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“It’s as If They’re Poisoning Us”

The Health Impacts of Plastic Recycling in Turkey



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Summary

“Ali,” a man in his mid-20's, started working in plastic recycling in Adana, a city in the south of Turkey, when he was 13 years old. He worked 13 hours per day in a recycling facility sorting, shredding, and melting plastic into small pellets. Five years ago, Ali quit his job because he had trouble breathing that he thought was linked to air pollution in the recycling facility. “There’s a strong smell of gas,” he explained.

Ali’s story is not unique. While often touted as a positive, environmentally friendly practice, plastic recycling can pose significant threats to human rights and the environment. Plastic products contain toxic chemical additives that can cause serious health problems. Plastic recycling releases those toxins into the local environment, threatening the health of those working in the industry and living nearby recycling facilities.

This report documents the health impacts of plastic recycling on facility workers and residents living near facilities in Adana and Istanbul, Turkey, a major destination for the European Union’s plastic waste. For decades, many countries in the Global North exported their plastic waste to China for recycling. But in 2018, the Chinese government banned plastic waste imports, leaving exporting countries scrambling to find new destinations for their waste. Turkey’s geographic proximity to and strong trade relations with the European Union (EU), and its status as an OECD member have made it a key destination for EU plastic waste exports since the Chinese government ban. In 2020, Turkey was the single largest recipient of EU plastic, importing nearly 450,000 tonnes. The recent influx of EU plastic waste imports contributed to the growth of the plastic recycling sector in Turkey.

Human Rights Watch research found that plastic recycling facility workers and nearby residents can be exposed to harmful chemicals when they inhale toxic dust or fumes emitted during the recycling process, which threatens their right to health. This exposure to air pollution puts workers and residents at the risk of developing significant life-long health conditions, including cancer and reproductive system harms.

The plastics industry has championed recycling as a way to manage waste from their products, while making few efforts to minimize the amount of plastic in their products or

design products that can easily be recycled. Many plastic products are designed to be used once, difficult to recycle, and remain in the environment for decades or centuries.

Plastic production, use, and disposal generates harmful effects for human health and the environment. Governments' human rights obligations require them to address these harms and to protect the rights to health and to a healthy environment. Plastics are produced from oil and gas and then mixed with chemical additives. Plastic production transforms fossil fuels and chemical additives into plastic and, in the process, releases toxic chemicals that are harmful to human health. Plastic recycling and disposal, including dumping, landfilling, and burning, are also linked to negative health and environmental impacts and can emit greenhouse gases. Historically, it is estimated that only nine percent of all plastic ever produced has been recycled, while most plastic waste accumulates in landfills, dumps, the natural environment, or is burned, releasing harmful toxins and greenhouse gases.

Throughout their lifecycle, plastics contribute to climate change. Ninety-nine percent of plastics are made from fossil fuels, including oil and gas. In 2019, global production, disposal, and incineration of plastic emitted 850 million metric tons of greenhouse gases (CO₂e), which is the equivalent to the emissions of nearly 190 medium-sized coal power plants. If plastic use continues its current growth trajectory, by 2050 the GHG emissions from its production and incineration will reach 15 percent of the global carbon budget, effectively making global climate goals very difficult, if not outright impossible, to reach.

For the small percentage of plastic waste that makes it to a recycling facility, recycling can pose significant threats to the rights of workers and nearby communities. In order to be recycled, used plastic is sorted, shredded into small pieces, melted, then reformed into pellets that can be used to make new plastic products. This process can have serious consequences for the health of workers and people living near facilities.

Scientific studies have found that localized air pollution and the release of toxins during plastic shredding and melting pose risks to human health. These include exposure to fine particles, dioxins, volatile organic compounds, and other harmful chemical additives in plastics, and have been linked to asthma, respiratory illnesses, cancer, and reproductive system harms.

Adana, a city of two million, is located near the Mediterranean port of Mersin, the destination for nearly 50 percent of Turkey’s plastic waste imports. For decades, Adana’s official industrial area, as well as the nearby neighborhoods of Şakirpaşa, Ova, Onur, and Uçak in Seyhan district, have been the center of plastic recycling in the country. As of April 2022, official figures show there were 167 licensed plastic recycling facilities in Adana and 232 licensed plastic recycling facilities in Istanbul, many of which are located near residences, medical clinics, schools, and parks.

Human Rights Watch interviewed more than two dozen plastic recycling facility workers from December 2021 to March 2022. These workers often come from some of the most marginalized populations in Turkey, including child workers, refugees, and undocumented migrants.

In Turkey, some of the plastic recycling facility workers and residents told Human Rights Watch that they experienced respiratory problems, severe headaches, skin ailments, worked without protective equipment, and had little to no access to medical treatment for occupational illnesses. Human Rights Watch found that licensed facilities in Adana and Istanbul are often located dangerously close to homes in contravention of Turkish law, which requires recycling facilities to be a “healthy” setback from settlements, which include residences, schools, and hospitals, so facilities do not cause any harms to the health or quality of life to those residing nearby. The close proximity of facilities to homes is threatening the health of nearby residents. In addition to health problems, local residents say intense odors and pollution from plastic recycling prevent them from sleeping, opening their windows, and spending time outside.

Children as young as 9 years old work in plastic recycling facilities in Turkey, despite legal protections prohibiting them from working in such hazardous conditions. Under international and Turkish law, work that is likely to harm the health of children is considered hazardous child labor and prohibited. Of the 26 workers interviewed by Human Rights Watch, nine began working in recycling facilities as children, including five who were children at the time of the interview. Workers in plastic recycling across Turkey told Human Rights Watch they earn wages significantly below Turkey’s minimum wage and work on average 12-hours per day, six-days per week. Fear over losing their jobs made workers wary about raising concerns with their employers over harmful working conditions, including working without access to personal protective equipment. Some facilities do not

register their employees in the social security system, which provides access to public healthcare, as required by Turkish law, and some recycling facility workers said they do not have access to any medical services if they get sick or injured in the workplace.

Residents, current and former recycling facility workers, medical providers, and facility owners said they did not have information about risks from toxic exposure from recycling facilities or how to mitigate those risks. Despite legal obligations for official government sources and employers to share information on the impacts of air pollution and toxic exposure, workers and residents reported being in the dark about the impacts of plastic recycling on their health and how they could protect themselves. Human Rights Watch co-submitted 22 information requests with the nongovernmental organization Citizens Assembly to relevant ministries and municipalities, seeking information and data on the specific environmental and health impacts of the plastic recycling facilities in Turkey. Only two responses were received within the legal mandated timeframe.

Inadequate enforcement of laws is making the situation worse. In Adana and the Bayrampaşa district in Istanbul, interviewees told Human Rights Watch that they were aware of some plastic recycling facilities operate without licenses from the relevant authorities, although Human Rights Watch did not have the capacity to follow up and identify the facilities operating without a license. A license, if enforced, would require them to uphold higher environmental standards. Plastic recycling facility workers told Human Rights Watch that environmental, occupational health, and labor inspections often do not occur on a regular basis or inspectors do not adequately inspect environmental and health conditions.

The Turkish government's ineffective response to the health and environmental impacts of plastic recycling and its lack of adequate air quality monitoring violates Turkey's obligations under domestic and international law, including the government's duties to respect and protect the rights to health and a healthy environment.

As the impacts of climate change and environmental pollution worsen, there is an increased need for a more circular economy, where products are reused, repaired, and refurbished instead of discarded, in order to reduce the consumption of raw materials and energy required to produce new goods. Viewing recycling as the main solution to plastics use is a false solution. Rather, reducing the production of new materials, like plastic, is

essential in the circular economy. Without reducing the amount of plastic being produced, the production of plastics from fossil fuels will continue to exacerbate the climate crisis, a global threat to human rights. If plastic use continues to grow as projected, by 2050 the greenhouse gas emissions from plastic production and incineration will reach 15 percent of the global carbon budget.

To address the human rights harms associated with the business of plastic recycling in Turkey, the Turkish government should ensure that any unlicensed plastic facilities are identified, and required to cease operations and promptly apply for licenses, in line with the Regulation on Environmental Permits and Licenses. The Ministry of Environment, Urbanization and Climate Change should carry out effective and regular unannounced inspections of facilities to ensure compliance with environmental regulations, close or relocate facilities located near homes and schools in contravention of laws, and make information about the risks from air pollution readily available and accessible. The Ministry of Health should carry out health impact studies in neighborhoods near plastic recycling facilities and make community health data accessible and available. The Ministry of Labor and Social Security should carry out regular and thorough occupational health examinations for workers in recycling facilities, ensure that employers are providing adequate protective equipment, and ensure effective enforcement of the ban on child labor.

To protect the right to health for recycling facility workers and nearby residents, the Turkish government should implement existing laws and regulations to prevent human rights harms from the plastic recycling industry. Exporting countries, including those in the EU, should take steps to manage their waste domestically, rather than shipping their waste to other countries. And because the growing rates of plastic production and consumption will continue to contribute to human rights harms, countries should reduce production and consumption of plastic products in order to prevent future human rights impacts associated with plastic recycling and disposal.

Exporters of plastic waste to Turkey, including EU member states, should take steps to ensure that their plastic waste exports are not contributing to human rights harms in Turkey and other importing countries. The European Parliament and the European Council should ensure that the revised Waste Shipment Regulation, which is currently under consideration, puts an end to plastic waste exports to non-European Union or European

Free Trade Association countries and extends protections to all countries, regardless of OECD status.

As most plastics are made of fossil fuels, do not biodegrade, and can take centuries to breakdown, it is imperative that the Turkish government take the urgent steps outlined in this report's recommendations. Plastic created today will continue to be a problem for future generations, making the plastic crisis a significant multigenerational harm.

Recommendations

To the Government of Turkey

- Strengthen laws and regulations to minimize the impacts of recycling on human health and decrease single-use plastic consumption.
- Ensure that authorities in the relevant ministries and municipalities engage and collaborate effectively with local communities, civil society organizations, and universities on data collection, monitoring, planning, and implementation of measures to minimize the impacts of plastic waste recycling on people and the environment.
- Consider the climate impacts of the domestic plastic sector, including by developing emission reduction scenarios for plastic recycling facilities in Turkey's updated Nationally Determined Contribution to the Paris Agreement, in line with Turkey's 2053 net zero target.
- Promote policies and practices that increase transparency about chemical additives in materials and limit the addition of harmful chemical additives in plastic products.

To Turkey's Ministry of Environment, Urbanization and Climate Change

- Due to the negative impacts on health and the environment, reinstate the ban on plastic waste imports to Turkey.
- In coordination with the Ministry of Health, conduct assessments to determine appropriate distances between plastic recycling facilities and residential areas, schools, parks, or medical facilities, and, if necessary, close or relocate all recycling facilities located at too close proximity, in line with the amended Regulation on Licenses for the Opening and Running of Businesses, (no. 25902).
- Require all unlicensed plastic recycling facilities within the Istanbul and Adana Metropolitan areas to cease operation and apply for a license in line with the Regulation on Environmental Permits and Licenses.
- Ensure unlicensed plastic recycling facilities promptly apply for licenses, as required by the Regulation on Environmental Permits and Licenses.

- Conduct regular, independent inspections without prior advance notice, to ensure compliance with regulations, as required by the Regulation on Environmental Audits.
- Increase transparency around the inspection of plastic recycling facilities by making inspection reports, including information on air and water quality, publicly available and accessible.
- Increase air and water quality monitoring in industrial areas and nearby neighborhoods, and make data publicly available and accessible.
- Ensure that data on plastic waste imports, including amount of plastic imported, origin, point of entry, and customs inspections, is up to date and publicly available.
- Strengthen laws and regulations to decrease single-use plastic consumption.
- Due to the significant impacts of PM_{2.5} on health, adopt a PM_{2.5} limit standard in line with the EU annual general limit value of 2.5 micrograms per cubic meter.

To Turkey’s Ministry of Commerce

- Work in collaboration with the Ministry of Environment, Urbanization and Climate Change to ensure that plastic waste imports do not contribute to health and environmental harms.
- Increase capacity of customs officials to identify non-recyclable imported plastic, including plastic waste that exceeds the one percent contamination threshold set by the Ministry of Environment, Urbanization and Climate Change.]

To Turkey’s Ministry of Health

- In coordination with the Ministry of Environment, Urbanization and Climate Change, as required by the amended Regulation on Licenses for the Opening and Running of Businesses (no. 25902), undertake thorough risk assessments following objective criteria to determine appropriate setbacks (health protection strips) between plastic recycling facilities currently in operation or applying for licenses to operate, and other land uses, including residences, schools, parks, and medical facilities.
- Implement comprehensive inspections to ensure that plastic recycling facilities do not harm the health and quality of life of nearby communities, as required by the

amended Regulation on Licenses for the Opening and Running of Businesses (no. 25902).

- Classify plastic recycling as a form of work that may result in occupational illness, as defined by the Regulation on the Rate of Loss of Earning Work Capacity in the Labor Force and Professions, and authorize public hospitals in cities with high numbers of plastic recycling facilities, including Adana, to diagnose occupational illnesses.
- Carry out community health impact studies on neighborhoods with existing plastic recycling facilities, including in Adana and Istanbul.
- Make community health data available and accessible, including neighborhood-level information on disease rates connected with exposure to pollution.
- Educate medical providers on the impacts of air and water pollution on health, including steps they can recommend patients take to reduce exposure to pollutants.
- Improve public education about health impacts of air and water pollution, toxics and how to minimize those risks.
- Increase access to medical services for migrants and refugees in Turkey, regardless of immigration status.

To Turkey's Ministry of Education

- In coordination with the Ministry of Environment, Urbanization and Climate Change and the Ministry of Health, incorporate awareness for the environmental and health implications of plastics, air pollution, and toxic exposure in school curricula.
- Advocate with the Ministry of Environment, Urbanization and Climate Change and local municipalities to ensure that facilities are located a safe distance away from schools.
- Educate students on steps they can take to reduce exposure to air and water pollution, including pollution from recycling facilities and other industrial sources.
- Provide schools with guidance on reducing students' exposure to hazardous air pollution while at school, including by installing air filtration systems and providing face masks.

To Turkey’s Ministry of Labor and Social Security

- Conduct regular, independent, and thorough inspections to ensure compliance with regulations, without prior advance notice, as required by the Occupational Health and Safety Law.
- Enforce the prohibition on child labor in plastic recycling facilities through regular inspections, including unannounced inspections.
- Ensure that agencies responsible for child labor inspections, including the Presidency of Guidance and Inspection, have a sufficient number of trained labor inspectors with resources to conduct meaningful inspections.
- Enforce the requirement for employers to provide personal protective equipment, including masks, goggles, gloves, and uniforms, for workers in plastic recycling facilities, as required by the Occupational Health and Safety Law.
- Conduct regular and thorough health inspections for workers at plastic recycling facilities, as obliged by the Occupational Health and Safety Law.
- Require employers to provide workers with full education on toxic exposure, mandatory use of personal protective equipment, and occupational health, as required by the Occupational Health and Safety Regulation.

To Municipalities with High Numbers of Plastic Recycling Facilities

- Respond promptly to citizen complaints as legally obligated by Turkey Municipality Law, No. 5393.
- Require all unlicensed plastic recycling facilities to cease operation and apply for a license from the local municipality.
- Ensure that plastic recycling facilities are located a safe distance from houses, schools, parks, and hospitals before approving licenses as required by legislation.

To Plastic Recycling Companies in Turkey

- Take steps to mitigate exposure to air pollution and toxins, including by improving air circulation and air filtration systems in recycling facilities.
- Ensure workers have access to – and are trained how to properly wear – protective equipment, including masks, gloves, uniforms, and goggles.

To the European Union and its Member States

- Ensure that the revised Waste Shipment Regulation, currently being considered by the European Parliament and the European Council, puts an end to plastic waste exports to non-European Union or European Free Trade Association countries and extends protections to all countries, regardless of OECD status.
- The European Commission through the European Anti-Fraud Office (OLAF) and EU member states should conduct inspections of EU plastic waste exports to ensure they are “almost free from contamination,” as required by the Basel Convention, and prevent the export of such wastes.
- Promote policies and practices that increase transparency about chemical additives in materials and limit the addition of harmful chemical additives in plastic products.
- Take steps to decrease production of plastic and improve waste management practices in line with EU Circular Economy Action Plan.

Methodology

This report examines impacts of plastic recycling on the health of workers in recycling facilities and those living near such facilities in Adana and Istanbul, Turkey. There are facilities in other cities in Turkey, though Human Rights Watch did not visit these. It documents the harmful effects of plastic recycling on health and the environment, the failure of the Turkish government to protect people's rights to health and to a healthy environment from such harm, or to respect and fulfil people's right of access to information. It focuses on the shredding, melting, and pelletizing of plastic in small-scale facilities. Small-scale plastic recycling facilities are dependent on physical labor for most operations, typically have 20 or fewer employees, and have one or few machines to shred, melt, and pelletize plastic. Often, each stage of plastic recycling, including shredding and melting, is done in separate facilities.

Human Rights Watch chose to conduct this research in Turkey because it is a major importer of plastic waste. The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, a United Nations treaty that entered into force in 1992, and the proposed EU Waste Shipment regulation offer protections for non-Organisation for Economic Co-operation and Development (OECD) member states that import plastic waste in order to protect less developed countries from environmental and human health harms associated with the global waste trade. As an OECD member, these international protections for non-OECD countries do not apply to Turkey, making it a key destination for plastic waste from nearby European countries, which speaks to the importance of researching plastic recycling in the country.

This report is based on information collected during field research conducted in Turkey in December 2021 and March 2022. Human Rights Watch representatives visited Adana and Istanbul neighborhoods with large numbers of plastic recycling facilities. In the course of this research, Human Rights Watch also visited Izmir, Manisa, Muradiye, Silivri, and Çorlu, but plastic sorting facilities visited in those locations are not central to this research.

Human Rights Watch interviewed 64 people for this report, including 26 people who currently work, or previously worked, in plastic recycling facilities and 21 who live near

plastic recycling facilities. Interviews were conducted in Turkish or Farsi, with translation support by Human Rights Watch staff, a consultant, and/or an interpreter. Of the 26 workers interviewed, 16 were in Adana and 10 were in Istanbul. Twenty-two of the 26 workers were male and four were female. Three girls and two boys were under age 18 at the time of the interview, and one woman and three men were adults who began working in a plastic recycling facility as children. Of the 21 residents interviewed, 15 lived in Adana, two lived in Istanbul, and four lived in other parts of Turkey, including Manisa, Menemen, and Çorlu.

All interviewees provided verbal informed consent to participate and were assured that they could end the interview at any time or decline to answer any questions. Some interviewees have been given pseudonyms and other identifying information withheld to protect confidentiality over fears of retaliation. Pseudonyms are used for all children who were interviewed.

In addition to workers and nearby residents, Human Rights Watch also spoke to dozens of people familiar with the plastics recycling industry in Turkey and globally, including waste pickers, healthcare professionals, staff of nongovernmental organizations (NGOs), staff of international organizations, academic researchers, journalists, local elected officials, public school officials, and municipal workers.

Human Rights Watch interviewed seven recycling facility owners in Adana and Istanbul. A 2021 crackdown by the Ministry of Environment, Urbanization and Climate Change on plastic recycling facilities operating without proper licenses made plastic recycling facility owners and some workers hesitant to speak with Human Rights Watch.

Human Rights Watch also reviewed secondary sources, including academic research, project reports, and media reports, to corroborate information from residents or plastic recycling facility workers. Turkish laws and regulations were also reviewed.

Human Rights Watch mapped the location of licensed plastic recycling facilities in Adana's Şakirpaşa, Ova, and Onur neighborhoods and Istanbul's Bayrampaşa district using address data available on the Ministry of Environment, Urbanization and Climate Change website. Of the 34 facilities in the three neighborhoods in Adana, we were able to confirm the addresses and map 32 facilities. We mapped 25 licensed facilities in three

neighborhoods in Bayrampaşa: Terazidere, Vatan, and Muratpaşa. Open-source online maps and, when available, recent Google Street View data were also used to validate the location of these facilities. Human Rights Watch used open-source online maps to identify schools, health facilities, parks, and residential areas located approximately 250 meters from licensed plastic recycling facilities. Because data on the location of recycling facilities, schools, health facilities, and parks is accessed from multiple sources, our results are approximate and not comprehensive.

This report defines unlicensed facilities as facilities that do not hold all the relevant licenses and permits from the Ministry of Environment, Urbanization and Climate Change and the local municipality.

In May 2022, Human Rights Watch co-submitted 22 information requests with Citizens Assembly, a civil society organization in Turkey, to the Ministry of Environment, Urbanization and Climate Change; Ministry of Education; Ministry of Health; Ministry of Labor and Social Security; Ministry of Commerce; Adana Metropolitan Municipality; and Adana Seyhan Municipality. A description of these information requests is included at Annex 2. Thirteen responses, from three directorates of the Ministry of Environment, Urbanization and Climate Change; the Adana Directorate of the Ministry of Environment, Urbanization and Climate Change; the Ministry of Health; the Adana Directorate of the Ministry of Health; the Adana Directorate of the Ministry of Education; the Ministry of Commerce; the Adana Directorate of the Ministry of Commerce; the Ministry of Labor and Social Security; the Adana Metropolitan Municipality Environment Division; the Seyhan Municipality Permits Division; and the Seyhan Municipality Environmental Protection Department were received at time of writing. Detailed responses to the information requests from the Ministry of Environment, Urbanization and Climate Change General Directorate of Environmental Impact Assessment, Permitting and Inspection and the Ministry of Labor and Social Security are attached in Annex 2.

In June 2022, Human Rights Watch submitted letters to the Ministry of Environment, Urbanization and Climate Change; Ministry of Health; Ministry of Labor and Social Security; Ministry of Commerce; and the Turkish plastic recycling industry trade group (*Türk Plastik Sanayicileri Araştırma Geliştirme ve Eğitim Vakfı Geri Dönüşüm İktisadi İşletmesi*, PAGÇEV), to request follow up information on the information requests and to solicit response to the issues documented in the report. At the time of writing, Human

Rights Watch had only received responses from the Ministry of Labor and Social Security and PAGÇEV. This correspondence is attached at Annex 1.

I. Background

What are Plastics?

Scale of the Problem

The world is drowning in plastic. We are eating, drinking, and breathing plastic, and plastic particles have been found in human blood, lungs, and placentas.¹ Scientists have documented microplastics, or plastic particles smaller than five millimeters in diameter, from the top of Mount Everest to the bottom of the Mariana Trench,² in 94 percent of tap water in the United States, and suspended in the air in some of the most remote places on Earth.³ While often framed as a strictly environmental pollution issue, plastics have significant impacts on human rights throughout their lifecycle, and the problem is increasing.

Plastic is not a single material but rather a term to describe a large group of plastic polymers that are made up of a variety of natural and human-made products and chemicals. Most plastic products are thermoplastics, meaning their chemical structure is fluid when heated and becomes solid when cooled to room temperature.⁴ Most plastic packaging is labeled with a plastic resin identification code to identify its plastic type,

¹ United Nations General Assembly, Report of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes, Baskut Tuncak, A/HRC/33/41, August 2, 2016, <https://documents-dds-ny.un.org/doc/UNDOC/GEN/G16/169/26/PDF/G1616926.pdf>; Heather A. Leslie et al., “Discovery and quantification of plastic particle pollution in human blood,” *Environment International*, 163 (2022), accessed April 1, 2022, <https://doi.org/10.1016/j.envint.2022.107199>; Lauren C. Jenner et al., “Detection of microplastics in human lung tissue using μ FTIR spectroscopy,” *Science of The Total Environment*, 831 (2022), accessed April 14, 2022, <https://doi.org/10.1016/j.scitotenv.2022.154907>; Antonio Ragusa et al., “Plasticenta: First evidence of microplastics in human placenta,” *Environment International*, 146 (2021), accessed January 15, 2022, <https://doi.org/10.1016/j.envint.2020.106274>.

² The Mariana Trench is in the western Pacific Ocean, east of the Mariana Islands, and it is the deepest oceanic trench on Earth.

³ Imogen E. Napper et al., “Reaching New Heights in Plastic Pollution—Preliminary Findings of Microplastics on Mount Everest,” *One Earth* 3 (2020): 5, accessed April 8, 2022, <https://doi.org/10.1016/j.oneear.2020.10.020>; X. Peng et al., “Microplastics contaminate the deepest part of the world’s ocean,” *Geochemical Perspectives Letters* 9 (2018): 1-5, accessed April 8, 2022, doi: 10.7185/geochemlet.1829; Mary Kosuth et al., Orb Media, “Synthetic Polymer Contamination in Global Drinking Water,” May 16, 2017, <https://orbmedia.org/invisibles-final-report> (accessed April 11, 2022); Steve Allen et al., “Atmospheric transport and deposition of microplastics in a remote mountain catchment,” *Nature Geoscience* 12 (2019): 339-334, accessed December 23, 2021, <https://doi.org/10.1038/s41561-019-0335-5>.

⁴ *Encyclopedia Britannica*, 2021, s.v. “plastic,” <https://www.britannica.com/science/plastic> (accessed April 1, 2022).

which makes for easier sorting.⁵ Although plastics are categorized as one of seven resin codes, there are thousands of unique plastics, each with their own chemical makeup, structure, and material characteristics.

Since the 1950s, plastic has evolved from a less common, multi-use material to a ubiquitous material in modern equipment, packaging, textiles, and other common goods. Global annual plastic production has soared from two million metric tons in 1950 to 380 million metric tons in 2015 – a 190-fold increase.⁶

Not only has plastic use increased over recent decades, plastic production is projected to triple from 2015 to 2060.⁷ Plans to scale up the plastic industry are largely driven by the world’s largest oil and gas producing companies, alongside fast moving consumer goods companies.⁸ As countries around the world transition from oil and gas as energy in attempts to prevent the most catastrophic effects of climate change, fossil fuel producing companies are increasing investments in plastic and petrochemical production, as well as increasing capacity to make plastic.⁹ Most plastics are made of fossil fuels, do not biodegrade, and can take centuries to breakdown. Plastic created today will continue to be a problem for future generations, making the plastic crisis a significant multigenerational harm.

⁵ For example, polyethylene terephthalate (PET) is coded as #1 and is commonly used to make water bottles, high-density polyethylene (HDPE) is #2 and commonly used to make shampoo bottles, polyvinyl chloride (PVC) is #3 and commonly used to make pipes, and low-density polyethylene (LDPE) is #5 and is used to make single-use plastics including plastic bags and film.

⁶ Center for International Environmental Law et al., “Plastic & Climate: the Hidden Costs of a Plastic Planet,” May 2019, <https://www.ciel.org/plasticandclimate/> (accessed September 14, 2021).

⁷ Laurent Lebreton and Anthony Andrady, “Future scenarios of global plastic waste generation and disposal,” *Palgrave Communications* 5 (2019): 6, accessed February 28, 2022, <https://doi.org/10.1057/s41599-018-0212-7>.

⁸ Fast moving consumer goods are products that are produced and sold quickly, including food and beverages in plastic packaging. Greenpeace, “The Climate Emergency Unpacked: How Consumer Goods Companies are Fueling Big Oil’s Plastic Expansion,” September 14, 2021, <https://www.greenpeace.org/usa/reports/the-climate-emergency-unpacked/> (accessed September 15, 2021).

⁹ *Ibid.*; International Energy Agency, “The Future of Petrochemicals,” October 2018, <https://www.iea.org/reports/the-future-of-petrochemicals> (accessed January 10, 2022); Fredric Bauer and Tobias Dan Nielsen, “Oil companies are ploughing money into fossil-fuelled plastics production at a record rate – new research,” *The Conversation*, <https://theconversation.com/oil-companies-are-ploughing-money-into-fossil-fuelled-plastics-production-at-a-record-rate-new-research-169690> (accessed July 24, 2022); Rebecca Altman, “How Bad Are Plastics, Really?,” *The Atlantic*, January 3, 2022, <https://www.theatlantic.com/science/archive/2022/01/plastic-history-climate-change/621033/> (accessed January 4, 2022); Alexander H. Tullo, “Why the future of oil is in chemicals, not fuels,” *Chemical and Engineering News*, February 20, 2019, <https://cen.acs.org/business/petrochemicals/future-oil-chemicals-fuels/97/i8> (accessed July 24, 2022).

Plastic Lifecycle and Human Rights

Throughout their lifecycle, plastics' production, use, and disposal generates harmful effects to human health and the environment, including contributing to climate change. Consequently, governments have obligations to address those harms and protect the rights to health and to a healthy environment. Ninety-nine percent of plastics are made from fossil fuels, including oil and gas.¹⁰ In 2019, global production, disposal and/or incineration of plastic emitted 850 million metric tons of greenhouse gases (CO₂e),¹¹ which is the equivalent of nearly 190 medium-sized coal power plants.¹² If plastic use continues to grow as projected, by 2050 the GHG emissions from plastic production and incineration will reach 15 percent of the global carbon budget, thus making global climate goals extremely difficult to reach, if not outright impossible.¹³

Plastics are primarily made of oil and gas. Oil and gas production can emit toxic chemicals through drilling operations, mechanical equipment, storage tanks, and transportation of fuels.¹⁴ Hydraulic fracturing, or fracking, is a method of fossil gas extraction that pumps fracking fluids into underground fossil fuel reserves to enable more efficient production of fossil gas reserves.¹⁵ Fracking produces large volumes of ethane, a cheap-to-produce gas that can be turned into ethylene, a plastic polymer, making it particularly relevant for plastics production.¹⁶ After fracking fluids are pumped into drilling wells, they can pollute underground and surface water sources that people depend on for drinking and

¹⁰ Center for International Environmental Law et al., "Plastic & Health: The Hidden Costs of a Plastic Planet," February 2019, <http://www.ciel.org/plasticandhealth> (accessed September 15, 2021).

¹¹ CO₂e, or carbon dioxide equivalent, is a common unit to describe greenhouse gases. The unit describes the amount of CO₂ which would produce an equivalent amount of global warming as any other greenhouse gas.

¹² *Ibid.*

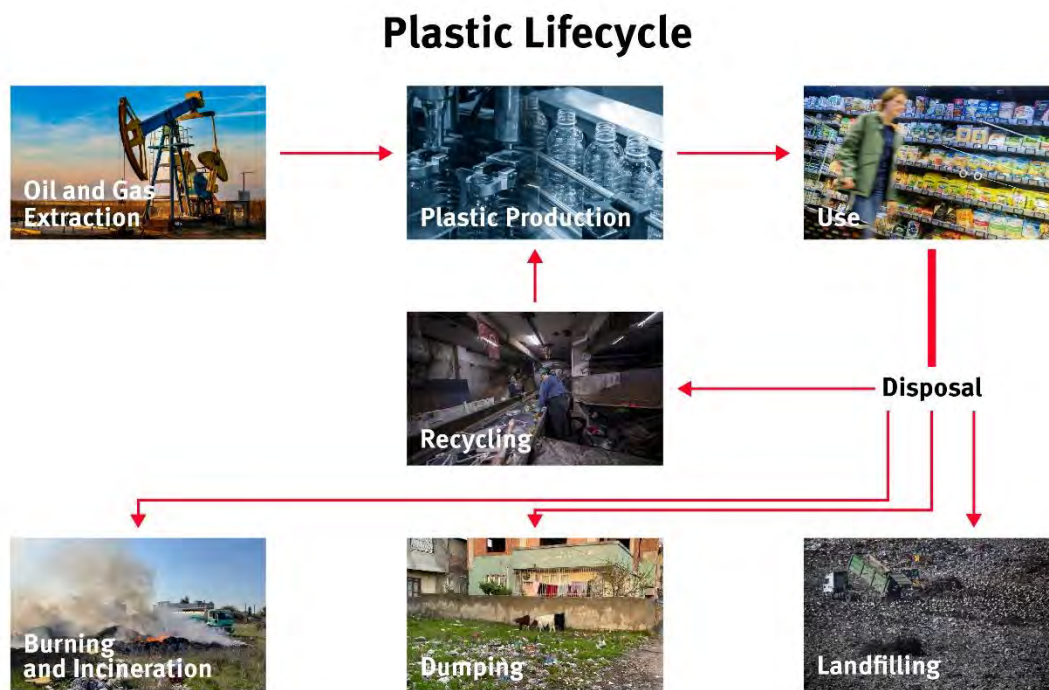
¹³ World Economic Forum et al., "The New Plastics Economy – Rethinking the future of plastics," 2016, <https://ellenmacarthurfoundation.org/the-new-plastics-economy-rethinking-the-future-of-plastics> (accessed May 15, 2022).

¹⁴ For example, benzene, a carcinogenic compound, can leak from petroleum refineries into the water, soil, and air, which can pose threats to the rights of local communities. United States Environmental Protection Agency, "Basic Information about Oil and Natural Gas Air Pollution Standards," undated, <https://www.epa.gov/controlling-air-pollution-oil-and-natural-gas-industry/basic-information-about-oil-and-natural-gas> (accessed May 16, 2022); Center for International Environmental Law et al., "Plastic & Health: The Hidden Costs of a Plastic Planet," February 2019, <http://www.ciel.org/plasticandhealth> (accessed September 15, 2021).

¹⁵ Fracking activities have been linked with radon, a naturally occurring radioactive gas, and other radioactive substance leakages, which pose health risks for workers and nearby residents. Concerned Health Professionals of New York and Physicians for Social Responsibility, *Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking and Associated Gas and Oil Infrastructure: Eighth Edition*, April 2022, <https://www.psr.org/wp-content/uploads/2022/04/compendium-8.pdf> (accessed July 13, 2022).

¹⁶ Diane M. Sicotte, "From cheap ethane to a plastic planet: Regulating an industrial global production network," *Energy Research & Social Science* 66 (2020), <https://doi.org/10.1016/j.erss.2020.101479> (accessed May 16, 2022).

agriculture, threatening their rights to water and food.¹⁷ Methane, a potent GHG, is emitted during fracking.¹⁸ According to Beyond Plastics, a nongovernmental organization, the methane emitted in the US alone while fracking for gas that is used to make plastics is responsible for 36 million tons of CO₂e emissions each year,¹⁹ roughly the annual greenhouse gas emissions of Uruguay.²⁰



The plastic lifecycle begins with oil and gas extraction. Plastic production turns fossil fuels products and chemical additives into plastic. Plastic products are then used by consumers and in industrial activities. After use, some plastic is recycled and returns to the plastic production stage of the plastic lifecycle. Most plastic is disposed of in formal landfills, informal dumpsites, or it is incinerated at an industrial facility or disposed of through open burning. (Clockwise from top left): © Shutterstock; © Shutterstock; © 2022 Ute Grabowsky/picture-alliance/dpa/AP Images; © 2018 Chris McGrath/Getty Images; © 2022 Human Rights Watch; © 2022 Human Rights Watch; © 2021 Sebnem Coskun/Anadolu Agency via Getty Images.

¹⁷ Klaus-Michael Wollin et al., “Critical evaluation of human health risks due to hydraulic fracturing in natural gas and petroleum production,” *Archives of Toxicology* 94 (2020): 967-1016, accessed June 7, 2022, doi: 10.1007/s00204-020-02758-7; Elaine Hill and Lala Ma, “The fracking concern with water quality,” *Science* 373 (2021): 6557, accessed June 7, 2022, DOI: 10.1126/science.abk3433; United States Environmental Protection Agency, “Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States (Final Report),” 2016, <https://cfpub.epa.gov/ncea/hfstudy/recordisplay.cfm?deid=332990> (accessed April 7, 2022).

¹⁸ Methane, CH₄, is a potent greenhouse gas and is approximately 27 times more effective in warming than carbon dioxide.

¹⁹ Beyond Plastics, “The New Coal: Plastics & Climate Change,” October 2021, <https://www.beyondplastics.org/plastics-and-climate> (accessed October 28, 2021).

²⁰ World Bank, “Total greenhouse gas emissions (kt of CO₂ equivalent),” 2020, https://data.worldbank.org/indicator/EN.ATM.GHGT.KT.CE?most_recent_value_desc=false (accessed April 7, 2022).

Plastic production turns fossil fuels and chemical additives into plastic that can be used to make packaging and consumer products.²¹ Plastic and petrochemical production emits harmful pollutants to air and water. Making matters worse, refineries and plastic production facilities are often located in low-income, marginalized neighborhoods where minorities, such as ethnic minorities, or communities of color, disproportionately live. Documentation indicates that these communities already experience more or more severe adverse impacts from pollution and environmental harms.²²

Consumer use of plastic poses is also a health issue. Toxic additives in plastic food and beverage packaging can leach into foods that are ingested by consumers.²³ Although the science of the human health impacts of ingesting microplastics and chemical additives is still developing, studies have linked ingested plastic particles with impacts on cell function, chronic inflammation, and disruptions to the endocrine system.²⁴ Currently, plastic producers around the world are not required to identify chemical additives in their products, so consumers are not able to access information about the chemical makeup of plastics and their potential impacts on health.²⁵

Finally, the disposal of plastic can pose harms to people and the environment. Most plastic produced is dumped, landfilled, incinerated, or litters the environment.²⁶ Of all

²¹ China and the United States are the world's leading producers of plastics and petrochemicals. International Energy Agency, "The Future of Petrochemicals: Towards more sustainable plastics and fertilizers," October 2018, <https://www.iea.org/reports/the-future-of-petrochemicals> (accessed May 23, 2022).

²² European Commission CORDIS, "Toxic Expertise: Environmental Justice and the Global Petrochemical Industry," November 30, 2020, <https://cordis.europa.eu/article/id/429878-exploring-toxic-expertise-the-petrochemical-industry-and-environmental-justice> (accessed May 16, 2022); UN Office of the High Commissioner of Human Rights Special Procedures, "USA: Environmental racism in 'Cancer Alley' must end – experts," March 2, 2021, <https://www.ohchr.org/en/press-releases/2021/03/usa-environmental-racism-cancer-alley-must-end-experts?LangID=E&NewsID=26824> (accessed July 5, 2022); Megan O'Toole and Jillian Kestler-D'Amours, "Toxic Legacy: the fight to end environmental racism in Canada," *Al Jazeera*, December 8, 2021, <https://www.aljazeera.com/features/longform/2021/12/8/toxic-legacy-the-fight-to-end-environmental-racism-in-canada> (accessed July 5, 2022).

²³ Center for International Environmental Law et al., "Plastic & Health: The Hidden Costs of a Plastic Planet," February 2019, <http://www.ciel.org/plasticandhealth> (accessed September 15, 2021). For more information on health harms throughout the life cycle see Section x: Toxic Chemicals in Plastics and Health Impacts.

²⁴ Mariana Teles et al., "Insights into nanoplastics effects on human health," *Science Bulletin* 65 (2020): 1966-1969, accessed September 14, 2021, <https://doi.org/10.1016/j.scib.2020.08.003>; Dafne Eerkes-Medrano et al., "Microplastics in drinking water: A review and assessment," *Current Opinion in Environmental Science & Health* 7 (2019): 69-75, accessed September 14, 2021, <https://doi.org/10.1016/j.coesh.2018.12.001>.

²⁵ Helene Wiesinger et al., "Deep Dive into Plastic Monomers, Additives, and Processing Aids," *Environmental Science & Technology* 55 (2021): 13, accessed June 7, 2022, <https://doi.org/10.1021/acs.est.1c00976>.

²⁶ A landfill is an official site, typically maintained and managed by a government agency, where waste is discarded, while a dump or dumpsite is an unofficial location where waste is discarded, often illegally.

plastic produced, 79 percent has accumulated in landfills, informal dumpsites, or the natural environment, 12 percent incinerated, and 9 percent recycled.²⁷ When plastic is dumped or landfilled, it naturally breaks down into smaller microplastics, less than five millimeters in diameter, polluting the soil, water, air, wildlife, and human bodies.²⁸ Methods to dispose plastic waste, including burning and incineration, contribute to short-term and long-term health impacts, as harmful chemicals and particulate matter is released into the air.²⁹

Global Waste Flows

Countries in the Global North, including the US, Canada, Japan, United Kingdom, and European Union member states, have routinely exported their plastic waste as “recycling” to countries with weak or non-existent environmental regulations, low labor costs, and little government oversight on environmental and labor rights violations.³⁰ In many cases, this plastic is not actually recyclable due to product design or a lack of recycling capacity in importing countries and leads to environmental pollution in recipient countries.³¹ Most countries in the Global North export their waste because they currently lack the physical infrastructure to recycle it domestically, and profits can be made by selling it to companies in other countries for processing.³² At the same time, countries in the Global North are able to externalize the health, environmental, and economic costs of their high consumption

²⁷ Roland Geyer et al., “Production, use, and fate of all plastics ever made,” *Science Advances* 3 (2017): 7, accessed September 10, 2022, <https://doi.org/10.1126/sciadv.1700782>.

²⁸ UN Environment Programme, “Plastic planet: how tiny plastic particles are polluting our soil,” December 22, 2021, <https://www.unep.org/news-and-stories/story/plastic-planet-how-tiny-plastic-particles-are-polluting-our-soil> (accessed June 7, 2022); Oliver Bajt, “From plastics to microplastics and organisms,” *FEBS Open Bio* 11 (2021): 4, accessed June 7, 2022, doi: 10.1002/2211-5463.13120.

²⁹ Costas A. Velis and Ed Cook, “Mismanagement of Plastic Waste through Open Burning with Emphasis on the Global South: A Systematic Review of Risks to Occupational and Public Health,” *Environmental Science & Technology* 55 (2021): 11, accessed June 7, 2022, <https://doi.org/10.1021/acs.est.0c08536>; Agnes Nagy and Rajmund Kuti, “The Environmental Impact of Plastic Waste Incineration,” *Academic and Applied Research in Military and Public Management Science* 15 (2016): 3, accessed June 7, 2022, doi: 10.32565/aarms.2016.3.3.

³⁰ Global Alliance for Incinerator Alternatives, “Discarded: Communities on the Frontlines of the Global Plastics Crisis,” April 2019, <https://www.no-burn.org/wp-content/uploads/Report-April-22.pdf> (accessed September 14, 2021).

³¹ See for example: Ibid.; Greenpeace UK, “Trashed: How the UK is still dumping plastic waste on the rest of the world,” May 17, 2021, <https://www.greenpeace.org.uk/wp-content/uploads/2021/05/Trashed-Greenpeace-plastics-report-final.pdf> (accessed September 15, 2021); Réseau Tunisie Verte et al., “Illegal shipments of Italian municipal waste to Tunisia,” February 2021, <https://drive.google.com/file/d/10MwIPLHmPU3rN6kcRpld8rwwawgRDroY/view> (accessed July 5, 2022).

³² European Environment Agency, “The plastic waste trade in the circular economy,” October 28, 2019, <https://www.eea.europa.eu/publications/the-plastic-waste-trade-in> (accessed May 16, 2022).

economies by exporting their waste instead of reducing levels of consumption or investing in waste management.³³

For decades, China was the world's single largest importer of plastic waste, importing approximately 45 percent of global plastic waste from 1992 to 2016.³⁴ Due to the high environmental impacts of plastic waste, the Chinese government implemented its National Sword Policy in January 2018, which banned the import of most plastic waste.³⁵ Since this ban went into effect, exporting countries have searched for new places to send their waste, and Malaysia, Indonesia, Vietnam, and Turkey have recently become key destinations for the world's plastic waste exports.³⁶ As countries, particularly in Southeast Asia, have become new destinations for plastic from the Global North, many have introduced new regulations on the quality of waste imports, while other countries have banned plastic waste imports completely due to the environmental and human health impacts.³⁷ Recent plastic import bans by the Chinese government and other countries are leading to less plastic waste being recycled. For example, plastic recycling rate in the US dropped from 8.7 percent in 2018 to between five and six percent in 2021 due, in part, to decreased waste exports.³⁸ Globally, plastic waste exports have been decreasing since 2017, as importing countries impose stricter regulations.³⁹

³³ This pattern of plastic waste exports by countries in the Global North to countries in the Global South is often referred to as *waste colonialism*, as it builds on colonial and imperialist power structures. For more information see: Max Liboiron, "Waste Colonialism," *Discard Studies*, November 1, 2018, <https://discardstudies.com/2018/11/01/waste-colonialism/> (accessed May 6, 2022).

³⁴ Amy L. Brooks et al., "The Chinese import ban and its impact on global plastic waste trade," *Science Advances* 4 (2018): 6, accessed September 14, 2021, <https://doi.org/10.1126/sciadv.aato131>.

³⁵ Zongguo Wen et al., "China's plastic import ban increases prospects of environmental impact mitigation of plastic waste trade flow worldwide," *Nature Communications* 12 (2021): 425, accessed May 16, 2022, <https://doi.org/10.1038/s41467-020-20741-9>.

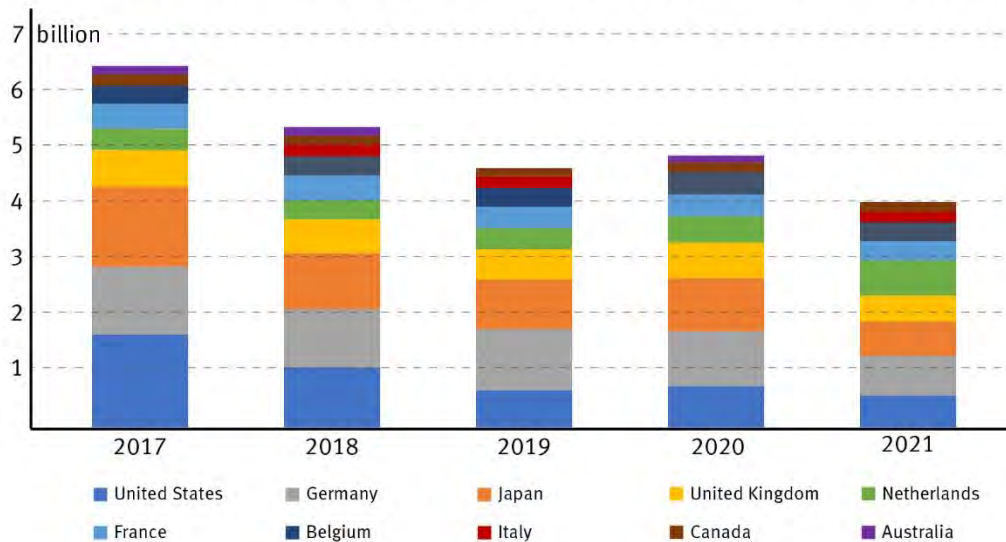
³⁶ Basel Action Network, "Global Export Data," undated, <https://www.ban.org/plastic-waste-project-hub/trade-data/global-export-data> (accessed April 19, 2022).

³⁷ Laura Parker, "China's ban on trash imports shifts waste crisis to Southeast Asia," *National Geographic*, November 16, 2018, <https://www.nationalgeographic.com/environment/article/china-ban-plastic-trash-imports-shifts-waste-crisis-southeast-asia-malaysia> (accessed May 16, 2022).

³⁸ Beyond Plastic, "The Real Truth About the U.S. Plastics Recycling Rate," May 4, 2022, <https://bit.ly/US-plastics-recycling-rate> (accessed May 10, 2022).

³⁹ See Figure 2: Basel Action Network, "Global Export Data," undated, <https://www.ban.org/plastic-waste-project-hub/trade-data/global-export-data-2021-annual-summary> (accessed May 10, 2022); United Nations Statistics Division, Trade Statistics Branch, "UN Comtrade Database," undated, <https://comtrade.un.org/data/> (accessed April 19, 2022).

Total Global Plastic Waste Exports by Quantity (kg), 2017 – 2021



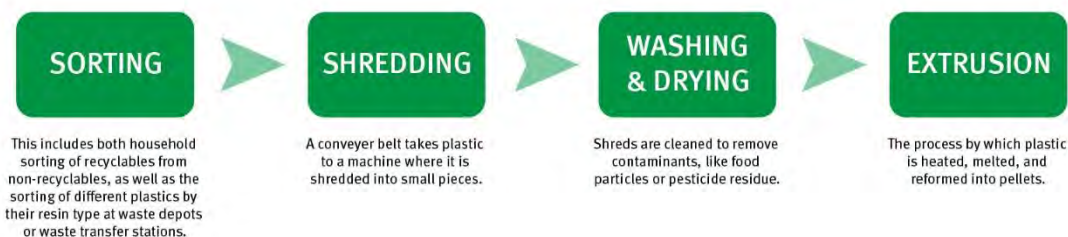
Source: United Nations Statistics Division, Trade Statistics Branch, "UN Comtrade Database," <https://comtrade.un.org/data>; Her Majesty's Revenue & Customs, "UK Trade Info," <https://www.uktradeinfo.com>; United States Census Bureau, "USA Trade Online," <https://usatrade.census.gov>.
Note that not all UN Comtrade data was available per year for every country.

After the Chinese government banned the import of plastic waste, effective January 1, 2018, global plastic waste exports by the world's largest exporting countries fell by more than two billion kilograms in just four years.

How Plastic is Recycled

Recycling plastic is not done at the consumer level, rather it is a multistep process. When plastic is deposited into a bin labeled for recycling, that plastic waste is being sorted, the first step in the mechanical recycling process. While individuals may separate their plastic waste from other materials, the actual process of recycling plastic occurs in industrial facilities.

The following description of mechanical plastic recycling details the process for small plastic recyclers in Turkey. It does not describe the practices at larger, warehouse-sized facilities or facilities reliant largely on modern technology for operations, although mechanical recycling follows the same process regardless of facility size. Turkey is home to both small-scale and larger, modern recycling facilities.



The multi-step process of mechanical plastic recycling.

In Turkey, most recyclables are sorted at waste depots, where waste pickers, municipal collectors, or waste brokers bring mixed waste. Most Turkish plastic recycling facilities rely on workers to manually separate materials like scrap metal, paper, cardboard, and distinct types of plastic, as little waste is separated at the household-level. On the contrary, in modern plastic recycling facilities, plastic waste is sorted by resin code using sink-float sorting methods, which sort plastic by buoyancy in water, or air classifiers, which identify plastic using infrared sensors then sort plastic by resin code using an air jet.⁴⁰ Plastic products must be sorted into specific resin types with similar characteristics and properties. For example, black plastic bags are separated from white plastic buckets and clear polyethylene terephthalate (PET) beverage bottles. The processes to recycle these materials are different because of their different chemical composition. Many types of plastic that are collected or imported cannot be recycled because they are contaminated with waste, made up of multiple materials, or of low quality. Materials that are unable to be recycled are either burned, incinerated, dumped, or landfilled.

Once plastic is sorted, it is sold to a facility where it is shredded and washed. The plastic materials are shoveled onto a conveyor belt and carried to a large shredding machine that breaks the plastic into small, centimeter-sized pieces. Plastic bags are also shredded into smaller pieces. After the plastic is shredded, those plastic shreds are washed to remove food particles or chemical residue. Many of the plastic recycling facilities in Turkey are small and only have space for one or two shredding machines.

⁴⁰ Air classifiers are one of the most common modern methods of sorting plastic by resin code. This process starts by spreading plastic products on a conveyor belt, identifying the plastic by resin code using an infrared sensor, then using an air jet to blow the desired plastic products into a separate container for further processing. For a visual example of this process, see: <https://www.youtube.com/watch?v=RSUuRUOD7-E>; Jean-Paul Lange, “Managing Plastic Waste—Sorting, Recycling, Disposal, and Product Redesign,” *ACS Sustainable Chemistry & Engineering* 9 (2021): 15722-15738, accessed April 28, 2022, <https://doi.org/10.1021/acssuschemeng.1c05013>.

Then, the shredded plastic is sold to a separate facility where it is heated, melted, and reformed into small lentil-sized pellets, in a process also referred to as extrusion. In this process, plastic is dried, and metal impurities are removed by passing the materials in front of a magnet. The dried plastic shreds are then melted at temperatures ranging from 200 to 275°C, cooled, then formed into pellets.⁴¹ Heating and melting of plastic films and bags involves a slightly different process, known as agglomeration, where the plastic is heated with water in a large, cauldron-like machine. For all types of recycled plastic, once it is melted, it is then cooled and pelletized. In some cases, recyclers add tire dust, paint, or calcite to dye plastic granules different colors. Finally, plastic granules are sold to be used as a raw material for a recycled plastic product.

Waste Collection in Turkey

Up to 80 percent of recyclable material in Turkey is collected by individual waste pickers.⁴² There are roughly 500,000 self-employed waste pickers in Turkey,⁴³ who walk or bike through streets pulling carts that support large sacks to collect waste that can be resold. Waste pickers fill heavy bags with plastic, paper, scrap metal, and other materials that they sell to depots, where the materials are sorted. Among those working as waste pickers are many recent migrants who work because they do not qualify for legal employment. Many are also Syrian refugees with temporary protection status in Turkey. Collecting waste is classified as a hazardous job under Turkey's Occupational Health and Safety Law.⁴⁴ Waste pickers are exposed to extreme weather conditions and physical hazards, including exposure to hazardous medical waste, needles, and broken glass. Crackdowns in September and October 2021 by the Istanbul municipal police on waste picking resulted in the short-term detention of hundreds of waste pickers and the risk of potential deportation for Afghan migrants working as waste pickers.⁴⁵

⁴¹ Li Shen and Ernest Worrell, "Chapter 13 – Plastic Recycling," in *Handbook of Recycling*, (Elsevier, 2014) (accessed April 20, 2022), <https://doi.org/10.1016/B978-0-12-396459-5.00013-1>.

⁴² Didem Atakan, "Undervalued and unrecognized, Turkish waste pickers at mercy of formal recycling sector," *Duvar English*, March 18, 2021, <https://www.duvarenglish.com/undervalued-and-unrecognized-turkish-waste-pickers-at-mercy-of-formal-recycling-sector-news-56700> (accessed April 20, 2022).

⁴³ *Ibid.*

⁴⁴ Waste collection and disposal is classified as hazardously under code 38.1.1 in Turkey's Occupational Health and Safety Law, No. 6331.

⁴⁵ Doga Celik and Arzu Geybullayeva, "Paper lives: Turkey's trash collectors face deportations, arrests, and midnight raids," *Global Voices*, November 18, 2021, <https://globalvoices.org/2021/11/18/paper-lives-turkeys-informal-trash-collectors-face-deportations-arrests-and-midnight-raids/> (accessed April 20, 2022).

There is a growing awareness around household sorting of waste in Turkey. In 2017, Emine Erdoğan, the wife of President Recep Tayyip Erdoğan, launched Turkey's Zero Waste Program, which intends to decrease waste in the country through a reduction in waste generation and improved reuse, recycling, and recovery of waste. The program aims to increase the country's recycling rate for all materials to 35 percent by 2023 and led to consumers paying a fee for single-use plastic bags that has decreased the amount of plastic bags consumed by 65 percent.⁴⁶ Schools, apartment buildings, and offices in Turkey are now encouraged to provide separate waste collection bins for recyclables and biodegradable waste for composting.

The program has increased the recycling rate of recyclable materials in the country, from 13 percent in 2017 to 25 percent in 2021.⁴⁷ It is unclear whether this increase is from increased recycling of plastics or other materials like metal and paper. While this is positive, increased investment in waste sorting and collection through the Zero Waste Program is also negatively impacting waste pickers. Sadik, a waste picker in Adana, told Human Rights Watch that the program is "taking work from poor people like me," as it is now more difficult to find materials to collect.⁴⁸ In addition, beyond the reduction in single-use plastic bag consumption, it is unclear how the Zero Waste Program has contributed to a reduction in waste in Turkey.

Plastic and Health

Although plastic is ubiquitous globally, many of its constituent chemicals are harmful and can pose serious risks to health. Globally, there is limited scientific assessment and monitoring about the impacts of new chemicals on human health and the environment. Of the 350,000 chemicals in use, only a small number have been fully assessed for safety.⁴⁹

⁴⁶ "'Zero waste' saves Turkish economy billions, cuts carbon emissions," *Daily Sabah*, June 3, 2022, <https://www.dailysabah.com/turkey/zero-waste-saves-turkish-economy-billions-cuts-carbon-emissions/news> (accessed June 3, 2022).

⁴⁷ Ibid.; "Recycling at source: Turkey's zero waste efforts expand," *Daily Sabah*, January 7, 2022, <https://www.dailysabah.com/turkey/recycling-at-source-turkeys-zero-waste-efforts-expand/news> (accessed May 1, 2022).

⁴⁸ Human Rights Watch interview with Sadik, waste picker, Adana, March 6, 2022.

⁴⁹ The European Union's Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) regulation on chemical safety and the European Chemicals Agency are globally significant to register, evaluate, and, when necessary, ban chemicals, yet as of May 2022, only 23,000 chemicals have been evaluated under REACH. Kathrin Fenner and Martin Scheringer, "The Need for Chemical Simplification as a Logical Consequence of

In addition, there has been limited research on the impacts of exposure to the mixture of multiple chemicals in plastics and other common products. Chemical additives in plastic products can pose significant threats to health, particularly when plastic's structure is altered during the recycling process.⁵⁰

Burning and incinerating plastic waste contributes to both short-term and long-term health impacts, as harmful chemicals and particulate matter is released into the air. Exposure to air pollution and toxins can pose disproportionate impacts on children, women, pregnant people, and older people due to biological factors.⁵¹ Even in healthy individuals, particulate matter can cause irritation of the airways, coughing, and difficulty breathing.⁵² For individuals with preexisting cardiovascular or respiratory issues, short-term exposure to particulate matter can aggravate asthma and cause heart attacks. Air pollution, including particulate matter emitted when plastic is burned, was responsible for 6.7 million deaths in 2019.⁵³ Long-term health impacts, including the development of chronic obstructive pulmonary disease (COPD) and cancer, may take years to present after exposure to pollutants, so people may not know that they are exposed until diseases develop, potentially decades later.⁵⁴ Dioxins are of particular concern.⁵⁵ Commonly found in plastic products, they are released as air pollutants when plastic is burned or melted and can lead to long-term damage to the immune, nervous, endocrine, and reproductive

Ever-Increasing Chemical Pollution,” *Environmental Science & Technology* 55 (2021): 14470-14472, accessed January 19, 2022, <https://doi.org/10.1021/acs.est.1c04903>; Kathrin Fenner and Martin Scheringer, “The Need for Chemical Simplification As a Logical Consequence of Ever-Increasing Chemical Pollution,” *Environmental Science & Technology* 55 (2021): 21, accessed January 20, 2022, DOI: 10.1021/acs.est.1c04903; European Chemicals Agency, “REACH Registration Statistics,” May 31, 2022, https://echa.europa.eu/documents/10162/2741157/registration_statistics_en.pdf/58c2d7bd-2173-4cb9-eb3b-a6bc14a6754b?t=1649160655122 (accessed June 3, 2022).

⁵⁰ Regional Activity Centre for Sustainable Consumption and Production et al., “Plastic’s toxic additives and the circular economy,” September 2020, https://ipen.org/sites/default/files/documents/plastics_and_additives_final-low-o-en.pdf (accessed July 20, 2022); Endocrine Society and IPEN, “Plastics, EDCs & Health: A guide for public interest organizations and policy-makers on endocrine disrupting chemicals & plastics,” December 2020, https://www.endocrine.org/-/media/endocrine/files/topics/edc_guide_2020_v1_6chqennew-version.pdf (accessed July 20, 2022).

⁵¹ For more information, see section titled “Disproportionate Health Outcomes.”

⁵² United States Environmental Protection Agency, “Health and Environmental Effects of Particulate Matter (PM),” undated, <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm> (accessed April 12, 2022)

⁵³ Richard Fuller et al., “Pollution and health: a progress update,” *The Lancet*, 6(2022): 6, accessed May 20, 2022, [https://doi.org/10.1016/S2542-5196\(22\)00090-0](https://doi.org/10.1016/S2542-5196(22)00090-0).

⁵⁴ Kerri A. Johansson et al., “Air Pollution Exposure” *Chest*, 147 (2015): 4, accessed July 20, 2022, doi: 10.1378/chest.14-1299.

⁵⁵ Dioxins are highly toxic persistent organic pollutants (POPs) and can cause reproductive and developmental problems, damage the immune system, interfere with hormones, and cause cancer. For more information see: World Health Organization, “Dioxins and their effects on human health,” October 4, 2016, <https://www.who.int/news-room/fact-sheets/detail/dioxins-and-their-effects-on-human-health> (accessed April 12, 2022).

systems.⁵⁶ Dioxins are targeted by the Stockholm Convention on persistent organic pollutants (POPs) for elimination due to their adverse effects on human health and the environment.⁵⁷

Toxic Chemical Additives in Plastics and Health Impacts

Plastic products contain chemical additives that pose threats to human health and make it more difficult to recycle plastic products.⁵⁸ Chemical additives are added to plastics during production to change or enhance performance, functionality, or other properties of the plastic product and include: 1) functional additives, like stabilizers, lubricants, and biocides; 2) colorants, including pigments; 3) fillers, like mica, clay, and talc; and 4) reinforcements, including carbon and glass fibers.⁵⁹ While chemical additives give plastic products qualities that make them useful, they can also be toxic environmental pollutants and harmful to human health. Plastic producers are not required to disclose additives in their products, so consumers purchasing products with plastic packaging and workers handling plastic waste have no way of knowing if they are exposed to materials that could pose health threats.⁶⁰

Phthalates, bisphenol A (BPA), and per- and polyfluoroalkyl substances (PFAS) are common chemical additives in plastic that harm human health. Phthalates are a group of additives commonly found in polyvinyl chloride (PVC), which is used to make pipes, wire insulation, and window frames. Phthalates are endocrine disrupting chemicals that are linked to early menopause in women, low birth rates, and higher rates of miscarriage.⁶¹

⁵⁶ Ibid.

⁵⁷ Stockholm Convention on persistent organic pollutants (POPs), adopted May 22, 2001, ratified by Turkey on October 14, 2009, <http://www.pops.int/TheConvention/Overview/TextoftheConvention/tabid/2232/Default.aspx>.

⁵⁸ Regional Activity Centre for Sustainable Consumption and Production, "Plastic's toxic additives and the circular economy," September 2022, https://ipen.org/sites/default/files/documents/plastics_and_additives_final-low-o-en.pdf (accessed April 22, 2022).

⁵⁹ John N. Hahladakis et al., "An overview of chemical additives present in plastics: Migration, release, fate and environmental impact during their use, disposal and recycling," *Journal of Hazardous Materials* 344 (2018): 179-199, accessed September 14, 2021, <https://doi.org/10.1016/j.jhazmat.2017.10.014>.

⁶⁰ Helene Wiesinger et al., "Deep Dive into Plastic Monomers, Additives, and Processing Aids," *Environmental Science & Technology* 55 (2021): 13, accessed June 7, 2022, <https://doi.org/10.1021/acs.est.1c00976>.

⁶¹ N. M. Grindler et al., "Exposure to Phthalate, an Endocrine Disrupting Chemical, Alters the First Trimester Placental Methylome and Transcriptome in Women," *Scientific Reports* 8 (2018): 6086, accessed April 20, 2022, <https://doi.org/10.1038/s41598-018-24505-w>; Yufei Wang and Haifeng Qian, "Phthalates and Their Impacts on Human Health," *Healthcare (Basel)* 9 (2021): 5, accessed May 16, 2022, doi: 10.3390/healthcare9050603; United States Center for Disease Control and Prevention, "Phthalates Factsheet," April 5, 2021, https://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html (accessed May 16, 2022).

BPA is an additive found in plastic electronics, baby bottles, and many food containers. Exposure can lead to increased risk of cancer, cardiovascular disease, and liver problems.⁶² PVC incineration releases phosgene, an asphyxiant gas that was used as a chemical weapon during World War I.⁶³

The EU has listed BPA as a substance of high concern due to its impacts on the endocrine systems of humans and animals, requiring companies that supply BPA in the EU to label the substance.⁶⁴ BPA has also been banned in the EU and in the US for use in baby bottles.⁶⁵ PFAS are a group of persistent chemicals known as *forever chemicals* due to their long lifespan. PFAS can be found in some plastic food packaging and can accumulate in the human body over time and contribute to serious health impacts, particularly for pregnant people and children. Exposure to PFAS is linked with decreased fertility, low birth weight, reduced immune system response, increased risk of cancer, and developmental delays.⁶⁶ The EU and some localities in the US have taken steps to ban PFAS in firefighting foams,⁶⁷ but chemical industry groups pushed back against a widespread ban on PFAS in the EU.⁶⁸

Additives in plastic products enter the environment and expose people to their harmful effects throughout the plastics lifecycle. Some hazardous chemicals can leach from plastic

⁶² Nasir Jalal et al., “Bisphenol A (BPA) the mighty and the mutagenic,” *Toxicology Reports* 5 (2018): 76-84, accessed April 20, 2022, doi: 10.1016/j.toxrep.2017.12.013.

⁶³ Ágnes Nagy and Rajmund Kuti, “The Environmental Impact of Plastic Waste Incineration,” *AARMS* 15 (2016): 3, accessed April 21, 2022, <https://www.researchgate.net/publication/329970322>.

⁶⁴ European Chemicals Agency, European Union, “Bisphenol A (BPA),” undated, <https://echa.europa.eu/en-US/hot-topics/bisphenol-a> (accessed April 20, 2022).

⁶⁵ European Chemicals Agency, European Union, “Bisphenol A (BPA),” undated, <https://echa.europa.eu/en-US/hot-topics/bisphenol-a> (accessed April 20, 2022); United States Food and Drug Administration, “Indirect Food Additives: Polymers,” 77 FR 41899, effective July 17, 2012.

⁶⁶ United States Environmental Protection Agency, “Our Current Understanding of the Human Health and Environmental Risks of PFAS,” undated, <https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas> (accessed May 16, 2022); European Environment Agency, “Effects of PFAS on human health,” October 15, 2020, <https://www.eea.europa.eu/signals/signals-2020/infographics/effects-of-pfas-on-human-health/view> (accessed May 16, 2022).

⁶⁷ European Commission, “PFAS,” proposed February 2022, https://ec.europa.eu/environment/chemicals/pfas/index_en.htm (accessed May 17, 2022); Washington State Bill SB 6413-2017-18, “Reducing the use of certain toxic chemicals in firefighting activities,” effective June 7, 2018; California Senate Bill No. 1044, Chapter 308, effective January 1, 2022.

⁶⁸ Leonie Cater, “The squeeze to get rid of ‘forever chemicals’,” *Politico*, October 15, 2021, <https://www.politico.eu/article/forever-chemicals-pfas-ban-restrictions/> (accessed May 17, 2022).

packaging to food products consumed by people.⁶⁹ Incinerating and burning plastic generates toxic gases that pose threats to human health.

Recycling and Exposure to Toxins

The mechanical recycling process accelerates the release of additives into the environment through emissions, releases, and leaching.⁷⁰ In particular, the shredding and extrusion phases emit toxins into the local environment that pose significant risks to health.

Particulate matter released when plastic is shredded is harmful to short-term respiratory and cardiovascular health when inhaled and can lead to asthma, wheezing, and decline in lung function.⁷¹ PM_{2.5} is particulate matter with a diameter of 2.5 micrometers, about the size of 1/30th of a strand of human hair, is easily inhaled into the deepest parts of the lungs, and can move into the bloodstream impacting both respiratory and cardiovascular health.⁷² Although Turkey does not currently have a PM_{2.5} standard, the Directive of the European Parliament and of the Council on ambient air quality and clean air for Europe establish an annual maximum of 25 micrograms of PM_{2.5} per cubic meter, in line with public health best practices.⁷³ Other toxins can be released during plastic recycling, including polybrominated diphenyl ethers (PBDEs), a group of flame-retardant chemicals that are carcinogenic and pose threats to the endocrine system. High levels of PBDEs have been found in the air and dust of recycling facilities.⁷⁴

⁶⁹ Jane Muncke, “Tackling the toxics in plastics packaging,” *PLOS Biology* 19 (2021): 3, accessed February 8, 2022, <https://doi.org/10.1371/journal.pbio.3000961>; Rolf U. Halden, “Plastics and Health Risks,” *Annual Review of Public Health* 31 (2010): 179-194, accessed September 14, 2021, <https://doi.org/10.1146/annurev.publhealth.012809.103714>.

⁷⁰ Hideshige Takada and Lee Bell, International Pollutants Elimination Network (IPEN), “Plastic Waste Management Hazards,” June 2021, <https://ipen.org/sites/default/files/documents/ipen-plastic-waste-management-hazards-en.pdf>, accessed January 11, 2022.

⁷¹ Elina Toskala and David Kennedy, “Asthma risk factors,” *International Forum of Allergy & Rhinology* 5 (2015): S1, accessed April 22, 2022, <https://doi.org/10.1002/alr.21557>.

⁷² World Health Organization, “WHO global air quality guidelines: particulate matter (PM_{2.5} and PM₁₀), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide,” September 22, 2021, <https://www.who.int/publications/i/item/9789240034228> (accessed May 17, 2022); United States Environmental Protection Agency, “Particulate Matter (PM) Basics,” undated, <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics> (accessed April 24, 2022).

⁷³ Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32008L0050> (accessed July 25, 2022).

⁷⁴ Mengtao Zhang et al., “Occupational exposure characteristics and health risk of PBDEs at different domestic e-waste recycling workshops in China,” *Ecotoxicology and Environmental Safety* 174 (2019): 532-539, accessed April 22, 2022, <https://doi.org/10.1016/j.ecoenv.2019.03.010>.

As plastic is heated at high temperatures, melted, and reformed into small pellets, it emits toxic chemicals and particulate matter, including volatile gases and fly ash, into the air, which pose threats to health and the local environment.⁷⁵ When plastic is recycled into pellets for future use, its toxic chemical additives are carried over to the new products. Recycled plastic pellets are often contaminated with harmful chemicals, including endocrine disrupting chemicals, that are present in virgin plastic products that are not filtered during recycling, thus transferred into recycled plastic.⁷⁶ In addition, the recycling process can generate new toxic chemicals, like dioxins, if plastics are not heated high enough.⁷⁷ Plastic extrusion also emits greenhouse gases that contribute to climate change.

Plastic recycling is linked with local environmental contamination. Untreated wastewater from recycling facilities are likely contaminated with toxic pollutants that can harm people and biodiversity.⁷⁸ Plastic melting facilities emit volatile organic compounds (VOCs), harmful polycyclic aromatic hydrocarbons (PAH), and odorants into the air, which have been found in residential areas downwind of recycling facilities.⁷⁹ Toxic chemicals, including carcinogens and VOCs, pollute air both inside facilities and in areas near recycling facilities.⁸⁰ Because plastic recycling is done in a similar process around the

⁷⁵ Niyitanga Evode et al., “Plastic waste and its management strategies for environmental sustainability,” *Case Studies in Chemical and Environmental Engineering* 4 (2021), accessed April 23, 2022, <https://doi.org/10.1016/j.cscee.2021.100142>.

⁷⁶ Sara Brosché et al., International Pollutants Elimination Network, “Widespread Chemical Contamination of Recycled Plastic Pellets Globally,” December 2021, <https://ipen.org/documents/widespread-chemical-contamination-recycled-plastic-pellets-globally> (accessed December 21, 2021).

⁷⁷ Clémence Budin et al., “Detection of high PBDD/Fs levels and dioxin-like activity in toys using a combination of GC-HRMS, rat-based and human-based DR CALUX® reporter gene assays,” *Chemosphere* 251 (2020), accessed April 22, 2022, <https://doi.org/10.1016/j.chemosphere.2020.126579>.

⁷⁸ Süheyla Tongur and Sevil Yıldız, “Determination of Toxicity in Plastic Recycling Wastewater by *Lepidium Sativum* Toxicity Test Method,” 4th International Water Congress, 2-4 November 2017, Izmir-TURKEY, accessed February 10, 2022, https://www.researchgate.net/publication/331384654_Determination_of_Toxicity_in_Plastic_Recycling_Wastewater_by_Lepidium_Sativum_Toxicity_Test_Method.

⁷⁹ Chung-Jung Tsai et al., “The pollution characteristics of odor, volatile organochlorinated compounds and polycyclic aromatic hydrocarbons emitted from plastic waste recycling plants,” *Chemosphere* 74 (2009): 8, accessed March 23, 2022, <https://doi.org/10.1016/j.chemosphere.2008.10.041>.

⁸⁰ For example, in China, workers in plastic extrusion facilities and people living near those facilities suffered acute and chronic health risks, including definite cancer risks, due to their exposure to VOCs from plastic recycling. Surface soils and sediments near plastic recycling facilities in North China had high levels of heavy metals, which are commonly released during plastic recycling, at levels that exceeded public health standards. Many studies have examined toxic emissions from plastic recycling facilities in China, as well as the impacts of exposure to those toxins, because China was the largest recipient of the world’s plastic recycling for many decades and has a large plastic recycling sector.

Huang et al., “Pollution characteristics of volatile organic compounds, polycyclic aromatic hydrocarbons and phthalate esters emitted from plastic wastes recycling granulation plants in Xingtian Town, South China”; Zhigui He et al., “Pollution characteristics and health risk assessment of volatile organic compounds emitted from different plastic solid waste recycling workshops,” *Environment International* 77 (2015): 85-94, accessed January 25, 2022,

world, it is reasonable to expect similar emissions from recycling facilities, regardless of their country of operation.

Disproportionate Health Outcomes

Exposure to toxic chemicals in plastics impacts groups in different ways. Employment in hazardous industries and biological factors influence the impact of toxic exposure on health.

For most adults, the greatest time spent out of the home is at the workplace.⁸¹ Occupational factors are responsible for roughly 18 percent of adult-onset asthma,⁸² and between two and eight percent of cancer cases can be attributed to workplace exposure.⁸³ Because of the long hours spent in close proximity to hazardous processes, workers in plastic recycling facilities are highly exposed to toxic chemicals emitted during plastic recycling, unless they wear adequate protective equipment and machinery has effective filtration systems. Occupational exposure to toxic chemicals is a harm to the right to health of workers, even if illnesses or diseases take years or decades to develop.⁸⁴

For women and pregnant people, toxic exposure can contribute to serious, lifelong health problems. Women generally have a higher proportion of body fat, making them more likely to store lipophilic, toxic chemicals in their tissues.⁸⁵ Women who are exposed to endocrine disrupting chemicals, including BPA, are at increased risk of polycystic ovarian syndrome

<http://dx.doi.org/10.1016/j.envint.2015.01.004>; Zhenwu Tang et al., “Contamination and risk of heavy metals in soils and sediments from a typical plastic waste recycling area in North China,” *Ecotoxicology and Environmental Safety* 122 (2015): 343-351, accessed February 9, 2022, <http://dx.doi.org/10.1016/j.ecoenv.2015.08.006>.

⁸¹ World Health Organization, “Preventing Disease Through a Healthier and Safer Workplace,” July 2, 2018, <https://www.who.int/publications/i/item/9789241513777> (accessed April 21, 2022).

⁸² Kjell Torén and Paul D Blanc, “Asthma caused by occupational exposures is common – A systematic analysis of estimates of the population-attributable fraction,” *BMC Pulmonary Medicine* 9 (2009): 7, accessed April 21, 2022, <https://doi.org/10.1186/1471-2466-9-7>.

⁸³ Mark P. Purdue et al, “The proportion of cancer attributable to occupational exposures,” *Annals of Epidemiology* 25 (2015): 3, accessed April 21, 2022, <https://doi.org/10.1016/j.annepidem.2014.11.009>.

⁸⁴ United Nations General Assembly, Report of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes, Baskut Tuncak, “Principles on human rights and the protection of workers from exposure to toxic substances,” A/HRC/42/41, July 17, 2019, <https://documents-dds-ny.un.org/doc/UNDOC/GEN/G19/217/70/PDF/G1921770.pdf> (accessed January 31, 2022), para. 78.

⁸⁵ United Nations Development Programme (UNDP), “Chemicals and gender,” February 2011, <https://www.undp.org/sites/g/files/zskgke326/files/publications/2011%20Chemical&Gender.pdf> (accessed April 21, 2022).

and recurrent miscarriages.⁸⁶ Environmental toxins in air, water, food, and cosmetics have been linked with female infertility.⁸⁷ Exposure of girls and women to endocrine disrupting chemicals prior to and during childbearing years can result in increased likelihood of children being born with disabilities, making this is a significant intergenerational issue.⁸⁸ Exposure to air pollution for pregnant people can result in the translocation of pollutant nanoparticles in placental tissue.⁸⁹ Endocrine-disrupting phthalates have been found to cross the placental barrier from blood and amniotic fluid, exposing the fetus to toxins that increase the likelihood of premature birth, children born with disabilities, and development of disabilities later in childhood.⁹⁰

Children, when exposed to the same levels of air pollution as adults, are at risk for developing more acute health impacts from that exposure due to their rapid development. Babies can be exposed to harmful chemicals in plastics through breast milk, infant formula, and inhalation.⁹¹ Children are particularly vulnerable to toxic exposure because the chemicals interfere with brain development, the function of hormones, and other processes necessary for children to grow into healthy adults.⁹² Children have developing lungs, high respiratory rates, and commonly breathe through their mouths, which may contribute to greater air pollution exposure than adults.⁹³

⁸⁶ Polycystic ovarian syndrome is a condition where small cysts form on the ovaries and can lead to missed or irregular periods, severe acne, and infertility. “Polycystic Ovary Syndrome (PCOS),” Johns Hopkins Medicine, undated, <https://www.hopkinsmedicine.org/health/conditions-and-diseases/polycystic-ovary-syndrome-pcos> (accessed July 20, 2022); Okunola A Alabi et al., “Public and Environmental Health Effects of Plastic Wastes Disposal: A Review,” *Journal of Toxicology and Risk Assessment* 5 (2019): 2, accessed February 9, 2022, DOI: 10.23937/2572-4061.1510021.

⁸⁷ Joseph Pizzorno, “Environmental Toxins and Infertility,” *Integrative Medicine* 17 (2018): 2, accessed April 22, 2022, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6396757/>.

⁸⁸ UNDP, “Chemicals and gender,” February 2011.

⁸⁹ Norrice M. Liu et al., “Evidence for the presence of air pollution nanoparticles in placental tissue cells,” *Science of the Total Environment* 751 (2019), accessed December 18, 2021, <https://doi.org/10.1016/j.scitotenv.2020.142235>.

⁹⁰ Rolf U. Halden, “Plastics and Health Risks,” *The Annual Review of Public Health*, 31 (2010): 179-94, accessed September 14, 2021, doi:10.1146/annurev.publhealth.012809.103714; Environmental Working Group, “Body Burden: The Pollution in Newborns,” July 14, 2005, <https://www.ewg.org/research/body-burden-pollution-newborns> (accessed July 20, 2022).

⁹¹ Ibid.

⁹² United Nations General Assembly, Report of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes, Baskut Tuncak, A/HRC/33/41, August 2, 2016, <https://documents-dds-ny.un.org/doc/UNDOC/GEN/G16/169/26/PDF/G1616926.pdf>.

⁹³ Thomas F Bateson and Joel Schwartz, “Children’s response to air pollutants,” *Journal of Toxicology and Environmental Health* 71 (2008): 3, accessed April 22, 2022, doi: 10.1080/15287390701598234.

School children who grow up in areas with high levels of industrial air pollution are likely to have reduced lung function.⁹⁴ Because of the nature of many toxins in plastics, exposure to those chemicals may lead to harmful effects that do not present until puberty or adulthood.⁹⁵ In addition, young children’s developing metabolic system can prolong exposure to endocrine disrupting materials, as it takes their bodies longer to excrete toxic contaminants.⁹⁶

Older people are also disproportionately affected by the harmful impacts of toxic chemicals emitted during the plastic recycling process. As the human body ages, changes in organ functioning may lead to biological challenges processing environmental pollutants, including toxins emitted during plastic recycling.⁹⁷ A slower metabolism, coupled with early-life exposures, can lead pollutants to remain in older peoples’ bodies for a longer period than younger adults, thus increasing their exposure to toxins. In addition, higher incidence of apnea and other chronic respiratory diseases can contribute to greater effects of air pollutants on the respiratory system of older people.⁹⁸

⁹⁴ Arnold D. Bergstra et al., “The effect of industry-related air pollution on lung function and respiratory symptoms in school children,” *Environmental Health* 17 (2018): 30, accessed April 27, 2022, <https://doi.org/10.1186/s12940-018-0373-2>.

⁹⁵ UNDP, “Chemicals and gender,” February 2011.

⁹⁶ Manelle Ramadan et al., “Bisphenols and phthalates: Plastic chemical exposures can contribute to adverse cardiovascular health outcomes,” *Society for Birth Defects Research & Prevention* 12 (2020): 17, accessed April 22, 2022, <https://doi.org/10.1002/bdr2.1752>.

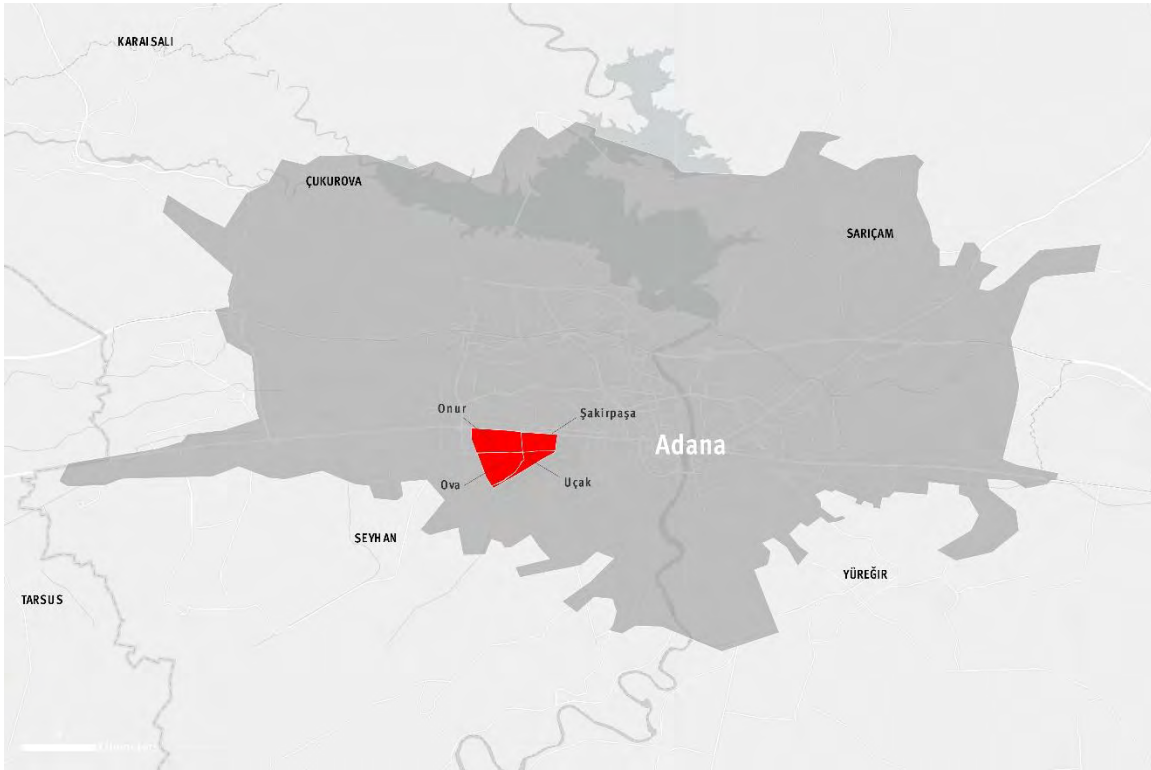
⁹⁷ John F Risher et al., “The elderly as a sensitive population in environmental exposures: making the case,” *Reviews of Environmental Contamination and Toxicology* 207 (2010): 95-157, accessed April 22, 2022, DOI: 10.1007/978-1-4419-6406-9_2.

⁹⁸ Ibid.

II. Findings

Plastic Recycling Practices in Turkey

Adana is the heart of Turkey’s plastic recycling sector. Its proximity to Mersin port, relatively inexpensive land prices, available water resources, a large workforce and immigrant population, and history as an industrial hub has allowed the plastics recycling industry to flourish. As of April 25, 2022, Turkey’s Ministry of Environment, Urbanization and Climate Change (MoE) lists 167 plastic recycling facilities (9.1 percent of the country’s 1,831 plastic recycling facilities) in Adana.⁹⁹ There is no available data on the number of unlicensed plastic recycling facilities operating in Adana. While many Adana plastic recyclers are located in the official industrial zone on the outskirts of the city, dozens of facilities are located in the Şakirpaşa, Onur, Ova, and Uçak neighborhoods in Seyhan district.¹⁰⁰



Adana metropolitan area.

⁹⁹ Ministry of Environment, Urbanization and Climate Change, “Document Search,” accessed April 25, 2022, <https://eizin.cevre.gov.tr/Rapor/BelgeArama.aspx>.

¹⁰⁰ Ibid.

Mersin port on the Mediterranean Sea is the destination for nearly 50 percent of foreign plastic waste exports to Turkey. Once the plastic waste arrives in Mersin, it is transported to Adana by truck, then delivered to sorting depots or recycling facilities. In 2021, a series of reports, including a groundbreaking report by Greenpeace, about illegal dumping and burning of imported plastic waste in Adana led to a crackdown on unlicensed facilities and facilities without import licenses that were handling imported plastic. The MoE inspected 133 plastic recycling facilities in Adana, found that 26 facilities were operating without proper licenses, and levied a total of 7 million lira in fines on companies that did not hold proper licenses.¹⁰¹ One plastic recycling facility owner told Human Rights Watch that facilities without proper import licenses received fines between 500,000 and 1 million liras (US\$58,000 to \$115,000) from the MoE starting in May 2021.¹⁰² The MoE also conducted additional inspections of recycling facilities in Adana to inspect permits and determine whether facilities were “deliberating polluting the environment” by dumping unrecyclable imported plastic waste.¹⁰³

As of April 25, 2022, the MoE lists 232 plastic recycling facilities (12.7 percent of Turkey’s 1,831 plastic recycling facilities) in the Istanbul Metropolitan Municipality.¹⁰⁴ In Istanbul, plastic recycling occurs in multiple districts, including Bayrampaşa, Sultangazi, Esenyurt, Başakşehir, Silivri, and Tuzla. Human Rights Watch only visited Istanbul’s Bayrampaşa, Sultangazi, and Silivri districts. We did not seek to visit plastic recycling facilities in all districts in Istanbul, but we consider the neighborhoods visited to be representative of other Istanbul neighborhoods with large numbers of plastic recycling facilities.

¹⁰¹ “Adana’da çevreyi kirleten geri dönüşüm tesislerine rekor ceza,” May 2, 2021, Bloomberg HT, <https://www.bloomberght.com/adana-da-cevreyi-kirleten-geri-donusum-tesislerine-rekor-ceza-2279577> (accessed July 17, 2022); Eren Bozkurt, “Adana’da gelişigüzel bertaraf edilen 181 ton atık geri dönüşüm tesisine gönderildi,” May 9, 2021, <https://www.aa.com.tr/tr/turkiye/adanada-gelisiguzel-bertaraf-edilen-181-ton-atik-geri-donusum-tesisine-gonderildi-/2234525> (accessed May 19, 2022).

¹⁰² The exchange rate from Turkish Liras to Euros was 10.27 TRY to 1 Euro on July 1, 2021. The economic crisis in Turkey has led the lira to decrease in value compared to the Euro since September 2021.

Human Rights Watch interview with anonymous recycling facility owner, Adana, Turkey, March 6, 2022.

¹⁰³ Eren Bozkurt, “Adana’da gelişigüzel bertaraf edilen 181 ton atık geri dönüşüm tesisine gönderildi.”

¹⁰⁴ Ministry of Environment, Urbanization and Climate Change, “Document Search,” accessed April 25, 2022, <https://eizin.cevre.gov.tr/Rapor/BelgeArama.aspx>.



Istanbul metropolitan area.

Turkish authorities do not publish data on the number of workers in plastic recycling facilities. Human Rights Watch is also not aware of any scientific studies that measure air, soil, or water pollution from plastic recycling facilities in Turkey.¹⁰⁵ Human Rights Watch and Citizens Assembly requested information from the MoE on air and water quality data collected by plastic recycling facilities, but this information was not shared.

The plastic recycling industry is lucrative. Plastic recycling facility owners, workers, and nearby residents told Human Rights Watch that visible economic wealth garnered from the

¹⁰⁵ While Human Rights Watch is not aware of studies in Turkey measuring environmental pollution from plastic recycling facilities, many similar studies have been conducted in China, which was the world's leading importer of plastic waste imports for decades. For more information, see: Huang et al., "Pollution characteristics of volatile organic compounds, polycyclic aromatic hydrocarbons and phthalate esters emitted from plastic wastes recycling granulation plants in Xingtian Town, South China"; Zhigui He et al., "Pollution characteristics and health risk assessment of volatile organic compounds emitted from different plastic solid waste recycling workshops," *Environment International* 77 (2015): 85-94, accessed January 25, 2022, <http://dx.doi.org/10.1016/j.envint.2015.01.004>; Zhenwu Tang et al., "Contamination and risk of heavy metals in soils and sediments from a typical plastic waste recycling area in North China," *Ecotoxicology and Environmental Safety* 122 (2015): 343-351, accessed February 9, 2022, <http://dx.doi.org/10.1016/j.ecoenv.2015.08.006>.

industry has led more individuals to open facilities.¹⁰⁶ A local elected official, or *muhtar*, in Adana’s Ova neighborhood,¹⁰⁷ described how the open flaunting of wealth drives people to invest in the industry:

My brother and I have owned a shop for 10 years and finally were able to save enough money to buy a house. These facility owners have fancy cars and a lot of money. We all see this wealth, which incentivizes people to join the business.¹⁰⁸

Of the 16 workers who reported their wages to Human Rights Watch, two earned the minimum wage and 14 earned less than the minimum wage.¹⁰⁹ All child workers who shared information about their wages earned less than the minimum wage. No worker interviewed by Human Rights Watch reported earning more than the minimum wage.

As opposed to recycling practices in the US and many European countries, the recycling process in facilities that Human Rights Watch visited relied on manual labor instead of technological solutions to recycling plastic waste. Relying on manual labor without providing adequate protection increases the number of people exposed to toxic chemicals released during plastic recycling. Modern machinery was not in use in any facility that Human Rights Watch visited or described by any workers interviewed, possibly because modern machinery is cost prohibitive for small-scale companies.

Human Rights Watch visited an extrusion facility on the outskirts of Adana where shredded plastic was dried, melted, and pelletized. The facility did not have a ventilation system or windows, so the facility was filled with dense smoke and the floors were covered in black,

¹⁰⁶ Human Rights Watch interview with plastic recycling facility owner (requested anonymity), Sultangazi, Istanbul, March 15, 2022; Human Rights Watch interview with plastic recycling facility owner (requested anonymity), Adana, March 6, 2022; Human Rights Watch interview with Sadik, former recycling facility worker and current waste picker, Adana, March 6, 2022; Human Rights Watch interview with *Muhtar* Allattin Baris, Adana, March 3, 2022.

¹⁰⁷ A *muhtar* is a locally elected head of a village or neighborhood.

¹⁰⁸ Human Rights Watch interview with *muhtar* of Adana’s Ova neighborhood, Adana, March 3, 2022.

¹⁰⁹ In 2021, Turkey’s minimum wage was 2826 liras (169.32 euro) per month, and it was raised to 4250 liras (254.64 euros) per month in 2022 in response to rapidly rising inflation. The estimates in euros are based on the May 17, 2022, exchange rate of 16.69 liras per 1 euro.

“Minimum wage for 2022 raised 50 percent,” *Hürriyet Daily News*, December 16, 2021, <https://www.hurriyetdailynews.com/turkey-increases-minimum-wage-to-4-250-turkish-liras-erdogan-announces-170119> (accessed April 26, 2022).

oily dust. In one corner near the drying machine, there was a one-meter-tall pile of ash and dust, likely contaminated with toxic chemical additives. None of the four workers or the facility owner wore any type of protective equipment to prevent toxic exposure or limit the inhalation of air pollutants.

Salim owns a plastic recycling facility in Bayrampaşa, Istanbul, where plastic is shredded and melted into pellets. Salim and his wife, Meryem, have been in the plastic recycling business for 30 years and have owned the facility visited by Human Rights Watch for 10 years. To identify and sort plastic before it's shredded, Salim lights a piece of plastic on fire to identify the resin type based on the smell, smoke color, and melting characteristics.¹¹⁰ Salim demonstrated this method when Human Rights Watch interviewed him. By inhaling fumes from burning plastic, Salim is directly exposing himself to toxic chemicals in plastics. This method of identifying resin type also demonstrates a lack of understanding about the potential health consequences of exposure to toxins in plastics.

The growing, lucrative, and small-scale plastic recycling sector provides space for rampant abuses of workers and concerning toxic exposure for people who live near facilities.

Wastewater and Water Pollution

Plastic recycling is a water intensive process, particularly in the washing and extrusion phases. Approximately two to three cubic meters of water is used to clean each tonne of plastic, and more water is used to cool plastic once it is melted and formed into pellets.¹¹¹ Industrial facilities, including plastic recycling facilities, are not permitted to discharge wastewater into sewers or canals without a permit from the Ministry of Environment, Urbanization and Climate Change and discharged wastewater must not harm human health under Turkish law.¹¹² It is unclear whether water quality downstream from plastic recycling facilities is being monitored by the MoE's Department of Water and Soil Management because that information is not publicly available.¹¹³

¹¹⁰ Human Rights Watch with Salim and Meryem, recycling facility owners, Bayrampaşa, Istanbul, March 14, 2022.

¹¹¹ Jefferson Hopewell et al., "Plastics recycling: challenges and opportunities," *Philosophical Transactions of the Royal Society B: Biological Sciences* 364 (2009): 2115-2126, accessed May 24, 2022, doi: 10.1098/rstb.2008.0311.

¹¹² Turkey Water Pollution Control Regulation, adopted December 31, 2004, <https://leap.unep.org/countries/tr/national-legislation/regulation-water-pollution-control-o>.

¹¹³ See: General Directorate of Environmental Management, "Activities," undated, <https://cygm.csb.gov.tr/index.php?Sayfa=faaliyetliste> (accessed June 3, 2022).

“Ahmet,” a plastic recycling facility worker in Adana, described to Human Rights Watch how wastewater from the recycling facility directly polluted the environment:

There’s a dirty water channel next to the machine, that’s where the water goes, goes through pipes from the machine to the canal. I haven’t seen any filtering systems. The filtering isn’t in the facilities.¹¹⁴

Human Rights Watch visited a canal in Adana that received wastewater from plastic recycling facilities. The canal runs alongside agricultural lands from Adana to the Mediterranean Sea, just east of Mersin. Alongside the canal, there was illegally dumped European and Canadian plastic waste which was identified by labels on packaging, medical waste, construction waste, as well as ashes where waste had been burned. The canal was not lined with concrete, and there was no visible indication that the authorities had taken measures to prevent pollutants in wastewater from potentially leaching into nearby agricultural soils or being inadvertently used for irrigation of agricultural fields.



Illegally dumped plastic waste imports, located near a canal in Adana. © 2021 Human Rights Watch

Migrants and Refugees in the Recycling Sector in Adana and Istanbul

Migrants and refugees make up a disproportionately high number of workers in recycling facilities because those jobs are available to people who don’t speak Turkish, have low barriers to entry, and are often part of the informal economy that is open to individuals without legal authorization to work in Turkey or facing barriers to finding work in other sectors.

¹¹⁴ Human Rights Watch interview with “Ahmet,” plastic recycling facility worker, Adana, March 1, 2022.

Kurds from Turkey are also highly represented among the workforce in recycling facilities. The bulk of people employed in plastic recycling in Adana are Kurds or Syrian refugees, according to workers, residents, and facility owners interviewed by Human Rights Watch in Adana.

Kurds living in Adana are mostly the children of victims of forcible displacement, or are themselves victims, who came to Turkey from villages and towns in southeast Turkey in the early 1990s when the Turkish military adopted a policy of evacuating or burning down thousands of villages. This was in the course of the conflict with the armed Kurdistan Workers' Party (PKK).¹¹⁵ Many Kurds in Adana have faced economic hardship and took unskilled manual work including in the waste sector.

Turkey is the world's largest host country for refugees, hosting approximately 3.6 million Syrians.¹¹⁶ Approximately 254,000 Syrian refugees are registered in the Adana province.¹¹⁷ As the Syrian refugee population in Adana has grown, Syrians have displaced some of the Kurdish workforce in the plastic recycling sector. Sadik, a Kurdish waste picker in Adana, told Human Rights Watch that the recent increase in the Syrian population has made waste collecting more competitive, negatively impacting his work because the increase in waste pickers has made it more difficult to find materials to collect.¹¹⁸

In Istanbul, a municipal police officer estimated that approximately 80 percent of people working in recycling facilities are migrants or refugees.¹¹⁹ Of the 10 Afghan workers Human Rights Watch interviewed in Istanbul, all were men under age 45 and none had legal immigration status. Recycling facility workers told Human Rights Watch that migrants from other countries, including Pakistan, and Iraq, as well as Syrians, commonly worked in recycling facilities in Istanbul.

¹¹⁵ Human Rights Watch, "Time for Justice: Ending Impunity for Killings and Disappearances in 1990s Turkey," September 3, 2021, <https://www.hrw.org/report/2012/09/03/time-justice/ending-impunity-killings-and-disappearances-1990s-turkey>.

¹¹⁶ United Nations High Commissioner for Refugees (UNHCR), "Refugees and Asylum Seekers in Turkey," undated, <https://www.unhcr.org/tr/en/refugees-and-asylum-seekers-in-turkey> (accessed April 28, 2022).

¹¹⁷ Asylum Information Database, "Statistics: Turkey," January 11, 2022, <https://asylumineurope.org/reports/country/turkey/statistics/> (accessed May 24, 2022).

¹¹⁸ Human Rights Watch interview with Sadik, waste picker and former recycling facility worker, Adana, March 6, 2022.

¹¹⁹ Human Rights Watch interview with *Zabita* officers, Bayrampaşa, Istanbul, March 14, 2022.

Health Harms and Risks

Plastic recycling facility workers and nearby residents in Adana and Istanbul are suffering from significant short-term health impacts associated with exposure to pollutants from plastic recycling. In addition, exposure to toxics released during plastic recycling threaten long-term health of workers and residents. While other factors and sources of pollution, including pollutants emitted from other facilities in the vicinity, may contribute to health harms, the types and frequency of health impacts Human Rights Watch documented among plastic recycling facility workers and nearby residents, and the existing scientific research connecting air pollution and toxic exposure to health harms, suggest a strong relationship between plastic recycling and negative health impacts.

Workers

Workers in plastic recycling facilities have direct exposure to toxic pollutants released during plastic recycling. Fourteen of the 20 workers who reported on occupational health told Human Rights Watch that they developed illnesses due to their work, including chronic respiratory conditions such as having trouble breathing, severe headaches, chest tightness, and asthma. Some workers also developed rashes and suffered from eye irritation. Many of those who agreed to be interviewed by Human Rights Watch are former recycling facility workers because many current workers expressed concern over retaliation for speaking out against their employer.

Ibrahim, 32, worked in a shredding and granule-making facility in Adana for between three and four years but stopped working in the facilities in 2019 due to the health impacts:

I got ill so I stopped. My lungs were injured...My doctor told me not to work there. I didn't get any medicine. They didn't look at my lungs or do an x-ray. I had an awful dry cough.¹²⁰

"Ahmet," 20, has switched between working in plastic recycling facilities and as a waste picker for the past five years in Adana. He said:

¹²⁰ Human Rights Watch interview with Ibrahim, former recycling facility worker, Adana, March 2, 2022.

I used to have health problems when working at the facilities. I had shortness of breath and my back hurt when working in the place that made [pellets]. That was from the fumes from melting. There's a huge cauldron where they're cooking the material, they keep adding water which comes back up as steam. When I inhaled that, it would feel like my lungs were squeezed and under pressure...I stopped working there two months ago, but I still have a problem with breathing.¹²¹

Nasrat, 18, came to Turkey in 2020 from Kabul, Afghanistan and began working at an extrusion facility in Istanbul where he hand-fed plastic bags into a machine that melted the plastic so it could be reformed into pellets. Without legal status, he is unable to access the Turkish healthcare system. After working in the facility for just three and a half months, Nasrat said he developed a chronic cough:

It was very stinky and dusty. It would hurt your nose. It was an ugly smell. I had a cough and my bones ached. I'd buy medicine with my own money...I stopped working in the facility because it had a very harsh smell and I did not earn enough money.¹²²

Human Rights Watch interviewed a medical doctor who said he could smell the fumes from plastic recycling facilities from his clinic in Bayrampaşa, Istanbul. He said workers from the nearby plastic recycling facilities often seek medical treatment for respiratory illnesses, take extended periods of time to recover from illnesses, and have higher than expected levels of heavy metals in their blood.¹²³

Human Rights Watch also interviewed seven male waste pickers who formerly worked in plastic recycling facilities in Adana and Istanbul. Because income is dependent on the weight of materials collected, waste pickers do not have a steady, reliable income, and their livelihoods depend on how much they work. Although working in recycling facilities

¹²¹ Human Rights Watch interview with "Ahmet," former recycling facility worker, Adana, March 1, 2022.

¹²² Human Rights Watch interview with Nasrat, former recycling facility worker and current waste picker, Sultangazi, Istanbul, March 15, 2022.

¹²³ Human Rights Watch interview with medical doctor, Bayrampaşa, Istanbul, March 10, 2022.

provided a reliable income, multiple people reported that they decided to leave their stable job because of the impact of recycling on their health and poor working conditions.

Aydın, 25, started in the waste sector at age 12 as a waste picker. In his early 20's, he worked in a shredding facility in Adana for between one and two years. Aydın said he left his job at the shredding facilities to collect waste from the streets due to health impacts:

Whether you like it or not, you inhale that smoke... The smoke dries and burns your throat. I did wear a kind of mask, but it didn't help. It burns the eyes as well... There were days I wouldn't go to the facility. I didn't have the energy. I went from 87 to 80 kilograms. I lost my appetite, lost weight, and was coughing.¹²⁴

While Turkish regulations are sufficient to minimize harms from recycling of such toxic substances, insufficient personal protection equipment, lack of health care for workers, and poor working conditions exacerbate risks that workers face.

In many small-scale plastic recycling facilities, working conditions were primitive and exploitative. For example, Human Rights Watch visited an extrusion facility near Adana where shredded plastic was dried, melted, and pelletized. The facility did not have a ventilation system or windows, so the facility was filled with dense smoke and the floors were covered in black, oily dust. There was a 1-meter-tall pile of ash and dust, likely contaminated with toxic chemical additives, in one corner of the facility.

Working conditions were a serious concern for many of the workers who spoke with Human Rights Watch.

“Elin,” 17, is a Syrian child worker who sorts waste with her sisters at a plastic shredding facility in Adana.¹²⁵ She told Human Rights Watch that her employer frequently yelled at her, denied her breaks, and forbade her from using the bathroom. Elin told Human Rights

¹²⁴ Human Rights Watch interview with Aydın, former recycling facility worker and current waste picker, Adana, December 7, 2021.

¹²⁵ One of Elin's sisters is also a child laborer, and the other sister is an adult but began working in a plastic recycling facility as a child.

Watch that the facilities at work are not adequate for change of menstrual pads, so she must go home, which is a five-minute walk from the facility, to manage her menstruation:

I ask to go to the bathroom and sometimes they don't let me. We'll [have to] come home for 5 minutes to change our pad when we're menstruating.¹²⁶

Insufficient Protective Equipment

Personal protective equipment (PPE), including face masks, gloves, uniforms, and goggles, are key to limit occupational exposure to toxic chemicals in plastic recycling facilities. Turkey's Occupational Health and Safety Law requires that employers identify and provide protective equipment to workers based on a risk assessment of potential harms in the workplace.¹²⁷

Yet, 16 workers reported inadequate access to employer-provided PPE, while only four were provided with both masks and gloves by their employer. In some cases, employers provided gloves, in some cases masks. Often, the PPE provided was not adequate to fully protect workers from exposure. None of the workers who spoke with Human Rights Watch reported wearing uniforms. Toxic dust on clothes can expose workers' family members to toxins emitted during plastic recycling if they enter their homes wearing the same clothes that they work in.

"Çiçek," 20, and her family are refugees from Syria who arrived in Adana in 2016. Shortly after arriving in Adana, she began working in a shredding facility with two of her sisters, "Elin" and "Zeynep." For the last six years, the three sisters have been hand sorting plastic waste by color. They are not provided with masks, and the gloves provided by the employer do not provide enough protection because the materials they encounter are often dirty:

¹²⁶ Human Rights Watch group interview with "Çiçek," "Elin," "Zeynep," and "Mira," recycling facility workers, Adana, March 3, 2022.

¹²⁷ Occupational Health and Safety Law, No. 6331, adopted June 30, 2012, <https://www.ilo.org/dyn/natlex/docs/MONOGRAPH/92011/106963/F1028231731/TUR92011%20Eng.pdf>.

[Our employer] gives us 12 gloves per month, but it's not sufficient because the waste is so dirty. So sometimes we wear two at a time. 12 is enough for one or two weeks. We purchase more gloves with our own money.¹²⁸

When we met Çiçek, the skin on her cheeks was irritated and red, and her arms had rashes, which she scratched during the interview. Çiçek told Human Rights Watch that her skin feels as if it's burning.

In a letter to Human Rights Watch, the Ministry of Labor and Social Security noted that employers that do not provide compliant personal protective equipment are subject to an administrative fine based on the number of employees that do not receive necessary protective equipment. We are unaware of whether any plastic recycling companies have been fined.



Gloves provided to workers at a plastic recycling facility in Adana. © 2022 Human Rights Watch

¹²⁸ Human Rights group interview with “Çiçek,” “Elin,” “Zeynep,” and “Mira,” recycling facility workers, Adana, March 3, 2022.

Lack of Medical Treatment

Many of the workers who spoke with Human Rights Watch noted that they had limited or no access to medical treatment for occupational illnesses despite a legal requirement for employers to provide this.¹²⁹

“Zeynep,” a 17-year-old child worker, was sorting through plastic waste when a piece of glass gashed her arm and she required stitches at the hospital. Because her employer did not provide Zeynep with social security despite being obligated to do so, she was left to pay for her treatment because Turkey’s social security system provides access to public healthcare.¹³⁰

None of the 10 Afghan recycling facility workers who spoke with Human Rights Watch had legal immigration status in Turkey, which made it difficult for them to access the Turkish healthcare system because they are not registered through the social security system. Specifically, the fear of deportation dissuaded them from seeking medical treatment for occupational illnesses and injuries. For example, Saber, 19, arrived in Istanbul from Afghanistan in May 2021 and immediately began working in an extrusion facility. He lives in a one-bedroom apartment provided by his employer with 15 other Afghan men who work together in the facility. Saber does not have legal status in Turkey, so he is unable to go to a public health clinic and cannot afford to pay for a private doctor or purchase medicine from a Turkish pharmacy for the frequent chest pain and flu-like conditions he suffers.¹³¹

While beyond the scope of this report, many workers also reported insufficient medical treatment when serious injuries or accidents occurred at the workplace. People interviewed described frequent accidents given the risky nature of the work involving lifting heavy bales of plastic on forklifts, shredding plastic in machines with sharp blades, and melting plastic at high temperatures. Nine workers said they witnessed serious injuries in the workplace, including co-workers’ fingers or arms amputated in the machinery. “Abdul,” from Afghanistan, who currently works in a facility in Istanbul where he sorts waste, told Human Rights Watch:

¹²⁹ Social Insurance and General Health Insurance Law, No. 5510, Art. 86, 88, and 82.

¹³⁰ Human Rights Watch group interview with “Çiçek,” “Elin,” “Zeynep,” and “Mira,” recycling facility workers, Adana, March 3, 2022.

¹³¹ Human Rights Watch interview with Saber, recycling facility worker, Bayrampaşa, Istanbul, March 13, 2022.

A year ago, I saw a man get his hand caught in a machine. His fingers were broken, but he didn't have papers so he couldn't go to the hospital to get his hand fixed. So his fingers didn't heal properly and he could no longer work, so he had to go back to Afghanistan.¹³²

Nearby Residents

It comes as a black smoke. It comes into the house. It's as if they're poisoning us.

— Gönül, Adana resident, December 2021¹³³

Plastic recycling facilities in Adana and Istanbul are located dangerously close to houses, schools, and medical facilities in contravention of Turkish legislation, putting people at risk of health effects from exposure to toxins and pollutants.

Ten residents living in low-income, densely packed neighborhoods with a large number of plastic recycling facilities reported an array of health problems, including asthma, trouble breathing, rashes, eye irritation, and cancer, while only three said they did not have any health problems. It is difficult to attribute individual cases directly to the recycling facility in part because many factors play a part in these harms. There are a variety of industrial, and likely polluting, businesses in the surrounding area in addition to plastic recycling facilities, which may contribute to negative health outcomes for local residents. Adana has poor air quality due to various sources of industrial emissions, and PM₁₀ measurements in the Adana city center exceeded the national PM₁₀ daily limit on 236 days in 2019.¹³⁴ However, the existing scientific base connecting air pollution and toxic exposure to health harms suggests a strong relationship between plastic recycling pollution and health conditions like those described by residents.

Sedat, 35, and his family live in Ova, a neighborhood in Adana's Seyhan district just north of the airport, where many plastic recycling facilities are located around his family home, with the closest facility no more than 20 meters away. Four of Sedat's close family

¹³² Human Rights Watch interview with "Abdul," recycling facility worker, Bayrampaşa, Turkey, March 13, 2022.

¹³³ Human Rights Watch group interview with Gönül, Zeynep, Cihan, and Dilber, residents, Adana, December 7, 2022.

¹³⁴ Health and Environment Alliance, "Technical Evaluation of Hunutlu Power Plant and Air Pollution in Adana," May 2020, https://world.350.org/adanayatemizhava/files/2020/06/1_HEALs-technical-expertise-report-on-Hunutlu_ENG-FINAL.pdf (accessed July 25, 2022).

members have died of cancer, and he believes that living near recycling facilities for three decades contributed to these fatal diseases.¹³⁵

If you stay so long in a place, you get sick. My 27-year-old sister died of colon cancer, this was 10 years ago. My brother died at 34 years of lung cancer four years ago. I believe it is the effect of the recycling plants...My relative ran a [extrusion facility] and he died of lung cancer. He was 55 years old.¹³⁶

Gönül, 42, has lived in Ova for 26 years. She wants to move farther away from the facilities, but a lack of economic resources prevents her family from relocating. She was repeatedly coughing during her interview with Human Rights Watch. She said:

I've had health problems for 12 years, when I developed asthma and bronchitis. I now have hypertension. I can't stop coughing. I think it's the plastic. I often go to the hospital, and they just give me serum and an inhaler.

My kids are 21 and 23 and have asthma as well. When they were small, I would take them to the hospital. My son has rashes on his hands. I'm worried about my children.¹³⁷

Health conditions reported to Human Rights Watch from people living near plastic recycling facilities are in line with what medical professionals said they expect to see in an area with high levels of pollution from plastic recycling. A medical doctor in Bayrampaşa, Istanbul, a district with a high number of recycling facilities, told Human Rights Watch he was seeing extremely high levels of heavy metals in the blood of his patients, which

¹³⁵ Beyond exposure to pollution and toxics from nearby plastic recycling, there are other risk factors that may contribute to cancer. Sedat's brother smoked cigarettes, but quit smoking at age 25, nine years before he died of lung cancer. Sedat's sister did not smoke cigarettes, but was likely exposed to second-hand smoke from others in her family. Cigarette smoke can cause cancer almost anywhere in the body, including the lungs, mouth, liver, and colon. World Health Organization, "Tobacco," May 24, 2022, <https://www.who.int/news-room/fact-sheets/detail/tobacco> (accessed May 25, 2022); US Center for Disease Control and Prevention, "Smoking and Cancer," May 5, 2022, <https://www.cdc.gov/tobacco/campaign/tips/diseases/cancer.html> (accessed May 25, 2022).

¹³⁶ Human Rights Watch interview with Sedat, resident, Adana, March 2, 2022.

¹³⁷ Human Rights Watch group interview with Gönül, Zeynep, Cihan, and Dilber, residents, Adana, December 7, 2022.

include recycling facility workers and people living near facilities.¹³⁸ Human Rights Watch requested community level health data from the Ministry of Health in May 2022 on air pollution and toxic exposure related illnesses, but the Ministry did not provide this information in response to our request. A medical doctor in Adana told Human Rights Watch that he had difficulty accessing community level health data from the Ministry of Health.

Improper Location of Recycling Facilities

Of course, recycling would only be in the ghettos. This would never be in a rich neighborhood

— Faruk, recycling facility owner March 2022¹³⁹

Waste treatment facilities, including plastic recycling facilities, in Turkey are required to be located at an appropriate setback from settlements, which include residences, schools, and hospitals, to ensure that facilities do not cause harms to the health or quality of life of people residing nearby, according to the Regulation on Licenses for the Opening and Running of Businesses.¹⁴⁰ The regulation requires the relevant Ministry of Health Provincial Directorate to conduct a risk assessment to determine the appropriate distance before issuing a license to the facility.¹⁴¹ Based on the risk assessment framework, plastic recycling facilities may be permitted to be between 40 to 325 meters from residences.¹⁴²

¹³⁸ Exposure to heavy metals, which can be emitted during plastic recycling, can damage brain, lung, kidney, and liver functioning, and long-term exposure to heavy metals can contribute to neurological diseases. Monisha Jaishankar et al., “Toxicity, mechanism and health effects of some heavy metals,” *Interdisciplinary Toxicology*, 7 (2014): 2, accessed July 20, 2022; doi: 10.2478/intox-2014-0009.

Human Rights Watch interview with medical doctor (requested anonymity), Bayrampaşa, Istanbul, March 10, 2022.

¹³⁹ Human Rights Watch interview with Faruk, recycling facility owner, Sultangazi, Istanbul, March 15, 2022.

¹⁴⁰ Regulation on Licenses for the Opening and Running of Businesses, No. 25902, effective August 25, 2022, <https://www.resmigazete.gov.tr/eskiler/2022/08/20220825-17.pdf>.

¹⁴¹ The requirements of the risk assessment may be found here:

https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fhsgm.saglik.gov.tr%2Fdepo%2Fbirimler%2Fcevre-sagligi%2F2-ced%2FSaglik_Koruma_Bandi%2FRisk_Hesaplama_Tablosu.xls&wdOrigin=BROWSELINK.

¹⁴² Pollution emitted from plastic recycling facilities and the significant health impacts of exposure to toxins released during recycling suggests that an appropriate distance may be greater than 325 meters. Studies have found that pollution from industrial activities is associated with increased risk of disease, including cancers, for residences one to three kilometers away from facilities. Javier García-Pérez, et al., “Residential proximity to industrial pollution sources and colorectal cancer risk: A multicase-control study (MCC-Spain),” *Environment International*, 144 (2020), accessed September 8, 2022, <https://doi.org/10.1016/j.envint.2020.106055>.

In addition, according to the Regulation on the Storage of Waste, facilities that store plastic waste are legally required to be at least 250 meters from residences.¹⁴³

Hanife, 64, and her husband, children, and grandchildren moved to Çorlu, near Istanbul, 12 years ago, where they built a house on inherited farmland. Five years ago, plastic recycling facilities began opening near her home, the closest only 35 meters from Hanife's front door.¹⁴⁴ "The municipality shouldn't have allowed us or them to build. It's either or, not both."¹⁴⁵ Hanife believed that some of the facilities were unlicensed and said they had been temporarily shut down for two months. At the time Human Rights Watch visited, the facilities were in operation again. Hanife said she could smell burning plastic and hear machines in operation from inside her home. Hanife told Human Rights Watch that her 12-year-old grandson often asked her, "Why did you build this house in the depths of hell?"¹⁴⁶

Based on Human Rights Watch's spatial analysis, it is common for plastic recycling facilities in Adana and Istanbul to be located close to residences and other incompatible land uses. The improper locating of plastic recycling facilities too close to housing increases risks to the health of local residents.

Human Rights Watch mapped 32 MoE licensed plastic recycling facilities within Adana's Şakirpaşa, Onur, and Ova neighborhoods. We used spatial analysis to schools, parks, and medical facilities within 250 meters of plastic recycling facilities, based on the setback defined in the Regulation on the Storage of Waste.¹⁴⁷ Based on our spatial analysis, roughly half of the plastic recycling facilities in Şakirpaşa, Onur and Ova are located within 250 meters of schools, and three facilities are within 250 meters of parks, where children play.¹⁴⁸ Dense residential areas are located next to licensed plastic recycling facilities, and dozens of residential buildings are located within 250 meters. Human Rights Watch

¹⁴³ Regulation on the Storage of Waste, published March 26, 2010, <https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=13887&MevzuatTur=7&MevzuatTertip=5>.

¹⁴⁴ Human Rights Watch used geospatial analysis to determine the distance between Hanife's home and the closest plastic recycling facility.

¹⁴⁵ Human Rights Watch interview with Hanife, resident, Çorlu, December 14, 2021.

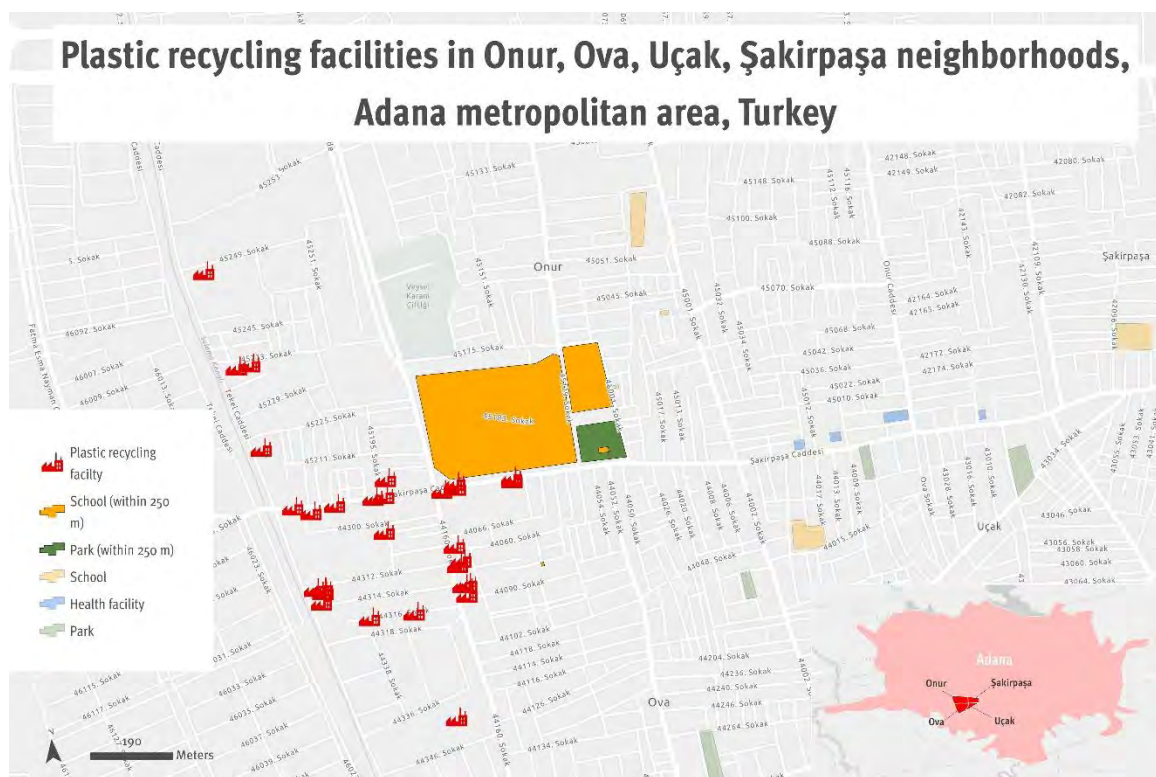
¹⁴⁶ Ibid.

¹⁴⁷ This analysis was conducted before the August 25 amended Regulation on Licenses for the Opening and Running of Businesses.

¹⁴⁸ A quarter of the plastic recycling facilities concentrated along Sakirpasa Caddesi, a street that separates the Onur and Ova neighborhoods.

interviewed multiple people who lived within 250 meters of plastic recycling facilities in this area.

Human Rights Watch visited a high school and a kindergarten that are part of a large educational complex and located just 25 meters, directly across the street, Şakirpaşa Caddesi, from four plastic recycling facilities.¹⁴⁹ Machinery in operation at one of the recycling facilities was audible from the headteacher’s office in one school. Multiple Adana residents expressed concern over the close proximity of plastic recycling facilities to schools.



¹⁴⁹ Human Rights Watch determined the distance between the schools and plastic recycling facilities using geospatial analysis. As described in the section on Disproportionate Health Outcomes, children are at risk for developing more acute health impacts from that exposure due to their rapid development, making the close proximity of schools to plastic recycling facilities concerning.

In Bayrampaşa, Istanbul, Human Rights Watch mapped 25 licensed plastic recycling facilities from MoE data. These facilities are concentrated in three neighborhoods: Terazidere, Vatan, and Muratpaşa. Based on our spatial analysis, facilities in Bayrampaşa are concentrated with other industrial activities. Sixty percent of the mapped facilities are closer than 250 meters from parks, despite the heightened health risks for children playing in those parks.¹⁵⁰

Dozens of residential buildings in the three neighborhoods in Bayrampaşa are located less than 250 meters from MoE licensed plastic recycling facilities. Based on Human Rights Watch’s spatial analysis, 70 percent of Vatan’s residential area is located within 250 meters of recycling facilities. Three facilities are located within 250 meters of an elementary school in Bayrampaşa’s Vatan neighborhood. In Bayrampaşa’s Terazidere neighborhood, one school and the Bayrampaşa Kolan Private Hospital are located slightly beyond 250 meters from plastic recycling facilities.



¹⁵⁰ Twenty-three of the 25 licensed facilities in Bayrampaşa are located with 300 meters of a park.

In Bayrampaşa, most workers reported living in employer-provided apartments, often with 15 to 30 men living in a one- or two-bedroom apartment. These housing arrangements were commonly in an apartment directly above the plastic recycling facility, or next door to the facility. In these cases, workers are exposed to toxic pollution at work and at home.

Quality of Life

Seventeen of 21 residents reported that living close to plastic recycling facilities has negatively impacted their quality of life. They told Human Rights Watch that intense odors and pollution from plastic recycling prevented them from sleeping, opening their windows, and spending time outside. Six people said that they wanted to move away from the facilities but did not have the financial means to relocate their families.

Cihan, 55, lives near multiple plastic recycling facilities and an empty lot where unrecyclable waste is illegally dumped and burned.¹⁵¹ She said:

The [recycling] factories work at night too, and they're very loud. It wakes me up. I hear workers fighting, machines, generators. It sounds like "tack tack tack." There's always noise. My [mental health] is affected by this. I get so angry and have to go to a psychologist.¹⁵²

Osman owns a barber shop located around the corner from multiple plastic recycling facilities, some of which run 24 hours per day. Osman told Human Rights Watch that the facilities impacted his ability to sleep, particularly in the last four or five years when more facilities have opened. "Sometimes I wake up in the middle of the night because of the smell."¹⁵³

Adana is known for its extremely high temperatures and humidity in summer, with an average August temperature of 34°C (93.2°F).¹⁵⁴ Multiple residents said that they could not open their windows during the summer because of odors from the recycling facilities.

¹⁵¹ Just after Human Rights Watch's interview with Cihan, a bale of unrecyclable imported waste was ignited, billowing black smoke towards her home.

¹⁵² Human Rights Watch group interview with Gönül, Zeynep, Cihan, and Dilber, residents, Adana, December 7, 2022.

¹⁵³ Human Rights Watch interview with Osman, Adana, March 2, 2022.

¹⁵⁴ Weather Spark, "August Weather in Adana," undated, <https://weatherspark.com/m/99280/8/Average-Weather-in-August-in-Adana-Turkey> (accessed May 17, 2022).

Based on Human Rights Watch field research, most residents living near recycling facilities in Adana are low-income and do not have access to air conditioning, so not being able to cool down their homes at night could increase risk of heat-related illnesses.

Facility Fires

Fires at plastic recycling facilities pose significant threats to the health and lives of nearby residents. Researchers with the Microplastics Research Group have documented more than 100 fires at plastic recycling facilities in Turkey in the past two years.¹⁵⁵ While it is not clear why recycling facilities are at risk of so many fires, some experts, activists, and local residents told Human Rights Watch that they believe fires are purposely lit in order to get rid of unrecyclable materials, including unrecyclable plastic packaging.¹⁵⁶ Human Rights could not confirm this allegation. The prevalence of fires at plastic recycling facilities increases health risks to those with preexisting respiratory illnesses from air pollution, as well as threats from the fire itself, particularly for those living nearby.¹⁵⁷

¹⁵⁵ The Microplastics Research Group is a group of Turkish researchers studying microplastic pollution, illegal plastic dumping and burning, and plastic facility fires. The group was founded in 2016 by Dr. Sedat Gündoğdu and Dr. Cem Çevik, professors at Çukurova University in Adana, Turkey.

Microplastic Research Group, “Plastic/Recycling Facility Fires,” undated, <https://mikroplastik.org/plastik-fabrika-yanginlari/> (accessed November 24, 2021).

¹⁵⁶ Human Rights Watch interview with housing community representative (requested anonymity), Manisa Muridaye, December 11, 2021; “Toxic smoke and suspicious plastic plant fires in Turkey,” *France 24*, May 29, 2022, <https://www.france24.com/en/live-news/20220529-toxic-smoke-and-suspicious-plastic-plant-fires-in-turkey> (accessed May 31, 2022).

¹⁵⁷ Short-term exposure to smoke and pollution from facility fires is linked to serious health risks for people with preexisting respiratory and/or cardiovascular diseases, including asthma, chronic obstructive pulmonary disease, and emphysema. United States Environmental Protection Agency, “How Smoke from Fires Can Affect Your Health,” undated, <https://www.epa.gov/pm-pollution/how-smoke-fires-can-affect-your-health> (accessed May 17, 2022).



Fires at plastic recycling facilities across Turkey, documented by various media sources and mapped by the Microplastics Research Group. © 2022 Microplastics Research Group

Child Labor and Plastic Recycling

Human Rights Watch found that children work in plastic recycling facilities in Turkey, despite legal protections prohibiting them from working in such dangerous conditions. While child labor isn't exclusive to the plastic recycling industry in Turkey, Human Rights Watch documented nine cases of child labor in plastic recycling facilities.¹⁵⁸ Hazardous work, including at plastic recycling facilities, harms children's health and safety, and is prohibited under international and Turkish law.

Human Rights Watch interviewed three girls and two boys working in plastic recycling facilities, starting as young as 9-years-old. One woman and three men interviewed by Human Rights Watch began working in plastic recycling facilities as children, starting as young as 13-years-old.

Child labor also interferes with children's education. None of the child workers interviewed by Human Rights Watch attended school, despite legal requirements for children to attend

¹⁵⁸ The International Labour Organization (ILO) notes that roughly 720,000 children under eighteen were engaged in economic activities in Turkey in 2019, with 45.5 percent working in the service sector, 30.8 percent working in agriculture, and 23.7 percent working in industry. International Labour Organization (ILO) - Ankara, "Child Labour," undated, <https://www.ilo.org/ankara/projects/child-labour/lang-en/index.htm> (accessed May 23, 2022).

primary school and four years of secondary school.¹⁵⁹ The loss of an education has significant impacts both for individual children and society as a whole because education can break generational cycles of poverty and enables children to be full and active participants in society.¹⁶⁰

“Yusuf,” now 16, started working in a plastic shredding facility in Adana when he was just nine years old. At the facility, he was responsible for loading plastic onto a conveyer belt, feeding materials into the shredding machine, and unloading trucks with plastic waste deliveries. After working in the facility for four years, Yusuf’s father stopped him from continuing to work there due to working conditions. Yusuf said:

We worked intensely and long hours. We would get five minutes to sit, then a truck would come, and we’d unload it. We started working at 8 a.m. and went until 8 p.m. Sometimes we’d work until 3 a.m.¹⁶¹

Globally, migrant and refugee children are at increased risk into being forced to work.¹⁶² Six of the nine child workers Human Rights Watch interviewed were migrants or refugees. Some children working in plastic recycling facilities and as waste pickers told Human Rights Watch that they were forced to work by their parents to support their families. “Çiçek,” who began working in a plastic recycling facility at age 15, told Human Rights Watch: “My dad is forcing [my sisters and me] to work there. If he didn’t force us to go, then I wouldn’t work there.”¹⁶³

“Mohammed,” 15, came to Adana with his family in December 2021 from Syria and had worked as a waste picker for one month at the time Human Rights Watch interviewed him. His father told him to find work, so he began collecting waste in the streets. Mohammed

¹⁵⁹ Primary Education Law, No. 222, enacted May 1, 1961; Education Reform Law, No. 6287, enacted March 30, 2012, <http://www.tbmm.gov.tr/kanunlar/k6287.html>.

¹⁶⁰ Human Rights Watch, “The Education Deficit: Failures to Protect and Fulfill the Right to Education through Global Development Agendas,” June 9, 2016, <https://www.hrw.org/report/2016/06/09/education-deficit/failures-protect-and-fulfill-right-education-through-global>.

¹⁶¹ Human Rights Watch interview with “Yusuf,” former recycling facility worker, Adana, March 6, 2022.

¹⁶² UNICEF, “Child Labour,” June 9, 2021, <https://www.unicef.org/protection/child-labour> (accessed May 26, 2022).

¹⁶³ Human Rights Watch group interview with “Çiçek,” “Elin,” “Zeynep,” and “Mira,” recycling facility workers, Adana, March 3, 2022.

dislikes collecting waste and he told Human Rights Watch that the smell of garbage makes him want to vomit, but he cannot find other work because he does not speak Turkish.¹⁶⁴

Children may also be at greater risk of exploitation in the workplace than adults.¹⁶⁵

“Karim,” now 16, left Afghanistan when he was 14 years old. After arriving in Istanbul, he began working in a plastic shredding facility, where he was the youngest worker. After one and a half months of working at the facility, Karim quit because the employer did not pay his wages.¹⁶⁶

Turkey has ratified the Convention on the Rights of the Child and the International Labor Organization’s Worst Forms of Child Labor Convention, which obligates states to protect children from work that may harm children.¹⁶⁷ Turkey’s Regulation on Heavy and Dangerous Work lists types of work that children ages 16 to 18 may not be employed in, including work in plastic manufacturing, machine repair and cleaning, and other work involving waste disposal.¹⁶⁸ In a letter to Human Rights Watch, the Ministry of Labor and Social Security reported that children cannot be employed, “in jobs that require working with hazardous substances which cause occupational diseases.”¹⁶⁹

European Imports in Turkey

I see imports. It’s clear they come with big bales, 4 or 5 huge trucks with mixed plastic; you can tell it’s coming from abroad. They buy for one price cheap overseas, then sort it, then can increase the price. It’s much more profitable than domestic waste.¹⁷⁰

— “Adnan” Adana resident, March 2022.

¹⁶⁴ Human Rights Watch interview with “Mohammed,” child waste picker, Adana, March 2, 2022.

¹⁶⁵ International Labour Organization, “Hazardous child labor,” undated, <https://www.ilo.org/ipec/facts/WorstFormsofChildLabour/Hazardouschildlabour/lang-en/index.htm> (accessed July 18, 2022).

¹⁶⁶ Karim is owed 2,800 liras in backpay from his former employer. Human Rights Watch interview with “Karim,” child worker, Sultangazi, Istanbul, May 15, 2022.

¹⁶⁷ Convention on the Rights of the Child (CRC), adopted November 20, 1989, G.A. Res. 44/25, annex, 44 U.N. GAOR Supp. (No. 49) at 167, U.N. Doc. A/44/49 (1989), art. 32; ILO Convention No. 182 concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour (Worst Forms of Child Labour Convention), adopted June 17, 1999, 38 I.L.M. 1207 (entered into force November 19, 2000), art. 3.

¹⁶⁸ Regulation on Heavy and Dangerous Work, Article 2, No.’s 58, 89, and 103, enacted March 20, 1973, pursuant to Decree No. 7/6174.

¹⁶⁹ See Annex 1.

¹⁷⁰ Human Rights Watch interview with “Adnan,” resident, Adana, March 1, 2022.

Since the Chinese government implemented its National Sword Policy in 2018, Turkey has become the largest importer of European plastic waste, including imports from EU member states and the UK. In 2016, Turkey imported 33,804 tonnes of plastic waste from European Union countries.¹⁷¹ By 2020, that figure increased by more than 1,200 percent to 447,432 tonnes.¹⁷² Since withdrawing from the EU in January 2020, the UK has exported vast amounts of plastic waste to EU members and Turkey. While more than half of the UK's plastic waste was exported to EU countries in 2021, the UK shipped 122,898,385 kilograms of plastic waste, or 27 percent of its plastic waste exports, to Turkey.¹⁷³

Although the UK exported plastic waste under the guise it would be recycled, Greenpeace, a global environment non-governmental organization, documented that in practice actors in Turkey illegally dumped, burned, or landfilled much of the plastic waste because it was too low quality to be recycled or contaminated with other waste.¹⁷⁴

Turkey's geographic proximity to the European Union and its status as an OECD member make it a key destination for EU plastic waste exports because the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal and the proposed EU Waste Shipment regulation offer protections for non-OECD members that import plastic waste. There are no EU policies dictating that plastic waste should be shipped to Turkey by EU members. The EU and Turkey have strong trade relations, dating from the 1963 Association Agreement and the 1995 Customs Union agreement.¹⁷⁵ Turkey is the sixth biggest trading partner for the EU, while the EU is Turkey's largest import and export partner.¹⁷⁶ The global plastic waste trade involves many actors, including waste brokers and dealers, waste carriers, shipping agents, and port authorities, and the legal

¹⁷¹ United Nations Statistics Division, Trade Statistics Branch, "UN Comtrade Database," undated, <https://comtrade.un.org/data/> (accessed April 19, 2022).

¹⁷² Ibid.

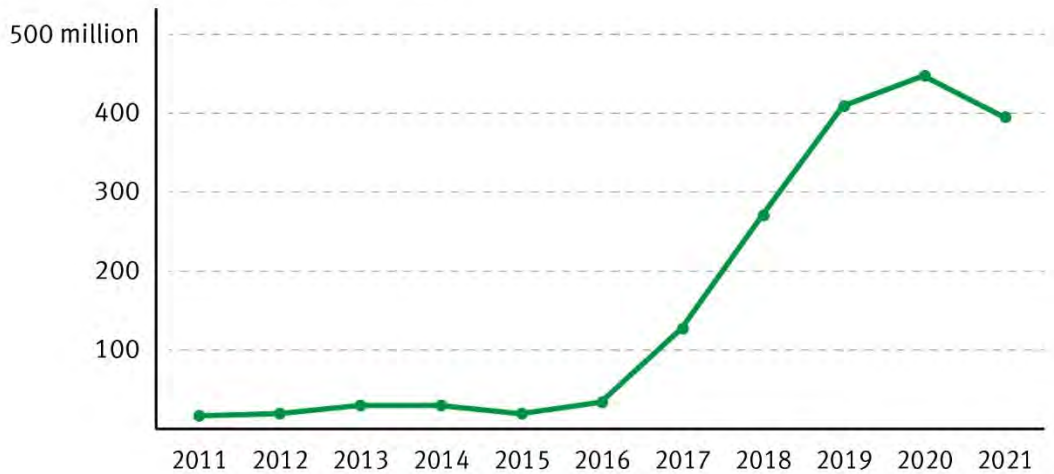
¹⁷³ Ibid.

¹⁷⁴ Greenpeace UK, "Trashed: How the UK is still dumping plastic waste on the rest of the world," May 17, 2021, <https://www.greenpeace.org.uk/wp-content/uploads/2021/05/Trashed-Greenpeace-plastics-report-final.pdf> (accessed September 15, 2021).

¹⁷⁵ European Commission, "EU trade relations with Turkey. Facts, figure and latest developments," undated, https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/turkey_en (accessed June 3, 2022).

¹⁷⁶ Ibid.

Plastic Waste Exports from EU Member States to Turkey by Quantity (kg), 2011 – 2021



Source: United Nations Statistics Division, Trade Statistics Branch, “UN Comtrade Database,” <https://comtrade.un.org/data>

Prior to the Chinese government’s ban on plastic waste imports, effective January 1, 2018, Turkey imported relatively little plastic waste from the European Union.

plastic waste trade was valued at \$2 billion globally in 2020.¹⁷⁷ The global plastic waste trade has also been linked with organized crime and waste trafficking.¹⁷⁸

After a series of international media reports, including a report by Greenpeace released in May 2021, about illegally dumped and burned imported plastic waste to Turkey, the Ministry of Environment and Urbanization¹⁷⁹ banned imports of two common types of plastic waste effective July 2, 2021.¹⁸⁰ Nine days after the import ban went into effect,

¹⁷⁷ Environmental Investigation Agency, “The Trust Behind Trash: The scale and impact of the international trade in plastic waste,” September 2021, <https://eia-international.org/wp-content/uploads/EIA-The-Truth-Behind-Trash-FINAL.pdf> (accessed September 30, 2021).

¹⁷⁸ INTERPOL has linked domestic high recycling targets in countries in the Global North, including in the EU, with plastic waste exports, as well as increased criminal activity in the global plastic waste trade. INTERPOL, “Emerging criminal trends in the global plastic waste market since January 2018,” August 2020, <https://www.interpol.int/en/News-and-Events/News/2020/INTERPOL-report-alerts-to-sharp-rise-in-plastic-waste-crime> (accessed September 14, 2021).

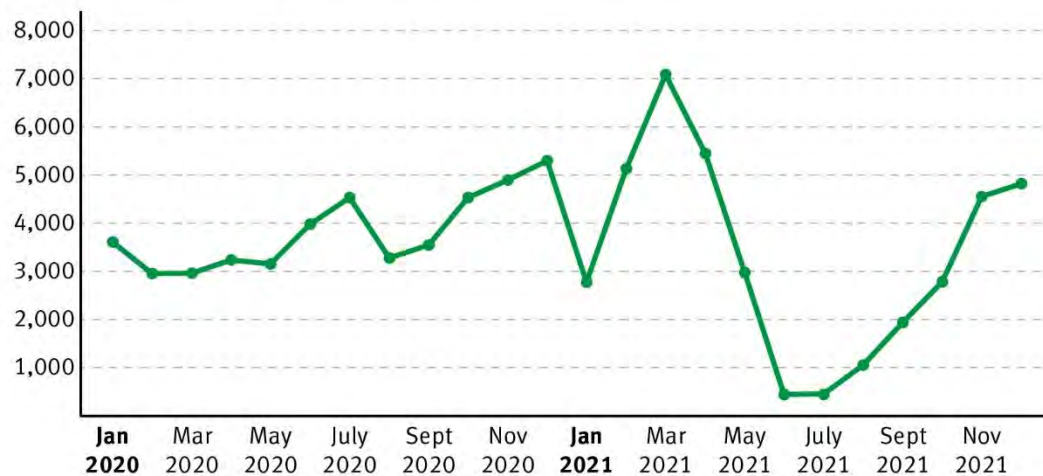
¹⁷⁹ The Ministry of Environment and Urbanization is now the Ministry of Environment, Urbanization and Climate Change.

¹⁸⁰ The law banned the import of high-density polyethylene (HDPE), resin code #2, commonly used to produce milk jugs and shampoo bottles, and low-density polyethylene (LDPE), resin code #4, often used to make plastic bags and film.

Turkey’s Ministry of Commerce announced the ban had been rescinded.¹⁸¹ Activists in Turkey believe the ban was rescinded due to pressure put on the government by Turkey’s plastics sector.¹⁸² Although the plastic waste import ban was short-lived, EU plastic waste exports to Turkey decreased to almost zero after the ban was announced but have steadily risen to pre-ban levels since fall 2021.

Based on interviews with plastic recycling facility owners, workers, and nearby residents, it is evident that the rise in European plastic waste imports over the past few years has contributed to an increase in recycling facilities.

Plastic Waste Exports from EU Member States to Turkey by Net Weight (kg), January 2020 – December 2021



Source: United Nations Statistics Division, Trade Statistics Branch, “UN Comtrade Database,” <https://comtrade.un.org/data>

After Turkey announced a ban on imports of high-density polyethylene (HDPE) and low-density polyethylene in May 2021, effective July 2, 2021, plastic waste exports by EU member states to Turkey decreased dramatically. The import ban was rescinded just nine days after it went into effect, and the quantity of imports returned to pre-ban levels by the end of 2021.

¹⁸¹ Ministry of Commerce, Official Gazette, “ÇEVRENİN KORUNMASI YÖNÜNDEN KONTROL ALTINDA TUTULAN ATIKLARIN İTHALAT DENETİMİ TEBLİĞİ (ÜRÜN GÜVENLİĞİ VE DENETİMİ: 2021/3)’NDE DEĞİŞİKLİK YAPILMASINA DAİR TEBLİĞ (ÜRÜN GÜVENLİĞİ VE DENETİMİ: 2021/36),” July 10, 2021, <https://www.resmigazete.gov.tr/eskiler/2021/07/20210710-28.htm> (accessed April 19, 2022); PAGEV, “Polyethylene Waste Imports Ban is Lifted with Active Control!,” July 2021, <https://pagev.org/polyethylene-waste-import-is-free-with-active-control> (accessed April 19, 2022).

¹⁸² Basel Action Network, “Plastic Waste Trade Watch,” July 2021, https://myemail.constantcontact.com/Plastic-Waste-Trade-Watch--July-2021.html?soid=1114999858498&aid=M_mMsbIBiA (accessed October 13, 2021); “Turkey repeals plastic import ban,” *Waste Management World*, July 12, 2021, <https://waste-management-world.com/artikel/turkey-repeals-plastic-import-ban/> (accessed July 5, 2022).

Increase in Recycling Facilities

From 2018 to 2020, EU plastic waste exports to Turkey skyrocketed from 38,804 to 446,432 tonnes – a 1200 percent increase.¹⁸³ Five of the seven recycling facility owners Human Rights Watch interviewed were recent to the plastic recycling sector. Notably, there is lack of official data on the number of plastic recycling facilities in operation in Turkey before and after the 2018 increase of imports, so there is no way of knowing how many plastic recycling facilities in Turkey opened in direct response to increased European imports. However, some residents and workers at plastic recycling facilities noted that imported plastic waste was a relatively new phenomenon, which they believed had resulted in a growth of the sector.

Velat, a recycling facility worker in Adana, has been working in the waste sector for 20 years as a waste picker and now in a recycling facility explained:

For the last [few] years, the plastic recycling sector has expanded. We think this is because of imported plastic. We never heard of waste from other countries before seven years ago.¹⁸⁴

The growth of the plastics sector has had a profound impact on Adana. Osman, an Adana resident, told Human Rights Watch: “Before there were facilities, there were fields and women were collecting and growing food...[The facilities have] grown a lot in the last four or five years.”¹⁸⁵

While Human Rights Watch did not see imported waste in the facilities we visited, workers interviewed said they saw imported waste at work and were able to identify imported plastic waste by the languages on plastic packaging.¹⁸⁶

¹⁸³ United Nations Statistics Division, Trade Statistics Branch, “UN Comtrade Database,” undated, <https://comtrade.un.org/data/> (accessed April 19, 2022).

¹⁸⁴ Human Rights Watch interview with Velat, recycling facility worker, Adana, March 6, 2022.

¹⁸⁵ Human Rights Watch interview with Osman, resident, Adana, March 2, 2022.

¹⁸⁶ Human Rights Watch group interview with “Çiçek,” “Elin,” “Zeynep,” and “Mira,” recycling facility workers, Adana, March 3, 2022.

Quality of Imports

Turkish waste is typically not sorted and thus requires more cleaning than imported European waste, providing recycling facility operators with a financial incentive to recycle foreign waste rather than domestically consumed plastic that is mixed with other materials.¹⁸⁷ Roughly 90 percent of Turkey’s municipal solid waste, including plastics, ends in landfills.¹⁸⁸ Despite growing efforts to increase the sorting of recyclable materials from waste through the Zero Waste Program, most household and industrial waste remains unsorted and so plastic waste is often contaminated, requiring substantial and costly manual labor to sort and clean.

Cognizant of the dire impact that European imports could have on processing of Turkish waste, plastic recyclers in Turkey that process imports are required to recycle at least 50 percent domestic waste. They are also obligated to report their recycling capacity to the MoE in order to receive an import permit.¹⁸⁹ Recycling capacity data is not made public, so it is unclear if facilities are reporting this information and if it is being inspected by the MoE. A new regulation, adopted in July 2021, requires plastic waste imports to be less than one percent contaminated, GPS tracking devices to accompany the waste from port of entry to recycling facility, and facilities to pay a bank guarantee to the Ministry before importing.¹⁹⁰ As plastic waste continues to be exported to Turkey in substantial quantities, it is unclear if these measures are effective.

Responding to an information request filed by Human Rights Watch and Citizens Assembly, the MoE reported that waste can be imported at 27 specialized border customs in 17 provinces.¹⁹¹ It remains unclear what inspection measures are taken to ensure imports meet the one percent contamination limit and other legal requirements.

¹⁸⁷ Sedit Gündoğdu and Tony Walker, “Why Turkey should not import plastic waste pollution from developed countries?,” *Marine Pollution Bulletin* 171 (2021), accessed September 14, 2021, <https://doi.org/10.1016/j.marpolbul.2021.112772>.

¹⁸⁸ TURKSTAT, “Municipal Waste Statistics, 2018,” October 1, 2019, <https://data.tuik.gov.tr/Bulten/Index?p=Belediye-Atik-Istatistikleri-2018-30666> (accessed April 24, 2022).

¹⁸⁹ Sedit Gündoğdu and Tony Walker, “Why Turkey should not import plastic waste pollution from developed countries?,” *Marine Pollution Bulletin* 171 (2021), accessed September 14, 2021, <https://doi.org/10.1016/j.marpolbul.2021.112772>.

¹⁹⁰ PAGEV, “Polyethylene Waste Imports Ban is Lifted with Active Control!”; Turkey Ministry of Environment, Urbanization and Climate Change

¹⁹¹ See Annex 2.

While European imports are reportedly cleaner and less contaminated than domestic plastic waste, Human Rights Watch observed dumped imported waste, including plastic food packaging, that was mixed with non-recyclables and unable to be recycled.¹⁹² Because we did not observe imported plastic in the recycling facilities visited during the course of research, we cannot confirm the quality of plastic waste imports that are processed in recycling facilities.

Failure of Government to Address Human Rights Impacts of Plastic Recycling

Everything is perfect on paper, but in practice it fails.

— Dr. Sadun Bölükbaşı, Chair of Adana Environment and Consumer Protection Agency, March 2022.¹⁹³

For the last 27 years, no one from the media, municipality, any other public institution, or governmental authorities have come to this neighborhood and conducted a survey about health, inspections, or social and socioeconomic research. They have never done this.

— Anonymous Adana resident, March 2022.¹⁹⁴

Turkey has environmental and occupational safety laws that are in line with EU standards. Yet, those regulations are often not enforced, which threatens the rights of people in Turkey.

Regulatory Requirements

Facility inspections are a critical mechanism to ensure that plastic recycling facilities are operating in compliance with permit requirements, including that workers have access to protective equipment, and facilities are monitoring emissions. Inspections of facilities is split between national and local government, namely the MoE and the local municipality.

¹⁹² Human Rights Watch visited various piles of imported plastic waste in Adana and Sultangazi, Istanbul, and found most of the dumped plastic was food packaging that was unrecyclable. Other non-recyclable materials included children's toys and plastic mailing envelopes.

¹⁹³ Human Rights Watch interview with Dr. Sadun Bölükbaşı, Chair of Adana Environment and Consumer Protection Agency, Adana, March 5, 2022.

¹⁹⁴ Human Rights Watch interview with Adana resident (requested anonymity), Ova, Adana, March 6, 2022.

One licensed facility owner told Human Rights Watch that the process of getting a license is complicated, expensive, and requires navigating multiple levels of bureaucracy.¹⁹⁵ For recycling facilities, including waste collection facilities, the company must obtain a license from the MoE, as well as a permit or license from the municipality where the facility is located.¹⁹⁶ The MoE is responsible for establishing recycling capacities, monitoring facility air and wastewater emissions, and monitoring imported plastic recycling, while the municipality is responsible for ensuring that the company is registered and follows local laws and regulations.¹⁹⁷

The MoE must also license plastic recycling facilities. Once facilities are licensed, the MoE is required to conduct annual environmental audits and inspections, including unplanned inspections, of facilities through the Regulation on Environmental Audits.¹⁹⁸ Environmental inspections should review the impact of a business' activities on the environment and health, including air, water, and soil pollution.¹⁹⁹

Under Turkey's Municipality Law, municipal government are granted authority to, "issue permits for, and inspect, polluting businesses..."²⁰⁰ Local municipal police officers (*zabita*) provide business permits and

Permit Requirements:

- 1) Ministry of Environment, Urbanization and Climate Change
 - Monitor air and wastewater emissions
 - Establish recycling capacity, defining the quantity of materials the facility can process
 - Monitor and track imported plastic waste
- 2) Local Municipality
 - Register workers with the Social Security Administration
 - Ensure that health risk assessments are conducted by the Ministry of Health Provincial Directorate
 - Follow building codes for physical safety
 - Follow other local laws and regulations

¹⁹⁵ Human Rights Watch interview with plastic recycling facility owner (requested anonymity), Sultangazi, Istanbul, March 15, 2022.

¹⁹⁶ Regulation on the Storage of Waste, published March 26, 2010, <https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=13887&MevzuatTur=7&MevzuatTertip=5>.

¹⁹⁷ Regulation on Waste Pretreatment and Recovery Facilities, No. 31623, effective October 9, 2021.

¹⁹⁸ Regulation on Environmental Audits, amended June 12, 2021, <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC090669>.

¹⁹⁹ Ibid.

²⁰⁰ Turkey Municipality Law, No. 5393, published July 13, 2005.

carry out inspections. They also inspect buildings to ensure they are following building codes for physical safety and are in line with fire safety standards as required by the Regulation on Fire Protection of Buildings; these standards are not unique to plastic recycling facilities.²⁰¹ In order to be granted a business license, the Ministry of Health Provincial Directorate is required first to conduct a health risk assessment to determine a healthy setback to ensure the facility does not harm the health and quality of life of nearby residents.²⁰²

Under Turkey's Occupational Health and Safety Law, the Ministry of Labor and Social Security is responsible for monitoring and inspecting occupational health and safety in the workplace, including through workplace inspections, examinations, and research. The Ministry has authority to shut down workplaces whose working methods or equipment are hazardous to workers.²⁰³

In a letter responding to questions posed by Human Rights Watch, the Turkish plastic recycling industry trade group (*Türk Plastik Sanayicileri Araştırma Geliştirme ve Eğitim Vakfı Geri Dönüşüm İktisadi İşletmesi*, PAGÇEV) said that all of its members have the appropriate licenses from the MoE and other relevant ministries.

Unlicensed Facilities

While it is mandatory for all plastic recycling facilities to acquire the relevant licenses and permits from the MoE and the local municipality, it is unclear exactly how many in Adana and Istanbul conform with this requirement and how many flout the regulations and operate as unlicensed facilities. Basic data on the number of unlicensed facilities is not available. Interviews with facility owners, workers, and nearby residents raise the concern that the number may be high, with interviewees offering estimates ranging from 50 to 90 percent of facilities in operation being unlicensed.

Because they are not monitored or inspected, it is impossible to confirm whether unlicensed facilities comply with regulations intended to protect human health, including

²⁰¹ Human Rights Watch interview with *Zabita* officers, Bayrampaşa, Istanbul, March 14, 2022.

²⁰² Regulation on Licenses for the Opening and Running of Businesses, No. 25902, effective August 25, 2022, <https://www.resmigazete.gov.tr/eskiler/2022/08/20220825-17.pdf>.

²⁰³ Occupational Health and Safety Law, No. 6331, adopted June 30, 2012, <https://www.ilo.org/dyn/natlex/docs/MONOGRAPH/92011/106963/F1028231731/TUR92011%20Eng.pdf>.

air quality monitoring, providing workers with protective equipment, or sharing information with workers about risks of air pollution and toxic exposure. Interviews with plastic recycling facility workers in both licensed and unlicensed facilities suggest that working conditions in unlicensed facilities may pose greater threats to human health because there are not official inspections or other enforcement mechanisms to ensure that facilities follow regulations to protect people or the environment.

In Bayrampaşa, an Istanbul district, a municipal police officer provided Human Rights Watch with data on the number of recycling facilities in the Vatan and Terazidere neighborhoods. Officers documented 2001 industrial facilities (not exclusive to plastic recycling); 628 were fully licensed, 799 had no licenses, and the remainder had some licenses or were in the license application process.²⁰⁴ Plastic shredding and extrusion facilities were the most common industry-type of the facilities classified with the municipal police, with 204 individual facilities, or nearly the number of recycling facilities that the MoE lists for the entire Istanbul region. This supports the concern that many unlicensed facilities not in the MoE's records may currently be operating in districts like Bayrampaşa. Human Rights Watch does not have access to the equivalent data for other districts in Istanbul or Adana with plastic recycling, as it is not public information. We filed an information request with the MoE for more data on plastic recycling facilities, but the Ministry did not provide this information in response to our request.

A plastic recycling facility owner in Sultangazi, Istanbul reported that his facility is licensed by the Ministry of Environment, Urbanization and Climate Change, which reviews his waste purchases, facility ventilation, building safety, and worker access to PPE. The owner also noted that it was uncommon for recycling facilities in Sultangazi to have the proper permits. "There are probably two facilities in this neighborhood with licenses. Only nice ones like ours."²⁰⁵

Residents and workers in Adana were uncertain of the number of unlicensed facilities. Because there is no official data on the number of unlicensed facilities and the MoE did not provide this information in response to our information request, Human Rights Watch was not able to confirm the exact number of unlicensed facilities in Adana. We are not

²⁰⁴ Human Rights Watch interview with *Zabita* officers, Bayrampaşa, Istanbul, March 14, 2022.

²⁰⁵ Human Rights Watch interview with recycling facility owner (requested anonymity), Sultangazi, Istanbul, March 15, 2022.

aware of any efforts by local authorities to ensure that unlicensed facilities apply for the appropriate licenses.

Under the Regulation on Environmental Permit and License, businesses operating without a permit are subject to a fine and must cease operations until they have applied for and been issued a temporary operating certificate or full license.²⁰⁶ But 20 of the 21 residents Human Rights Watch interviewed said they had never heard of operators in their neighborhood who they believe to be unlicensed being forced to suspend work.

Lack of Inspections

Inspections are a key tool to ensure that licensed facilities follow proper environmental, labor, and occupational health laws and regulations. The MoE conducts inspections to confirm if facilities are in compliance with the relevant environmental permits and licenses. The Ministry of Labor and Social Security leads inspections on work permits, child labor, social security registration, and occupational health and safety. The local municipality, including municipal police, inspects business permits.

Responding to an information request, the MoE reported that 29,932 inspections were conducted of waste disposal and recycling facilities throughout the country from 2018 to August 2022, although the ministry did not specify how many of these inspections were for facilities that recycled plastic waste. Following these inspections, more than 343 million Turkish liras in administrative fines were imposed on facilities that were in non-compliance, and 208 facilities were required to suspend operations.²⁰⁷ Again, it is unclear whether these fines were exclusive to plastic recycling facilities or for the broader waste management sector.

In response to an information request filed by Human Rights Watch and Citizens Assembly, the Ministry of Labor and Social Security noted that, from 2017 to 2021, there were 105 inspections of plastic recycling centers, of which 26 were found in violation. In a separate letter responding to inquiries Human Rights Watch made to the Ministry, the Ministry of the

²⁰⁶ Regulation on Environmental Permit and License, No. 29115, effective November 1, 2014.

²⁰⁷ On September 9, 2022, 343 million liras were equivalent to roughly 18.72 million euros. Due to the significant devaluation of the lira between 2018 and mid-2022, we are not able to provide an exact equivalency of the fines collected by the ministry.

Labor and Social Security reported there were 280 scheduled inspections and 709 unscheduled inspections between January 1, 2013 and June 29, 2022 regarding working conditions, business conduct, and occupational health. Yet only 10 of 26 workers interviewed by Human Rights Watch reported ever witnessing any type of facility inspection. In four cases, the owners notified workers in advance of the inspection in order to clean the facility or remove unregistered workers.

Zakir, 22, started working at an extrusion facility four years ago, when he arrived in Istanbul from Afghanistan. Now a trainer of new employees, he told Human Rights Watch about the annual inspections by municipal police:

There are usually prearrangements for inspections. The municipal police will come and just see what they want. We'll clean up the facility first. They inspect work conditions. During the inspection, we'll just stand aside, I'll go hide in a corner or go to the other room.²⁰⁸

Of the 26 plastic recycling facility workers Human Rights Watch interviewed, only one person reported ever having an occupational health examination. Occupational health examinations, as required by Turkey's Occupational Health and Safety Law, are carried out in other sectors in Turkey.²⁰⁹

Turkey's Ministry of Labor and Social Security is tasked with conducting labor inspections to address child labor. In a letter to Human Rights Watch, the ministry stated that it inspects child labor through both scheduled and unscheduled inspections, but the ministry did not clarify how the age of workers is checked during inspections or if any administrative fine or measures related to child labor had been levied during the 989 inspections of plastic recycling facilities between January 1, 2013 and June 29, 2022. The US Department of Labor, which monitors child labor globally, has previously identified gaps within the operations of the Ministry of Labor and Social Security and has

²⁰⁸ Human Rights Watch interview with Zakir, recycling facility worker, Bayrampaşa, Istanbul, March 13, 2022.

²⁰⁹ Özgür, an Adana municipal employee who works with pesticides told Human Rights Watch that he is subject to a respiratory, hearing, and blood test every six months. Human Rights Watch interview with Özgür, resident, Adana, March 1, 2022.

recommended several steps to address these, including an increase in the number of labor inspectors.²¹⁰

Lack of Response to Complaints

Turkey's constitution enshrines the rights of citizens and non-citizen residents to submit complaints and apply for information on matters "concerning themselves or the public."²¹¹ Complaints may be filed in person, by phone, or online with the local municipality, through the Presidential Communications Center, or with the relevant ministry.²¹²

Human Rights Watch learned of at least three separate petitions that included signatures of members of the community made by local residents to the Adana Metropolitan Municipality concerning the impacts of plastic recycling facilities. For example, three women collected roughly 300 signatures and filed a petition with the Adana Metropolitan Municipality about the smell, noise, and air pollution from multiple plastic recycling facilities near their homes and told Human Rights Watch that they were threatened by the local police and one of the facility owners. The women told Human Rights Watch that the municipality has not taken any action to address the complaints.

"Selim" lives in Adana's Ova neighborhood near multiple plastic recycling facilities. In 2020, he collected signatures from people in the neighborhood and filed a complaint with the municipality stating that recycling facilities were located too close to residences, threatened the safety of children due to air pollution, and were making people sick. Within a week of filing the complaint, the chief of the municipal police and the head of the official industrial zone came to Selim's home and told him that they needed a few months to respond to the complaint, even though they were legally obligated to do so within 30 days.²¹³

²¹⁰ U.S. Department of Labor, "2018 Findings on the Worst Forms of Child Labor", p.1154-1163, https://www.dol.gov/sites/dolgov/files/ILAB/child_labor_reports/tda2018/ChildLaborReportBook.pdf.

²¹¹ Constitution of the Republic of Turkey, https://global.tbmm.gov.tr/docs/constitution_en.pdf (accessed April 26, 2022), art. 74.

²¹² Turkey Municipality Law, No. 5393, published July 13, 2005; T.C. Presidency, "Presidential Communications Center (CIMER), <https://www.cimer.gov.tr/> (accessed May 26, 2022); Turkey Ministry of Environment, Urbanization and Climate Change, "Alo 181," <https://181.csb.gov.tr/> (accessed May 26, 2022).

²¹³ Law on the Right to Information, No. 4982, effective 2004.

[The head of the industrial zone] and the police chief came to my door in a car together. They said give us a few months to reply to you. I said okay as long as this is going to end. But nothing happened. Them coming to my door made me feel bad. Of course, I didn't want to go face to face. I withdrew in a way after that car came to my door. The complaint was filed 2 years ago. They never responded.²¹⁴

Access to Information

People in Turkey, including both workers in plastic recycling facilities and people living nearby, have limited access to information about the impacts of air pollution and toxin exposure from plastic recycling. Basic information about the plastic recycling sector, including the sector's environmental and health impacts, is often not made public, making it challenging for citizens, civil society actors, or experts to understand the full effects of plastic recycling and hold their governments to account, particularly when additional sources of air pollution, including from industries and nearby coal-fired power plants, also contribute to poor air quality. The impacts of air pollution and toxic exposure are rarely discussed, including by official government sources, employers, and medical professionals.

Journalists have been allegedly attacked by plastic recycling facility owners for reporting on the plastic waste trade and plastic recycling facilities in Turkey. According to a criminal complaint submitted by journalists Vedat Örüç and Elif Kurttaş to the Adana Prosecutor's Office, the journalists visited the Kemal Deniz Geri Dönüşümcüler Sitesi on July 27, 2022, in order to investigate issues related to plastic waste imports to Turkey and to learn about plastic recycling companies in Adana. According to the complaint, the journalists interviewed an employee of a recycling company and were given verbal permission to take photographs by the employee. The journalists allege that after the interview owners of the facility verbally assaulted and detained the two for thirty minutes, and company employees confiscated their photographic equipment.²¹⁵

²¹⁴ Human Rights Watch interview with "Selim," resident, Adana, March 2, 2022.

²¹⁵ "Two freelance journalists assaulted while investigating waste treatment in Turkey," #FreeTurkeyJournalists, International Press Institute, July 28, 2022, <https://freeturkeyjournalists.ipi.media/two-freelance-journalists-assaulted-while-investigating-waste-treatment-in-turkey/> (accessed July 28, 2022); Gozde TÜZER, "Adana'da araştırma yaparken darbedilen Gazeteci Vedat Örüç: Ekipmanlarımıza el konuldu," evrensel, July 28, 2022, <https://www.evrensel.net/haber/466935/adanada-arastirma-yaparken-darbedilen-gazeteci-vedat-oruc-ekipmanlarimize-el-konuldu> (accessed August 2, 2022).

According to media reports, owners of the Akgül and Akbulut Recycling Companies have also filed a criminal complaint against Vedat Örüç and Elif Kurttaş for entering the facility without permission and for slander.²¹⁶ On August 11, Human Rights Watch sent a letter to Kemal Deniz, the owner of the industrial area, seeking information about protocols for conducting research at the site and security footage, but we had not received a response at the time of writing. This incident is demonstrative of the challenge accessing basic information about Turkey’s plastic recycling industry.

Public Data is Insufficient and Inaccessible

Turkish medical and public health experts told Human Rights Watch there is limited public awareness about the impacts of air pollution and toxic exposure on health, which may contribute to increased exposure.

Information about air pollution and public health is often insufficient or inaccessible. Currently, the MoE is not collecting sufficient air quality data to document the impacts of plastic recycling on health, and the information that is collected is not readily accessible to people in Turkey.

In Adana, government air quality monitors are located in the Seyhan district city center, but not in the industrial zone where there are many point-sources of air pollution.²¹⁷ Government air quality data is published online in Turkish for a general air quality index, PM₁₀, PM_{2.5}, carbon monoxide (CO), sulfur dioxide (SO₂), and nitrogen dioxide (NO₂).²¹⁸ On the government website, hourly air quality data is shared in charts, and it is color-coded to communicate potential risks to health.²¹⁹

The closest monitor that publicly reports air quality measurements is roughly five kilometers away from the industrial center where plastic recycling facilities are located.²²⁰ There is no public, government air quality monitor located in Adana’s industrial area or in

²¹⁶ “Darp edildiğini iddia eden 2 gazeteciye suç duyurusu,” Adana Haber Gazetesi, July 28, 2022, <https://www.haberadanagazetesi.com/haber-darp-edildigini-iddia-eden-2-gazeteciye-suc-duyurusu-6121.html> (accessed August 2, 2022).

²¹⁷ Ministry of Environment, Urbanization and Climate Change, “Ulusal Hava Kalite İzleme Ağı (National Air Quality Monitoring Network),” <https://sim.csb.gov.tr/Services/AirQuality> (accessed May 1, 2022).

²¹⁸ Ibid.

²¹⁹ For example, good air quality is represented with a green icon, while unhealthy air quality is represented with a red icon.

²²⁰ The closest MoE air quality monitor to the industrial area is located at the Adana Valilik government building. Ibid.

neighborhoods with large numbers of plastic recycling facilities. Air quality data taken in the city center finds that the city is already polluted, with PM10 standards exceeded 65 percent of the year, but it is possible that residents living close to the industrial center are exposed to even more harmful air quality.²²¹

Licensed plastic recycling facilities are required by the MoE to carry out air quality monitoring, but the Ministry does not make that data publicly available. Because air quality data collected by facilities is kept private, Human Rights Watch could not confirm if plastic recycling facilities had proper air quality monitoring systems in place, and we were not able to access air quality data taken at plastic recycling facilities despite requesting this information from the MoE. Without access to information about local air quality, people living near plastic recycling facilities are not able to make decisions to protect themselves from the harmful impacts of air pollution, and medical and public health experts are not able to communicate the risks of exposure.

The Turkish Statistical Institute publishes limited data on industrial air pollution, but this data is sector-based and does not provide emissions data for plastic recycling in Turkey.²²² Emissions data is provided for water supply, sewage, waste management, and remediation activities all together, so it is unclear what emissions are from the waste management sector, or specifically from plastic recycling. This data is also not useful for workers or citizens to understand the risks associated with the plastic recycling sector because it is too general to decipher risks specific to the plastic recycling sector.

The Ministry of Health collects detailed data about public health including disease rates, children born with disabilities, cause of death, and hospitalization rates.²²³ Most of this data is aggregated on the country-level, which makes analysis on the impacts of plastic recycling on community health impossible.

²²¹ Health and Environment Alliance, “Technical Evaluation of Hunutlu Power Plant and Air Pollution in Adana,” May 2020, https://world.350.org/adanayatemizhava/files/2020/06/1_HEALs-technical-expertise-report-on-Hunutlu_ENG-FINAL.pdf (accessed July 25, 2022).

²²² TURKSTAT, “Air Emissions Account by Economic activity, *Environment and Energy*, January 28, 2022, <https://data.tuik.gov.tr/Kategori/GetKategori?p=cevre-ve-enerji-103&dil=2> (accessed May 1, 2022).

²²³ TURKSTAT, *Health and Social Protection*, <https://data.tuik.gov.tr/Kategori/GetKategori?p=saglik-ve-sosyal-koruma-101&dil=2> (accessed May 1, 2022).

Lack of Information from Employers

Employers in Turkey are legally obliged to share information about the potential impacts of workplace exposure with their employees, yet workers are not told what they are exposed to nor the potential impacts. No worker interviewed by Human Rights Watch was aware of air quality monitoring at their place of work. Interviews with plastic recycling facility owners suggest the facility managers do not have a comprehensive understanding of the potential health impacts of exposure.

Two workers told Human Rights Watch that language barriers between workers and bosses prevented them from communicating with their employers. Mahmut, a 27-year-old Syrian worker describes, “At the facility, there were bosses and foreman. They were Turkish and didn’t tell us anything. The bosses didn’t speak Arabic.”²²⁴

Lack of Information from Medical Providers

Doctors in Turkey, including doctors with senior roles in medical chambers, have been investigated and targeted by the Turkish government for speaking out on public health matters, particularly since the start of the Covid-19 pandemic.²²⁵ Because of this, Human Rights Watch was only able to interview two doctors for this report. At the same time, doctors in Turkey are required to see large number of patients and receive relatively low incomes, and an estimated 1,400 doctors reportedly left their positions to work abroad in 2021.²²⁶ One clinician who serves residents living near plastic recycling facilities told Human Rights Watch that he sees up to 80 patients per day. Based on interviews with workers and nearby residents, patients do not feel that they are provided with adequate information about the risks and impacts of air pollution and toxic exposure on their health.

Gönül receives frequent medical services for respiratory ailments that doctors tell her are related to living in Ova, Adana. Her doctor suggested that she leave the neighborhood but did not provide any information on what she could do to reduce exposure to pollution:

²²⁴ Human Rights Watch interview with “Mahmut,” Syrian refugee, former recycling facility worker, Adana, March 5, 2022.

²²⁵ “Turkey: Probes Over Doctors’ Covid-19 Comments,” commentary, Human Rights Watch Dispatch, June 10, 2022, <https://www.hrw.org/news/2020/06/10/turkey-probes-over-doctors-covid-19-comments>.

²²⁶ Carlotta Gall, “Turkey’s Doctors Are Leaving, the Latest Casualty of Spiraling Inflation,” *New York Times*, February 7, 2022, <https://www.nytimes.com/2022/02/07/world/asia/turkey-inflation-doctors.html> (accessed February 8, 2022).

The doctor asks where I work, and I tell him I live in an industrial zone. He tells me to stay away, but where do I go?... There has not been a survey of health effects, not at all. We're dead to them, we don't exist. You're the first to come ask these questions about health.²²⁷

"Aysun," 65, lives no more than 25 meters away from the closest plastic recycling facility. Her home is on a dirt road that has constant traffic of trucks coming and going from the facilities. Trucks drove past Aysun's home roughly every three minutes while Human Rights Watch conducted an interview outside her home, and it smelled like rotting garbage from the facilities. Aysun was diagnosed with asthma about five years ago, but her doctor did not give her information on how to limit exposure to toxic air to minimize the impacts of asthma.²²⁸

None of those Human Rights Watch interviewed reported that doctors or other medical staff shared information about exposure to toxic chemicals, like dioxins or BPA, that are emitted during plastic recycling.

Access to Information Requests and Responses

Turkish citizens and non-citizen residents in Turkey have the right to information and to submit written requests to relevant authorities.²²⁹ The Law on the Right to Information implements this right and is in line with international best practices, including by setting a 15 working day timeline for response and enabling applicants to appeal if an information request is denied.²³⁰

Due to the absence of basic information on air quality and health data, Human Rights Watch co-submitted information requests with the nongovernmental organization Citizens Assembly in May 2022 requesting information on plastic recycling facilities, air quality data, inspection reports, rates of illnesses related to air pollution and toxic exposure, plastic waste import data, and responses to complaints from the Ministry of Environment, Urbanization and Climate Change; Ministry of Education; Ministry of Health; Ministry of

²²⁷ Human Rights Watch group interview with Gönül, Zeynep, Cihan, and Dilber, residents, Adana, December 7, 2022.

²²⁸ Human Rights Watch interview with "Aysun," resident, Ova, Adana, March 4, 2022.

²²⁹ Constitution of the Republic of Turkey, https://global.tbmm.gov.tr/docs/constitution_en.pdf (accessed April 26, 2022), art. 74.

²³⁰ Law on the Right to Information, No. 4982, effective 2004.

Labor and Social Security; Ministry of Commerce; Adana Metropolitan Municipality; and Adana Seyhan Municipality.

Under Turkish law, government authorities are required to respond to information requests within 30 working days. Of the 22 information requests submitted, two received responses within the legally obligated time frame of 30 working days from the MoE Spatial Planning Directorate and the Ministry of Commerce. Human Rights Watch and Citizens Assembly also received responses from the Ministry of Labor and Social Security; the Ministry of Health; the MoE General Directorate of Environmental Impact Assessment, Permitting and Inspection; the Adana Directorate of the MoE; the Adana Directorate of the Ministry of Health; the Adana Directorate of the Ministry of Education; the Adana Directorate of the Ministry of Commerce; the Adana Metropolitan Municipality Environment Division; the Seyhan Municipality Environmental Protection Department; and the Seyhan Municipality Permits Division, but those responses were outside the 30 working day time frame. Of the responses received, the responses from the MoE Spatial Planning Directorate the Ministry of Commerce; the Adana Directorate of the Ministry of Health; the Seyhan Municipality Environmental Protection Department; and the Seyhan Municipality Permits Division were incomplete in their responses and did not provide answers to the questions posed. The Ministry of Labor and Social Security provided more information, and their response is included in Annex 2 of this report. The MoE General Directorate of Environmental Impact Assessment, Permitting and Inspection also provided a detailed response, which is included in Annex 2. Basic data on air pollution, facility inspections, and plastic waste imports remain unavailable, thus making it difficult for communities to gain basic information needed to understand risks associated with plastic recycling.

III. Turkey’s Domestic and International Obligations

International human rights law obligates Turkey’s government to protect the rights of those within its jurisdiction from harm, including harms linked to business activities such as plastic recycling.

Right to Health

As part of the obligation to respect and fulfill the right to the highest attainable standard of health under international human rights law, governments are required to have and implement policies that protect health in the workplace and prevent and minimize environmental hazards to health. Turkey is a party to the International Covenant on Economic Social and Cultural Rights (ICESCR), and as such has specific treaty obligations with respect to the right to health, which in the word of the Committee on Economic Social and Cultural Rights (CESCR), tasked with interpreting the ICESCR, includes underlying determinants of health, such as safe and healthy working conditions and a healthy environment.²³¹

State parties to the ICESCR are obligated to improve “all aspects of environmental and industrial hygiene,” for example through the prevention and reduction of the population’s exposure to harmful substances such as harmful chemicals.²³² The ICESCR requires that states take the steps necessary for “the prevention, treatment and control of...occupational and other diseases.”²³³ It also recognizes “the right of everyone to the enjoyment of just and favorable conditions of work” including “safe and healthy working conditions.”²³⁴ CESCR has noted that the right to health includes an obligation on states to minimize “so far as is reasonably practicable ... the causes of health hazards inherent in the working environment.”²³⁵ Chronic exposure to toxic substances in the workplace can

²³¹ International Covenant on Economic, Social and Cultural Rights (ICESCR), adopted December 16, 1966, G.A. Res. 2200A (XXI), 21 U.N. GAOR Supp. (No. 16) at 49, U.N. Doc. A/6316 (1966), 993 U.N.T.S. 3, entered into force January 3, 1976, ratified by Turkey September 23, 2003. U.N. Committee on Economic, Social and Cultural Rights, General Comment No. 14: The right to the highest attainable standard of health, UN Doc. E/C.12/2000/4, adopted August 11, 2000, para. 4.

²³² CESCR, General Comment No. 14, para. 15.

²³³ ICESCR, art. 12.

²³⁴ *Ibid.*, art. 7.

²³⁵ CESCR, General Comment No. 14, para. 15.

give rise to violent, cruel, and degrading outcomes, and are therefore violations of the rights of workers.²³⁶

The Convention of the Rights of the Child (CRC) notes that children’s right to health includes, “a right to grow and develop to their full potential and live in conditions that enable them to attain the highest standard of health.”²³⁷ The CRC also recognizes that for children to enjoy the highest attainable standard of health, states should consider the “dangers and risks of environmental pollution” when combating disease and malnutrition.²³⁸

Under Turkey’s Occupational Health and Safety Law, employers are responsible for ensuring that employees undergo health examinations relevant to the health and safety risks at the workplace.²³⁹

Child Labor

The Convention of the Rights of the Child, ratified by Turkey on April 4, 1995, guarantees all children under eighteen the right “to be protected from economic exploitation and from performing any work that is likely to be . . . harmful to the child’s health or physical, mental, spiritual, moral or social development.”²⁴⁰ The International Labor Organization Worst Forms of Child Labor Convention (No. 182), ratified by Turkey on August 2, 2001, obligates states to protect children from work that is “likely to harm the health, safety or morals of children.”²⁴¹ Turkey’s Regulation on Heavy and Dangerous Work lists types of work that children ages 16 to 18 may not be employed in, including work “involved in the manufacturing of plastics substances in which artificial and other synthetic fibres are

²³⁶ The UN Human Rights Committee’s General Comment No. 34 on article 19 of the ICCPR expressly articulates a right for access to information held by public bodies; A/HRC/42/41, para. 21.

²³⁷ CRC, art. 15.

²³⁸ CRC, art. 24(1), 24(2)(c).

²³⁹ Occupational Health and Safety Law.

²⁴⁰ Convention on the Rights of the Child (CRC), adopted November 20, 1989, G.A. Res. 44/25, annex, 44 U.N. GAOR Supp. (No. 49) at 167, U.N. Doc. A/44/49 (1989), art. 32.

²⁴¹ ILO Convention No. 182 concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour (Worst Forms of Child Labour Convention), adopted June 17, 1999, 38 I.L.M. 1207 (entered into force November 19, 2000), art. 3.

used,” work involving “the lubrication, repair and cleaning of moving machinery, engines or parts and traction gear,” and work “involving garbage disposal.”²⁴²

Turkey’s Occupational Health and Safety Law classifies waste collection and waste disposal as hazardous.²⁴³ Under Turkey’s Labor Act, it is illegal for children under fifteen years to work and for children under eighteen years to be employed in hazardous work, as defined by the Regulation on Heavy and Dangerous Work.²⁴⁴

Rights of Migrant Workers and Their Families

As a party to the International Convention on the Protection of the Rights of All Migrant Workers and Members of their Families, which Turkey ratified in 2004, Turkey is obligated to ensure that migrant workers and their families—whether documented or undocumented—are treated no less favorably than Turkish nationals with respect to safety and health conditions of work.²⁴⁵

Right of Access to Information

Information is a prerequisite for the exercise of various other rights, including both the rights to health and the right to a healthy environment.²⁴⁶ The Human Rights Committee, a body of independent experts tasked with monitoring the implementation of the International Covenant on Civil and Political Rights, stated that in order to, “give effect to the right of access to information, States parties should proactively put in the public domain government information of public interest,” ensuring access is easy, prompt, effective, and practical.²⁴⁷

²⁴² Regulation on Heavy and Dangerous Work, Article 2, No.’s 58, 89, and 103, enacted March 20, 1973, pursuant to Decree No. 7/6174.

²⁴³ Occupational Health and Safety Law, No. 6331, Code 38.1.1.

²⁴⁴ Labor Act, No. 4857, enacted May 22, 2003, art. 71-73.

²⁴⁵ International Convention on the Protection of the Rights of All Migrant Workers and Members of their Families, December 18, 1990, A/RES/45/158, art. 25(1)(a), <https://www.refworld.org/docid/3ae6b3980.html> (accessed July 6, 2022).

²⁴⁶ UN Human Rights Special Procedures and UN Environment Programme, “Right to a healthy environment: good practices,” A/HRC/37/59, <https://wedocs.unep.org/bitstream/handle/20.500.11822/32450/RHE.pdf>.

²⁴⁷ UN Human Rights Committee, General Comment No. 34, Freedoms of Opinion and Expression, U.N. Doc. CCPR/C/GC/34 (2011), paras. 18-19. The Human Rights Committee also noted that the right to information is addressed in other articles of the ICCPR, including arts. 2, 10, 14 and 17.

The right to information is the foundation for the realization of all workers' rights regarding toxic exposures. Workers have the right to know, inter alia, the implications of exposure, the action being taken to prevent exposure and their rights in relation to such exposure. Every worker has the right to know current information about their actual and potential exposures to toxic and otherwise hazardous substances.²⁴⁸ Turkey's Occupational Health and Safety Law obligates employers to inform employees about potential health and safety risks in the workplace, protective and prevention methods to reduce risks, and legal rights.²⁴⁹

Right to a Healthy Environment

The right to a healthy environment is established both in domestic and international law. The United Nations General Assembly adopted a resolution on July 28, 2022, declaring access to a clean, healthy and sustainable environment, a universal human right.²⁵⁰ The Human Rights Council, an inter-governmental body within the UN responsible for the promotion and protection of human rights, "recognizes the right to a clean, healthy and sustainable environment as a human right that is important for the enjoyment of human rights."²⁵¹

Article 56 of the Turkish constitution establishes, "Everyone has the right to live in a healthy and balanced environment. It is the duty of the State and citizens to improve the natural environment, to protect the environmental health and to prevent environmental pollution."²⁵²

²⁴⁸ A/HRC/42/41, para. 53.

²⁴⁹ Occupational Health and Safety Law.

²⁵⁰ "UN General Assembly declares access to clean and healthy environment a universal human right," *UN News*, July 28, 2022, <https://news.un.org/en/story/2022/07/1123482> (accessed July 28, 2022).

²⁵¹ United Nations Human Rights Council, "The human right to a clean, healthy and sustainable environment," Resolution 48/13, GE.21-14965(E).

²⁵² Constitution of the Republic of Turkey, https://global.tbmm.gov.tr/docs/constitution_en.pdf (accessed April 26, 2022), art. 56.

Protecting Human Rights in the Context of Business Activity

Governments are obligated to protect their citizens from human rights abuses, including those connected with business activity.²⁵³ In practical terms, a government's obligation to protect human rights in the context of business activity "requires taking appropriate steps to prevent, investigate and redress such abuse through effective policies, legislation, regulation and adjudication."²⁵⁴ Governments are also obligated to effectively enforce that legal framework once it is in place, to prevent abuse, and to ensure accountability and redress where abuses do occur.²⁵⁵ Companies also have a responsibility under the United Nations Guiding Principles on Business and Human Rights to respect human rights and ensure that their practices do not cause or contribute to human rights abuses.

²⁵³ Office of the High Commissioner for Human Rights, "UN Guiding Principles on Business and Human Rights, Implementing the United Nations 'Protect, Respect, and Remedy' Framework," 2011, http://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf (accessed July 24, 2022).

²⁵⁴ UN Commission on Human Rights, "Report of the Special Representative of the Secretary-General on the issue of human rights and transnational corporations and other business enterprises, Annex, I.A.1," A/HRC/17/31, March 2011, <http://www.business-humanrights.org/media/documents/ruggie/ruggie-guiding-principles-21-mar-2011.pdf> (accessed April 26, 2022).

²⁵⁵ The Guiding Principles note that states should "Enforce laws that are aimed at, or have the effect of, requiring business enterprises to respect human rights, and periodically assess the adequacy of such laws and address any gaps." Ibid, B.3.

IV. Steps Forward

While it is critical for the government and relevant authorities in Turkey to implement existing laws and regulations to prevent human rights harms from the plastic recycling industry, efforts to prevent or address the human rights impacts associated with plastic around the world cannot be addressed simply by improving conditions in recycling facilities. Without taking steps to reduce production and consumption of plastic products, greater demand for plastic recycling will likely continue to contribute to human rights harms.

Within Turkey, Europe, and around the globe, steps should be taken to address the plastics crisis and the impacts of plastic production, use, and disposal on human rights. Turkey is taking positive steps to better manage its own waste, including efforts to decrease single-use plastic consumption. In Europe, efforts are underway to update the EU's Waste Shipment Regulation, which regulates EU plastic waste exports.²⁵⁶ And around the world, countries are taking the first steps towards negotiation of a global plastics treaty to address the impacts of plastic throughout its lifecycle.

Waste Management and Recycling in Turkey

As recycling scales up, the Turkish government and relevant ministries should ensure that recycling and waste management practices minimize harm. As is already required by Turkish law, recycling facilities should not be located alongside residences. The government of Turkey should take steps to ensure that recycling facilities currently located too close to settlements are relocated and new facilities are located a healthy setback from residences.

Plastic recycling companies in Turkey can take steps to mitigate exposure to released toxins, including by improving air circulation and air filtration systems in recycling facilities. This could include using ventilation hoods with filters above machines to remove pollutants from the air. Effective air filtration systems reduce exposure risk for both

²⁵⁶ European Commission, "Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on shipments of waste and amending Regulations," (EU) No 1257/2013 and (EU) No 2020/1056, November 17, 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0709&qid=1642757230360> (accessed November 18, 2021).

workers and people living near recycling facilities. Access to protective equipment, including masks, gloves, uniforms, and goggles, can significantly reduce worker exposure to toxins in the workplace. However, as long as toxic chemical additives are included in plastic products, the process of recycling will continue to threaten human health.

The government of Turkey should also ensure that the livelihoods of waste management workers in the informal economy, including waste pickers and unlicensed plastic recycling facility employees, are factored into new waste management strategies.

Ways Forward in the European Union

The European Union is home to many of the world's largest plastic consuming and exporting countries. Following the bans on plastic waste imports by some receiving countries, EU members have continued to send their waste abroad to other locations with less stringent regulations, where it may lead to significant human rights and environmental harms. To address the harms associated with plastic recycling and disposal abroad, EU countries should take steps to limit exporting waste outside of the EU and should prioritize efforts to increase waste prevention, as required by the EU Circular Economy Action Plan.²⁵⁷

In November 2021, the European Commission published its proposition to revise the Waste Shipment Regulation, which has governed waste shipments from EU countries since 2006.²⁵⁸ At this writing, the European Parliament and EU member states are still debating their respective positions in response to the Commission's proposal. The Commission's legislative proposal would increase protections for non-OECD countries by requiring importing countries to treat waste in "an environmentally sound manner" and is conditional on the importing country submitting an official request to an exporting country to send waste exports before waste shipments begin.²⁵⁹

²⁵⁷ European Commission, "Circular economy action plan," undated, https://ec.europa.eu/environment/strategy/circular-economy-action-plan_en (accessed November 23, 2021).

²⁵⁸ Krista Shennum, "EU Waste Shipment Proposal Takes Steps to Address Plastic Crisis," Human Rights Watch Dispatch, November 25, 2021, <https://www.hrw.org/news/2021/11/25/eu-waste-shipment-proposal-takes-steps-address-plastic-crisis>.

²⁵⁹ Key non-OECD recipient countries for EU plastic waste exports include Malaysia (136 million kg/year in 2021) and Vietnam (122 million kg/year in 2021). In 2021, EU plastic waste exports to Vietnam and India increased, as exports to Turkey decreased. Basel Action Network, "European Union Export Data: 2021 Annual Summary," undated,

In the proposed regulation, EU exporting companies should independently audit facilities in importing countries to ensure the facility has the capacity to treat waste, follows domestic environmental regulations, operates in a “safe and environmentally sound manner,” monitors health and safety risks to workers and nearby residents, ensures traceability of all waste received to the facility, takes measures to limit GHG emissions, and can provide records of its waste management activities for the last five years.²⁶⁰ EU policy experts expect this will function as a de facto ban on exports to non-OECD countries because it requires prior-informed-consent in writing before waste shipments can be sent, essentially banning waste exports unless importing countries request to opt-in.²⁶¹ While stronger regulations for plastic waste exports to non-OECD countries have been welcomed by NGOs, there is some concern that these proposed rules may lead to an increase in exports to OECD countries, including Turkey.²⁶² For OECD countries, the regulation proposal would require importing governments to improve monitoring of recycling facilities and enforcement of trade rules. No facility visited by Human Rights Watch in the course of this research would meet the criteria described in the proposed regulation.

As documented in this report, monitoring of recycling facilities in Turkey is insufficient to enforce regulations designed to prevent human rights harms. The revision of the Waste Shipment Regulation is a significant opportunity for the EU to strengthen and extend protections to all countries, regardless of OECD status, in order to address the global impacts of European plastic waste consumption. The European Parliament and EU member states should make use of this opportunity to push for more ambitious rules in line with international and regional mandates and protect the rights to health and a healthy environment for communities around the world.

<https://www.ban.org/plastic-waste-project-hub/trade-data/eu-export-data-2021-annual-summary> (accessed May 24, 2022); European Commission, “Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on shipments of waste and amending Regulations,” (EU) No 1257/2013 and (EU) No 2020/1056, November 17, 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0709&qid=1642757230360> (accessed November 18, 2021).

²⁶⁰ European Commission, “Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on shipments of waste and amending Regulations,” (EU) No 1257/2013 and (EU) No 2020/1056, Annex X.

²⁶¹ Basel Action Network, “Plastic Waste Trade Watch,” November 2021, <https://myemail.constantcontact.com/Plastic-Waste-Trade-Watch---November-2021.html?soid=1114999858498&aid=tpy7Pe1tj1U> (accessed November 30, 2021).

²⁶² *Ibid.*

Global Opportunities to Address the Plastics Crisis

Around the world, environmental, health, and human rights advocates are pushing for stronger regulations on plastic waste exports from countries in the Global North and solutions to the global plastic crisis.

In March 2022, parties to the United Nations Environment Assembly (UNEA) agreed to establish a committee to negotiate a treaty to address the global plastics crisis.²⁶³ The agreed mandate paves the way for countries to establish a legally binding instrument that addresses the environmental and human rights impacts of plastics throughout their lifecycle, from oil and gas extraction to plastic production to disposal.

Experts, civil society organizations, and local activists are calling for a global plastics treaty that caps plastic production, removes harmful chemical additives from everyday plastic products, and includes the voices of plastic workers, including waste pickers, in decisions made to address the crisis.²⁶⁴ Some scientists are calling for a phaseout of virgin plastic production by 2040 in order to address the environmental, climate, and human impacts of plastic.²⁶⁵ The resolution by UNEA to begin negotiations for a global plastics treaty highlights the impacts of plastics on both people and the environment: “The high and rapidly increasing levels of plastic pollution represent a serious environmental problem on a global scale, negatively impacting the environmental, social and economic dimensions of sustainable development.”²⁶⁶

Noting that the plastics crisis impacts countries in the Global North and the Global South in different ways, the resolution considers national circumstances and capabilities, and acknowledges “that some legal obligations arising out of a new international legally binding instrument will require capacity-building and technical and financial assistance in

²⁶³ Krista Shennum, “Global Plastics Treaty: A Historic Opportunity to Protect Human Rights,” Human Rights Watch Dispatch, March 2, 2022, <https://www.hrw.org/news/2022/03/02/global-plastics-treaty-historic-opportunity-protect-human-rights>.

²⁶⁴ Center for International Environmental Law, “Over 700 Civil Society Groups Urge UN Member States to Negotiate a Global Legally Binding Agreement to Address the Plastics Crisis,” undated, <https://www.ciel.org/over-700-civil-society-groups-call-for-a-new-plastics-treaty/> (accessed May 17, 2022); A New Global Treaty on Plastic Pollution, “Civil Society, Indigenous Peoples, Workers and Trade Unions, and Other Organizations,” undated, <https://www.plasticstreaty.org/organizations/> (accessed May 17, 2022).

²⁶⁵ Melanie Bergmann et al., “A global plastic treaty must cap production,” *Science* 376 (2022) 6592, accessed April 30, 2022, <https://doi.org/10.1126/science.abq0082>.

²⁶⁶ UNEP/EA.5/Res.14.

order to be effectively implemented by developing countries and countries with economies in transition.”²⁶⁷

The resolution calls on an intergovernmental negotiation committee (INC) to negotiate a legally binding instrument that takes into account the full lifecycle of plastic.²⁶⁸ The first round of negotiations by the INC will take place in November 2022, with negotiations set to conclude by the end of 2024.

As negotiations progress toward a global plastics treaty in the coming years, states should ensure that solutions address the many impacts of plastics throughout their lifecycle in a way that protects human rights.

²⁶⁷ Ibid.

²⁶⁸ Ibid.

Acknowledgments

This report was researched and written by Krista Shennum, Gruber Fellow in the Environment and Human Rights Division of Human Rights Watch. Emma Sinclair-Webb, associate director of the Europe and Central Asia Division, Deniz Bayram, a Turkish environmental lawyer, and Ceylan Akça Cupolo participated in the field research, providing expertise, legal consultation, and translation. Carolina Jorda Alvarez, senior analyst in Human Rights Watch's Digital Investigations Lab conducted spatial analysis on the location of plastic recycling facilities.

The report was edited by Felix Horne, senior researcher of the Environment and Human Rights Division; Richard Pearshouse, director of the Environment and Human Rights Division; Katharina Rall, senior researcher of the Environment and Human Rights Division; Aisling Reidy, senior legal advisor; Babatunde Olugboji, deputy program director; Deniz Bayram; Emma Sinclair-Webb; Julia Bleckner, researcher in the health team; Jim Wormington, senior researcher in the Economic Justice and Rights Division; Juliane Kippenberg, associate director of the Children's Rights Division; Hillary Margolis, senior researcher in the Women's Rights Division; Philippe Dam, advocacy director of the Europe and Central Asia Division; Bill Frelick, director of the Refugee and Migrant Rights Division; Sophie Richardson, China Director; and Bridget Sleaf, senior researcher in the Disability Rights Division. The report was translated into Turkish by Murat Özbek.

We would like to thank NGO colleagues, local activists, government officials, researchers, and experts who provided information for this report. Thank you to Dr. Sedat Gündoğdu of the Microplastic Research Group for providing technical expertise on the impacts of plastic waste in Adana. We would also express our appreciation to Citizens Assembly for agreeing to co-submit information requests to ministries during the research for this report. We would like to thank Nihan Temiz Ataş and colleagues at Greenpeace Mediterranean for their groundbreaking report on the mismanagement of European plastic waste imports in Turkey.

Most importantly, Human Rights Watch is deeply grateful to the many individuals who shared their knowledge and experiences with us. Without their testimony, this report would not be possible.

Annex 1: Correspondence with Ministries

Letter to the Ministry of Environment, Urbanization and Climate Change, June 17, 2022

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Fax: +1-212-736-1300; 917-591-3452

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June 17, 2022

Minister Murat Kurum
Ministry of Environment, Urbanization and Climate Change
Mustafa Kemal Mahallesi
2082. Cadde No:52
Çankaya / Ankara

Dear Minister Murat Kurum,

On behalf of Human Rights Watch, we are writing to share our preliminary findings into the impacts of plastic recycling on the health of plastic recycling facility workers and nearby residents in Turkey.

Human Rights Watch is an international human rights organization that conducts research and advocacy on human rights abuses in more than 90 countries worldwide. Human Rights Watch is committed to producing material that is accurate, well-informed, and objective. We want to ensure that our report properly reflects the views, policies, and practices of relevant authorities and actors. With this in mind, we hope you or your staff will respond to the questions below, so that your views are accurately reflected in our reporting.

Summary of Findings

Plastic recycling operations in Adana and Istanbul are threatening the health of facility workers, including child laborers, and nearby residents. Our research is based on more than 60 interviews with current and former plastic recycling facility workers, nearby residents, facility owners, medical providers, and others familiar with plastic recycling facility operations in Adana and Istanbul. Workers and nearby residents are exposed to acute air pollution and toxic chemicals released during the shredding and melting of plastic during the recycling process. Workers and nearby residents described to Human Rights Watch severe headaches and respiratory problems. Our field research established that, in contravention of regulations and public health requirements, plastic recycling facilities are frequently located closer than the appropriate distance, between industrial facilities and incompatible land uses, including housing, schools, and hospitals.



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Many workers told Human Rights Watch that their employers are not paying social security contributions (SGK), and some recycling facility workers said they do not have access to any medical services if they get sick or injured in the workplace. Children as young as nine-years-old work in plastic recycling facilities in Turkey, despite legal protections prohibiting them from being hired to work in such hazardous conditions. One third of workers interviewed by Human Rights Watch were children or began working in plastic recycling facilities as children. Workers in plastic recycling interviewed across Turkey reported earning wages significantly below Turkey's minimum wage and work more than 70 hours per week. Fear over losing their jobs made workers wary about raising concerns to their employers over harmful working conditions, including working without access to personal protective equipment (PPE).

Residents, current and former recycling facility workers, medical doctors, and facility owners described not being able to access basic information about risks from toxic exposure from recycling facilities despite legal obligations for official government sources and employers to share information on the impacts of air pollution and toxic exposure on their health.

Recycling facility workers and nearby residents reported that inadequate enforcement of laws is making the situation worse. In Adana and the Bayrampaşa neighborhood in Istanbul, plastic recycling facilities commonly operate without licenses from the relevant authorities. For licensed facilities, it has been reported to us that inspections often do not occur at all or do not adequately inspect environmental and health conditions.

Questions Related to Human Rights Concerns

In the interest of obtaining a thorough, balanced, and objective understanding of the issue we are examining, we are writing to get your Ministry's perspective on the matters highlighted above, so we can incorporate your views into our forthcoming report. In particular, we are interested in the following information:

1. Considering the rise in plastic waste imports in Turkey since 2018, what measures has the Ministry taken to regulate the growing plastic recycling sector? Has the Ministry dedicated resources or implemented capacity building efforts to support the growing sector, including increasing the number of plastic recycling facility inspectors or introducing new regulations for the industry?
2. Given that some of the plastic waste imported into Turkey cannot be recycled, what role does the Ministry play in inspecting the quality and type of plastic waste

imports? Does the Ministry provide technical support to customs agents or the Ministry of Commerce on the identification of non-recyclable plastic waste? What happens when non-recyclable plastic waste is identified by inspectors?

3. It is our understanding that a requirement of recycling facility licensing is the monitoring of air and water quality by recycling facilities, yet we could find no record of this data being published. How many licensed facilities have complied with the requirement to monitor air and water quality and submit data to the Ministry? What steps does the Ministry take to make air and water quality data collected by plastic recycling facilities publicly available and accessible? What steps does the Ministry take to ensure that air pollution and wastewater is not degrading air and water quality?
4. How frequently does the Ministry inspect plastic recycling facilities? Are inspections conducted on a regular basis, in response to complaints, and/or random? What is reviewed during inspections by the Ministry? Do the inspections include an audit of air and water quality monitoring and occupational health and safety?
5. Please provide details on how the Ministry monitors air and water quality in neighborhoods with large numbers of plastic recycling facilities. How often is data gathered? How many air and water quality monitors does the Ministry operate and where are those monitors located? What pollutants are monitored? What data and associated health risks are reported to the general public?
6. Does the Ministry inspect or measure facility proximity to residences or settlements before granting a license? What steps does the Ministry take if a licensed facility is located closer than the 250-meter appropriate distancing to settlements?
7. It is our understanding that some plastic recycling facilities are operating without licenses from the Ministry and/or the local municipality. What steps does the Ministry take if it discovers that a facility is operating without licenses?

We would be pleased to reflect your responses to the above questions in our forthcoming report if we receive your written answers by June 30, 2022. Please reply in Turkish or English to us at [REDACTED], copying [REDACTED] and [REDACTED]. We would appreciate any other comments or information that you can provide.

We would also welcome the opportunity to speak with you or your representatives. Please let us know if you have any questions or would like to arrange a meeting or video conference.

Sincerely,



Richard Pearshouse
Director
Environment and Human Rights Division

Hugh Williamson
Director
Europe and Central Asia Division

Letter to the Ministry of Health, June 17, 2022

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June 17, 2022

Minister Fahrettin Koca
Ministry of Health
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06800 Bilkent - Çankaya / Ankara
disabgm@saglik.gov.tr

Dear Minister Fahrettin Koca,

On behalf of Human Rights Watch, we are writing to share our preliminary findings into the impacts of plastic recycling on the health of plastic recycling facility workers and nearby residents in Turkey.

Human Rights Watch is an international human rights organization that conducts research and advocacy on human rights abuses in more than 90 countries worldwide. Human Rights Watch is committed to producing material that is accurate, well-informed, and objective. We want to ensure that our report properly reflects the views, policies, and practices of relevant authorities and actors. With this in mind, we hope you or your staff will respond to the questions below, so that your views are accurately reflected in our reporting.

Summary of Findings

Plastic recycling operations in Adana and Istanbul are threatening the health of facility workers, including child laborers, and nearby residents. Our research is based on more than 60 interviews with current and former plastic recycling facility workers, nearby residents, facility owners, medical providers, and others familiar with plastic recycling facility operations in Adana and Istanbul. Workers and nearby residents are exposed to acute air pollution and toxic chemicals released during the shredding and melting of plastic during the recycling process. Workers and nearby residents described to Human Rights Watch severe headaches and respiratory problems. Our field research established that, in contravention of regulations and public health requirements, plastic recycling facilities are frequently located closer than the



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appropriate distance, between industrial facilities and incompatible land uses, including housing, schools, and hospitals.

Many workers told Human Rights Watch that their employers are not paying social security contributions (SGK), and some recycling facility workers said they do not have access to any medical services if they get sick or injured in the workplace. Children as young as nine-years-old work in plastic recycling facilities in Turkey, despite legal protections prohibiting them from being hired to work in such hazardous conditions. One third of workers interviewed by Human Rights Watch were children or began working in plastic recycling facilities as children. Workers in plastic recycling interviewed across Turkey reported earning wages significantly below Turkey's minimum wage and work more than 70 hours per week. Fear over losing their jobs made workers wary about raising concerns to their employers over harmful working conditions, including working without access to personal protective equipment (PPE).

Residents, current and former recycling facility workers, medical doctors, and facility owners described not being able to access basic information about risks from toxic exposure from recycling facilities despite legal obligations for official government sources and employers to share information on the impacts of air pollution and toxic exposure on their health.

Recycling facility workers and nearby residents reported that inadequate enforcement of laws is making the situation worse. In Adana and the Bayrampaşa neighborhood in Istanbul, plastic recycling facilities commonly operate without licenses from the relevant authorities. For licensed facilities, it has been reported to us that inspections often do not occur at all or do not adequately inspect environmental and health conditions.

Questions Related to Human Rights Concerns

In the interest of obtaining a thorough, balanced, and objective understanding of the issue we are examining, we are writing to get your Ministry's perspective on the matters highlighted above, so we can incorporate your views into our forthcoming report. In particular, we are interested in the following information:

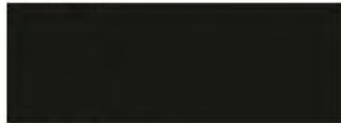
1. Does the Ministry of Health collect neighborhood-level public health data, including anonymized data on rates of cancer, miscarriages, respiratory illnesses, and children born with disabilities? What is the relationship between neighborhood-level rates of disease and air pollution? Is the data disaggregated by age and gender? Is that data publicly available? Can you share that data for Adana's Şakirpaşa, Ova, Onur, and Uçak neighborhoods and for Istanbul's Bayrampaşa and Sultangazi neighborhoods?

2. What resources or trainings, if any, does the Ministry of Health provide to medical professionals on the impacts of air pollution and toxin exposure on health? What training do health workers in areas with high numbers of plastic recycling facilities get in the field of environmental health, and specifically the health effects that can be caused by exposure to chemicals in plastic?
3. What role does the Ministry of Health play in ensuring that workers in hazardous industries, like plastic recycling, and people living near industrial areas are not exposed to toxic chemicals and air pollution?
4. Are there higher than average rates of toxin-related illnesses in Adana's Şakirpaşa, Ova, Onur, and Uçak neighborhoods? Are there higher than average rates of toxin-related illnesses in Istanbul's Bayrampasa and Sultangazi neighborhoods? Can you share rates of toxin-related illnesses for those neighborhoods?
5. What role does the Ministry of Health play in determining appropriate distancing of industrial facilities from incompatible land uses, including housing, schools, and hospitals? What steps does the Ministry take to ensure appropriate distancing is adhered to? Does the Ministry have a position on the appropriate distance between industrial zones and residential areas in order to minimize exposure to industrial pollution? If so, has the Ministry submitted this policy to the Ministry of Environment, Urbanization and Climate Change and/or other relevant authorities?

We would be pleased to reflect your responses to the above questions in our forthcoming report if we receive your written answers by June 30, 2022. Please reply in Turkish or English to us at [REDACTED], copying [REDACTED] and [REDACTED]. We would appreciate any other comments or information that you can provide.

We would also welcome the opportunity to speak with you or your representatives. Please let us know if you have any questions or would like to arrange a meeting or video conference.

Sincerely,



Richard Pearshouse
Director
Environment and Human Rights Division

Hugh Williamson
Director
Europe and Central Asia Division

Letter to the Ministry of Labor and Social Security, June 17, 2022

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June 17, 2022

Minister Vedat Bilgin
Ministry of Labor and Social Security
Emek Mahallesi Naci AYYALIOĞLU Caddesi
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Dear Minister Vedat Bilgin,

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Questions Related to Human Rights Concerns

In the interest of obtaining a thorough, balanced, and objective understanding of the issue we are examining, we are writing to get your Ministry's perspective on the matters highlighted above, so we can incorporate your views into our forthcoming report. In particular, we are interested in the following information:

1. Please provide details about Ministry of Labor and Social Security inspections of plastic recycling facilities. How often are these inspections conducted and how many facilities have been inspected? Are inspections conducted on a regular basis, in response to complaints, and/or random? What does the Ministry of Labor and Social Security look for when it inspects work permits at plastic recycling facilities?

What happens if the facility is in non-compliance or if its workers are not registered?

2. How is the age of children checked during inspections? What are the steps the inspectors take when child labor is found? Specifically, what steps are taken to transition children out of child labor into education or vocational training? Have there been cases where labor inspectors have imposed sanctions on employers for employing children?
3. Has the Ministry of Labor and Social Security conducted a broader investigation or inquiry into the plastic recycling sector for its frequent employment of unregistered workers? If so, what are the main findings and were any measures taken to address the wider problem?
4. How does the Ministry of Labor and Social Security ensure that workers are provided with personal protective equipment (PPE) by their employers to limit exposure to toxins in the workplace?
5. It is our understanding that plastic recycling facility workers are subjected to periodic occupational health examinations. How often do workers receive occupational health examinations? Are plastic recycling facility workers provided with the results of their occupational health examinations? What happens if the health examination demonstrates work-related health impacts, including from air pollution or toxin-related illnesses?
6. It is our understanding that many individuals working in plastic recycling facilities are not registered with the Ministry's Social Security Institution. Why are so many workers in the plastic recycling sector unregistered and therefore unable to benefit from full medical care?
7. It is our understanding that children often work in plastic recycling facilities in contravention of Turkish law. Has the Ministry of Labor and Social Security conducted a broader inquiry or investigation into the plastic recycling sector for its frequent employment of child workers? If so, what were the findings of that investigation and what measures were taken to address the issue?
8. According to your records, how many Turkish citizens are employed in plastic recycling facilities and how many non-citizens? How many Syrians with temporary protection, Afghans with residence permits, and other nationalities with residence

permits are employed in the plastic recycling sector? Do you have an estimate for the number of undocumented non-Turkish nationals employed in the plastic recycling sector? Are documented and undocumented non-Turkish nationals paid the same wages for their work in the plastic recycling sector as Turkish nationals?

We would be pleased to reflect your responses to the above questions in our forthcoming report if we receive your written answers by June 30, 2022. Please reply in Turkish or English to us at [REDACTED], copying [REDACTED] and [REDACTED]. We would appreciate any other comments or information that you can provide.

We would also welcome the opportunity to speak with you or your representatives. Please let us know if you have any questions or would like to arrange a meeting or video conference.

Sincerely,

[REDACTED]

Richard Pearshouse
Director
Environment and Human Rights Division

Hugh Williamson
Director
Europe and Central Asia Division

Response from the Ministry of Labor and Social Security

MINISTRY OF LABOR AND SOCIAL SECURITY
General Directorate of Foreign Affairs

ANSWERS TO QUESTIONS ASKED BY HUMAN RIGHTS WATCH TO OUR MINISTRY
(Re: On the Research Report on the Effects of Plastic Recycling on the Health of Plastic Recycling Plant Workers and Residents in Turkey)

1. Please provide detailed information about the audits that the Ministry of Labor and Social Security (MoLSS) carries out at plastic recycling facilities. How often are these audits carried out and how many facilities have been audited? Are audits conducted regularly, in response to complaints and/or randomly? What does the MoLSS pay attention to when inspecting work permits in plastic recycling facilities? What happens if the plant does not comply with the legislation or its workers are not registered?

All auditing activities, including research, investigation and inspection activities carried out on behalf of the state regarding the implementation of all the provisions of the legislation relevant to working conditions and environment including working hours, wages, occupational health and safety, employment of children and youth, undeclared work, unemployment, employment and labor markets, are conducted by our ministry.

Labor audits consist of two main divisions: "scheduled audits" and "non-scheduled audits consisting of *ad hoc* inspections." Scheduled audits are audits carried out in order to monitor the implementation of the provisions of legislation relevant to work life in specific areas or sectors determined through the evaluation and prioritization of problems in work life, or in particular workplaces determined through the targeting of a specific risk group. Non-scheduled audits consisting of *ad hoc* inspections, on the other hand, are carried out upon the receipt of specific complaints or denunciations or upon the inclusion in our auditing program of those documents received by our agency which are deemed compatible with our auditing services.

The data of the audits carried out by our presidency between 01.01.2013 and 29.06.2022 regarding the recycling operations covered by the codes 38.11, 38.12, 38.21, 38.22 and 38.32 found in the Nace Rev 2 6-code query are as follows.

A total of 280 scheduled audits regarding work execution and occupational health and safety have been carried out in workplaces included in the above mentioned Nace codes. Apart from this, a total of 709 non-scheduled audits regarding work execution and occupational health and safety have been carried out in work places included in the above mentioned Nace codes. In these audits a total of 117.229 workers have been reached. In the same vein, in these audits 32 foreigners have been reached and requisite administrative actions have been taken against 7 workers who did not have work permits.

In the audits it is asked whether work permits are present in accordance with the relevant legislation. In cases where our auditors detect workers without work permits, administrative fines are recommended to be imposed in accordance with the mandatory provisions of the legislation and relevant public authorities are notified to take action.

According to the social security legislation, the registration of workplaces and their operations, as well as the social insurance of their employees are within the purview of the Presidency of the Social Security Agency (SSA). In cases where our ministry detects unregistered workers during an audit, we notify the Social Security Agency in accordance with the relevant legislation to take action. Again, necessary notifications are made to the relevant public authorities about whether the facilities comply with the provisions of the legislation.

2. How are the ages of children checked during audits? What steps do auditors take when they detect child labor? In particular, what steps are taken to move children from child

labor to education or vocational training? Have there been cases where auditors have imposed sanctions for employing child workers?

Our ministry plans the labour audits to be carried out at work places in a given year either as "scheduled audits" or as "non-scheduled audits" In all the audits child and young workers are identified as a prioritized risk group. Issues regarding the age of children are controlled in accordance with the Labor Law No. 4857 and its sub-legislation. Accordingly our auditors demand from the relevant public authorities that they prevent children who are found to be working in unsuitable or prohibited jobs, from working. Additionally, they recommend administrative fines to be imposed in accordance with mandatory provisions of our legislation. Moreover requisite notifications are made to the relevant judicial authorities regarding the criminal cases.

3. Has the MoLSS conducted a large-scale investigation or inspection of the plastics recycling industry due to the widespread employment of unregistered workers? If so, what are its main findings and have any measures been taken to address this more general problem?

In Turkey unregistered employment is considered as a structural economic problem area and the strategy of the struggle against this problem is carried out in the country as a whole, rather than through specific institutional efforts. The main headings of this strategy are as follows: effective guidance and audits, awareness and consciousness raising activities, and increasing the effectiveness of cross-auditing mechanisms through information sharing among different institutions and agencies.

Thanks to activities carried out under these strategic headings since 2002, the rate of unregistered employment has decreased from 52% to 25.77 in the first quarter of 2022, with the agricultural sector included. In the first quarter of 2022 the unregistered employment rate in non-agricultural sectors was 16.49% which is very close to our 2023 target of %15.

In the struggle against unregistered employment, activities carried out under the heading of effective guidance and audits are based on a risk-focused strategy which does not distinguish between different sectors or industries and on an approach which minimizes the loss of time and labor. In the course of a calendar year, sectors and industries where unregistered employment is observed to be highest are inspected through intense and widespread audits. Thus sectors and industries where unregistered employment is observed to be intensified are audited without distinction. Due to the fact that our country is receiving intense migration and because of the fluctuations in the labor market our auditing strategy is implemented broadly rather than in a sector-specific fashion.

4. How does the MoLSS ensure that workers are provided with personal protective equipment (PPE) by their employers to limit their exposure to toxins in the workplace?

The purpose of the Law No. 6331 on Occupational Health and Safety is to regulate the duties, powers, responsibilities, rights and obligations of employers and employees in order to ensure occupational health and safety at workplaces and to improve current health and safety conditions.

The law applies to all jobs and workplaces in the public and private sectors, to the employers and employer representatives of those workplaces and to all employees including apprentices and interns, regardless of their field of activity. The only exceptions are those listed in Article 2 of the law. Accordingly the employer is required to ensure the occupational health and safety of its employees and to take all necessary measures to that aim, including the prevention of occupational risks and providing information and necessary equipment, adapting health and safety measures to changing conditions and making an effort to improve the current situation.

Article 5 of the Law titled "Principles of Protection from Risks" includes the following provisions:

Article 5 – (1) The following principles are taken into account in the fulfillment of the employers' obligations:

- a) *Avoiding risks.*
- b) *Analyzing risks that cannot be avoided.*
- c) *Fighting risks at their source.*
- ç) *Being attentive to the design of workplaces, equipment, style of work and the selection of production methods in order to make the job suitable for people, to prevent the negative effects of the monotony of the working and production tempo on health and safety and to minimize them if they cannot be prevented.*
- d) *Adapting to technical developments*
- e) *Replacing the dangerous with non-dangerous or less dangerous*
- f) *Developing a coherent and general prevention policy that covers the impact of factors related to technology, work organization, working conditions, social relations and working environment.*
- g) *Prioritizing collective protection measures over personal ones.*
- ğ) *Giving adequate instructions to the employees.*

In addition, Article 19 of the law lists “using and protecting the personal protective equipment provided correctly” among the obligations of the employees. The law also stipulates that if the employer does not provide standard compliant, CE stamped personal protective equipment, the employer shall be administratively fined on the basis of each employee for whom the necessary equipment has not been provided.

Substantial and procedural matters regarding the specifications, provision and use of personal protective equipment to be utilized in cases where the prevention or adequate reduction of risks in the workplace cannot be achieved by collective protection based on technical measures or work organization or working methods, are determined by the Regulation no. 28695 on the Use of Protective Equipment at Workplaces, published in the Official Gazette on 02.07.2013. According to Article 7 of the regulation titled “Assessment and Selection of Personal Protective Equipment” it is the obligation of the employers to determine the occupational health and safety measures to be taken and the personal protective equipment to be used on the basis of risk assessments to be made by the employers. In the same vein, it is also stipulated that the employer will inform employees and their representatives about the health and safety measures to be taken during the use of personal protective equipment and about the risks against which the personal protective equipment will be used.

Consequently, it is the obligation of the employers to provide the necessary and adequate personal protective equipment for the employees, in order to ensure that the employees are protected against all types of occupational health and safety risks related to the working environment.

Personal protective equipment that should be provided for the employees by the employers in order to prevent or reduce the risks arising from the execution of the work is one of the headings included in the topics covered by the labor audits carried out by our ministry’s Presidency of Guidance and Auditing. In this context the following questions are covered in the audit: whether the personal protective equipment to be used has been determined on the basis of a risk assessment to be made by the employer, whether that equipment has been provided to the employees, whether the personal equipments provided by the employer complies with the provisions of Article 6 (titled General Provisions) of the Regulation on the Use of Protective Equipment at Workplaces, whether they are CE stamped, whether the employer has taken all necessary measures for the employees to use this personal equipment in an adequate fashion, whether the employees’ opinions have been queried before identifying which personal protective equipment will be used. In

cases of audits where shortcomings in these respects are detected, it is ensured that such shortcomings are rectified, and in cases of employers who do not rectify such shortcomings, administrative fines are recommended to be imposed upon them.

5. We understand that plastic recycling plant workers undergo regular occupational health inspections. How often are workers subjected to occupational health examinations? Are the results of occupational health examinations given to plastic recycling plant workers? What happens if the health examination shows health effects from work, including air pollution or toxins-related illnesses?

One of the obligations of the employers under Law no. 6331 is monitoring the health of the employees. This matter is regulated by the Article 15 of the law which obliges employers to ensure that their employees are subjected to medical examinations by taking into consideration the health and safety risks that employees face in the workplace.

In this context the employers are required to ensure that health examinations are carried out at the recruitment of the employees, at job changes, and during the course of their work, in regular intervals determined by the ministry on the basis of the characteristics of the employees, the work and the hazard classification of the workplace; or in cases of employees returning to work after being removed from work recurrently because of work accidents, occupational diseases or health reasons, on demand. Accordingly health monitoring is required for all employees covered by the law and it should be ensured that employees are subjected to health monitoring by taking into account the health and safety risks that employees face in the workplace.

In addition, when assigning duties to their employees, the employers are required to consider the suitability of the employees for the job in terms of health and safety, and to ensure that health examinations are carried out at their recruitment. Similarly, according to the second paragraph of the Article 15 of the Law, those who will work in dangerous and very dangerous jobs cannot be employed without vocational training and they cannot be recruited without a medical report stating that they are suitable for the job. The costs arising from the health monitoring and any additional costs arising from this monitoring shall be borne by the employer and that financial burden cannot be shifted onto the employees.

In addition, health information is kept confidential in order to protect the privacy and reputation of the employees who have undergone medical examinations. The law also stipulates that an administrative fine shall be imposed on the employers for each employee for whom they failed to fulfill their health monitoring obligations under the Law.

Labor audits carried out in this framework inspect whether employees are subjected to health monitoring by their employers by taking into account the hazard classification of the workplace and whether the employees belong to a group requiring special policies.

In addition to this, according to Article 14 of the law on the registration and notification of work accidents and occupational diseases, the employers' responsibilities are:

- a) *Employers shall keep the records of all work accidents and occupational diseases, make necessary investigations and prepare relevant reports about them.*
- b) *Employers shall investigate and prepare reports about incidents that occur in the workplace which, while not resulting in injuries or death, cause damage to the workplace or work equipment or have the potential to harm the employees or damage the workplace or work equipment.*

The employers shall notify The Social Security Agency in the following cases, in the specified time spans.

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The employers shall notify The Social Security Agency in the following cases, in the specified time spans.

a) *Work accidents within three working days after the accident.*

b) *Occupational diseases notified by health service providers or occupational physicians, within three working days from the date of learning.*

Occupational physicians or health service providers shall refer the cases they pre-diagnosed with occupational diseases to the health service providers authorized by the Social Security Agency.

Health service providers shall notify the work accident cases referred to them, and authorized health service providers shall notify the cases where they diagnosed with occupational diseases to the Social Security Agency within ten days, at the latest.

In this framework, it is the obligation of the employer to keep and report all records regarding all kinds of work accidents and occupational diseases that the employees may experience.

6. We understand that many people working in plastic recycling facilities are not registered with the Social Security Agency. Why are there so many unregistered workers in the plastics recycling industry because of which they do not receive full medical care?

With the social security reform, which has been implemented in our country gradually since 2006, comprehensive regulations have been put in effect to fight against unregistered employment, among others. Within the framework of the new approach adopted with the said reform, five main strategies have been determined to fight against unregistered employment.

- 1- Cross-auditing through information and data sharing between agencies
- 2- Increasing the effectiveness of the auditing system and transition to a risk-focused auditing model
- 3- Reassessment of costs on employment
- 4- Increasing the quality of social security services
- 5- Awareness and consciousness raising in the area of social security.

In this framework, In addition to the permanent staff of the Social Security Agency (SSA) auditing board, social security inspectors have been employed in order to increase the effectiveness of the audits and inspections carried out by the Social Security Agency. Sectors, workplaces and regions (including plastic recycling facilities) determined through risk analyses are audited both on an *ad hoc* basis upon complaints and on a regular basis.

In this framework, workplaces that are detected to employ unregistered personnel are administratively fined up to 14 minimum wages. In addition, such workplaces are precluded from benefiting from any financial incentives, grants, loans and tax advantages provided by the state or private sector.

In addition see Answer 1, Answer 3 and Answer 5.

7. We understand that children often work in plastic recycling facilities against Turkish law. Has the MoLSS conducted a large-scale investigation or inspection into the plastics recycling industry due to the widespread employment of child workers? If so, what are the findings of this investigation and what actions have been taken in response?

In the Labor Law, which is the basic legislation regulating working life in our country, necessary arrangements have been made to prevent all forms of child labor in accordance with international norms.

Article 71 (titled "Working Age and Restrictions on the Employment of Children") of the Labor Law no.4857 includes the following provisions:

Employment of children who have not completed the age of fifteen is prohibited. However, children who have completed the full age of fourteen and their primary education may be employed on light works that will not hinder their physical, mental and moral development, and for those who continue their education, in jobs that will not prevent their school attendance. Children who have not completed the age of fourteen can be employed in arts, culture and advertising activities that will not prevent their physical, mental, social and moral development and the attendance of those who continue their education to school, provided that they make a written contract and obtain separate permission for each activity. In the placement of children and young employees in jobs and in the types of work where they are employable, their security and health, physical, mental and psychological development as well as their personal suitabilities and capabilities shall be taken into consideration. The job the child performs must not bar him for attending school and from continuing his vocational training, nor impair his pursuance of class work on a regular basis.

Working hours of children who have completed compulsory primary education and do not continue formal education are seven hours a day and thirty-five hours a week; those working in arts, culture and advertising activities cannot exceed five hours a day and thirty hours a week. This period can be increased up to eight hours a day and forty hours a week for children who have completed the age of fifteen. This period can be increased up to eight hours a day and forty hours a week for children who have completed the age of fifteen. The working hours of preschool children and children attending school during the education period can be at most two hours a day and ten hours a week, out of education hours. During the periods when the school is closed, the working hours cannot exceed the durations stipulated in the fourth paragraph above.

According to the same Law, it is prohibited to employ workers under the age of eighteen in underground or underwater works such as mines, cable laying, sewerage and tunnel construction, and to employ children and young workers under the age of eighteen in industrial night jobs.

The "Regulation on the Procedures and Principles of Employment of Child and Young Workers" issued pursuant to Article 71 of the Law includes procedures and principles regarding the working conditions and jobs that are prohibited for children and young workers under the age of 18, jobs that young workers who have completed the age of 15 but have not completed the age of 18 are allowed to work at, and light works that children who have completed the age of 14 and their primary education are allowed to be employed in.

According to the aforementioned regulation; in the placement of child and young workers, as well as in the course of their work, their safety, health, physical, mental, moral and psychosocial development, personal disposition and abilities are taken into account.

Child and young workers under the age of 18, even if they are allowed to work according to their age records, cannot be employed in the following jobs: in preparation, completion and cleaning jobs; in production and wholesale of alcohol, cigarettes and addictive substances; in retail sale and wholesale of flammable, explosive, hazardous and dangerous substances, as well as in the production, processing and storage of such substances and in all kinds of jobs which involve the possibility of being subjected to such substances; in jobs performed in environments with high noise or vibration levels; in jobs requiring working in extremely hot and cold environments, in jobs that require working with hazardous substances which cause occupational diseases; in jobs where it is possible to be subjected to radioactivity and hazardous rays, in jobs that require extra attention and uninterrupted standing; in jobs paid per piece and a premium system; in jobs that do not allow the child or young worker to return to his home or family at the completion of the job with the exception of jobs performed for educational or training purposes; in jobs that are above child or young workers' physical and psychological characteristics as determined by an occupational physician; in jobs that are likely to cause lack of education, experience and attention to safety; in

money transportation and collection jobs; and in jobs carried out during the night period as specified in the first paragraph of Article 69 of the Labor Law No.4857.

On the other hand, our Ministry carries out extensive activities in order to support the legislative arrangements in the field. Cooperation and coordination is ensured among all parties working on child labor. The National Program for Combatting Child Labor (2017-2023) has been prepared with the contribution of the relevant parties with the main objective of preventing the worst forms of child labor, especially in heavy and dangerous jobs in industry, on the street and in seasonal mobile agricultural sector, and it is being implemented successfully.

Within the context of the declaration of 2018 as "The Year of Combatting Child Labor", the "Common Declaration on Combatting Child Labor" has been signed in order to increase the awareness of the society about the struggle against child labor, and to contribute to the policies and aims of the National Program at the highest level.

Units for Combating Child Labor have been established in 81 provinces, and monitoring reports are submitted to our Ministry every month by these units.

Projects are carried out in cooperation with national and international sources related to combatting child labor, relevant public agencies, social parties, professional organizations, Universities, NGOs and international organizations in order to eliminate child labor in general and the worst forms of it in particular.

8. According to your records, how many Turkish citizens and foreigners are employed in plastic recycling facilities? How many Syrians under temporary protection, how many Afghans and people from other nationalities with residence permits are employed in the plastics recycling sector? Do you have an estimate of the number of unregistered foreigners working in the plastic recycling industry? Are registered and unregistered foreigners paid the same wages as Turkish citizens for their work in the plastic recycling sector?

According to subparagraph a) of the first paragraph of Article 4 of the Social Insurance and General Health Insurance Law No. 5510, those employed by one or more employers with a service contract are considered as insured.

Pursuant to the Article 92 of the relevant Law titled "Obligatory Social Insurance, Termination of Social Insurance and Social Security Registration Number", it is obligatory for persons covered by short and long term insurance to be insured and have general health insurance, and for persons covered by general health insurance to have general health insurance.

In this framework, it is a legal obligation to provide insurance to all workers, including those working in recycling facilities. The procedures and principles regulating the reporting of the service records and earnings of the insured persons working under a service contract, to the Social Security Agency, as well as the payment of their premiums, are explained in Articles 86 and 88 of the Law No. 5510.

On the other hand, the first, second and third paragraphs of Article 82 of the Law no. 5510 include the following provisions: "The lower limit of the daily earnings, which is taken as the basis for the calculation of the premiums to be received and allowances to be given, is one-thirtieth of the minimum wage appropriate for the age of the insured, and the upper limit is, for the insured persons who are older than 16 years of age, 7,5 times of the lower limit of their daily earnings. However in case of Turkish workers who are taken abroad by employers who undertake work in countries where there are no social security contracts, the upper limit is three times of the lower limit of their daily earnings.

The daily earnings of the insured persons whose daily earnings are below the lower limit specified in the above paragraph and those who work for free are calculated over the lower limit, and the

daily earnings of the insured persons whose daily earnings are above the upper limit are calculated over the upper limit.

According to the second paragraph, if the insured person's earnings are below the lower limit, the employer pays all of the insurance premium of the difference between these earnings and the lower limit, and all of the insurance premiums of the insured persons who work for free." Based on the minimum wage amount determined every year, the lower and upper limits of the earnings on basis of which premiums are calculated, and the amounts on the basis of which some transactions are calculated, are determined and announced by the Social Insurance Agency, and notifications below the daily minimum wage are not allowed on the basis of this system.

In this context, the lower and upper limits of the basis of which premiums are calculated and the amounts on the basis of which certain transactions are calculated for the year of 2022 have been announced by the Social Security Agency Circular No. 2022-1.

Letter to the Ministry of Trade, June 17, 2022

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hrw.org

June 17, 2022

Minister Mehmet Muş
Ministry of Trade
SÖĞÜTÖZÜ YERLEŞKESİ, Söğütözü Mah
2176. Sk. No:63 06530
Çankaya / ANKARA

Dear Minister Mehmet Muş,

On behalf of Human Rights Watch, we are writing to share our preliminary findings into the impacts of plastic recycling on the health of plastic recycling facility workers and nearby residents in Turkey.

Human Rights Watch is an international human rights organization that conducts research and advocacy on human rights abuses in more than 90 countries worldwide. Human Rights Watch is committed to producing material that is accurate, well-informed, and objective. We want to ensure that our report properly reflects the views, policies, and practices of relevant authorities and actors. With this in mind, we hope you or your staff will respond to the questions below, so that your views are accurately reflected in our reporting.

Summary of Findings

Plastic recycling operations in Adana and Istanbul are threatening the health of facility workers, including child laborers, and nearby residents. Our research is based on more than 60 interviews with current and former plastic recycling facility workers, nearby residents, facility owners, medical providers, and others familiar with plastic recycling facility operations in Adana and Istanbul. Workers and nearby residents are exposed to acute air pollution and toxic chemicals released during the shredding and melting of plastic during the recycling process. Workers and nearby residents described to Human Rights Watch severe headaches and respiratory problems. Our field research established that, in contravention of regulations and public health requirements, plastic recycling facilities are frequently located closer than the appropriate

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distance, between industrial facilities and incompatible land uses, including housing, schools, and hospitals.

Many workers told Human Rights Watch that their employers are not paying social security contributions (SGK), and some recycling facility workers said they do not have access to any medical services if they get sick or injured in the workplace. Children as young as nine-years-old work in plastic recycling facilities in Turkey, despite legal protections prohibiting them from being hired to work in such hazardous conditions. One third of workers interviewed by Human Rights Watch were children or began working in plastic recycling facilities as children. Workers in plastic recycling interviewed across Turkey reported earning wages significantly below Turkey's minimum wage and work more than 70 hours per week. Fear over losing their jobs made workers wary about raising concerns to their employers over harmful working conditions, including working without access to personal protective equipment (PPE).

Residents, current and former recycling facility workers, medical doctors, and facility owners described not being able to access basic information about risks from toxic exposure from recycling facilities despite legal obligations for official government sources and employers to share information on the impacts of air pollution and toxic exposure on their health.

Recycling facility workers and nearby residents reported that inadequate enforcement of laws is making the situation worse. In Adana and the Bayrampaşa neighborhood in Istanbul, plastic recycling facilities commonly operate without licenses from the relevant authorities. For licensed facilities, it has been reported to us that inspections often do not occur at all or do not adequately inspect environmental and health conditions.

Questions Related to Human Rights Concerns

In the interest of obtaining a thorough, balanced, and objective understanding of the issue we are examining, we are writing to get your Ministry's perspective on the matters highlighted above, so we can incorporate your views into our forthcoming report. In particular, we are interested in the following information:

1. Why did the Ministry of Trade ban imports of high-density polyethylene (HDPE) and low-density polyethylene (LDPE), announced May 2021, and then rescind the ban in July 2021?

2. Given that some of the plastic waste imported into Turkey cannot be recycled, what role does the Ministry of Trade play in inspecting the quality and type of imported plastic waste?
3. What conditions must be met before the Ministry of Trade grants a plastic waste import license? What steps does the Ministry take to ensure the importer is in compliance with those conditions?
4. It is our understanding that plastic waste imports are tracked using GPS from the point of entry in Turkey to the recycling facility where it is processed. Is GPS data tracking plastic waste imports publicly available and accessible?

We would be pleased to reflect your responses to the above questions in our forthcoming report if we receive your written answers by June 30, 2022. Please reply in Turkish or English to us at [REDACTED], copying [REDACTED] and [REDACTED]. We would appreciate any other comments or information that you can provide.

We would also welcome the opportunity to speak with you or your representatives. Please let us know if you have any questions or would like to arrange a meeting or video conference.

Sincerely,

[REDACTED]

Richard Pearshouse
Director
Environment and Human Rights Division

Hugh Williamson
Director
Europe and Central Asia Division

Letter to PAGÇEV, June 17, 2022

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June 17, 2022

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Bakirkoy 34153 Istanbul
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Dear Yavuz EROĞLU,

On behalf of Human Rights Watch, we are writing to share our preliminary findings into the impacts of plastic recycling on the health of plastic recycling facility workers and nearby residents in Turkey.

Human Rights Watch is an international human rights organization that conducts research and advocacy on human rights abuses in more than 90 countries worldwide. Human Rights Watch is committed to producing material that is accurate, well-informed, and objective. We want to ensure that our report properly reflects the views, policies, and practices of relevant authorities and actors. With this in mind, we hope you or your staff will respond to the questions below, so that your views are accurately reflected in our reporting.

Summary of Findings

Plastic recycling operations in Adana and Istanbul are threatening the health of facility workers, including child laborers, and nearby residents. Our research is based on more than 60 interviews with current and former plastic recycling facility workers, nearby residents, facility owners, medical providers, and others familiar with plastic recycling facility operations in Adana and Istanbul. Workers and nearby residents are exposed to acute air pollution and toxic chemicals released during the shredding and melting of plastic during the recycling process. Workers and nearby residents described to Human Rights Watch severe headaches and respiratory problems. Our field research established that, in contravention of regulations and public health requirements, plastic recycling facilities are frequently located closer than the appropriate



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distance, between industrial facilities and incompatible land uses, including housing, schools, and hospitals.

Many workers told Human Rights Watch that their employers are not paying social security contributions (SGK), and some recycling facility workers said they do not have access to any medical services if they get sick or injured in the workplace. Children as young as nine-years-old work in plastic recycling facilities in Turkey, despite legal protections prohibiting them from being hired to work in such hazardous conditions. One third of workers interviewed by Human Rights Watch were children or began working in plastic recycling facilities as children. Workers in plastic recycling interviewed across Turkey reported earning wages significantly below Turkey's minimum wage and work more than 70 hours per week. Fear over losing their jobs made workers wary about raising concerns to their employers over harmful working conditions, including working without access to personal protective equipment (PPE).

Residents, current and former recycling facility workers, medical doctors, and facility owners described not being able to access basic information about risks from toxic exposure from recycling facilities despite legal obligations for official government sources and employers to share information on the impacts of air pollution and toxic exposure on their health.

Recycling facility workers and nearby residents reported that inadequate enforcement of laws is making the situation worse. In Adana and the Bayrampaşa neighborhood in Istanbul, plastic recycling facilities commonly operate without licenses from the relevant authorities. For licensed facilities, it has been reported to us that inspections often do not occur at all or do not adequately inspect environmental and health conditions.

Questions Related to Human Rights Concerns

In the interest of obtaining a thorough, balanced, and objective understanding of the issue we are examining, we are writing to get PAGÇEV's perspective on the matters highlighted above. In particular, we are interested in the following information:

1. Many of the worst violations HRW has documented occurred in unlicensed facilities. What role does PAGÇEV play in helping small-scale facilities, often unlicensed, improve their environmental performance and adhere to all permitting and regulatory requirements? Does PAGÇEV provide support to companies to apply for licenses from the Ministry of Environment, Urbanization or Climate Change?

2. Has the influx of plastic waste imports since 2018 contributed to a growth of Turkey's plastic recycling sector? How has the rise of plastic waste imports impacted the recycling of domestically produced plastic waste? What steps has PAGÇEV taken to ensure that plastic waste imports do not contain unrecyclable waste?
3. What steps does PAGÇEV take to provide support to plastic recycling companies wanting to improve their operations to minimize air pollution or toxin emissions? Does PAGÇEV provide public information about chemical additives in plastic products and the potential impacts of exposure to those chemical additives on workers?
4. It is our understanding that PAGÇEV organizes trainings on plastic recycling for students, residents, and companies in Turkey. What information is presented in these trainings? Do the trainings share information about potential health impacts from exposure to air pollution or toxic chemicals released during plastic recycling?
5. Does PAGÇEV require their members to be licensed and in compliance with Turkish law and regulations? Does PAGÇEV have any specific criteria for membership that requires members to adhere to best practices in the recycling industry, including minimizing air, water, and soil pollution and monitoring air quality? Does PAGÇEV carry out audits to ensure adherence to these criteria? Does PAGÇEV operate a complaint mechanism, where interested parties can make complaints about PAGÇEV member companies?

Your written response to the questions above, if received by June 30, 2022 and sent to [REDACTED] will be reflected in our forthcoming report. Please note that we may publish your responses at our discretion and when appropriate, either in full or in part. We would appreciate any other comments or information that you can provide.

We would also welcome the opportunity to speak with you or your representatives. Please let us know if you have any questions or would like to arrange a meeting or video conference.

Sincerely,

[REDACTED]

Richard Pearshouse
Director
Environment and Human Rights Division

Hugh Williamson
Director
Europe and Central Asia Division

Response from PAGÇEV, July 5, 2022

No. : 321
Subject : Plastic Recycling

HUMAN RIGHTS WATCH

Please find below PAGÇEV's answers to the 5 questions you submitted in your letter dated June 21, 2022.

Sincerely yours,

Yavuz EROĞLU, President

Response 1

In Turkey, it is a crime to open an unlicensed workplace and to employ people outside the provisions stipulated by the relevant legislation. If an illegal situation is detected, necessary penal actions are taken within the framework of the applicable laws. PAGÇEV assumes an important mission for the recycling sector in our country to grow as a "planned industry" and to that aim we always prioritize education and training. PAGEV Plastic Technology Vocational and Technical Anatolian High School in Küçükçekmece, Istanbul and PAGEV Vocational and Technical Anatolian High School in Gebze were built with the donations of our members and they provide our sector with an educated and well trained workforce. Our 2000 students, who receive training on recycling technologies, provide a workforce with high technical skills for the sector when they graduate.

In the last 7 years, we have provided recycling trainings to 50,000 young people studying in various schools in our country, including students in the PAGEV high schools that we have established. We have instilled in our students the importance of recycling for a cleaner environment and a more livable world.

As PAGÇEV, we have also taken an active role in the regulations made/to be made by the public authorities regarding recycling. For example, we have contributed to the implementation of the Deposit Return System (DRS) in Turkey. On the other hand, we have worked to develop sorting and collection systems at source and thus to fundamentally change the unhealthy environment for waste collection. As the authorized institution of the Ministry of Environment, Urbanization and Climate Change we, as PAGÇEV, achieved a great success last year by organizing the recycling of packaging waste for 13 million people in Turkey. We have worked in close contact with the Ministry of Environment, Urbanization and Climate Change to ensure that those defined as "waste pickers" are integrated in the legal system and covered by social security. We contributed to the formation of a favorable public opinion to support the efforts to document and register waste pickers in the social security system. As a matter of fact, we explained our opinion as an organization in an article published in Dünya Newspaper on the subject. (You can find that article attached to this letter.)

On the other hand, we contributed to the Ministry of Environment, Urbanization and Climate Change's determination of the criteria for licenses to be issued to recycling companies. In this sense, in order to prevent unfair competition, we have contributed to the determination of modern machinery/equipment requirements that recycling facilities must meet. We actively supported the Ministry of Environment, Urbanization and Climate Change's efforts to rehabilitate licenses by establishing new criteria for companies, aiming to ensure environmentally friendly production.

Response 2

As part of the Green Deal program, giant brand owners in Europe have pledged to reduce their carbon emissions as part of the fight against climate change. In this context, the trend towards plastic products made from recycled raw materials has increased. Turkey is the sixth biggest producer of plastic products in the world and the second biggest producer in Europe after Germany and it has to export products made from recycled raw materials to the countries to which it exports plastic products, especially Europe. Turkey, which is one of the world's leading producers of plastic products, also exports extensively to Europe and therefore the exported products are used and turned into waste in Europe. In other words, Turkey imports from Europe the plastic products it exports after they have been transformed into waste. Plastic waste, which is the raw material needed for industrial production, is imported both within the framework of the green deal and because Turkey's plastic products are turned into waste in other countries. The critical point here for our country is that waste imports are carried out under the conditions set by the Ministry of Environment, Urbanization and Climate Change. The critical point here for our country is that waste imports are carried out under the conditions set by the Ministry of Environment, Urbanization and Climate Change. As recycling is a rapidly growing trend all over the world and Turkey has to import waste in order to develop in line with this trend, opposition to waste imports meeting the criteria set by the Ministry does not reflect a rational perspective. Waste imports, which contribute to reducing environmental pollution and economic growth, accelerate the growth of the recycling

industry. When we look at the European Union countries, we see that they import more waste than Turkey. In summary, the issue is the correct implementation of waste imports within the framework of the legislation. As PAGÇEV, we, together with the Ministry of Environment, Urbanization and Climate Change, have carried out a series of studies for the effective inspection of imported waste. In this context, we contributed to the process of revoking the licenses of companies importing waste, renewing them and re-licensing them according to the criteria established. Recycling companies that will obtain a license have been required to have the necessary technological equipment. The letters of guarantee received from the recycling companies prevented the import of banned wastes into our country. It also paved the way for a control mechanism to be in place for the entire process of waste imports, starting from the border, until they arrive at the production facility and up to the disposal of the remaining waste at the facility. We made our technical contribution to ensure that this *modus operandi* in Turkey is in line with the European Union norms.

Our first target in accessing the raw materials needed by the recycling sector is, of course, the waste in our own country. As PAGÇEV, we have organized the recycling of the packaging waste of the 13 million population in Turkey. In addition to PAGÇEV, the Ministry of Environment, Urbanization and Climate Change conducts serious sorting and collection activities at source with some authorized organizations such as ÇEVKO. Prioritizing domestic waste collection, the Ministry also aims to actively implement the Deposit Return System in Turkey. With the introduction of the Deposit Return System, it is aimed to recycle 20 billion beverage packages annually in our country and to provide an annual gain of 175 million dollars to the economy. If the system works properly, 1 million tons of additional waste will be prevented in Turkey every year. The Deposit Return System will reduce carbon emissions in Turkey by 263 thousand tons/year.

We are also making a significant contribution to this issue. Therefore, increasing the amount of waste collected domestically on the one hand, and importing waste on the other, will grow our recycling sector simultaneously in their own separate ways.

Waste is important for Turkey to be able to produce and export from recycled raw materials within the scope of the green deal. This is vital not only in economic terms but also for a cleaner environment and lower carbon emissions. If production is not made from recycled raw materials, oil will be extracted from non-renewable resources from scratch and plastic products will be produced from this oil with original raw material, thus leading to greater carbon emissions. Our recycling companies importing plastic waste contribute to the goal of a cleaner world by preventing environmental pollution by using recycled raw materials instead of original products from scratch. From time to time, accusations are made against recycling importers, but such accusations are not based on sound environmental and economic reasons. In fact, there are manipulative news reports in which it is suggested that some companies in Turkey do not use imported waste in industrial production. However, which industrialist would pay for and import waste that they will not use in production? No industrialist would buy products that will not be recycled. Imported waste is the raw material used in the production of our recycling companies. Unfounded accusations that go beyond this fact are contrary to the ordinary flow of business life and logic. The Ministry of Environment, Urbanization and Climate Change has banned the entry of plastic waste imported with the "mixed" code into our country, taking into account the possible waste share from waste imports. PAGÇEV has been the most active Civil Society Organization in the Sub-Commission established by the Ministry to determine the criteria and standards on this issue.

In addition, PAGÇEV is working on investments to ensure that plastics produced from composite materials, which we call chemical recycling, can also be easily recycled. We continue to actively work with the ministry both to attract investors and to prepare the relevant legislation on this issue.

Response 3

In addition to the vocational high schools it has established, PAGÇEV also carries out educational activities to reduce carbon emissions by providing training to students in other schools in our country. To date, PAGÇEV has reached 50 thousand children to raise awareness about the steps we need to take individually to increase recycling awareness and reduce carbon emissions.

PAGÇEV also raises awareness about the advantages of plastics against climate change. For example, households are given to understand that plastics used in building insulation bring energy savings. On the other hand, it is pointed out that plastics used in solar panels and wind turbines in renewable energy, which stands out as clean energy, reduce carbon emissions. Likewise, it is shared with the public that all the technological wonders we use, from electric cars to airplanes, are lighter and emit less carbon emissions into the air thanks to plastics. PAGÇEV not only explains all these to the public, but also supports the Ministry of Labor and Social Security's efforts to implement the existing occupational health and safety standards in the sector and to create new legislation, by sharing its technical expertise.

Since PAGÇEV is also a member of the Board of Directors of the European Union Plastics Manufacturers Association, it has undertaken active duties in the harmonization and implementation of the legislation of the European Union and the legislation of the Republic of Turkey. Turkey's plastics legislation is in line with the European Union legislation and there are no gaps in our country in terms of legislation on occupational health and safety. However, as in every country, it is the state which has the power to intervene when there are shortcomings in the implementation of the laws, or when crimes are committed. Effective audits are important. If illegal activities are detected, the competent authorities of our state take the necessary action.

Response 4

PAGÇEV has not only provided recycling and low carbon emission trainings to 50,000 students in Turkey in the last 7 years, but it also carried out door-to-door awareness raising activities among households on sorting at the source. PAGÇEV also conducts recycling activities with companies and has carried out studies on the environmental and economic gains of sorting recyclable wastes such as plastic, glass, metal and paper.

PAGÇEV not only aims to increase the number of conscious consumers, but it also seeks to contribute to climate change by comparing recyclable plastic with alternative products and by calculating which one has lower carbon emissions. PAGÇEV informs the public in detail how the process of recycling plastics, which by the way, make our lives easier, works through the support conscious consumers after they use them. PAG especially took students to recycling facilities to provide them with detailed concrete information about recycling and thus raised awareness.

Standards in the plastics industry in Turkey are in line with the legislation in the European Union in terms of health and environment. The Ministry of Labor and Social Security's labor standards and the Ministry of Environment and Urbanization's emission limitations constitute the legal framework. Companies working in Turkey have to work within these limits. It is a criminal offense to work outside of these limits, and ministries impose deterrent penalties on such companies, up to and including banning them from operating. PAGÇEV actively contributed to the establishment of ventilation standards (emission/hoods) in working environments with the Ministry of Environment and Urbanization and provided support for the harmonization of the legislation with the EU. The majority of the machinery and raw materials used in the recycling system in our country are imported from Europe. Since our legislation is the same as Europe's, we would be pleased to provide you with information on the issue of "toxic chemicals" mentioned in your question, provided that you clarify which specific chemicals you refer to and how these are evaluated differently in Europe than in Turkey.

Response 5

PAGÇEV members are engaged in environmentally friendly production and they continue their activities within the applicable legal framework. These enterprises can only operate within the scope of the licenses and permits they receive from the Ministry of Environment, Urbanization and Climate Change and other relevant Ministries. This way of operating is a legal obligation. Therefore, all our members must be licensed and meet the conditions specified by the ministry.

As we have mentioned, it is the Ministry of Environment, Urbanization and Climate Change which has the authority and duty to carry out audits in the field. PAGÇEV encourages its members to

produce in accordance with occupational health and safety and environmental standards by using world-class recycling technologies, and provides support to the sector with a technically skilled workforce through the students trained in the schools it has established. PAGÇEV carries out educational and training activities and it also contributes to the preparation of legislation in coordination with the relevant ministries.

According to the laws in Turkey, PAGÇEV does not have the power to conduct audits, but with the experience it has gained as a member of the board of directors of the plastics manufacturers' association in the European Union and the knowledge base it has generated in its own schools, it contributes to the drafting of the legislation in the public sector on how to conduct audits and how to make these audits more effective. In addition to the support provided for the drafting of legislation, it also contributes to the efforts to provide the sector members and the public with correct and accurate information.

Annex 2: Information Requests

From the Ministry of Environment, Urbanization and Climate Change, and its Istanbul and Adana Directorates, Human Rights Watch and Citizens Assembly solicited documentation on licenses for plastic recycling facilities in Adana and Istanbul; license requirements; air quality data; inspection reports; and administrative fines for noncompliant facilities. Human Rights Watch and Citizens Assembly received a response from the Spatial Planning Directorate on June 21, stating that the Ministry had communicated our request to relevant departments of environmental management, environmental impact assessment, permitting, and inspections. The Guidance and Inspection Directorate also responded, stating our application was shared with the Permitting Division. Human Rights Watch and Citizens Assembly received a response from the Adana Directorate on July 27 noting that our information request was shared with the MoE in Ankara. On August 31, the General Directorate of Environmental Impact Assessment, Permitting and Inspection provided a detailed response with information on facility licensing, waste imports, and inspections. This response is provided below.

Human Rights Watch and Citizens Assembly requested from the Ministry of Education, and its Adana Directorate, documentation relating to health examinations and location data for schools near recycling facilities. A response was received on August 15 from the Ministry of Education and Adana Directorate noting that the Ministry of Education has not been involved in any procedures or official correspondences establishing plastic recycling facilities.

From the Ministry of Health, and its Istanbul and Adana Directorates, information requests were submitted seeking documentation of health data in Adana and Istanbul for illnesses relating to air pollution and toxic exposure, including cancer rates, asthma, respiratory illnesses, and children born with disabilities. On August 15, a response was received by the Adana Directorate of the Ministry of Health, but the response did not have any substantive answers. In another response from the Ministry of Health, delivered September 9, the ministry listed the most common cancer types in Adana and Istanbul, but they did not provide concrete data on the number of cancer cases or information about disease rates in neighborhoods with high numbers of plastic recycling facilities.

Human Rights Watch and Citizens Assembly requested documentation from the Ministry of Labor and Social Security on occupational health inspections in plastic recycling facilities, inspections of work permits, and data on the number of people working in the plastic recycling sector. A response from the Ministry received on July 19 stated that 102 inspections of plastic recycling centers had been conducted within the past five years. Of those 102 inspections, 26 facilities had been found in violation, and 382,531 liras in administrative fines were levied against facilities that were not in compliance with the applicable laws and regulations. This response is provided below.

Human Rights Watch and Citizens Assembly requested documentation from the Ministry of Commerce, and its Istanbul, Mersin, and Adana Directorates, of companies with import licenses and data on plastic waste imports to Turkey. On June 16, we received notice from the Ministry that our questions had been shared with the Turkish Statistics Institution, but at the time of writing we had not received any further follow up. On August 15, we received a response from the Adana Directorate noting that they did not have information to the questions in the information request.

Finally, Human Rights Watch and Citizens Assembly filed information requests with the Adana Metropolitan Municipality and Seyhan Municipality seeking documentation related to complaints, petitions, and responses to complaints by the municipality about the plastic recycling industry. Responses from the Seyhan Municipality of Environmental Protection received on July 27 and from the Seyhan Municipality Permits Division on July 28 did not respond to the questions posed in the information requests. The Adana Metropolitan Municipality Environment Division responded, stating our application was shared with the municipality's Public Relations Division, but no additional response was received at the time of writing.

Response from the Ministry of Environment, Urbanization and Climate Change to Human Rights Watch's Information Request, August 31, 2022

Republic of Turkey
Ministry of Environment, Urbanization and Climate Change
General Directorate of Environmental Impact Assessment, Permitting and Inspection

Number: [REDACTED]
Subject: The Application of Attorney Deniz Bayram on behalf of Citizens' Assembly and Human Rights Watch

Ms. Deniz Bayram
[REDACTED]

Re : a) Your petition dated 17/06/2022
b) Your petition dated 19/06/2022
c) Adana Provincial Directorate of Environment, Urbanization and Climate Change's letter dated 26/07/07 and numbered 123.

In your applications registered through your above mentioned petitions (a) and (b), certain information and documents were requested on behalf of Citizens' Assembly and Human Rights Watch regarding plastic recycling facilities, the functioning of such facilities and complaints made about such facilities in accordance with the Law No. 4982 on Access to Information..

As is known, the general procedures and principles regarding the management of wastes from generation to disposal without harming the environment and human health are established by the Waste Management Regulation prepared by our Ministry based on the EU Waste Framework Regulation and published in the Official Gazette dated 02/04/2015 and numbered 29314. In addition, the Regulation on the General Principles of Waste Pretreatment and Recovery Facilities prepared by our Ministry in order to establish the procedures and principles regarding the technical criteria of waste processing facilities which will operate for the purpose of processing wastes and the minimum conditions that must be present in these facilities, entered into force after being published in the Official Gazette dated 09/10/2021 and numbered 31623. With the said Regulation, the procedures and principles regarding the technical criteria of waste processing facilities that will operate for the purpose of processing wastes and the minimum conditions that must be present in these facilities have been determined and according to the said Regulation;

- All facilities are obliged to obtain an environmental license under the Environmental Permit and License Regulation published in the Official Gazette dated 10/09/2014 and numbered 2915.
- The general physical conditions, technical criteria, minimum number of departments/units and equipment that facilities must meet according to their field of activity in order to obtain an environmental license have been determined.
- Facilities are required to present a workplace opening and working license in accordance with the Regulation on Workplace Opening and Working Licenses.
- The facilities are required to comply with the provisions of the Regulation on Fire Protection of Buildings, which was put into force by the Council of Ministers Decision dated 27/12/2007 and numbered 2007/12937.
- The facilities are required to comply with the obligations imposed by the Regulation on Water Pollution Control published in the Official Gazette dated 31/12/2004 and numbered 25687, and all kinds of preventive measures defined in the relevant legislation against pollutants such as noise, dust and odor are required to be taken.

This document is signed with secure electronic signature.
[REDACTED]

Mustafa Kemal Mahallesi Eskişehir Devlet Yolu (Dumlupınar Boulevard) 9th Km. No.278
Çankaya/Ankara Phone: +90 (312) 4101000 Fax: +90 (312) 4192192
[REDACTED]

- Facilities are obliged to submit a closure plan in order to prevent potential negative environmental impacts after closure and to ensure proper management of waste at the facility.

Environmental Permit and License procedures of all recovery facilities, including plastic waste processing, pretreatment and plastic recovery, are carried out in accordance with the provisions of the Environmental Permits and Licenses Regulation, which entered into force after being published in the Official Gazette dated 10/09/2014 and numbered 29115. Depending on the subject of the license, the conditions and criteria to be met by the businesses, the information and documents required during the application for Temporary Activity Certificate and Environmental Permit and License Certificate, and the inquiries of the businesses that have received Temporary Activity Certificates and Environmental Permit and License Certificates (on the basis of the province where the enterprise operates, the subject of Environmental Permit and License and the waste codes approved to be admitted to the facility) can be made under the relevant headings in the Permit and License Procedures module of our Ministry's General Directorate of EIA Permitting and Inspection at <http://ced.csb.gov.tr>. On the other hand, current air quality data including PM 10 data for all provinces in Turkey can be accessed at <https://havaizleme.gov.tr/Services/AirQuality>.

The distance of recycling facilities to settlements, schools and similar places is evaluated by the relevant institutions (Municipalities, Special Provincial Administrations, etc.) during the process of obtaining the Non-Sanitary Establishment License. Prior to the Environmental Permit and License application, it is obligatory to obtain a letter of conformity from the Provincial Directorate of Environment, Urbanization and Climate Change of the province where the facilities are located. As a result of the on-site inspection carried out by the Provincial Directorate, if it is determined that the physical conditions mentioned in the relevant legislation to which the enterprise in question is subject are met and that they have a Zero Waste Basic Level Certificate or exemption according to the lists in the Zero Waste Regulation published in the Official Gazette dated 12/7/2019 and numbered 30829, a letter of conformity is issued by the Provincial Directorate via the e-permit system within two months from the date of application. In accordance with the provisions of Article 7, Paragraph 4 of the Environmental Permit and License Regulation; the operator and in cases where the transactions are carried out through service procurement, the authorized environmental consultancy firm, are responsible for the accuracy and compliance of the information, documents and reports submitted to the competent authorities in the Environmental Permit and License Application, and for the legal consequences thereof.

According to the Environmental Law No. 2872 in force since 09/08/1983, the import of hazardous wastes into Turkey is prohibited and only some non-hazardous wastes that do not pose an environmental risk and have economic value through recycling can be imported provided that the criteria specified in the sub-legislation are met. Import of wastes that cannot be recovered in Turkey and wastes for disposal purposes are not allowed.

Some non-hazardous wastes with economic value can be imported within the framework of the Communiqués issued in accordance with the Environmental Law. These communiqués are revised and published every year by the Ministry of Trade by taking the opinion of our Ministry. Import of wastes is regulated by the "Communiqué on Import Control of Wastes Controlled for the Protection of the Environment (Product Safety and Inspection: 2022/3)". In the relevant Communiqué, the HS code numbers of the wastes whose import is subject to import control are given in Annex-1, the HS code numbers of the wastes whose import is prohibited in Annex-2/A and the waste codes of the wastes whose import is prohibited in Annex-2/B (Annex-4 of the Waste Management Regulation). Non-hazardous wastes, which are allowed to be imported in a controlled manner with the aforementioned communiqué, can be imported provided that a certificate of conformity is obtained from our Provincial Directorates of Environment, Urbanization and Climate Change. These non-

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hazardous wastes can be imported with the Waste Importer Registration Certificate obtained from our Ministry, by industrialists who have recycling facilities that have obtained environmental permits and licenses or temporary activity certificates from our Ministry.

In 2021, imports of plastic groups other than PET, PS, PVC, PP and mixed plastics have been banned. In addition, materials coded "15 01 06 - Mixed packaging," "16 01 19 - Plastic," "17 02 03 Plastic" are also considered as "potentially risky wastes" and their imports are banned. The import of "07 02 13 - Waste Plastic," "15 01 05 - Composite Packaging" and "19 12 04 - Plastics and Tires" coded wastes are only allowed under certain HS code numbers. The import of wastes defined as "12 01 05-Plastic chips and burrs," "15 01 02 Plastic packaging" and "20 01 39-Plastics" whose origin and quality can be traced and verified is conditionally permitted.

Before the customs procedures of the wastes to be imported are started, conformity inspections of some non-hazardous wastes (plastic, paper, glass, etc.) within the scopes of the "Communiqué on Import Inspection of Wastes Controlled for the Protection of the Environment" and the "Waste Import Implementation Circular" issued by our Ministry, are carried out by the expert personnel of our Provincial Directorates at the relevant border customs. Within the scopes of the aforementioned Communiqué and Circular, wastes can only be imported from 27 specialized (border) customs where radiation panels are located. Our 17 Provincial Directorates conduct inspections at the said customs administrations and approve their conformity.

In accordance with the provisions of the Environmental Law No. 2872 and other applicable legislation issued pursuant to this Law, companies in the waste recycling sector and waste processing facilities in the entire waste management process from the collection, transportation and recovery of both the wastes allowed to enter the country within the scope of the import permit issued only for recycling purposes and other wastes within the country, to the disposal of the residual wastes that arise as an inevitable result of the process, as well as recycling facilities where the wastes arrive, are continuously monitored and audited by the inspection staff of our Ministry and 81 Provincial Directorates within the scope of sudden, complaint-based or combined inspection programs, including inspections at specialized (border) customs control points in 17 provinces where there is a border customs office where the wastes will enter the customs territory of Turkey. Administrative sanctions are imposed on all real or legal entities and individuals who are found to carry out recycling activities in violation of the legislation in accordance with the relevant articles of the Environmental Law, and the Temporary Activity Certificates/Environmental Permit and License Certificates of such businesses are canceled and their activities are suspended. In addition, criminal complaints are filed with the Public Prosecutor's Office against businesses/persons found to have polluted the environment in accordance with the relevant provisions of the Turkish Penal Code.

In this context, 29,932 inspections have been carried out for waste disposal and recycling facilities since 2018, and businesses found to be operating in violation of the Environmental Law have been imposed a total of TL343.539.013,13 in administrative fines. In the same period, 208 facilities' activities were suspended. In this respect, inspections of waste recycling facilities continue with determination.

For your information,

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Distribution:
Attention: Ms. Deniz Bayram [REDACTED]
Information: Directorate of Guidance and Inspection; Adana Governorship (Provincial Directorate of Environment, Urbanization and Climate Change).

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Response from the Ministry of Labor and Social Security to Human Rights Watch's Information Request, July 19, 2022

MINISTRY OF LABOR AND SOCIAL SECURITY
 Presidency of Guidance and Auditing

19.07.2022

Number: [REDACTED]
 Subject: Document requests regarding labor audits about occupational diseases and workplace health and safety.

Dear Deniz Bayram, Counselor at Law
 [REDACTED]

Re: Your letter dated 06.07.2022 and numbered E-92097133[042]-14572

As is known, labor audits refer to all research, investigation and inspection activities carried out on behalf of the state regarding the implementation of all the provisions of the legislation relevant to working conditions and environment including working hours, wages, occupational health and safety, employment of children and youth, undeclared work, unemployment, employment and labor markets. Labor audits consist of two main divisions: scheduled audits” and non-scheduled audits consisting of *ad hoc* inspections.” Scheduled audits are audits carried out in order to monitor the implementation of the provisions of legislation relevant to work life in specific areas or sectors determined through the evaluation and prioritization of problems in work life, or in particular workplaces determined through the targeting of a specific risk group. Non-scheduled audits consisting of *ad hoc* inspections, on the other hand, are carried out upon the receipt of specific complaints or denunciations or upon the inclusion in our auditing program of those documents received by our agency which are compatible with our auditing services.

- Factors that contribute to the formation of occupational diseases are among the issues examined by our agency within the framework of our scheduled audits carried out in workplaces operating in the mining, chemical and metal industries. Statistical data on the audits carried out in these industries in 2017, 2018, 2019, 2020 and 2021 are as follows:

MINING					
Year	Audits			Administrative Fines	
	Scheduled	Non-scheduled	Total	Number of recommended workplaces	Amount
2017	1318	249	1567	604	14508489
2018	752	222	974	270	9727605
2019	8	144	152	24	870726
2020	2	99	101	19	460121
2021	903	98	1001	337	20084216

METAL		
	Audits	Administrative Fines

METAL					
Year	Scheduled	Non-scheduled	Total	Number of recommended workplaces	Amount
2017	752	923	1675	502	4443489
2018	3758	610	4368	752	7289198
2019	132	666	798	111	1154421
2020	620	437	1057	164	2524849
2021	6248	440	6688	946	15230497

CHEMISTRY					
Year	Audits			Administrative Fines	
	Scheduled	Non-scheduled	Total	Number of recommended workplaces	Amount
2017	572	249	821	269	2596759
2018	917	196	1113	229	2270461
2019	21	171	192	21	733423
2020	433	113	546	110	2580804
2021	1464	147	1611	275	6567034

2. The data of the audits carried out by our agency between 01.01.2013 and 29.06.2022 regarding the recycling operations covered by the codes 38.11, 38.12, 38.21, 38.22 and 38.32 found in the Nace Rev 2 6-code query are as follows: A total of 280 scheduled audits regarding work execution and occupational health and safety have been carried out in workplaces included in the above mentioned Nace codes. Apart from this a total of 709 non-scheduled audits regarding work execution and occupational health and safety have been carried out in work places included in the above mentioned Nace codes. In these audits a total of 117.229 workers have been reached.

3. The answer to this question was covered in the answers to the first and second questions above.

4. According to the Social Security legislation, the registration of workplaces and their operations, as well as the social insurance of their employees are within the purview of the Presidency of the Social Security Agency. In cases where our agency detects unregistered workers during an audit, we notify the the Social Security Agency in accordance with the relevant legislation to take action. Accordingly, the statistical data in question should be requested from the Presidency of the Social Security Agency.

5. In the last 5 years, our agency carried out audits in regard to occupational health and safety at 102 workplaces involving the codes 38.11, 38.12, 38.21, 38.22 and 38.32 found in the Nace Rev 2 6-code query and we recommended to impose administrative fines amounting to a total of 382.531 TL on 26 workplaces.

For your information.





While often touted as the most effective way to manage plastic waste, plastic recycling involves significant risks that governments need to manage to protect human rights. Plastics, being made of fossil fuels and chemical additives, release hazardous air pollutants and toxins when recycled, posing a threat to the right to health.

“It’s As If They’re Poisoning Us” documents how workers in and people living nearby plastic recycling facilities in Turkey are experiencing serious health impacts linked to toxic pollution. The report records workers’ and residents’ experiences of health issues, including respiratory problems, severe headaches, and skin ailments. Many workers worked without protective equipment and had little to no access to medical treatment for occupational illnesses. Plastic recycling facility workers often come from the most vulnerable populations in Turkey and include children, refugees, and undocumented migrants.

In violation of Turkey’s domestic regulations, many of the facilities Human Rights Watch visited in districts of Istanbul and the southern city of Adana were in close proximity to residential housing, threatening the health of local communities. Turkish authorities and recycling companies are not providing adequate information about the risks from toxic exposure from plastic recycling or how to mitigate those risks. The Turkish government is not enforcing laws and regulations that require regular and thorough facility inspections, occupational health measures, and strict licensing of plastic recycling facilities. Plastic recycling in Turkey is not simply a domestic concern. Since 2018, a significant amount of plastic waste intended for recycling has been imported from the European Union, exacerbating the impacts of plastic recycling on people in Turkey.

Human Rights Watch calls on the Turkish government to act on its human rights obligations, particularly with respect to the rights to health and a healthy environment, and ensure that workers and nearby residents are protected from the risks of plastic recycling. This should include enforcing relevant environmental and occupational health regulations, improving access to air and water quality data, ensuring that facilities are not located near housing, and enforcing the prohibition on child labor in recycling facilities. Human Rights Watch also calls on individual exporting countries and the European Union to halt the export of plastic waste to Turkey.

(above) Illegally dumped plastic waste, including imported European plastic waste imports, near a residential neighborhood in Sultangazi, Istanbul, Turkey.

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(front cover) A woman works at a recycling facility, where plastic is sorted, shredded, washed, melted, and turned into pellets in Istanbul, Turkey on December 2, 2021.

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