

INTRODUCTION TO “ONE WORD: PLASTICS” PRACTICING ANTHROPOLOGY IN SOLID WASTE MANAGEMENT: USAID CLEAN CITIES, BLUE OCEAN

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Solid waste (AKA ‘garbage’ or ‘trash’) provides an opportunity for anthropologists to practice and make a real difference in the environment, climate change, and in social and infrastructural inequalities. Solid waste, with its increasingly large plastic content, is also methodologically and theoretically interesting to more of us than archaeologists. The solid waste management (SWM) sector provides an extraordinary opportunity for fruitful interdisciplinary collaboration. And since the field has not been overpopulated by social scientists, it’s possible to blaze a new substantive, methodological, and theoretical path.

Clean Cities, Blue Ocean (CCBO) is the United States Agency for International Development’s (USAID) global program to address ocean plastic pollution under the United States government’s Save Our Seas

Initiative.¹ The program has provided an opportunity for three medical anthropologists to work on the issue of SWM in order to keep plastics out of the environment. I am Laurie Krieger, the CCBO Social and Behavior Change and Gender Director, a CCBO technical-management staff position. Kathleen Skoczen, whom I hired as a consultant, oversaw, trained, mentored, and helped design qualitative² research with CCBO’s grantee in Samaná, Dominican Republic. Tran Hang is the newly hired Social and Behavior Change Advisor/consultant to CCBO in Vietnam. I am immensely grateful to USAID for supporting a program in which qualitative formative research plays an important role and where grantees are able to transform research results into action.

The articles in this issue are at the forefront of practicing and

¹Launched in June 2022, the Save Our Seas Initiative is USAID’s flagship initiative to combat ocean plastic pollution globally. Designed to support implementation of the Save Our Seas Act 2.0 of 2020, the Save our Seas Initiative will include \$62.5 million in initial funding and will launch 14 new country and regional programs in key geographies that represent 40 percent of the total global mismanaged plastic waste.

²Without the invaluable and tireless editing support from Laurie Frydman, CCBO Content Writer and Communications Specialist, this issue would never have seen the light of day. The authors of this issue also wish to express our appreciation to the USAID reviewers who provided valuable comments, caught errors, and helped us to improve all the articles.

applied social science and represent successful interdisciplinary collaboration. I decided to bring together most of the authors in this issue for a panel at the Society for Applied Anthropology (SfAA) 2022 meetings in Salt Lake City, Utah. The authors include anthropologists, a human geographer, environmental scientists, ecologists, development specialists, communication experts, and management/business experts.

This *Practicing Anthropology* issue has emerged from that session. This issue contains articles based on the research described in our panel as well as additional research conducted with support from CCBO. For this issue, Clare Romanik, USAID’s Lead Ocean Plastics and Urban Advisor, agreed to respond to wide-ranging questions on CCBO’s innovative approach to reducing ocean plastics. We are grateful for USAID’s support in this sector.

Clean Cities Blue Ocean and the Role of the Anthropologist

The situation of plastic in the world’s environment is truly terrifying—plastic is ubiquitous in every facet of our lives. Clean Cities, Blue Ocean piqued my interest in this surprisingly (to me) fascinating subject. For 23 years, I have practiced anthropology as a staff member of The Manoff Group, which had been a small, woman-owned

consulting business specializing in social and behavior change, primarily for health and nutrition.³

When Tetra Tech approached me to ask The Manoff Group to bid on CCBO with them, and Marcia Griffiths, the then owner-President of The Manoff Group, agreed, I decided to bid myself as The Manoff Group's seconded staff member who would work full-time with CCBO. It seemed like a good idea at the time. It still does. I am a public health anthropologist with a specialty in gender who has, for decades, been less than enamored by most of global public health's western biomedically-oriented, often behavioral approach to health, illness, and behavior change. I thought that the environment sector might be different. And that's how I ended up in the world of plastic waste as the CCBO Social and Behavior Change and Gender Director.

CCBO focuses on preventing plastic waste from entering the world's oceans. The program provides technical assistance to national and local governments and awards grants to local non-governmental organizations, universities, and for-profits to develop and test, scale, and share innovative ways to stem the flow of plastic into the ocean. CCBO works in 25 cities across 10 countries (Dominican Republic, Indonesia, Maldives, Peru, Philippines, Sri Lanka, Vietnam, and recently added Papua New Guinea, Fiji, and the Federated States of Micronesia). The countries were selected by USAID for the magnitude and difficulty of their plastic waste issues. Even countries with a small population, for example the Maldives, have a huge

³In 2022, The Manoff Group was bought by its minority shareholder and is no longer a woman-owned, small business.

problem with plastic waste. The Maldives is located in the middle of the Indian Ocean, with its closest neighbor 500 miles away and a tiny estimated population of 390,164 (CIA, 2022) to less than 524,000 (World Population Review, 2022). The Maldives' plastic issue is partly due to ocean currents that bring others' waste to the Maldives and partly due to the immense challenges of disposing of waste on islands—especially in physically isolated coral archipelago nations such as the Maldives.

Figure 1

Clean Cities, Blue Ocean Grantee Soneva Namoonna Holds Focus Group Discussion on the Beach, Baa Atoll Island, Maldives



Anthropology and Plastic Waste

Although anthropologists currently work in SWM and the 3Rs (reduce, reuse, and recycle), there are relatively few of us (see, e.g., AAA, 2022; Machado-Borges, 2017; Pathak and Nichter, 2020). In 2020, Gauri Pathak and Mark Nichter

issued a call for anthropologists to study plastic waste (Pathak and Nichter, 2020). Nichter has been active in the field of plastic waste research, organizing a plastics futures consortium of social scientists working in different countries researching the challenges of plastic waste.

Several anthropologists have conducted research on informal waste collectors (IWCs), also known as waste pickers or scavengers (e.g., Hartmann and Hegel, 2021; Hartmann, et al, 2020; Hegel 2022; WIEGO, 2021; Millar 2008 and 2018; Simpson-Hebert, 2005). Women in Informal Employment: Globalizing and Organizing (WIEGO) is an international network of scholars, activists, and

scholar-activists dedicated to researching and improving the lot of waste pickers and women who work in other large categories of informal employment, such as domestic laborers. WIEGO counts anthropologists (e.g., Hegel) and sociologists (e.g., Sonia Dias) among its members (WIEGO, 2021).

Figure 2

Sonia Dias Bio

Sonia Dias is a charismatic Brazilian sociologist-activist who is known internationally among people working in the environment sector on plastic waste. She has dedicated her life to researching and improving the lot of the women waste collectors who prevent so much of the world's plastic from ending up in the environment, and to improving solid waste management.

An anthropologist conducted one of the only studies that examined who is actually responsible for waste handling within the household (Machado-Borges, 2017). Thanks to the CCBO program and USAID management, I have been able to require formative research for social and behavior change initiatives—and infuse the research and, hopefully, the perspective of CCBO with an anthropological lens. CCBO grantees and a local subcontractor have conducted detailed, albeit brief, ethnographic studies of waste handling within households, in businesses, with informal waste collectors, and in Peru, also with deep-sea and littoral fishers. The studies are designed to be detailed and to add information to the sparse literature on, for example, everyone in the household who actually handles household waste and how and when socialization for household waste disposal occurs.

The Plastic Problem

Globalization and neoliberalism figure prominently in SWM/3Rs. Virtually all plastic is made from petroleum products. This involves petroleum extractive industries and chemical companies. In addition, large, as well as some small, companies produce plastic packaging and

films that are currently difficult or impossible to recycle. With the pandemic, industry and travel diminished severely, so oil and gas companies made up for lost revenue by producing more and more plastics, many of which are not recyclable. Even masks are often made of plastic in some way.

Why does this matter? Unless it is converted into something else, plastic waste never goes away. Never. Plastic bags, straws, or bottles can take from 20 to 400 years to degrade—and when they do, they just become smaller and form microplastics. Microplastics are defined as any plastic that is 5 mm or less, but they can be much smaller. Nano-sized plastics are less than 1 μm in size (Ragusa et al., 2021; Smith et al., 2018). Microplastics exist in the remotest places in the world—in soil and, for example, in water, beer, honey, wild-caught fish, sea salt, and in human placentas and umbilical cord blood (Campanale et al., 2020; Correia Prata, 2018; Ragusa et al., 2021; Smith et al., 2018). In fact, Campanale et al. (2020) declare that plastics are so prevalent they can be used in archeological and geological stratigraphy since plastics only made their appearance about 70 years ago.

Although work on the human health effects of microplastics is still in its infancy, we know that plastics are powerful endocrine disruptors, especially for males (Petrovicová et al., 2013; Solleiro-Villavicencio, 2020). A number of other deleterious effects from microplastics on human health have been documented or strongly suspected, including dyspnea from tiny microplastics that enter humans' respiratory systems, neuroendocrine disease, enhanced inflammatory response, and disruption

Figure 3

Plastic Waste in a Neighborhood in Samaná Province, DR

(Photo by CEBSE Consortium)



of the gut biome (Correia Prata, 2018; Petrovicová et al., 2013; Smith et al., 2018; Solleiro-Villavicencio, 2020).

Plastic production facilities are also known to be hazardous to the factory workers who work in them—especially in countries of the Global South with insufficient worker safety regulations. The exposure of plastic processing can lead to workers inhaling toxic fumes and handling chemicals over long periods of time, oftentimes without proper protective equipment (CIEL et al., 2019).

Plastics that end up in the marine environment are a disaster for marine life. They fill the stomachs of fish and marine birds, which then starve to death; they are caught in the nostrils of turtles and clog marine plant life (Ocean Conservancy, 2022). If improperly managed, waste plastic will usually wind up in the ocean. Abandoned, lost, or discarded fishing gear, the so-called

plastic “ghost nets,” continue to catch fish and other marine life when they are intentionally left at sea or break loose from their moorings due to storms or accidents.

Land-based plastics leak into the ocean through ineffective or non-existent SWM systems, for example, those systems that don't collect all the waste, don't discourage littering, or that dispose of garbage in open dumps or waterways.

Although waste collection and disposal are very local, what happens to recyclable waste is global. Segregated waste materials are only valuable when there are markets for them. Waste plastics are transported all over the world. Recyclable markets are global. If your small town has a recycling program, it may well be linked into the global market system.

Volume and transportation costs, as well as the ability to make plastic into something else, are key to recycling. Not all plastic can be recycled cost-effectively or at all. Small towns and countries (e.g., the Maldives) do not generate enough plastic to sell to big buyers. If your small town wants to sell its plastic, it will probably need to sell to a buyer who is aggregating the plastic from your town and other sources. What happens to that plastic? It may be sold to a buyer who physically breaks down the plastic into pellets, for example, so it can be reused or made into something else. Or the plastic may be shipped to another country (formerly China took much of the United States plastic), where it becomes that country's problem. As Kathleen Skoczen remarks in this issue, the life of plastic is complex and a part of globalization from manufacturing to disposal and reuse.

Figure 4

The United States Environmental Protection Agency on Waste

The U.S. Environmental Protection Agency on Waste

The total generation of [U.S.] municipal solid waste (MSW) in 2018 was 292.4 million tons (U.S. short tons, unless specified) or 4.9 pounds per person per day. Of the MSW generated, approximately 69 million tons were recycled and 25 million tons were composted.

Together, almost 94 million tons of MSW were recycled and composted, equivalent to a 32.1 percent recycling and composting rate. An additional 17.7 million tons of food were managed by other methods. Other food management includes the following management pathways: animal feed, bio-based materials/biochemical processing, co-digestion/anaerobic digestion, donation, land application and sewer/wastewater treatment.

-United States Environmental Protection Agency. Facts and Figures on Materials, Wastes, and Recycling.” [National Overview: Facts and Figures on Materials, Wastes and Recycling | US EPA.](#)

What about environmental justice? Municipalities often collect waste from wealthier but not poorer neighborhoods. Poorer areas tend to be more densely populated, harder to reach geographically, or informal settlements with narrow alleys that collection trucks can't access. This is one reason that CCBO strongly encourages grants to individuals, organizations, or companies with good ideas to collect waste from areas not currently served, that is, poor, physically difficult to reach, and informal settlements.

Much of the plastic waste in the Global South is collected by informal waste collectors or waste pickers. IWCs are poor, usually highly stigmatized, and often work on fetid piles

of decaying waste in dumps under horrible conditions or collect waste from streets or homes without the benefit of motorized waste conveyances, especially if they are women because women have less access to these vehicles. The advantages of waste picking are: anyone can do it; waste pickers have no bosses; hours are flexible, which is especially important to women; and waste pickers usually function independently, selling the waste they have collected (e.g., Allen & Jossias, 2011; Bhaskar & Chikarmane, 2012; Hartmann et al., 2021; Medina, 2008). Dumps and poorly constructed and/or maintained landfills result in burning waste, leaching of liquid from waste into waterways, and blowing plastics, particularly single-use plastics, and decaying organic matter, which produces measurable greenhouse gasses. Dumps also attract flies, rodents, and other animals and have a habit of spontaneously combusting and/or collapsing on waste workers. You will encounter some of these themes in our papers.

The landfills in the western, post-industrial countries are now almost always sanitary landfills that do not tend to leak plastics into the ocean. However, most waste in the United States, for example, does not get recycled—and much of it may not be recyclable. It ends up in landfills or goes up in smoke in waste-to-energy disposal, where waste is burned in regulated facilities that protect as much as possible from air pollution; nevertheless, there are always some emissions as well as resulting ash. Some waste, for example, the very sizeable proportion of our solid waste that consists of organic matter, can be (although usually isn't) composted.

This Issue

In this issue, the research or implementation described in all but one paper was supported by CCBO. Heide Kerber is not affiliated with CCBO in any way. The views expressed in these papers and in this introduction do not necessarily represent the views of USAID or the United States government.

Clare Romanik manages CCBO at USAID and was the program's lead designer. At the suggestion of *Practicing Anthropology* editor Lisa J. Hardy, I interviewed Clare Romanik about her views of CCBO and the future of plastic waste in general. The CCBO strategic communication staff, Laurie Frydman and Melinda Donnelly, wrote up the interview.

Phu Quoc, Vietnam, is one of the focal sites of CCBO. Heide Kerber published an excellent paper on waste on that island. Based on her paper, I invited Kerber to present her research as part of CCBO's 2022 panel at the SfAA meetings. Kerber, a human geographer, uses sociological and anthropological theory to situate waste on a tourist island with spotless tourist spaces and waste-filled residential areas, an all too common phenomenon in tourist coastal towns with uneven SWM systems. Kathleen Skoczen, an applied anthropologist, together with CCBO grantee researchers, analyzed household interview data from the CCBO grantee in Samaná, Dominican Republic. Skoczen demonstrates how local waste has a global basis. My, Naty Pantaleón's, and Daniel Abreu's paper introduces an approach to formative research: Trials of Improved Practices (TIPs) and describes the results of its application in Samaná. TIPs was developed by the Manoff Group in the 1980s and is used by many NGOs but may be new to this readership.

CCBO grantee Soneva Namoon applied TIPs to waste behavior on several island communities in Baa Atoll in the Maldives and report their results here. Kathleen Skoczen and María Caram's article discusses the results of another important population that the same Dominican grantee studied through their CCBO grant: informal waste collectors or waste pickers. Skoczen uses anthropological theory to make a major contribution to the literature on this group. Raul Caceres, CCBO Asia Regional Social and Behavior Change Manager, narrows the focus on IWCs, describing an illustrative training of IWCs affiliated with the CCBO grantee in Puerto Princesa, Palawan, Philippines. Caceres and his co-authors illustrate how training can spur both individual and social change in this very poor, stigmatized group. Finally, my reflections article aims to provide a brief synthesis and wider context and understanding of the important points about solid waste and the people who generate, handle, dispose of, and recycle it. *Practicing Anthropology* guidelines require a maximum of 12 bibliography entries. I have included a few more in this overview in hopes that this issue will inspire you to conduct your own research on waste, with this bibliography providing initial sources. There is so much yet to research in the world of waste!

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