association, like the many other associations that exist throughout the private sector in the Dominican Republic, could go far in helping sector actors gain more control and access to resources. This type of united front could help establish fair pricing, reduce cutthroat competition, and lobby for better working conditions and resources. In the end, these better conditions will improve recycling efforts but also improve communities and the environment.

No hay sindicato; seria bueno porque asa compartimos nuestras situaciones y tiraríamos p'alante. También nos ayudaría a conseguir facilidades de préstamo.

There isn't a union; it would be nice [to have one], as we could then share our situations and we could help each other move ahead. It could also help us obtaining loans from banks.

Este es un mercado muy cíclico - hay veces que los precios están altos, y de repente, bajan cuando hay mucha oferta.

This is a very cyclical market - sometimes, prices are high, and suddenly, they go down considerably when there is a lot of product to offer.

No hay sindicato, ni ayuda ni subsidios de los ayuntamientos para con nosotros los recicladores.

There isn't a union; there isn't help nor subsidies from the government to us the recyclers.

No tengo compañía formal, lo cual disminuye la materia prima que puedo conseguir – no me permite acceso a ciertos lugares que venden mucho material.

I don't have a formal company, which decreases the raw materials that I can get, being that I can't access materials from certain companies that sell a lot.

No logramos que la cervecería no nos aumente/pague bien el precio de las botellas. Lo que ofrecen es un incentivo adicional por huacal.

We cannot convince the beer makers to increase or give us better pricing for the bottles; they only offer us an incentive for the small cases of beer bottles.

No hay sindicato, y no tenemos una voz unida que represente nuestros intereses.

We don't have a union, so there isn't a united voice to represent our interests.

No hay ningún sitio que ofrezca asesoría o capacitaciones a nuestro nivel; no hay acceso a instituciones que trabajen con el medio ambiente y con nosotros.

There isn't a place that offers consulting or education at our level, nor do we have access to institutions that work with us and the environment.

La competencia es muy agresiva; hay gente que no sabe, se mete en el negocio y compra muy caro. Hay un descontrol de precios grande; Ya no tengo tantos clientes porque se van con otros; No estamos unidos, y no hay regulación de precio; Deslealtad entre la gente ... Vivimos como chivos sin ley en este país.

The competition is really aggressive; there are people who don't know (anything), but they get in the business anyway, and then they offer high prices for the raw materials. There isn't any price control. I don't have as many clients, as they left me and went with someone else. We aren't united; there isn't any price regulation. People are disloyal. We live like goats in a country without law (people do as they please).

7.3 Summary

As demonstrated in this section, there are considerable challenges throughout the SWM value chain. It is not an easy sector in which to earn a living, and some of its workers live in precarious financial circumstances. Even so, at the lowest level, this industry offers unskilled laborers access to the informal market to earn some income. Women at the lowest level, working as IVCs, find within this sector a flexible source of income that allows them a sense of “freedom” even as it comes with many risks. As one moves up the value chain, opportunities for women remain restricted and low paid, and are often informal: helping their spouse or father or cleaning and sorting recyclables. It is disappointing that an international, progressive, environmental NGO in the DR only employs one woman, and she is not a Dominican national. In larger operations, women are offered professional employment, provided they are qualified, in front office work. At least some actors—the larger aggregators—in the industry have realized or are now realizing the benefits of having women in their workforce, which suggests this source of employment for women may expand.

8. Conclusions and Recommendations: Fixing the Problem

Ethnographic studies and TIPs can make a significant contribution to development. the 3Rs/SWM is no exception. Too often in development, planners, programmers, and policy makers hear the “voices” of the population filtered through the voices of NGOs, which while well-meaning, have their own interests and biases. Additionally, survey results may provide useful information but again the population's voices are missing because respondents answer questions devised by researchers rather than discuss their own constructions of the subject. Ethnographic interviewing, focus group discussions, and TIPs enable the readers of this report to listen directly to the voices of Samañer/os/as as they share how they think/feel about waste, what they do about it, and what they are willing and able to do differently to protect their peninsula.

Throughout this study, there was a widespread recognition in households, across the solid waste value chain, and among the business community that the peninsula/province of Samaná is experiencing a crisis with the accumulation of garbage, specifically plastic garbage. The introduction of a wider variety of packaged items for consumption, along with a growing middle class and an expanding formal workforce, has changed patterns of consumption across the country, including in Samaná. The increase in buying power and increasing numbers of expatriates (particularly in Las Terrenas, but also to a lesser degree in

other locations on the peninsula) has invited Western-style grocery stores and “China shops” where there are more items of convenience that are hermetically sealed in plastic and a wide array of items made of plastic. Thus, not only do rice, beans, vinegar, oil, spice packages, soda, milk, water, etc., now come in plastic packaging, consumers can buy home decorations, buckets, dishes, storage and trash bins, chairs, tables, washing tubs, washing machines, toys, fashion items, etc., all made from plastic. This is not entirely new of course; both the expansion of goods and residents’ purchasing power has changed. Businesses, catering to a population that is often mobile or in the public domain, (e.g., tourists on excursions or workers grabbing fast food on the street), as well as expanding industries like vehicle mechanics, fishing, salons, etc., all rely on items that are wrapped in or consist of plastic.

Extended producer responsibility has come late to the world of plastic packaging and manufacturing. As one participant observed, “the new law was supposed to prohibit the use of foam, but as I understand it, at the end, it didn’t pass and people can still use it, demonstrating that the interests of private companies don’t always go alongside the interest of the environment.” The replacement of glass soda bottles—recycled, washed and reused for decades—with disposable, single-use plastic bottles has caused problems across the peninsula. The move to plastic packaging did not address at the time the subsequent consequences of these products at the other end of the consumption chain. The household participants in this study often spoke of having limited options and no alternatives for plastic trash. As a 59 year-old man in Sánchez told researchers “our beach was clean, it got contaminated after the plastic arrived.”

Social and behavior change goes beyond communication, especially since SBCC (social and behavior change communication) for solid waste (SW) is intimately related to the SWM system. A summary of key findings and corresponding recommendations follows. The recommendations include—but go beyond—communication to suggest actions that will facilitate the ability of the public, IWCs, aggregators, and other businesses to implement 3Rs.

8.1 Gender

Gender is a crosscutting theme that runs through much, but not all of perceptions about and handling of waste in the DR. Household waste handling is mostly not gendered. The exceptions are that native Dominican Samañeras collect kitchen waste in a bucket which pig owners or pig farmers pick up, replacing the full bucket with a clean, empty bucket. Men and boys are responsible for cutting the grass and pruning the large plants in the patio; consequently, it was they (or male gardeners told to do so by a wealthier woman participant) who tried out composting yard waste during the TIPs. Within the household, everyone, regardless of gender, deposits their trash in the household receptacles. Whoever is home when the unpredictable waste collection truck comes and hears the truck takes out the trash. Everywhere both men and women agreed that this is a matter of logistics rather than gendered responsibility. Both men and women eagerly embraced segregation of waste in the TIPs, which was conducted solely with households. During the TIPs, both men and women took the opportunity to instruct their children on segregating waste and the importance of caring for their environment.

Men and women participants are equally troubled by the waste, especially plastic waste, in their environment. All seemed to feel sad and helpless about the intrusion of waste in their province. More

men than women may be exposed to the litter in their environment through their occupations, but both men and women expressed similar feelings.

The commercialization of waste is highly gendered due to structural and cultural reasons (gender status, roles, and norms as well as sexual construction of gender). Women are overrepresented at the lowest level of the waste value chain, where they are unable to collect for the same length of time as men due to the women's competing household and family obligations and their desire to avoid male IWCs' sexual harassment and that of male criminal elements who sometimes turn up in the landfills. Women IWCs are susceptible to sexual harassment and even GBV by male IWCs as well as by the criminals. Women report being pushed out of the way by male IWCs so that the men can collect the most valuable items. Men are also more able to go out collecting from the towns and countryside. Women are more tethered to the landfill by their other family roles as well as their lesser ability to access equipment that would enable them to collect more and be more mobile (e.g., trucks and carts). The lack of mobility means that women must sell to the waste traders/aggregators who come to the dump and control the price. In contrast, men can seek out aggregators in town who may pay more. Consequently, male IWCs reported earning more than female IWCs do.

Women are entirely missing as owners of aggregation businesses. Men are able to borrow funds from banks and male relatives to capitalize their businesses. Women may be less able and have less free time to start a business. Male aggregators may rely on their wives for assistance with administration, but these wives were not permitted to talk with the researchers. Most aggregators hire relatively few women, rationalizing this by using constructions of sex that claim women are incapable of handling heavy items. Higher level aggregators may hire women but usually only for repetitive, routine tasks that require less strength. Only the woman running a large aggregation/upcycling/exporting waste business in Santo Domingo reported trying to hire women. More women work for her father's company than any other aggregator in the study. So, the effect of gender on waste business is significant while the effect of gender on household waste handling is inconsequential.

Both male and female IWCs responded to a question about what they would do if they could do anything else. Some responded that they would work in waste. Women also suggested jobs that require additional education and training, e.g., secretary, hairdresser, and sometimes additional capital (e.g., opening a hairdressing salon). On the whole, both men and women chose occupations that would provide independence and flexibility.

8.1.1 Recommendations

- Low literacy is prevalent among IWCs. Literacy and numeracy training should be offered by CCBO, NGOs or government to IWCs and aggregators if they are interested. Training should be offered in a way that does not interfere with earning a living
- Since the old dumps are being remediated, provide much less opportunity for IWCs to collect waste, and it is unlikely that the new SWM structure will be able to employ or provide a living for all IWCs in the province, interested IWCs should be provided with alternate livelihood training, perhaps through CCBO.
- CCBO should provide gender training and GBV training to both male and female IWCs (but separately).

- CCBO has developed a training and grants program for women at the lowest levels of the SWM value chain that is being rolled out in the Philippines and Indonesia. Perhaps a start-up/incubator grants program for women IWCs combined with livelihood training and GBV training would help women who want to remain in SWM to move up the value chain.¹⁹

8.2 Households

All members of the household contribute to putting waste into the household's waste containers.

8.2.1 Segregation at Source

As the TIPs data show and household interviews suggest, households already segregate waste.

- Kitchen waste: Pig owners/farmers constitute a ready outlet for organic kitchen waste. Native Dominican Samaná residents and others segregate kitchen waste to feed their own or others' pigs. Segregation of this waste is one of the few gendered waste behaviors—women segregate kitchen waste and save it in buckets for the pig food collectors.
- Bathroom waste container content is segregated to be burned; at present the SWM system cannot satisfy families' needs for privacy, modesty, and hygiene regarding this waste.
- Yard waste is kept separate to burn (often with bathroom container waste); plastic very often contaminates the yard waste and is burned along with it, but TIPs showed that most people who agreed to do it were willing to separate the plastic from the yard waste. At present, there is no separate yard waste collection by the municipalities.
- Glass: Many households rinse out and save glass for private, informal sector glass collectors who visit neighborhoods sporadically; households may also repurpose glass bottles.
- Metal: many households clean and save metal for the private, informal metal collectors who visit neighborhoods sporadically and may pay for metal (or not).
- TIPs revealed that sample members and some of their neighbors enthusiastically welcomed the ability to segregate plastic waste when they were confident that it would be kept separate and recycled—because it was collected specially by someone hired by CEBSE to collect and recycle the plastic. The implicit tone and several explicit comments suggested that the ability to segregate plastic waste was empowering for poor, low status community members who felt keenly that they were contributing to and therefore important to the protection of their city and even the planet.
- Almost all TIPs participants who tried separating out incidental plastic waste from yard waste found it easy to do.
- Men are normally responsible for cutting grass and plants that require a machete to cut. Perhaps that is the reason that in the few households that attempted composting during TIPs, it was the men who tried to compost or the task was given to a male gardener.
- Composting attempts during TIPs were generally unsuccessful because there was no or insufficient instruction on how to compost.

¹⁹ Additional recommendations are found in the IWCs and Aggregators sections of this chapter.

- Dividing household waste into different categories, which are destined for different disposal methods, has been practiced in Samaná for some time.
- Samaná residents are very troubled by the waste, especially plastic waste, in their environment. Furthermore, once they were assured and could see for themselves that their plastic waste was kept in a separate waste stream, TIPs participants and sometimes their neighbors gladly segregated plastic waste.
- Household sample members commonly requested additional waste containers to assist them in segregation. Native Dominican residents are accustomed to the pig food collector exchanging the household's bucket with kitchen waste for clean buckets. Therefore, the idea of receiving a clean waste container from an interested party may not be new to these Samaná residents, particularly women who are responsible for saving kitchen waste. Only one sample member mentioned space limitations for keeping waste because patios could be used.

8.2.2 Waste Collection

- Most households were satisfied with the way their waste was collected.
- Those households not on a main street and consequently whose waste was not collected frequently, or perhaps not at all if they lived in difficult to reach areas, suggested having bins conveniently placed throughout neighborhoods so that they could just drop their garbage in as frequently as needed. Some people qualified that with the stipulation that the municipality collect the waste frequently.
- Current waste collection varies by neighborhood: those living on a main street on the way to the landfill may have their trash collected daily, others were twice a week or once a week.
- When waste will be collected is unpredictable—that is the reason that whoever is home when the truck comes runs out with the household trash to give it to the workers; although this is usually a woman, the task is not gendered per se. Women in most towns tend to be home more frequently to be home. Participants told researchers that better management of the garbage trucks would be crucial to addressing the trash crisis. Some households leave plastic bags of trash on the street, where animals tear open the bags and scatter the contents.
- Waste is usually put out in plastic bags from shopping. Plastic bags left for a short time outside the house will be torn open by the town's dogs and the waste spread in the environment.
- Several participants said they missed the bins that were located around the peninsula for dropping waste, likely from other projects or administrations. Additional participants asked for convenient bins to dispose of their household waste when they wanted to get rid of it. A common complaint was that waste left in or around the house soon begins to smell in the hot, moist climate of Samaná. Many household research participants discussed the value of having dumpsters as proper collection points. It alleviated the burden of keeping waste in the patio, and discouraged people from illegally dumping trash on beaches, in rivers, etc.
- A few participants mentioned that the bins for community waste that used to be in their community disappeared due to people who took them to use for storing water.

8.2.3 Recommendations

Segregating household plastic waste will require:

SWM System:

- A SWM system that systematically and predictably routinely collects and maintains separate waste streams for recyclables, including plastic waste
- A segregation system that either trains families to segregate recyclable from non-recyclable waste or a transfer station/MRF with a line to further separate plastics
- Yard waste should be collected and kept separate, perhaps contributing to city composting or cover for the landfills.
- Provide the alternative of household and/or community composting for those households that would prefer to use the waste (and yard waste) as fertilizer. Household composting could be supported and initiated by NGOs; community or municipal composting should be explored by municipalities to learn whether it is feasible and might be an added source of revenue. Men will probably be most interested in composting, but instruction should also be offered to interested women.
- Work with pig farmers and pig owners to establish pig food collection throughout the peninsula. The coordinating body (NGOs, community associations or possibly municipal governments) should coordinate with pig farmers/owners to ensure that everyone's kitchen waste is collected who wants to participate in the program.
- Enlist IWCs to collect recyclables on a predictable, fixed schedule, perhaps through the *Samaná Recicladores* Association, which owns a truck.

Requisite Materials

- When municipalities have decided on the waste streams that must be kept separate and have initiated a systematic, routine collection and disposal/marketing system, providing several durable bins to households for the separate waste streams (other than pig food) would encourage people to segregate waste correctly. It might work best if these were subsidized or provided gratis, perhaps by private sector actors with an interest in a clean Samaná and maintaining separate waste streams. The containers could have advertising for the private sector entity/ies providing the bins.
- Household composting requires either a special container that will allow the organic waste to be aerated or a tool (e.g., a shovel or pitchfork) to turn over the compost to aerate it. The NGO/s responsible for a household composting program should investigate whether households can supply these themselves or whether they could be sold very cheaply or made cheaply by household members.
- Preventing households from burning their yard and bathroom container waste will necessitate material, an SWM system, and SBCC activities. Planting specific plants in the patio or keeping pots of them around where people sit has been documented to help to repel mosquitoes, although this solution does not seem to be strongly effective. The other activities are covered in the SBC and SWM system sections.

- Addressing the reasons that people burn yard waste and bathroom waste will probably obviate the need for burning. People aren't wedded to burning and don't appreciate the smell from neighbors' burning waste. This will require a way to dispose of bathroom SW while preserving modesty, privacy, and hygiene; a way to dispose of yard waste easily; and a way to repel mosquitoes.

SBC

- Once there are recycling markets for some plastic waste and waste streams can demonstrably be kept separate. Households can be required to learn which plastics are recyclable and which should be placed with residual waste. A public information campaign with reminder materials about what goes in which category, together with a word-of-mouth campaign, which was unintentionally started by TIPs participants who enlisted neighbors to join their recycling pickup, should be sufficient to promote and achieve a high level of household waste segregation at source. The research indicates that this will be acceptable and that people may even be convinced to take the additional step of the plastic mixed in with yard waste.
- Once a system for collection and disposal/sale of recyclables has been organized by municipalities with aggregators (both small and large), it would be a good idea to also develop reminder materials that illustrate where each waste stream will go. These materials should be disseminated through social media and community meetings held by NGOs and community associations.
- NGOs are probably best poised to initiate or continue household composting programs. Such programs will require instructional materials—webinars or an app (such apps probably exist) that are both instructional and promotional and reminder materials of what and how to compost as well as tools or possibly appropriate containers to aerate the compost. Readily available, expert sources will need to be on hand long-term to answer questions and solve problems.
- The composting program should be promoted by the NGOs through community associations, which could be provided with the reminder materials to disseminate through radio, social media, and word of mouth.
- An SBCC program is needed to promote safe alternatives to burning bathroom/garden waste and to encourage alternative, less environmentally and health risky behaviors, i.e., bringing bathroom waste together with household residual waste to the closest compacting trash bin, growing certain plants with mosquito repellent properties, wearing mosquito repellent, and putting yard waste outside for collection or depositing it in a compacting trash bin.

Collection for Households is not a problem for many study participants. However, some participants do not have waste picked up and all suffer from the unpredictability of when the waste will be collected. Recommendations include:

SWM System

- The frequency of collection does not need to increase, but the frequency may need to decrease for households whose SW is collected daily. While these households are on the way to the current landfill, picking up their waste every day leaves less time to collect others' waste.

- For those households whose waste is not collected currently—and even for those whose waste is collected weekly—convenient heavy bins (that cannot be easily moved or used to store water) could be an excellent substitute for household collection or for more frequent collection. Even the more remote households would be able to get their SW out of the house before it smells.
- The bins should contain compactors so that waste (once deposited) could neither be removed nor seen by others. When the bin is emptied, the waste would be unrecognizable, thus protecting privacy and modesty and ensuring hygiene for Samaneno/a/s. Such bins appear to be key. If they are too costly for municipalities, perhaps a private sector initiative for a clean Samaná, as part of or a follow-on to *Samaná Limpia*, for a public-private sector partnership might help to subsidize the bins.
- Once a strong collection and disposal system is available to all residents, the municipalities might consider legally eliminating the *motochoncheros*' role in SWM collection.
- The municipalities and private waste collection companies should routinize collection schedules and advertise the schedules.
 - An app that would let the public know when the truck is coming to their neighborhood and that could alert drivers when a household has additional waste (e.g., yard waste) to pick up could facilitate collection and alleviate the problem of bags left outside to wait for the truck.

Requisite Materials

- Alternative methods (growing certain plants, mosquito repellants) should be provided to repel potentially disease-bearing mosquitoes to replace burning yard waste.
- An app should be available for households to inform the IWCs collecting recyclables that they have materials to collect and the nature of the materials (e.g., glass, metal, recyclable plastics, cardboard, or even organic kitchen waste that IWCs sell to pig farmers).
- Municipalities and waste companies should consider adopting one of the existing apps for waste pickup.

SBC

- Once the collection schedule is routinized for municipal collection of residual waste and perhaps yard waste, a public information campaign should announce it and the schedule utilizing all media that Samañer/o/a/s are accustomed to.
- Neighborhood associations should work with the municipality to publicize the collection schedule in their neighborhood and the collection app.
- The availability of compacting trash bins should be publicized, along with their locations. A sensitive public information program should let the public know that once waste goes in, it cannot be touched or seen and when it comes out, it is completely unrecognizable.
- Discouragement of burning should be part of a comprehensive SBC program that addresses the reasons for burning, including promoting whatever alternatives are chosen by the Ministry of Health and local governments to use to repel mosquitoes. The compacting bins and how they work should be explained.

- When the new collection system is functional, municipalities should publicize the ability to segregate waste and what happens to the individual waste streams from collection to disposal, including marketing.

8.3 Businesses

Women are present in the business sector, but the large majority of business owners and their employees are men. One woman business owner on the boardwalk reported that women own 80 percent of businesses on the boardwalk in her town.

8.3.1 Segregation at Source

Knowledge of the term “3Rs” varied among businesses, but most were unaware of the term. Nevertheless, the majority of businesses practice some form of the 3Rs.

- It appeared that most businesses try to reduce plastic waste, e.g., by using fewer plastic bags for ice (fishers) or only providing straws upon request (restaurants). It is also common to separate waste and dispose of it in different destinations (e.g., organic waste to pig farmers or IWCs who sell it to pig farmers). Many businesses reported reuse and recycling, e.g., recycling bottles to the companies that produce the contents of the bottles.
- Some businesses, especially resorts, have tried training staff on the 3Rs.

8.3.2 Types of Waste Produced by Businesses

- In general, the waste produced by non-tourist businesses falls into three categories: 1. general, with plastic (most common); 2. industrial waste, which could also be hazardous (e.g., fiberglass, used pesticide and fertilizer containers, building materials); 3. reusable or recyclable waste, e.g., organic waste which some businesses save for pig food or compost (especially hotels and resorts), bottles that could be sold back to the companies that produce the bottled product—practiced by hotels and restaurants.
- It is possible for vendors to reduce the use of single-use plastics. One vendor, living on the Malecón in Samaná, uses only cardboard and bamboo. The vendor claimed that witnessing the plastic crisis in beautiful Samaná motivated his thinking about the sustainability of his business model. Containers cost five times more than foam, and have to be brought in from Santo Domingo, but this vendor thought the tradeoff was well worth the investment.

8.3.3 Views of Public Waste

- All members of the business sample decried public waste and thought the answer lay in "education" of the population.
- Participants often blamed vendors for the plastic waste. They emphasized the need to reduce plastic use, singling out fast food stands, take out restaurants, and grocery stores that use plastic packaging liberally. These vendors should be held accountable, according to many participants.

Sample members pointed out these businesses' use of cheap plastic bags and cheap foam containers as well as their sales of plastic bottled soda and water.

8.3.4 Government-Business Relations

- The quality of government-business relations depends on the town. However, business owners, associations, and business staff felt that both national and local governments do a poor or nonexistent job in communicating SWM laws and policies to businesses. One business owner reported finding out about new laws/policies only when going to pay taxes. Others stated they learned of applicable laws and policies from “the media,” e.g., television and radio.
- Except for the church association, which reported that the municipality sent someone to help whenever it was contacted, businesses in most towns felt that the municipality should be doing more in SWM, e.g., providing segregated waste bins so businesses could segregate waste, providing a way to safely dispose of industrial waste, and communicating with businesses.
- All businesses stated they would welcome training for the owners and staff in the 3Rs.

8.3.5 Recommendations

Gender

- A program by the national government and/or outside donors to encourage and support women to own businesses might help to ease the gender disparity in businesses owners, assuming that more women desire to establish businesses.

Segregation at Source

- Local governments should investigate further how businesses are already segregating waste and support helpful segregation practices and discourage any that are not useful.
- Training for business owners and their staff on the 3Rs should be conducted through cooperation by business associations, NGOs, and local governments.

Waste Collection and Disposal

- The IWC association in Samaná should talk with associations of local businesses, including fishers' associations, to arrange the collection of plastic and other valuable waste. If IWCs in other towns want to form an association and pursue funding to purchase a truck and equipment, they should also talk with associations of local businesses and fishers' associations.
- It is crucial that the new landfills and transfer station include a way to dispose safely of hazardous industrial and agricultural waste and that these are collected or convenient places to drop off such waste are established.
- The need to reduce plastic use in businesses is recognized by many of those interviewed.

Government-Business Relations

- The national government should communicate, probably nationwide, the new law with the provisions that are most applicable to businesses.

- The local governments of Samaná province should communicate SWM policies with the businesses in their locations through meetings (virtual or in person) and public information literature. Not all business owners can read, so meetings could be key for them. For many businesses, governments can meet with and provide information to the associations and ask that they communicate the information to their members.
- Local governments should appoint a business liaison, not only for SWM but for other concerns of businesses.
- A government-sponsored program for procuring plastic substitutes (biodegradable materials) for vendors throughout the peninsula might help with economies of scale and make such products more affordable for small businesses.

8.4 Community

- Public waste, especially plastic waste, is widely recognized by residents, business owners, and their employees as much more than an eyesore; it is often considered a danger to the environment and to human health.
- Public waste causes distress to Samaná residents but they also feel helpless to do anything about it.
- Some Samaneñ/os/as volunteered that the litter found in the Samaná landscape is bad for the ocean and for tourism.
- Dominicans tend to distinguish between public and private. In Samaná, this translates into taking responsibility for segregating household waste but discarding waste generated in public (e.g., through eating and drinking, etc.) anywhere.
- Residents of Samaná spend a great deal of their time outdoors, socializing, eating, and drinking. Consequently, residents generate a great deal of public waste (i.e., litter).
- Many participants' comments strongly suggested their support for strengthening and supporting neighborhood associations as vehicles for public education and supporting community projects.
- Members of the research team suggested in focus group discussions the possibility of neighborhood associations as a way to organize composting projects; community focus group discussion members embraced this idea.
- Participants mentioned that children are not learning in the homes how to behave in public, especially when it comes to trash. This perceived breach in teaching children proper behavior and social norms coincides with an increase in the quality and quantity of trash. However, children currently throw the waste they generate at home into household trash receptacles.
- Children are currently included in a bottle collection program in Sánchez.
- In the town of Samaná, waste primarily comes from three sources: 1. people throwing their garbage directly in the streets and parks; 2. garbage intended for the dump being left in piles or in improvised dump sites and being spread by the wind, rain, and animals; and 3) garbage being washed out of the landfills, which is becoming less of a problem as the government remediates the existing landfills by first ensuring that the waste is covered by dirt daily.
- Both *motoconcheros* and possibly formal waste collection trucks whose drivers do not want to make the entire trip to one of the landfills deposit waste alongside the highways and in ravines and rivers.

8.4.1 Recommendations

Education

- Children should be included in the solution to public waste. Education regarding waste should be included in school curricula starting in primary school with increases in sophistication in higher grades. This education should be coupled with SBC initiatives so that children feel more a part of protecting their environment (e.g., beach cleanups, environmental champions, etc.). If inclusion in the Ministry of Education's curricula is not possible, afterschool education could help to ensure the future of the peninsula's environment.
- Parent-teacher associations should be included in the education so that parents learn what their children are taught about waste and the environment.
- Perhaps mothers' clubs could also introduce discussion about local environmental issues and how to raise children to be litter-free. This would also accompany in-school programs.

Requisite Materials

- Sufficient bins should be provided to make disposal of waste easy for both tourists and residents.
- Once the SWM system is able to maintain separate waste streams from collection through disposal/marketing, bins could be segregated by type of waste. Public information and SBC efforts would need to reinforce the similarity of segregating household and public waste in order to produce a clean Samaná.

SWM System

- Bins alone are insufficient until collection of bins is frequent enough so that they never overflow.
- A system that could handle segregation of waste at the public source should be tried because it was initially successful in an earlier project—until people saw that the content of the bins was combined in collection trucks and at the landfill.
- The municipalities should consider sharing the costs of bins and increased collection with the businesses that benefit from a cleaner peninsula, e.g., through the Restaurant Association, etc.

Governance

- Anti-littering laws should be promulgated, advertised through public information, and enforced. Citizen volunteers could help with enforcement as could members of some business associations (e.g., fishers).
- Municipal, provincial, or national government should consider working with beverage companies to institute a deposit on bottles, much like the systems in North America and Europe, which alleviate most of the plastic bottles litter.
- As the SWM system greatly improves, including collection and placement of bins convenient to everyone in the peninsula, dumping waste in improvised dumpsites should be abolished by law, if it is not already, and the law should be enforced with sanctions for violators.

SBC

- The perception that public waste is no one's responsibility or only the municipalities' responsibility appears to be long-standing, deeply ingrained, and linked to other parts of the culture (e.g., the public/private distinction). Changing thinking about public waste and corresponding behaviors will require a long-term, multipronged social and behavior change program. Although the behaviors may be few (e.g., leaving plastic bottles, leaving foam food containers, leaving glass bottles, etc.), changing them will probably require culture change.
- In addition to the education mentioned earlier, all the environmental NGOs working in Samaná should coordinate efforts in their programs and SBC to stop public waste, i.e., littering.
- Neighborhood associations or groups of neighbors should be engaged in word-of-mouth SBC. They should also act as informal enforcers to prevent littering, as the women in Sánchez reported doing when people threw trash on the beach in their neighborhood.
- Neighborhood associations can be a key resource that collaborates with both NGOs and municipalities to communicate policies, guidelines, and programs around recycling and solid waste management; organize community composting projects; and expand and systematize pig food collection beyond the native Samaná Dominican population to minimize organic waste entering the municipal waste stream.

8.5 Internal Tourists and Tourist Companies

Tourism provides most formal sector (and some informal sector) jobs on the peninsula. Both internal tourists and international tourists visit Samaná.

- International tourists generally stay at hotels or resorts and go on whale watching tours or ecotours. They seldom spend much time in the towns of the peninsula; therefore, they are not a major source of public waste.
- In contrast, Dominicans who come from other parts of the country are a major source of public waste.
- Bus companies, bus drivers, and/or tour guides who bring tourists onto the peninsula for weekend excursions (profiting from this activity) leave locals to clean up the trash.
- In addition to the buses and tourist companies bringing in tourists, a significant number of tourists arrive via private cars.
- The number of convenient bins for tourists' waste is insufficient. Even where bins exist, the content may not be collected frequently so that the bins may overflow.

8.5.1 Recommendations

Governance

- Norms for tourist companies and bus companies should be disseminated if already in existence or developed by the province or municipalities if not. The norms should come with consequences for repeated violators.
- Taxation of tourist and bus companies or even adding a municipal tax to tourist tickets and parking for private cars could significantly add to municipalities' revenue. This tax revenue would

be best spent on improving the SWM system, especially for tourist spots such as beaches, including providing sufficient bins and collection.

- Containers for larger waste found on beaches and in tourist areas from internal tourists (e.g., broken beach chairs and umbrellas) should be provided.

Requisite Materials

- Handouts of laws and consequences for violating
- SBC materials should be disseminated that promote the use of waste bins and demonstrate how to recognize them. These materials should tap into culturally salient underlying themes. They should also indicate where containers for larger waste are located.
- Sufficiently attention-grabbing bins should be provided.
- Attention-grabbing receptacles for larger waste that has been observed in tourist spots should be provided—if there are trucks able to collect these items.

SBC

- This study examined community and household perceptions of internal tourism; it did not interview tourists from elsewhere in the Dominican Republic or tourist/bus companies. CCBO or CEBSE could conduct very brief (i.e., two weeks) qualitative research with a sample of internal tourists and tourist companies to focus an SBC program.
- Since internal tourism appears to be a major issue for the residents of Samaná and researchers observed tourists littering, a full SBC program should be considered by CCBO, donors, and government. This program should include communication, appropriately located bins that are collected, and littering laws that are enforced.
- A public-private initiative could be considered by the tourism sector, Ministry of Tourism, and local governments.

8.6 Informal Waste Collectors (AKA Level One Aggregators)

8.6.1 Characteristics

- Researchers interviewed IWCs (*buzos* or *recicladores*) working in landfills in Samaná, Las Terrenas, and Sánchez.
- The men and women interviewed were either non-literate or had low levels of education.
- About half of the IWCs (half of the women and half of the men) reported they like the work.
- Even some Dominican IWCs do not have identity cards (*cedulas*) and recognize this as an obstacle to getting other types of work

8.6.2 Feelings About the Work

- All participants declared that they worked for the money—to earn a living—and all valued the flexibility.

- Women consistently reported that the work provides freedom, self-sufficiency, financial security, and independence that translates into being happier, even if the working conditions are not always ideal.
- Many IWCs expressed pride in their role in helping the environment and taking care of their cities.
- Women, especially, appreciate the hazardous nature of their work. They showed injuries and skin infections and cited other health issues.

8.6.3 Relations with Government

- There is an almost complete lack of communication from any level of government with IWCs.
- The consideration of IWC needs is entirely dependent on the current administration of each municipality.
- Dumpsites were closed to IWCs without warning or explanation. Dumpsite remediation, which includes covering the landfill with dirt each day, was not communicated to IWCs who knew only that their livelihoods were being taken away or greatly diminished.

8.6.4 Gender Differences

- Men earn several times more than women due to women collecting less valuable materials, being able to work fewer hours due to competing home responsibilities, and the belief that women have less stamina than men.
- Men and women IWCs raised security concerns in the landfills. Possibly for this reason, IWCs at the isolated Sánchez landfill are all men. Participants reported criminals coming to the landfills. They also reported that women are vulnerable to sexual harassment and GBV from criminals and male IWCs.
- In Las Terrenas, male IWCs protect women IWCs when they are attacked by outsiders. Women who work in a landfill with extended family are more protected than women without kin in the landfill (Samaná women more so than Las Terrenas women). The association of IWCs in Samaná also seems to benefit female IWCs because there was a way to hold all IWCs accountable for their behavior.

8.6.5 Recommendations

Support

- If IWCs without *cedulas* (IDs) are interested in having them, the local governments in the province, perhaps in collaboration with the national government, should consider developing an outreach program to IWCs to help them obtain *cedulas*.
- With the closing of the dumps and building sanitary landfills and MRFs which may or may not be able to employ all the current IWCs, CCBO should consider developing a program for literacy and numeracy and then livelihood training for IWCs, keeping in mind the current employment situation in the peninsula.

- CCBO should consider a mentoring and/or networking program for IWCs to help them cultivate networks that would help them get jobs in SWM or other sectors.
- The IWC association in Santo Domingo, NGOs, and CCBO should consider helping IWCs in the peninsula to revitalize the association in Samaná and organize associations at the other current and future landfills.

Gender

- CCBO or NGOs should provide both male and female IWCs (separately) training in gender, sexual harassment, and GBV.
- In the new transfer stations/MRF, women should be able to work apart from men. The stations should be constructed in such a way that women have equal access to the most valuable waste.
- CCBO has developed a training and grants program for women at the lowest levels of the SWM value chain that is being rolled out in the Philippines and Indonesia. CCBO should investigate a start-up/incubator grants program for women IWCs combined with livelihood and GBV training to advance their opportunities and begin to balance the gender inequity and stratification in this sector. The livelihood training might include skills in other sectors that women IWC participants are interested in and that could serve IWCs (e.g., food preparation).

Requisite Materials

- Provision of woman-friendly hand carts or other wheeled containers might enable women to have more choice in where to sell their collected waste and could also enable them to collect from homes far from collection routes.
- Provision of trucks for other associations would enable these associations to collect waste from resorts, hotels, and other businesses.

SBC and Communication

- The national government and local governments should institute public information initiatives for IWCs to enable them to understand what is being done and why, and what will happen in the future so that they can plan their lives.
- Local government environmental officers should consider holding regular sessions at least once a year to listen and respond to IWCs' suggestions and complaints.

8.7 Aggregators (Levels Two-Five)

Researchers grouped aggregators into levels, with IWCs at the bottom (level one). The criteria were size, equipment, their source for purchasing waste, and the kind of business which bought the waste. Lower-level aggregators work by themselves or with their relatives and may be part of the informal sector.

8.7.1 Financing

- Starting an aggregator business requires capital.

- Capital is mainly raised from relatives— three aggregators secured bank loans, one self-financed by working in construction, and eight of the 10 aggregator business owners secured outside funding to launch their businesses, allowing them to invest in aggregating at a higher level.
- Many explicitly mentioned how difficult loans were to obtain and how much more they could do if they could access loans.

8.7.2 Gender

- All owners of aggregator businesses in the study were men, although the daughter of the largest aggregator, in effect, runs the business for her owner father.
- Lowest level aggregators (levels two and three) either don't employ women or work with their wives.
- Higher level aggregators employ women in office jobs or in cleaning and sorting (receiving the waste).
- All but the lower-level aggregators expressed the desire to hire more women, sometimes due to their gender constructs (e.g., women are more detail-oriented, women are more serious about work, etc.).

8.7.3 Support Needed

- It is a very competitive industry, which puts pressure on the aggregators.
- A majority of aggregators expressed frustration with the lack of support from government; they feel overlooked, despite their important role for the environment.
- Aggregators expressed the desire for help in organizing an association that would lobby for government support through regulation and enforcement.

8.7.4 Reasons to go into the Business

- Aggregators recognized the importance of their business for the environment and some reported they had become aggregators to help the environment.
- The highest (level five) aggregator manages her father's business. Other aggregators entered the sector because of their fathers or other relatives. Still others were motivated by environmental concerns.
- Some of the lowest level aggregators had moved up the value chain from working as IWCs.

8.7.5 Recommendations

Financing and Support

- Loans are difficult for men to secure but more difficult for women. NGOs and donors should consider working with the private sector and government to establish a loan program coupled with business training for current aggregators that would enable them to handle competition and expand or improve their businesses.
- A special grant or loan program (see IWCs, this chapter) for women who are either currently working in the business or who want to enter this industry should be established either through

CCBO or other donors or NGOs. The program should include both business and gender and GBV training.

- Aggregators should consider forming a trade association, similar to a guild, to set standards and represent aggregators to the government and larger buyers of plastic waste. The association could also provide courses in business training as well as gender awareness-raising and GBV.

Gender

- A private sector donor special grant or loan program with training and mentoring for women who want to start aggregation businesses should be established.
- If in-kind grants are initiated, equipment should be tested for its appropriateness for Dominican women before purchase.
- A private sector loan program for aggregators to build separate bathrooms for men and women could help more women to be employed by these businesses.

Annex I. Terms and Definitions

All-Inclusive Resort: An all-inclusive resort is sometimes referred to as a vacation package. In an all-inclusive hotel, guests are often transported directly from the airport to the hotel. Once there, all drink, food, and entertainment are included with the price of rooms. Guests may have no reason to leave the grounds but are often pressured into taking prepackaged excursions outside the hotel. Sandals is perhaps the best example of this.

Almacén: An *almacen* is a warehouse that sells anything from staple food items to lumber. Traditionally, an *almacen* is the primary place for larger shopping trips. Often, food here is purchased in bulk without commercial packaging. Beans, rice, and spices are put into smaller plastic bags, often wrapped a second time in a larger bag. With the expansion of commercial packaging, *almacenes* are also moving toward prepackaged food items even as they lose customers to supermarkets and hardware stores.

Colmado: This is a neighborhood store where residents can access bare essentials without a longer trip to town. It is usually a small shed, often not bigger than 10 by 10 feet, with a counter. Limited supplies include cold beverages, tomato paste, rice, beans, etc. With the expansion of wealth and private refrigerators and supermarkets, *colmados* are becoming rare.

Malecón: Technically, *malecón* translates to pier but the *malecón* in Samaná is more like a boardwalk, made of concrete, that runs along the waterfront, at times widening to accommodate small restaurants, fountains, etc.

Moto Concho: A *moto concho* is a motorcycle used for hire, primarily for transportation. Sometimes there may be cart of some sort welded to the frame of the motorcycle. *Moto concho* refers to both the driver, the motorcycle, and the activity.

Moto Conchero: Often referred to simply as *moto conchos*, *moto concheros* are exclusively young men who operate motorcycles for hire. They transport passengers, but also may be hired for errands, as evidenced by this study's results that show they collect garbage from residents for a small fee (~RD\$50 = >US\$1.00).

Socialization: Socialization is the learning of the rules, norms, values, and proper behaviors within a specific cultural context. Socialization happens informally in the home and more formally in the context of a K-12 educational system.

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