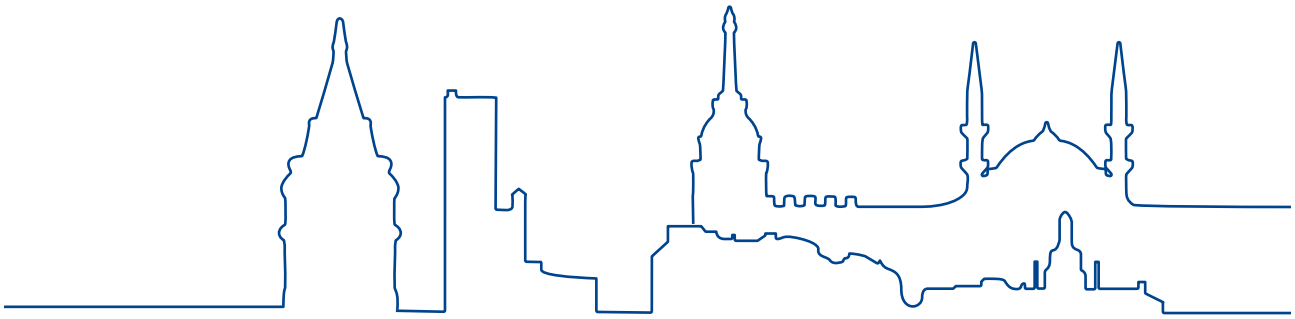

IPC–MERCATOR POLICY BRIEF June 2026

TÜRKİYE'S PLASTIC WASTE IMPORTS: ENVIRONMENTAL RISKS AND POLICY OPTIONS

Sedat Gündoğdu

Executive Summary

In recent years, Türkiye has become one of the main destinations for Europe's plastic waste. This trend is often justified as a way to support recycling capacity and meet the demand for raw materials. However, available evidence shows that plastic waste imports create serious environmental, social, and governance risks. Türkiye already faces major challenges in managing a large share of its own municipal waste. Imported plastic waste adds further pressure to this already fragile system. This policy brief examines the plastic waste trade not only as an economic activity but also as a form of pollution transfer, an environmental injustice, and an ecological security risk. A review of the Basel Convention, the EU Waste Shipment Regulation, and Türkiye's current waste management rules shows that important gaps remain in enforcement, traceability, and data transparency, despite the existence of a legal framework. Plastic waste imports also intensify pollution from recycling facilities. Microplastic discharges, illegal dumping, open burning, and fires at recycling sites create long-term risks for water, soil, air, and the food chain. These risks show that Türkiye needs to move away from a recycling model that depends on imported plastic waste. To reduce these risks, Türkiye should gradually phase out plastic waste imports, establish real-time mass-balance tracking, strengthen independent inspections, and give priority to domestic waste reduction, reuse systems, and deposit return schemes designed around reuse and refill.

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Introduction

Global plastic production was about 1.5 million tons in 1950. By 2025, it had exceeded 450 million tons.[1] If current trends continue, production is expected to double by 2045.[2] About 99% of plastics are made from fossil fuels, and plastic production is responsible for a significant share of greenhouse gas emissions. It is estimated that plastic production could use one-fifth of the global carbon budget by 2050.[3] When this rapid growth is combined with inadequate waste management, the impacts become more severe. Around 8 million tons of plastic leak into the oceans every year, ecosystems are increasingly affected by microplastics, and toxic chemicals enter the food chain.[4] The fact that only 9–10% of all plastics ever produced have been recycled shows that the problem is too large to be solved by recycling alone.[5]

Although recycling is still being presented as the main solution to plastic pollution, it has limited effectiveness against such a multidimensional and structural problem. This can be explained less by technical capacity than by socio-economic, political, and discursive factors.[6] This approach shifts environmental responsibility from production systems to individuals and makes structural problems less visible. It also allows the petrochemical and packaging industries to continue operating without requiring a reduction in plastic production. Further production growth is often legitimized through the language of the circular economy. At the same time, recycling is used as a form of technological solutionism. It presents complex environmental processes as technical problems that can be managed. For policymakers, this creates the impression that action is being taken without requiring direct conflict with industry. Recycling is also attractive because it can be reported through simple quantitative indicators, such as recycling rates. However, this approach does not adequately address the formation of microplastics, the circulation of plastic chemicals, or downcycling, whereby the resulting product is lower in quality and less chemically stable.

As a result, recycling often functions as an illusion of a solution. It delays the structural changes needed to address the plastic crisis and weakens more effective strategies such as reduction and reuse. One major outcome of this illusion has been the growth of the global waste trade. Countries mostly located in the Global North export the plastic waste they generate to countries that have become pollution havens, often in the Global South. By doing so, they avoid social and environmental costs and increase the distance between themselves and their waste. In many cases, these waste flows also follow historical routes of colonial extraction and dependency.[7]

This policy brief assesses Türkiye's plastic waste import policy from environmental, economic, and social perspectives. It examines the historical background of waste imports, global and national legal frameworks, the toxic impacts of imported waste on local ecosystems, structural gaps in inspection and enforcement mechanisms, and the possible implications of the EU Waste Shipment Regulation for Türkiye.

Basel Convention, Waste Colonialism and Pollution Transfer

Many studies have shown that the plastic waste trade can cause serious environmental damage and reduce social well-being. These impacts are linked to weak regulatory enforcement in exporting countries and inadequate waste management infrastructure in importing countries.[8] Historically, waste trade has been understood as a form of

waste colonialism, ecological imperialism, and environmental injustice. It has also often been associated with illegal activities.[9]

High-profile cases in the history of waste trade, such as the *Khian Sea* case and the Koko Beach case (see Box 1), clearly exposed the injustices created by this trade. These cases increased international awareness of the global movement of waste and strengthened calls for reform. In this context, the Basel Convention on the transboundary movement of hazardous waste was adopted in 1989.[10] The Convention initially focused on industrial "hazardous" wastes. However, as illegal activities involving electronic and plastic waste became more visible, it was later revised to include these and similar post-consumer waste streams. Even so, it took a long time for the Convention to fully address plastic waste.[11]

BOX 1: THE *KHIAN SEA* AND KOKO BEACH CASES

The Khian Sea case was a global scandal that began in 1986, when the ship *Khian Sea* left Philadelphia in the United States carrying 14,000 tons of incinerator ash and failed to find a legal place to unload it. The waste was first rejected by the Bahamas. It was later dumped in Haiti under the label of "fertilizer," while the remaining waste was illegally discharged by the ship into the Atlantic and Indian Oceans. This case caused strong international outrage against the practice of developed countries dumping hazardous waste in developing countries. It is widely seen as one of the key turning points that led to the negotiation of the Basel Convention in 1989.

The Koko Beach case took place in the late 1980s in the port town of Koko in Nigeria. Italian companies illegally dumped thousands of barrels of hazardous toxic waste on a local site. This scandal was included in Greenpeace's International Trade in Wastes inventory. Because the waste was dumped near agricultural land and settlements, creating serious public health risks, the case played an important role in bringing the concept of "toxic colonialism" into the literature. Cases such as *Khian Sea* and Koko Beach also pushed regional organizations, including the Organization of African Unity, to demand stronger measures against waste imports. They later helped create the political ground for the Bamako Convention at the continental level.

In May 2019, the Basel Convention was significantly amended through specific changes targeting plastic waste.[12] These amendments clarified which types of plastic waste are subject to the prior informed consent procedure, known as PIC, under the Basel Convention. Mixed plastic waste, classified under code Y48, became subject to the PIC procedure. Some exemptions were allowed for plastic waste classified under code B3011, i.e., waste that is separated by polymer type, intended for recycling, and almost free from contamination. These amendments, supported by 186 countries including Türkiye, also helped create the basis for stricter plastic waste shipment rules within the EU and OECD.[13]

The EU Waste Shipment Regulation

The revised EU Waste Shipment Regulation introduces a full ban on the export of plastic waste coded as Y48 to non-OECD countries from 2026 onward.[14] The new Regulation, No. 2024/1157, was published on April 30, 2024, and entered into force on May 20, 2024. Most of its main provisions will apply from May 21, 2026. With this regulation, the EU aims to ensure that waste generated in the EU and subject to shipment is exported only when it can be managed in an environmentally sound manner (ESM). It also aims to strengthen action against illegal waste trade. The new regulation introduces a ban on plastic waste exports to non-

OECD countries, stricter rules for OECD countries such as Türkiye, ESM requirements, and digital tools to combat illegal trade.

The regulation will fully ban all plastic waste exports to non-OECD countries as of November 21, 2026. However, it also allows non-OECD countries to apply to import non-hazardous plastic waste provided that they can prove that they are able to manage such waste in an environmentally sound manner and that these imports will not harm their own domestic waste management systems. As of February 21, 2025, the countries that applied and gave such guarantees for importing non-hazardous waste from the EU after May 21, 2027, were Bangladesh, Bosnia and Herzegovina, Egypt, El Salvador, India, Indonesia, Kazakhstan, Malaysia, Moldova, Monaco, Morocco, Nigeria, North Macedonia, Pakistan, the Philippines, Saudi Arabia, Serbia, Singapore, Taiwan, Thailand, Togo, Tunisia, Ukraine, and Vietnam.[15]

This situation raises concerns about the effectiveness of the ban on exports to non-OECD countries. There is no clear public information showing that these countries have adequate waste management infrastructure or publicly available plans to address irregular and improper waste processing practices. This means that enforcement will remain a decisive factor in the trade. Since weak inspection and enforcement capacity is a chronic problem among importing countries, there is a risk that the new regulation may remain ineffective in practice. At the same time, waste imports place an additional burden on the capacity needed to manage domestically generated waste. This may further increase the disposal of national waste in landfills, its transfer to incineration facilities, or its uncontrolled release into the environment.

Another key element of the EU Waste Shipment Regulation is the PIC procedure. From May 21, 2026, all plastic waste shipments to OECD countries, including Türkiye, will be subject to the PIC procedure, regardless of the type of plastic waste. Under this procedure, the content of the material to be imported must first be shared by the exporting country with the importing country for approval. The shipment can take place only if permission is granted.

However, this system still carries the risk of document manipulation. The EU recognizes this risk and plans to closely monitor OECD countries that import large amounts of plastic waste. If there is evidence that the waste is not being managed in an environmentally sound manner, the EU may suspend exports. This shows that independent civil society monitoring can play an important role in this area. Opening and supporting this space would be one way to make the regulation more effective.

In the EU regulation, independent control is mainly framed through independent and accredited third-party audits. The proposed audit system is expected to include physical inspections by accredited auditing companies at least every two years. This may limit the impact of the legal framework. Accreditation is the main condition for those who will carry out the audits, but it is not clear how these auditors themselves will be monitored or according to which criteria. In addition, setting the physical inspection frequency at two years may not be sufficient to bring a waste trade with high risks of illegality under effective legal control.

The ESM standards proposed under the EU Waste Shipment Regulation require importing facilities to prove that they provide a level of protection equivalent to EU law. However, it remains unclear how practical the proposed ESM requirements will be, including mass-balance data, measures to reduce greenhouse gas emissions, and transparent trace-

ability systems. Mandatory digitalization may help reduce some practical difficulties. Yet the general lack of transparency in the sector remains a major factor that limits traceability.

To combat illegal trade through digitalization, the EU has created the Digital Waste Shipment System (DIWASS). This online system will allow all notifications and documents to be exchanged electronically. The EU plans to make DIWASS fully operational on May 21, 2026. In addition, the European Anti-Fraud Office (OLAF) has been given authority to investigate illegal cross-border waste shipments, carry out inspections, and coordinate with national authorities. In short, the new regulation aims to move beyond paper-based declarations and make physical inspection and transparency a requirement.

However, measures proposed under the new EU Waste Shipment Regulation, such as independent audits, the PIC procedure, ESM requirements, and certification processes, may still remain largely on paper. This is a serious risk because illegal waste trade is often driven by low risk and high profit. Current tracking systems, such as Türkiye's Mobile Hazardous Waste Tracking System, cannot monitor waste flows inside facilities. In addition, inspectors may be exposed to local pressure or corruption. Under these conditions, even the most prestigious certificates can become legal shields that hide illegal activities.

The 2B Plast case is one of the clearest examples of this structural inspection weakness in global waste trade. It shows how paper-based declarations can be completely different from the reality on the ground.[16] The 2B Plast facility in Düzce has been approved and certified by German authorities as a high-technology facility capable of recycling under ESM standards. However, in 2021, an inspector found by chance that the facility had actually closed months earlier but was still receiving plastic waste from Germany. This scandal showed that even high-level international certificates may fail to confirm whether a facility is actually operating.

The case also had unresolved consequences. The waste held at customs could not be returned to Germany, and its final fate remained unclear. More broadly, the 2B Plast case shows how waste trade can operate through a paper-based illusion created by local consultancy firms and bureaucratic procedures. It also confirms that the mandatory audits expected to enter into force in 2027 under the new EU Waste Shipment Regulation may become a legal shield for illegal activities if they assess facilities in isolation from their wider infrastructure and real operating conditions.

For this reason, the 2B Plast case shows why GPS tracking up to the facility gate, as in systems such as the Ministry of Environment, Urbanization and Climate Change's Mobile Hazardous Waste Tracking System (MoTAT), is not enough. Every kilogram of waste inside the facility must be tracked through a digital mass-balance system until it becomes a final product or verified residual waste. 2B Plast is a sign of systemic failure. It shows that imported waste can be abandoned in the environment through ghost facilities while still being presented as recycling.

Türkiye's Plastic Waste Governance

Türkiye has become an important actor in the global plastics market. In terms of plastic processing capacity, it ranks second in Europe after Germany and sixth or seventh in the world. According to 2025 data, Türkiye produced 10 million tons of plastic products, while 80% of the raw materials used in this production depended

on imports. Of this total production, 8 million tons were consumed in the domestic market.[17]

Türkiye generates around 32–33 million tons of municipal waste each year.[18] Plastics are estimated to account for 8–13% of this waste, corresponding to approximately 3.3 million tons of plastic waste.[19] In terms of per capita waste generation, Türkiye has reached levels comparable to developed OECD countries. However, its waste management infrastructure does not have sufficient capacity to manage this burden effectively.[20] Lebreton and Andrady[21] estimate that Türkiye will generate around 34.5 million tons of municipal waste in 2030, 38 million tons in 2040, and 40 million tons in 2060.[22]

The constitutional basis for waste management in Türkiye is Article 56, which states that everyone has the right to live in a healthy and balanced environment. The main legal framework is set by Environmental Law No. 2872 of 1983, which was amended significantly in 2006, 2018, and 2020. More recent regulations are also central to Türkiye's circular economy targets. These include the Zero Waste Regulation, which entered into force in 2019; the Packaging Waste Control Regulation of 2021; and the National Waste Management Action Plan for 2023–2035 (Figure 1).

However, despite the existence of this legal framework, 80–90% of municipal waste is still sent to sanitary landfills or left in uncontrolled dumping sites. This shows a major gap between regulation and implementation. There are also serious problems of transparency and methodology in Türkiye's recycling data. Official figures are often based on estimates rather than scientific measurements. According to ministry statements, the municipal waste recovery rate increased from 13% in 2017 to 30% in 2022 and was projected to reach 36% in 2024, corresponding to about 700,000 tons.[23] However, the World Bank reported Türkiye's recycling rate as 11.9% for 2022.[24] Field studies

Figure 1. Schematic representation of the proposed waste governance system in Türkiye

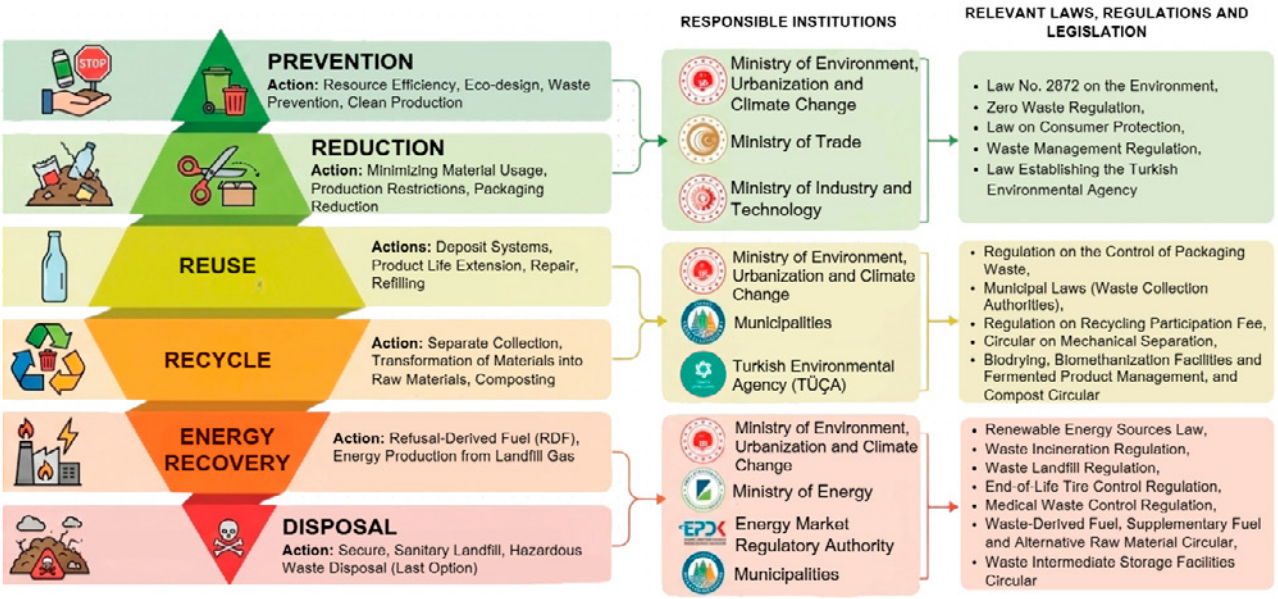
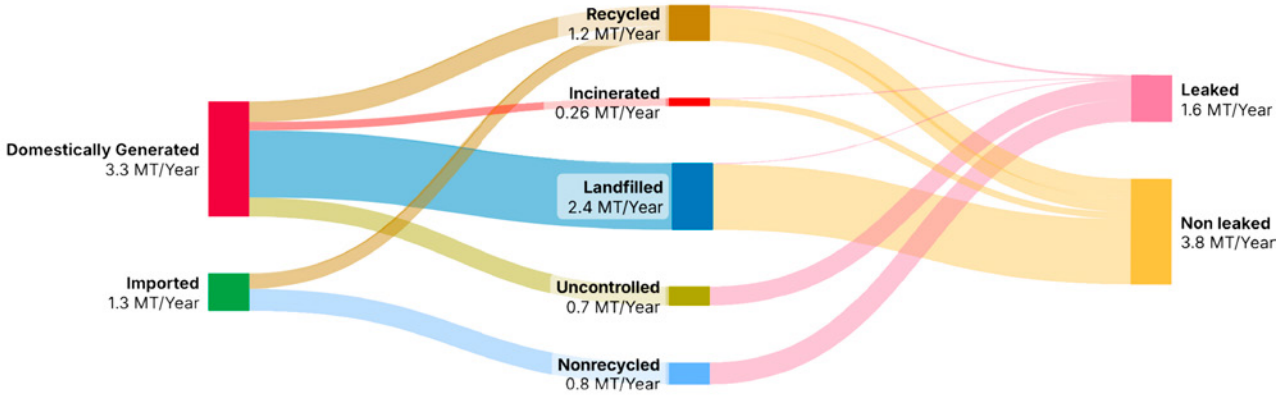


Figure 2. Sankey diagram showing the distribution of plastic waste in Türkiye by source, domestic and imported, and by disposal method, including leakage flows into the environment. (For a detailed explanation of the imported data, see the note at the end of the document)



and several media reports also support this lower estimate.[25] This places Türkiye among the OECD countries with the lowest waste recovery rates.

Although there is no clear statistical figure for the number of plastic recycling facilities in Türkiye, waste statistics published by TurkStat show that there were 2,934 licensed waste recovery facilities in 2024.[26] According to the e-permit database of the Ministry of Environment, Urbanization and Climate Change, 1,263 of these facilities operate in the recovery of plastic-related waste.[27] The total plastic recycling capacity of these facilities is estimated to be around 1.125 million tons.[28]

Based on ministry statements and TurkStat statistics, Türkiye faces an annual plastic waste burden of approximately 4.6 million tons when domestically generated and imported plastic waste are considered together. Under all statistical assumptions, around 1.6 million tons of this waste is estimated to leak directly into the environment each year (Figure 2).

In Türkiye, municipalities are a central part of waste management. However, the complex structure of the regulations makes waste governance difficult. This complexity is mainly linked to the division of responsibilities created by the metropolitan municipality system. Municipal Law No. 5393 defines the main duties, powers, and responsibilities of municipalities. Metropolitan Municipality Law No. 5216 regulates the administrative structure and legal status of metropolitan municipalities. These laws define responsibilities for the collection, transport, transfer, recovery, and disposal of solid waste.

In metropolitan provinces, these responsibilities are assigned to metropolitan municipalities. District municipalities within metropolitan provinces collect waste in their own areas and transport it to transfer stations designated by the metropolitan municipality. Metropolitan municipalities are then responsible for managing and disposing of this waste in line with the relevant regulations. In non-metropolitan provinces, responsibility lies mainly with district municipalities and provincial municipalities. However, provincial municipalities do not have the same role as metropolitan municipalities. Solid waste unions have also been established as an alternative model, but their effectiveness remains contested.

This fragmented structure creates practical difficulties in waste management. Although

Türkiye has made progress in building solid waste management facilities, administrative and technical capacity remains insufficient. As a result, uncontrolled dumping continues, especially in districts of non-metropolitan provinces. These areas also create a chronic fire risk. Similar problems can also occur in metropolitan provinces, as seen in the case of Kocaeli. According to 2025 data, one in every ten fires responded to by the fire department, corresponding to 1,263 cases, was directly related to garbage and waste fires.[29]

The main environmental cost of these fires is the release of hazardous emissions. These include black carbon, a super pollutant, and carcinogenic substances such as dioxins and furans, which can reach levels 50–60 times higher than normal when plastics burn. These gases and particulate matter increase the risk of asthma, chronic obstructive pulmonary disease, and cancer among nearby communities. In addition, the large volumes of water and chemicals used during firefighting can dissolve heavy metals in the waste mass and carry them into groundwater and surface waters.[30]

Türkiye's inadequate waste management infrastructure has also created an informal waste collection economy. As a result, solid waste management and recycling processes in Türkiye depend to a large extent on waste pickers, who operate outside the formal system. Waste pickers recover materials that municipalities and licensed companies either cannot reach or do not collect because sorting is too costly. In this way, they make an important contribution to separate collection rates in Türkiye.

Since the 1980s, informal waste picking has become a main source of income and an urban survival strategy for Kurdish communities who migrated internally. In recent years, it has also become an important livelihood for Syrian and Afghan asylum seekers. Although the work is mostly male-dominated, women and children also take part, especially in the sorting and baling of waste in household yards.

Waste pickers search the streets for an average of 10–12 hours a day with handcarts known as *çekçek*. They face serious health risks, including cuts from rusty metals, chemical exposure, and orthopedic problems caused by carrying heavy loads. They also face social exclusion. In the dual structure of informal and formal waste systems, waste pickers depend on intermediate storage sites known as *ardiye* and on middlemen. They receive the lowest income in an unequal system where prices are set by the market.

At the social level, waste pickers are often stigmatized because their work is seen as dirty. They may be labelled as thieves or beggars and remain among the invisible and marginalized groups of the city. Conflicts over the ownership of waste create constant tensions between public authorities, licensed companies, and informal waste pickers. Bans and heavy penalties increase insecurity among waste pickers instead of improving the system.

In practice, waste pickers are one of the few functioning parts of Türkiye's weak waste management system. They reduce the environmental impacts of plastics by taking recyclable materials from bins and moving them into their own value chain. However, their economic situation is highly dependent on changing material prices. It is estimated that there are more than 500,000 waste pickers in Türkiye. When major actors in the sector manipulate material prices through waste imports, waste pickers are pushed away from collecting plastics and toward more valuable materials such as aluminum and paper. This reduces the share of plastic waste entering the value chain.

Türkiye's Waste Imports and Plastic Pollution

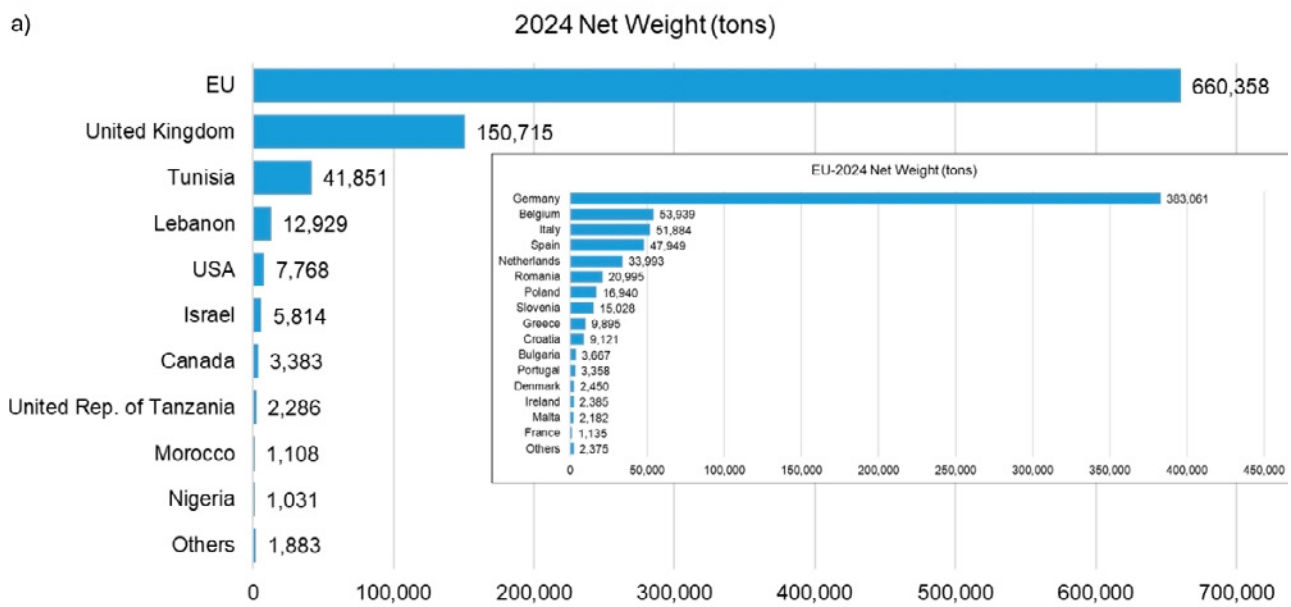
Waste Imports and Data Democracy

China's ban on the import of many types of plastic waste at the end of 2017 is widely seen as a turning point for Türkiye's plastic waste imports.[31] In the six years before China's import ban, Türkiye imported a total of 189,259 tons of plastic waste from the EU and ranked ninth among the EU's plastic waste export destinations. After the ban, however, Türkiye began to import three times this amount on an annual basis alone.[32] Plastic waste imports rose sharply to 437,000 tons in 2018 and reached approximately 1.29 million tons in 2024 (These figures were taken from a presentation by the Ministry of Trade of the Republic of Türkiye. Since the presentation was updated after this study was published, the data may differ. Please read the note at the end of the document for further details).

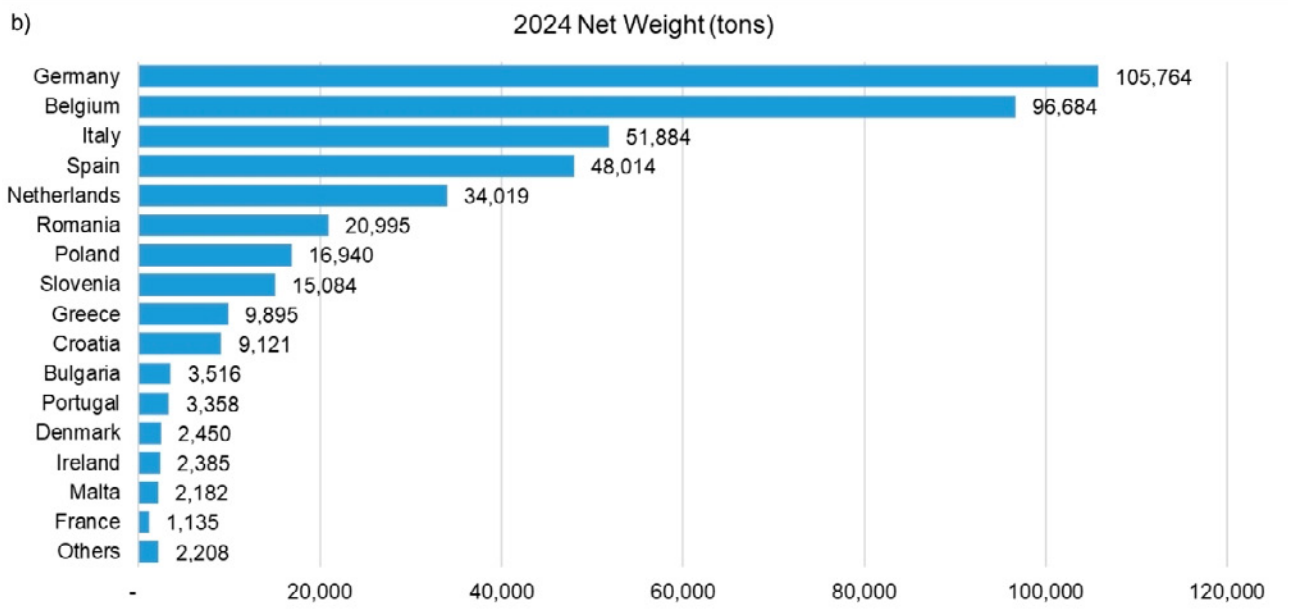
However, the consistency of these data is contested because there is no effective data monitoring policy. At the global level, several open sources can be used to track waste trade data. The main source is the UN Comtrade database, which publishes United Nations trade statistics. Another key source is Eurostat, the statistical database of the European Union. In addition, some civil society organizations, such as Basel Action Network, and industry organizations, such as the Turkish Plastics Manufacturers Research, Development, and Education Foundation (PAGEV), publish data compiled from different sources. A comparative presentation of these data is provided in Figure 3.

As shown in Figure 3, the UN and the EU report different figures for plastic waste exports to

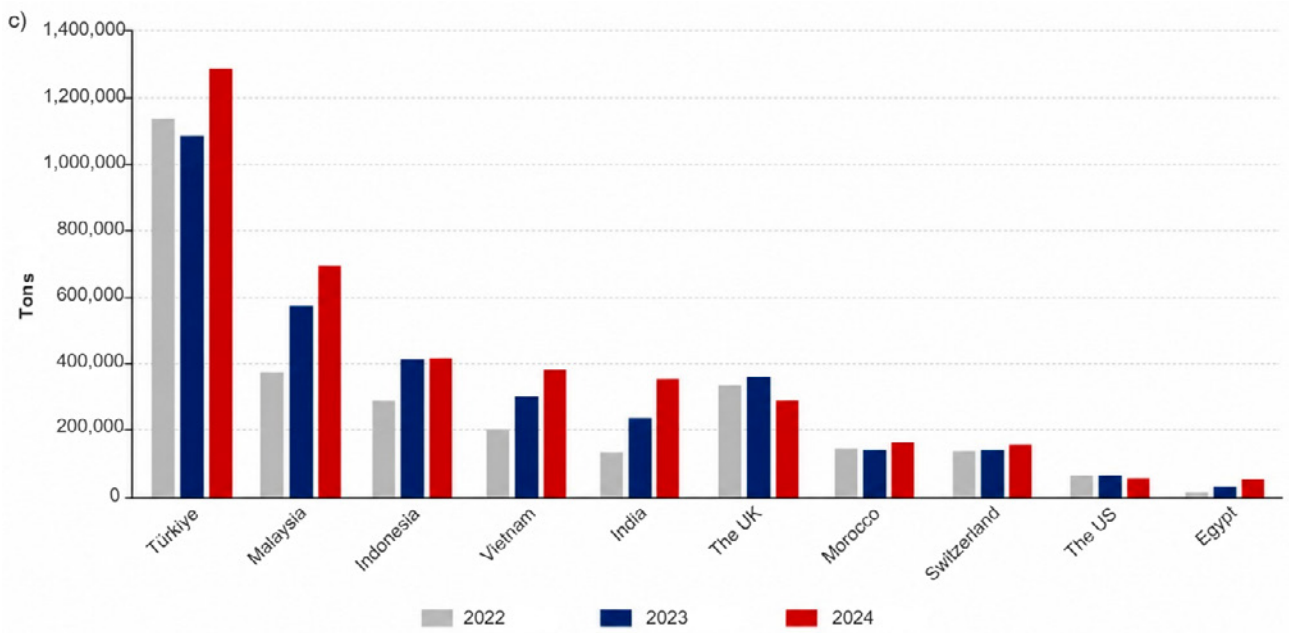
Figure 3. Tonnage of HS 3915 coded plastic waste exported from the EU and other countries to Türkiye for 2024, according to different databases providing waste trade statistics data: a) UN Comtrade, b) EU Eurostat, c) Turkish Ministry of Trade. (This chart, provided by the Ministry of Trade of the Republic of Türkiye has been updated since this study was published. For a detailed explanation, see the note at the end of the document.)



b)


2024 Net Weight (tons)
Germany 105,764
Belgium 96,684
Italy 51,884
Spain 48,014
Netherlands 34,019
Romania 20,995
Poland 16,940
Slovenia 15,084
Greece 9,895
Croatia 9,121
Bulgaria 3,516
Portugal 3,358
Denmark 2,450
Ireland 2,385
Malta 2,182
France 1,135
Others 2,208
- 20,000 40,000 60,000 80,000 100,000 120,000

c)


Tons
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
Türkiye
Malaysia
Indonesia
Vietnam
India
The UK
Morocco
Switzerland
The US
Egypt
2022
2023
2024

Türkiye. Similar differences can also be seen in the data published by the Basel Action Network, a civil society organization that shares plastic waste trade data with the public. Basel Action Network reported that the EU exported 426,000 tons of plastic waste to Türkiye in 2024.[33] By contrast, PAGEV, the lobbying organization of the Turkish plastics industry, reported that Türkiye imported 677,700 tons of plastic waste under HS code 3915 (primarily discarded and recycled plastics used in manufacturing, recovery, and waste management facilities) in the same year.[34] This figure is broadly consistent with UN Comtrade data, although there is still a difference of around 17,000 tons.

An even more striking figure was presented and subsequently amended after this report was published (see the note at the end of the document for a detailed explanation) by the Turkish Ministry of Trade at a workshop held in Ankara on December 12, 2025, under the European Commission's Technical Assistance and Information Exchange (TAIEX) program. The workshop focused on the implementation of the EU Waste Shipment Regulation, inspections of destination facilities, and shared challenges in waste shipments between the EU and Türkiye. In the presentation delivered by the ministry, Türkiye's plastic waste import figure for 2024 was given as 1.29 million tons. These inconsistencies make the traceability of the plastic waste trade more difficult.

Differences between Eurostat, UN Comtrade, and national statistics are mainly caused by methodological definitions, reporting timelines, gray areas in customs declarations, and a lack of transparency. In waste trade, the scope of customs codes, or HS codes, can differ across databases. Time lags between the export date recorded by the sending country, the import date recorded by the receiving country, and the reporting date can also create inconsistencies. Re-export processes further complicate the figures.

Some differences are technical. For example, low-tonnage transactions may fall below reporting thresholds. However, there is also a more systemic problem. Dirty or prohibited waste may be declared under incorrect codes or presented as raw material. This widens the statistical gap and makes the trade harder to monitor.

This systemic problem also weakens the effectiveness of the Basel Convention. The PIC procedure under the Basel Convention has created practical difficulties in distinguishing which plastic wastes fall under the B3011 code and which fall under the Y48 code. This has allowed exporters to label waste as B3011 and shift responsibility to governments.

As a result, the codes declared by the exporting side and the codes recorded by the importing side may not match. Because of different classification practices, some waste streams may not always be recorded under the correct waste category. These include textile plastics, synthetic rubbers, plastics mixed into paper bales, and waste shipped for fuel production.

Plastic Pollution in Türkiye

The inefficiency of Türkiye's local waste collection system has turned plastic pollution from a waste management problem into a chronic pollution crisis affecting all ecosystem compartments, including water, soil, air, and biota.[35] Around 90% of municipal waste in Türkiye is still sent to sanitary landfills or uncontrolled dumping sites. This is one of the main sources of plastic leakage into the environment. This structural weakness in solid waste management has also made Türkiye's rivers a major source of plastic pollution for the Mediterranean and the Black Sea.

In addition, old waste disposal sites in coastal cities, many of which have often been closed without proper rehabilitation, continue to contaminate groundwater and surface waters. Türkiye has one of the highest plastic and total waste volumes in Europe and has a significant waste footprint in the Mediterranean.[36]

Studies show that Türkiye has the highest share of floating macro-litter reaching the Mediterranean and the Black Sea, accounting for 16.8% of the total load.[37] The scale of the problem is also clear along the Black Sea coast, where plastics make up more than 80% of marine litter and 88% of beach litter.[38]

Similarly, among the coastal areas with the highest plastic flux, Cilicia in Türkiye ranks first in the entire Mediterranean, with a flux of 31.3 kg per km per day.[39] The plastic flux along the Izmir coast has also been reported as 7.1 kg per km per day.[40] Türkiye's marine environments act as a sink for plastics from both land-based sources and foreign-origin plastics transported by marine currents.

The Seyhan and Ceyhan rivers have also been identified as among the main waterways carrying plastic into the Mediterranean. Liubartseva et al.[41] report that the Ceyhan River carries 5,109 tons of plastic per year, contributing 5.1% of total plastic pollution in the Mediterranean. The Seyhan River carries 3,465 tons per year, contributing 3.5%. In Türkiye's seas, this problem is not limited to the water column. Significant microplastic and macro-plastic pollution has also been reported in sediments and coastal areas across marine systems.[42]

Although inadequate waste management infrastructure is often identified as the main source of this pollution, recycling processes, which are usually presented as a component of advanced waste management systems, are also an important pollution source. This is especially visible in regions such as Adana, where imported plastic waste is processed intensively. Microplastics generated during mechanical recycling processes, such as shredding and washing, are discharged into irrigation canals and are likely to make a significant contribution to pollution in the Mediterranean (Figure 4).

Field studies have shown that microplastic concentrations in irrigation canals downstream of recycling facilities can be up to 132 times higher than upstream levels. They also show that more than 5.3 billion particles per hour can enter aquatic systems from these canals.[43] The use of these contaminated waters for agricultural irrigation creates a dangerous pathway. It transfers plastic pollution from aquatic environments to terrestrial food chains (see Box 2).

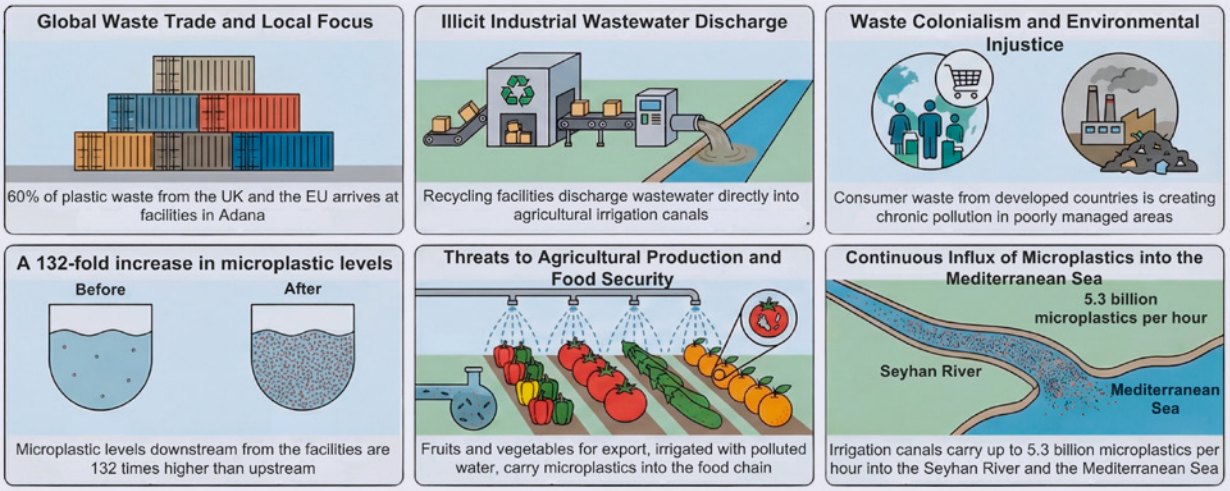
Figure 4. Microplastic accumulation from recycling facility wastewater at different times. The photograph in the left panel (Credit: Vedat Örüç) shows microplastic accumulation on the Mersin coast originating from the Seyhan River. The photograph in the right panel (Credit: Sedat Gündoğdu) shows the collection well at the Seyhan Wastewater Treatment Plant, operated by Adana Metropolitan Municipality, where microplastics from recycling facilities are collected.

BOX 2: POINT SOURCE MICROPLASTIC POLLUTION FROM RECYCLING PROCESSES AND THE CASE OF ADANA

Adana is a strategic center where around 60% of Türkiye's total imported plastic waste is processed and where plastic recycling facilities are heavily concentrated. The scientific study conducted by Gündoğdu and Avcıoğlu[44] presents quantitative evidence on the environmental impacts of illegal wastewater discharges from recycling facilities into agricultural irrigation canals in the region. Field analyses conducted as part of the study showed that microplastic concentrations immediately downstream of recycling facilities were up to 132 times higher than upstream levels. The study also found that microplastic flow in the canals exceeded 5.3 billion particles per hour. Polymer and morphological analyses provided clear evidence of the pollution source. Plastic pellets used as industrial raw materials and specially fragmented plastics were found only in samples collected downstream of the facilities.

These findings confirm that mechanical recycling processes, especially shredding and washing, can cause uncontrolled microplastic release. This pollution not only damages local aquatic ecosystems but also carries microplastics into the food chain through agricultural products irrigated with these waters and exported to global markets, including European markets. The study shows that the plastic waste trade cannot be carried out in line with the principles of environmentally sound management, or ESM, under current conditions. It also confirms that existing inspection mechanisms are failing at a systemic level. For this reason, the study underlines the need for stronger policy changes, including import bans and mandatory microplastic filtration systems.

Below is a schematic representation of the study conducted by Gündoğdu and Avcıoğlu.



Plastic pollution in Türkiye is not limited to coastal areas. It also threatens soil ecosystems. Agricultural soils in Türkiye have become an important sink for microplastics, mainly because of uncontrolled plastic mulch use and inadequate waste management. Microplastic levels in agricultural soils, reported as 192.7 particles per kg, are higher than those found in urban areas.[45]

The global literature on the contribution of plastic recycling to microplastic pollution is also growing.[46] Increasing evidence from Türkiye and other countries shows that mechanical recycling processes can generate large amounts of microplastics, especially during cutting, washing, and drying. These particles are often discharged into the environment or wastewater channels through untreated or poorly treated wastewater.[47] Once released, these pollutants enter local water resources and soils. They create ecological and public health risks through trophic transfer and long-term environmental persistence.

Plastic recycling in Türkiye is not only a source of microplastic pollution. It is also a serious source of chemical pollution. Fires at plastic recycling facilities have increased sharply, especially since 2017. The number of fires rose from six per year in 2017 to 125 per year in 2022.[48] Many of these fires are linked to poor storage conditions. There are also allegations that some unsuitable imported or domestic plastic wastes are deliberately burned to avoid disposal costs.

Although these fires are often reported in the media as incidents causing material damage, their impacts go far beyond economic loss. When chlorinated plastics such as PVC burn, they can release persistent organic pollutants, including dioxins and furans. These pollutants can cause serious air and water pollution and create major public health risks, including cancer and respiratory diseases. Irregular storage, inadequate fire detection systems, and weak inspections increase these risks. Because of their systematic environmental damage, such cases should also be considered within the legal framework of ecocide.

Illegal dumping and open burning are also major pollution sources linked to waste imports and plastic recycling more broadly. Gündoğdu[49] shows that illegal dumping and open burning related to plastic waste imports have caused serious accumulation of persistent organic pollutants in soils in some parts of Adana. The Ministry of Environment, Urbanization and Climate Change states that imported waste is tracked through MoTAT using GPS and digital forms from customs points or production sites to recycling facilities. However, there is extensive evidence that this system cannot effectively control the movement of imported plastic waste from customs to facility entry and cannot prevent environmental pollution.

The limited effectiveness of MoTAT in field practice can be explained by several main factors:

- MoTAT and GPS tracking mainly confirm that the container has reached the facility. However, monitoring ends at the facility gate. Once the container is unloaded, digital oversight stops. This makes it impossible to track the real movement of waste inside the facility, the fate of non-recyclable residues, or the illegal transfer of waste to another facility or vacant land.
- The system does not provide real-time tracking that digitally matches the amount of waste entering a facility with the amount of recycled product and process residue leaving it. This gap allows facility owners to burn imported material or dump it illegally into places such as irrigation canals instead of actually re-

cycling it. The quota system also creates a weakness, as the non-recyclable share of imported waste can be offset on paper by waste coming from the informal domestic system.

- MoTAT tracks the movement of waste, not its physical content. It therefore cannot solve systemic problems such as the misdeclaration of dirty or prohibited waste under incorrect customs codes, or its presentation as "clean" waste on paper.
- As the 2B Plast case shows, GPS and certification systems can conflict with reality on the ground. Shipments may still appear to arrive at a facility even when that facility had closed months earlier. This is possible because both EU and national rules allow documentation and certification to be renewed at intervals of up to two years. As a result, MoTAT is a weak barrier against illegal activities because it only documents the arrival of waste at the facility and does not provide visibility over waste treatment and disposal processes inside the facility.

Conclusion and Recommendations

Türkiye's current recycling model, which depends on plastic waste imports, is often justified through the need for raw materials and the transition to a circular economy. However, field evidence shows that this process has turned into a transfer of the environmental pollution burden and a form of waste colonialism. Point source microplastic pollution documented in Adana shows that recycling facilities themselves can become pollution sources. It also shows that ESM criteria do not have a clear technical or economic basis in practice.

Cases such as 2B Plast confirm that the independent audits proposed under the EU's new Waste Shipment Regulation may remain only on paper. Without transparent tracking mechanisms and cross-checking systems protected from local political pressure, these audits will not be sufficient. In a country where 80–90% of municipal waste is still not effectively recovered, allowing the inflow of low-quality foreign waste prevents the development of domestic collection systems and turns Türkiye into a global pollution sink.

To protect Türkiye's ecological security and support a real transition to a circular economy, the following strategic steps are necessary:

1. **Gradual Phase-Out and Full Ban on Imports:** Plastic waste imports should be gradually tightened until domestic waste management infrastructure is optimized. The final goal should be a full ban. This would require wealthy countries to reduce their own waste at the source instead of exporting the problem. It would also allow Türkiye's national waste management system to use its full recycling capacity for domestic waste. Reducing the manipulation of waste material pricing would also increase the proportion of plastics collected through the informal system.
2. **Establishment of Independent and International Audit Mechanisms:** ESM audits should not depend on paper-based declarations prepared by local environmental consultancy firms. A system should be established with independent auditors who have international accreditation and operate in line with EU and OECD standards. Audit reports should be publicly available, and civil society should be able to monitor these systems.
3. **Real-Time Digital Mass-Balance Tracking:** Limiting MoTAT to container-based GPS tracking

creates a major security gap. The amount of waste entering facilities should be digitally matched in real time with the amount of recycled product and process residue leaving them. This tracking should be kept separate from waste collected through the national system. Such a system would show whether the requirement that imported waste be 99% recyclable is actually met. It would also make clear whether imported waste is recycled, burned, or sent to dumpsites. This would make illegal discharge or burning of residual waste much harder and would increase the effectiveness and deterrent value of penalties.

4. **Point Source Pollution Standards:** Advanced filtration systems should be made mandatory for recycling facilities to prevent microplastic release from mechanical processes. VOC capture technologies should also be required. Facilities that fail to meet discharge standards should have their licenses permanently revoked.
5. **Mandatory Fire Prevention in Recycling and Sorting Facilities:** Current regulations include license cancellation if a fire is found to have been started deliberately. However, fire prevention should be strengthened before pollution occurs. Infrared early-warning and fire prevention systems should be made mandatory in facility design and installation requirements.
6. **Priority for Domestic Waste Management and Deposit Return Systems:** Instead of an import-led growth strategy, the National Deposit Return System should be redesigned to support reuse and refill systems. It should be expanded rapidly to cover all packaging types. At the same time, source-separated collection should be introduced across the country at the municipal level. This would increase separate collection rates and reduce packaging waste generation, leading to higher net recovery rates.
7. **Reduction in Production and Elimination of Toxic Additives:** Recycling should be recognized as an incomplete and limited solution. The policy focus should shift from recycling to reducing new plastic production. Toxic additives in plastic products should be restricted, product safety criteria should be introduced, and materials should be designed to be genuinely recyclable at the end of their life cycle.
8. **Active and Proactive Role in the Global Plastics Treaty:** Türkiye should take a position in the ongoing United Nations Global Plastics Treaty negotiations that supports strict transboundary controls on waste trade and limits on plastic production. National legislation should be aligned with these global obligations. Türkiye should also lead a regional initiative to prevent pollution in the Mediterranean. This would support both pollution reduction and access to financial tools needed for alternative circular systems.
9. **COP31 Zero Waste Agenda:** Türkiye has placed zero waste at the center of its action agenda. In line with this position, it should take a leading role in promoting zero waste imports nationally and in contributing to the reduction of global waste trade. Otherwise, its zero-waste leadership will remain only on paper. Zero waste is only possible with zero waste imports.

Türkiye now faces a clear choice. One path is a false economic activity based on low-value imported waste. The other is a sustainable circular model that protects public health and ecosystems. Waste imports are not an economic necessity. They are a policy choice that increases the country's ecological vulnerability.

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Note: The presentation dated December 12, 2025, provided by the Ministry of Trade of the Republic of Turkey which served as the source for the imported waste quantities in this report, has been revised after the publication of this study. The following note has been added to the revised document as the reason for the revision:

"In the presentation dated December 12, 2025, the waste category "plastics including rubber" was inadvertently added to the "plastics" category. Accordingly, the relevant presentation table has been updated in June 2026 to include only plastic waste data."

This change does not affects the comments regarding the lack of data democracy, transparency, and inclusiveness pointed out in the report.

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The Istanbul Policy Center–Sabancı University–Stiftung Mercator Initiative aims to strengthen the academic, political, and social ties between Turkey and Germany as well as Turkey and Europe. The Initiative is based on the premise that the acquisition of knowledge and the exchange of people and ideas are preconditions for meeting the challenges of an increasingly globalized world in the 21st century. The Initiative focuses on two areas of cooperation, EU/German-Turkish relations and climate change, which are of essential importance for the future of Turkey and Germany within a larger European and global context.

Sedat Gündoğdu is 2025/26 Mercator-IPC Fellow at IPC.

The interpretations and conclusions made in this paper belong solely to the author and do not reflect IPC's official position.

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Istanbul Policy Center
Bankalar Caddesi Minerva Han No: 2 Kat: 4
34420 Karaköy-İstanbul
T +90 212 292 49 39
ipc@sabanciuniv.edu - ipc.sabanciuniv.edu

IPC | ISTANBUL POLICY CENTER
SABANCI UNIVERSITY
STIFTUNG MERCATOR INITIATIVE