WASTE MANAGEMENT SYSTEM IN TAJIKISTAN

SMART CITY
DUSHANBE

Initiative Group “Shafaq” (Rassvet), Dushanbe, Tajikistan

Content

Abstract

This study examines municipal solid waste management in Tajikistan, with a particular focus on the capital city of Dushanbe, highlighting the persistent gap between the country's international environmental commitments and their domestic implementation. The analysis identifies systemic deficiencies, including continued reliance on uncontrolled landfill disposal, the absence of formal recycling and composting infrastructure and the expansion of informal waste-picking activities. The study also evaluates the role of major Development Finance Institutions (DFIs), notably the World Bank, the Asian Development Bank (ADB) and the European Bank for Reconstruction and Development (EBRD) in addressing these challenges. Despite substantial financial investments and technically ambitious project designs, the findings indicate limited transformative impact, with key initiatives such as the Dushanbe Sustainable Urban Development Project experiencing suspension and fund reallocation.

Using a mixed-methods approach that combines desk-based analysis of policy and project documentation with stakeholder interviews and field observations, the research identifies institutional disintegration, weak regulatory enforcement, a lack of transparency in governance and socio-environmental vulnerabilities associated with landfills located near communities as critical barriers to reform. The study concludes that sustainable waste management in Tajikistan requires comprehensive policy reform, strengthened institutional capacity, public participation, and enhanced accountability in international financing mechanisms.

Introduction

Sustainable waste management plays a critical role in shaping urban governance structures, environmental sustainability, and public health outcomes. In developing countries, the shift from elementary waste disposal practices to integrated and circular management systems present a multifaceted challenge shaped by economic limitations, institutional capacity, and prevailing socio-cultural norms. Tajikistan, a Central Asian state experiencing rapid urbanization and heightened vulnerability to climate change, faces persistent and systemic difficulties within its municipal solid waste (MSW) sector. Although the country has ratified major international environmental conventions and established a national legislative framework accordingly, waste management practices remain largely underdeveloped. The sector continues to rely heavily on uncontrolled landfill disposal and is characterised by the near absence of large-scale recycling, composting, or formal material recovery infrastructure.

These challenges are particularly pronounced in the capital city, Dushanbe, which exemplifies the structural weaknesses of the national system. The city operates more than 1,800 waste collection points yet depends on a single, overburdened landfill that receives an estimated 1,200 tonnes of waste per day. This concentration of waste disposal has intensified environmental degradation and heightened public health risks. The widespread presence of informal waste pickers, while providing essential livelihoods for marginalised groups, functions outside regulatory oversight and further highlights the inadequacies of formal waste management mechanisms. Moreover, substantial financial and technical investments by major Development Finance Institutions (DFIs), including the World Bank, the Asian Development Bank (ADB) and the European Bank for Reconstruction and Development (EBRD), have produced uneven outcomes. High-profile initiatives, such as the Dushanbe Sustainable Urban Development Project, have encountered implementation challenges, resulting in project suspension and the reallocation of funding.

Against this backdrop, the present research offers a comprehensive and evidence-based assessment of Tajikistan's waste management landscape. It critically explores the disconnect between international environmental commitments and domestic implementation, evaluates the effectiveness and transparency of externally financed interventions, and examines the socio-economic conditions of communities affected by landfill operations. Employing a mixed-methods approach that integrates desk-based analysis, stakeholder interviews and field observations, the study seeks to identify the structural, regulatory and social barriers impeding progress in the sector. Ultimately, this report aims to contribute to academic and policy discourse by advancing practical and context-sensitive recommendations to support more effective, equitable and sustainable waste management in Tajikistan, positioning waste governance not solely as an environmental issue but as a core matter of institutional accountability, social justice and sustainable development.

Objectives & Methodology

The primary goal of this study is to provide a comprehensive assessment of waste management practices in Tajikistan, with particular attention to the gaps in regulation, infrastructure and implementation. The research will explore how waste is currently collected, transported and disposed of, while identifying the absence of systematic separation, composting and recycling.

Another important objective is to analyse investment patterns in the waste management sector, with a focus on projects supported by development finance institutions (DFIs) such as the European Bank for Reconstruction and Development (EBRD), the World Bank (WB) and the Asian Development Bank (ADB). By reviewing these projects, the study seeks to understand the extent to which they have addressed existing challenges, as well as the degree of transparency and accountability in their execution. The project also aims to document the environmental and social impacts of landfill sites on local communities. By engaging directly with residents, experts and officials, the study will capture diverse perspectives and experiences related to waste mismanagement. Ultimately, the research intends to produce evidence-based recommendations that can guide policymakers, DFIs, and other stakeholders toward more effective, transparent and sustainable waste management solutions in Tajikistan.

The research began with a comprehensive desk review of available literature, official statistics, legislative norms and project documentation from both national authorities and DFIs. This will help establish a baseline understanding of the current waste management framework, its legal underpinnings, and its operational realities. Special attention will be given to projects such as the “Smart City” initiative, which, despite ambitious plans for waste processing facilities, has yet to move beyond the planning stage. Following the desk review, semi-structured interviews were carried out with a wide range of stakeholders, including government representatives, private sector recycling operators, DFI project managers, and residents living in proximity to landfill sites. Also, field visits were conducted to major landfill sites, however, for entrance the special permission is needed.

For the purposes of this research, it was decided to engage an expert based in Dushanbe, such as an ecologist, journalist or an individual with established access to local authorities given the significant challenges associated with accessing information, as relevant information is rarely provided without formal arrangements. Several ecologists were contacted, including an individual with prior experience in a World Bank-funded waste management project and a university lecturer; however, none agreed to undertake the research, citing concerns about the dissemination of local authority information and the limited financial compensation relative to the anticipated workload.

As a result, with the support of the organisation Iqtidor, this responsibility was assigned to a specialist in social issues. However, he was unable to adequately address the specific methodological requirements of the research and could not conduct additional interviews with relevant stakeholders due to bureaucratic constraints and the reluctance of officials, restricted by fear and hierarchical barriers to engage in discussions. Therefore, a multi-stakeholder workshop was organised, bringing together representatives of relevant public authorities, activists, civil society organisations (CSOs), experts and development finance institutions (DFIs) to discuss the current state of waste management and to articulate the objectives of the meeting, particularly with regard to how CSOs can support and complement state-led waste management initiatives. Unfortunately, no representatives from Development Finance Institutions (DFIs) participated in the workshop. Official invitations were sent to the local branches of DFIs in Tajikistan; however, responses were received only from the Asian Development Bank (ADB) and the World Bank (WB). ADB indicated that its current focus is primarily on water and sanitation projects, while World Bank representatives informed us by phone that they would be unavailable on the day of the meeting. A systematic analysis of the collected data and information was conducted to identify key trends, gaps in implementation, and opportunities for reform, with particular attention to structural deficiencies and potential avenues for advancing sectoral modernisation and sustainability. The findings will be consolidated into a comprehensive research report, prepared in English and shared with a broad audience through local and international publications.

Waste management in Tajikistan

In Tajikistan, waste management in terms of collection, transportation to disposal place, and the recycling market, is not properly regulated. This sector is controlled by the Committee on Housing and Public Utilities under the Government of the Republic of Tajikistan (hojagii manziliyu komunali). There are no centralized methods of waste separation, composting, or recycling in the country. All collected waste is sent to landfills. Overall, there are about 91 large landfills with a total area of 372.7 hectares, which are currently full of non-recycled waste. Specifically, the facilities are distributed as follows: Sughd Region has 34 landfills covering 219 hectares; Khatlon Region has 24 units with a total area of 86.77 hectares; GBAO contains 15 landfills spanning 9.835 hectares; the Regions of Republican Subordination (RRS) include 13 units covering 37.06 hectares; and Dushanbe City operates only one landfills with an area of 20 hectares.[1]

According to the Early Warning System[2]- a data system tracking investments across sectors worldwide, Tajikistan is in cooperation with the European Bank for Reconstruction and Development (EBRD), World Bank (WB), Asian Development Bank (ADB) for environment- and sanitation-related investments, including waste management. During the period 1 January 2020 to 31 December 2025, a total of 171 projects valued at approximately USD 4.5 billion were implemented. Among these, 90 projects, representing USD 687.6 million, were dedicated to climate and environmental action, water and sanitation, infrastructure development, and technical cooperation, underscoring a policy commitment to sustainable development and institutional strengthening. As shown in Figure 1, the investment was around 260 million for climate, environment, water and sanitation sectors.

[1] From the presentation of local officials during the workshop on 22 January in Dushanbe

[2] Projects Proposed by Development Banks for the South Caucasus & Central Asia (January 1, 2020 to December 31, 2025). Early Warning System, < https://public.tableau.com/app/profile/iaptableau/viz/SouthCaucasusCentralAsiaRegionProjectsJan-Aug2020/EARLYWARNINGSYSTEMDevelopmentbankprojects >

Figure 1: International Accountability Project's Early Warning System: Projects Proposed by Development Banks for the South Caucasus & Central Asia (January 1, 2020 to December 31, 2025). Data on Tajikistan. https://accountabilityproject.org/

However, the current waste management system requires comprehensive reform, as there are still no large-scale waste processing facilities in operation. Overall, Tajikistan has about 91 main landfills, covering 372.7 hectares. According to representatives of the Committee, currently the total number of garbage disposal points in Dushanbe is 1,805.[3] There are no plants for recycling waste, but some local private production plants, which accept papers, metal and plastic. The consumption of products is increasing together with the growth the of population and consequently of garbage as well. Recycling waste is a capital-intensive activity. Constructing a facility capable of processing approximately 100,000–200,000 tonnes of waste annually may require an investment of USD 10–100 million. Such high initial costs are beyond the financial capacity of most small and medium-sized enterprises; consequently, local recycling plants tend to operate on a limited scale and accept relatively small volumes of waste.[4]

[3] Asia Plus "How illegal waste collection and recycling in Dushanbe threatens human health and the environment", <https://asiaplustj.info/news/tajikistan/society/20241210/kak-nezakonnii-sbor-i-pererabotka-musora-v-dushanbe-ugrozhaet-zdorovyu-lyudei-i-okruzhayutshei-srede>, December 10, 2024

[4] Navruz Karimov, Central Asian Bureau for Analytical Reporting "Bury and forget: how Tajikistan "fights" the increase in landfills", < https://cabar.asia/ru/zakopat-i-zabyt-kak-v-tadzhikistane-boryutsya-s-uvelicheniem-musornyh-poligonov>March 31, 2021

The state administration, together with the people, do not realise the importance of reform in this sector, as our health is connected with a clean environment, all the legal and illegal landfills are full of waste, which is just being buried or burnt and disposed of underground. Buried garbage becomes unsuitable for recycling and gradually rots, producing leachate, a toxic liquid that gets into groundwater and consequently into drinking water as well.[5]

Figure 2: Mercury lamps in landfill. Source: Asia Plus

Hazardous waste, such as lamps, batteries, medical materials, must be carefully segregated and transferred to specialised treatment facilities. In addition, responsible authorities are required to monitor the environmental and public health impacts of waste disposal and to inform the population accordingly. However, in reality, waste is not segregated, and all waste streams are transported and disposed of together at landfills.

Overall, the culture of keeping clean everywhere including yards, streets, is gradually disappearing, people do not understand the importance of a green and clean environment; the children are not taught at school the importance of putting waste into garbage containers. Public authorities demonstrate limited engagement in educational and awareness-raising initiatives aimed at promoting proper waste disposal practices. In addition, the housing and public utilities sector fails to ensure adequate provision of waste collection infrastructure, including a sufficient number of garbage containers for the population. In addition, limited institutional openness to collaboration with individuals and local civil society organisations constrains the implementation of awareness campaigns on urban sanitation and pollution prevention.

Legislative normative and responsible authorities

Tajikistan has ratified key global environmental and climate agreements, affirming its commitment to sustainability (See Table 1). It is a party to the United Nations Framework

[5] Navruz Karimov, Central Asian Bureau for Analytical Reporting “Bury and forget: how Tajikistan "fights" the increase in landfills”, < https://cabar.asia/ru/zakopat-i-zabyt-kak-v-tadzhikistane-boryutsya-s-uvelicheniem-musornyh-poligonov>March 31, 2021.

Convention on Climate Change **(UNFCCC)**, Kyoto Protocol, and Paris Agreement, focusing on climate resilience, emissions reduction, and adaptation, which is critical, given the country's vulnerability to glacial melt and water scarcity. The country has also joined **the Stockholm Convention** (to control hazardous chemicals) and the Basel Convention (to manage waste), reinforcing pollution prevention efforts. Additionally, Tajikistan ratified **the Aarhus Convention** to enhance public participation in environmental governance. Other ratified treaties, such as the **Convention on Biological Diversity**, **Desertification Convention and Ramsar Convention,** support climate adaptation and pollution reduction through ecosystem conservation. Overall, by ratifying these international environmental and climate instruments, Tajikistan aligns its national environmental policies with global standards, strengthens its legal framework for pollution control and climate action, and contributes to collective international efforts to protect the environment and human health.

Table 1: List of International Conventions to which Tajikistan is a Party

International convention	Year accession
UN Convention on Biological Diversity, 1997. Relevant updates to the Convention on Biological Diversity include: the Cartagena Protocol on Biosafety to the Convention on Biological Diversity, 2004; the Nagoya Protocol on Biosafety to the Convention on Biological Diversity. Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity, signed in 2011 and ratified in 2013.	1997
United Nations Framework Convention on Climate Change, 1998; The relevant update is The Kyoto Protocol was adopted on December 29, 2008 and entered into force on March 29, 2009.	1998
UN Convention to Combat Desertification	1997
Vienna Convention for the Protection of the Ozone Layer, 1996 and updated by the Montreal Protocol on Substances that Deplete the Ozone Layer , 1998; London Amendments to the Montreal Protocol on Substances that Deplete the Ozone Layer , 1998; Copenhagen Amendments to the Montreal Protocol on Substances that Deplete the Ozone Layer , 2009; Montreal Amendments to the Montreal Protocol on Substances that Deplete the Ozone Layer , 2009; Beijing Amendments to the Montreal Protocol on Substances that Deplete the Ozone Layer , 2009.	1996
Stockholm Convention on Persistent Organic Pollutants (POPs) (ratified 2007); Relevant updates: 2009 amendment to include 9 new persistent organic pollutants, 26 August 2010; 2011 amendment to include endosulfan, 27 October 2012; and 2013 amendment to include Hexabromocyclododecane, 26 November 2014.	2007
Aarhus Convention (acceded in 2001); A related update is the Kyiv Protocol on Pollutant Release and Transfer Registers to the Convention on Access to Information of 21 May 2003.	2003

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal	2016
Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides in International Trade	1998
Convention on Occupational Safety and Health	2009
Convention on Tripartite Consultation (International Labour Standards)	2014
Convention for the Safeguarding of the Intangible Cultural Heritage	2006
International Covenant on Economic, Social and Cultural Rights	1999
Convention on the Elimination of All Forms of Discrimination against Women	1993

At the national level, environmental protection in Tajikistan is governed by **the Law on Environmental Protection (2011, No. 760)**, subsequently amended. This foundational law establishes the state's environmental policy, aiming to ensure sustainable development, guarantee the right to a healthy environment and secure ecological safety through the rational use of natural resources.[6]

In 2025, Tajikistan developed **a new Environmental Code**. The Environmental Code of the Republic of Tajikistan was formulated and endorsed by the Government of Tajikistan as a comprehensive legislative instrument aimed at systematising and unifying national environmental legislation. The Code defines the legal foundations for environmental protection, the sustainable management of natural resources, the assurance of ecological safety, and the regulation and coordination of state and public participation in environmental governance.[7] The Environmental Code of the Republic of Tajikistan includes approximately 12–15 provisions, out of a total of 75 articles, that directly or substantively regulate issues related to waste management and landfills. These provisions are not grouped within a dedicated chapter but are instead dispersed across the Code and embedded within broader regulatory sections.[8]

And there is a **Law of the Republic of the Tajikistan on production and consumption waste** (amended by the Republic of Tajikistan No. 109 of 25.07.2005, No.

[6] Law of the Republic of Tajikistan on environmental protection, < http://www.adlia.tj/show_doc.fwx?rgn=115495<https://base.spinform.ru/show_doc.fwx?rgn=46580>, accessed in November 2025

[7] Environment code of Tajikistan, December 2025

[8] Environment Code of Tajikistan, December 2025

736 of 28.06.2011). Under the Law on Production and Consumption Waste, local authorities are tasked with identifying and eliminating unauthorised waste sites, educating the public on proper waste management and promoting sustainable practices. Despite this, many illegal landfills appear along roads, rivers and lakes, largely ignored by the authorities. Waste is legally owned by the government, but effective management is hampered by staff shortages, low salaries, and widespread corruption in investment projects. There is no legal enforcement for separate waste collection, and schools rarely teach proper sorting.

With regard to hazardous waste management, in response to these concerns, the Resolution entitled "On Measures to Create a System of Safe Collection, Storage, Transportation and Recycling of Mercury-Containing Lamps" was adopted in 2009. According to this Resolution, executive authorities, local self-government bodies and the State Unitary Enterprise "Housing and Communal Services" were mandated to establish collection points for mercury-containing lamps from the population and to inform the public about proper collection procedures. Financial resources from municipal budgets were allocated to support the implementation of these measures. However, at present, the enforcement of this Resolution and the organisation of dedicated storage facilities for such hazardous waste are no longer necessary, as mercury-containing lamps have been almost entirely phased out of the market and largely replaced by LED lighting technologies.

The Committee for Environmental Protection, together with relevant departments, is tasked with improving environmental legislation, including drafting an Environmental Code for Tajikistan. It is also responsible for preparing and submitting to the government the draft ***National Strategy for Biodiversity Conservation*****, the *Program for the Development of Specially Protected Natural Areas (2026–2030)* and the *Program for Environmental Education (2026–2030)*.**[9]

Superficially, Tajikistan follows international standards on ecology in principle, as a signatory to major agreements, and has developed a corresponding legal framework. However, the effective implementation and enforcement of these standards are

[9]Asia Plus, "Emomali Rahmon ordered the construction of large waste recycling facilities in Tajikistan", https://asiaplustj.info/news/tajikistan/power/20250918/emomali-rahmon-poruchil-postroit-v-tadzhikistane-krupnie-predpriyatiya-po-pererabotke-musora>, September 18, 2025

constrained by economic limitations, institutional capacity and complex regional environmental challenges.

Waste management hierarchy

In Tajikistan, municipal solid waste **(MSW)** management is governed through a multi-level institutional framework. Environmental regulation and policy oversight have traditionally been the responsibility of **the Committee for Environmental Protection under the Government of the Republic of Tajikistan**, while local executive authorities (municipal and district administrations) are responsible for the practical organisation of waste collection, transportation and disposal through municipal utility enterprises.

In September 2024, a major institutional reform was introduced with the establishment of **the Committee for Housing and Communal Services under the Government of the Republic of Tajikistan** by presidential decree. This Committee centralises state coordination of housing and communal infrastructure, including municipal waste services, while environmental regulation remains with the Committee for Environmental Protection. Day-to-day MSW operations continue to be carried out **by municipalities** under the local authorities**,** with the new Committee providing strategic guidance, coordination and sectoral reform oversight. In Dushanbe, the Municipality oversees solid waste management through **five State Unitary Enterprises (*Khojagii komunaliyu manzili*).** four handling district collection and one managing the landfill. Legal frameworks (Law No. 44, Decree No. 209, Resolution No. 279) define local authorities' responsibilities and set rules for waste handling. SUEs are intended to operate as self-sustaining enterprises covering their costs.[10] Tajikistan's waste management laws assign local authorities' responsibility for collection, transport and disposal, but enforcement gaps and weak penalties have allowed widespread informal waste collection.

The collection of municipal solid waste fees from residents varies by region, including across districts of Dushanbe. Eco-activist Zulfiya Golubeva compiled tariff data showing that fee structures differ depending on housing type and district. (see Figure 3**)** For instance, in the Shohmansur and Somoni districts, residents of well-appointed apartment buildings with garbage chutes pay higher rates, reaching 3.90 somoni by 2024, than those

[10] World Bank, Project Information Document (PID), Dushanbe Sustainable Urban Development Project (P179630) < https://documents1.worldbank.org/curated/en/099173002242329313/pdf/P17963005a16330a097290effb0df8297e.pdf>, accessed in November 2025

living in similar buildings without chutes, who pay 3.20 somoni. Private homeowners face even higher charges, up to 4.60–4.70 somoni, while residents of barrack-type housing pay a lower, flat rate. Commercial and budgetary organisations are subject to substantially higher volumetric tariffs per cubic metre of waste, with commercial rates rising to 53.70 somoni per m³ by 2024. Overall, from 2014 to 2024, waste collection tariffs increased steadily across all categories.

ТАРИФЫ НА ВЫВОЗ МУСОРА ПО ДУШАНБЕ С 1 НОЯБРЯ 2014 ПО 2024 ГОД

Собрала Зульфия Голубева, источни
сайты медиакомпании Вечерка и Ховар.

Вид жилья	С 1.11.2014г.	С 1.05.2018г.	С 1.05.2019г.	С 1.03.2021г.	С 1.08.2023г
Район Фирдавси					
Благоустроенные дома с мусоропроводом	2,50	2,80	3,10	3,70	4,10
Благоустроенные дома без мусоропровода	2,10	2,30	2,50	3,00	3,30
Частные дома	3,00	3,20	3,60	4,30	4,70
Бараки	2,80	Нет инфо	3,40	4,10	4,50
Коммерческие организации	39 сом. за 1 куб.м.	Нет инфо	54 сом. за 1 куб.м.	Нет инфо	65,3 сом. за 1 куб.м.
Бюджетные организации	27 сом. за 1 куб.м.	Нет инфо	34,5 за 1 куб.м.	Нет инфо	41,8 сом. за 1 куб.м.
Район Сино					
Благоустроенные дома с мусоропроводом	2,60	2,90	3,20	3,80	4,20
Благоустроенные дома без мусоропровода	2,20	2,40	2,60	3,10	3,40
Частные дома	3,10	3,40	3,70	4,40	4,85
Бараки	3,00	Нет инфо	3,60	4,30	4,70
Коммерческие организации	40 сом. за 1 куб.м.	Нет инфо	55,20 за 1 куб.м.	Нет инфо	66,8 сом. за 1 куб.м.
Бюджетные организации	31 сом. за 1 куб.м.	Нет инфо	39,20 за 1 куб.м.	Нет инфо	47,4 сом. за 1 куб.м.

Figure 3: Waste fee fixed by Committee for different region with different rates, Source: From Expert

The State Unitary Enterprise "Smart City"[11], established by the Dushanbe city government in 2019, is a city-level organisation focused on urban technology and services. It plays a direct role in modernizing the management of solid waste in Dushanbe, particularly through its involvement in the Dushanbe Sustainable Urban Development

[11] < https://dsc.tj/en/home/>

Project (DSUDP), a major initiative supported by DFIs such as the World Bank, with Smart City serving as the implementing agency.

According to officials' response, the institutional framework for waste management is characterised by fragmentation, with connected agencies working independently and without effective collaboration.

Analysis of investments

Tajikistan is currently in search of investment for waste management issues. According to EWS, the main contributors to this sector are WB, ADB and EBRD. These DFIs' contribution to waste management goes through different projects, including sanitation, water supply, a sector-wide catalyst for addressing climate and environmental challenges at the city level, the Socio-Economic Resilience Strengthening Program and the Sustainable Urban Development Project. This section presents an overview of banks' investments in the waste management sector, with a specific focus on recent and ongoing initiatives. Particular emphasis is placed on the World Bank's Dushanbe Sustainable Urban Development Project (P179630), which represents a key intervention in improving urban sustainability and waste management infrastructure.

As shown in Figure 3, investment in Tajikistan's waste management sector began in the late 2000s, notably with the EBRD Solid Waste Loan in 2008, marking the initial engagement of international financial institutions in addressing fundamental urban waste infrastructure challenges. Following 2010, the World Bank assumed a more prominent role, integrating waste management components into broader water, sanitation, and environmental health interventions, particularly through the Rural Water Supply and Sanitation project (P162637, 2012–2020).

Figure 4: Chronology of the investment on WM, generated by AI based on EWS

- ☑ Green = Completed
- 🔵 Blue = Active
- 🟠 Orange = Proposed / Early Implementation
- 🟣 Purple = Pipeline / Preparation
- 🔴 Red = Feasibility Stage
- 🟤 Brown = Tender Stage
- 🌐 Cyan = Ongoing (as part of a larger multi-country program)

Subsequent investments reflected an expansion from foundational infrastructure toward more integrated and resilience-oriented approaches. Projects such as the Socio-Economic Resilience Strengthening project (P168052, 2017–2023) and the Rural Water Supply and Sanitation Phase II (P177325, 2020–2025) indicate sustained engagement in rural environmental services, while the Dushanbe Sustainable Urban Development project (P179630, 2020–2025) represents a strategic shift toward comprehensive urban waste management solutions in the capital.

More recently, investment patterns demonstrate increasing alignment with climate and sustainability objectives. The EBRD's Green Cities 3 program, embedded within Dushanbe's Climate Change Action Plan framework, underscores the growing emphasis on climate-resilient and integrated urban planning.

In parallel, the World Bank advanced its engagement through the Dushanbe Sustainable Urban Development Project (P179630), under which the associated feasibility study (IDA

V4910-TJ) was successfully completed in December 2025.[12] Overall, the trajectory of investment reflects a transition from isolated, project-based interventions toward coordinated, multi-institutional programmes that address waste management as part of broader urban resilience, rural service provision, and climate adaptation strategies.

In recent years, **the Asian Development Bank (ADB)** has primarily focused its financing in Dushanbe on large-scale water supply and sanitation (WSS) projects, including grants from 2018–2022 and additional financing. However, in its national and urban assessments, ADB also considers solid waste management (SWM) as part of urban infrastructure and resilience planning. Direct investment in solid waste management by ADB in Dushanbe is limited. Unlike the World Bank, which financed a dedicated SWM project, ADB does not have a large, targeted grant or loan solely for waste management. Instead, support is mostly indirect, through technical assistance, monitoring, and integration of SWM into broader urban development and climate resilience projects. This may include recommendations, inclusion in sustainability plans, or potential support for containers and logistics as part of other urban initiatives.

The European Bank for Reconstruction and Development (EBRD) has been an important actor in supporting Tajikistan's waste management sector, particularly by promoting sustainable urban development and climate-resilient infrastructure. The Bank's early engagement focused on foundational investments, such as **the Solid Waste Loan in 2008 (Project ID 38901)**, which marked the initial entry of international financial institutions into addressing the country's critical waste infrastructure gaps, especially in urban areas. These early projects targeted basic collection and disposal systems, aiming to establish the groundwork for broader improvements in public and environmental health.[13] The Dushanbe Solid Waste Management Project, funded by the EBRD, aimed to modernise the city's waste management system with a total investment of USD 11.7 million. The project rehabilitated and expanded the main landfill, introduced environmental safeguards, upgraded waste collection equipment and optimised collection routes to improve service coverage. Municipal staff received training, and new organisational and

[12] World Bank, Project Information Document (PID), Dushanbe Sustainable Urban Development Project (P179630) < https://documents1.worldbank.org/curated/en/099173002242329313/pdf/P17963005a16330a097290effb0df8297e.pdf>, accessed in November 2025

[13] EBRD, Dushanbe Solid Waste Management Project https://www.ebrd.com/home/work-with-us/projects/psd/38901.html#project-description1, November 2025

financial measures were introduced to strengthen institutional capacity and sustainability.

The initiative functioned as a pilot example, establishing the first collaboration between the European Bank for Reconstruction and Development and the Government of Tajikistan to support financing for a solid waste management project.[14]

Over time, the EBRD's approach evolved toward integrating waste management within larger urban and climate-focused programs. A notable example is the Green Cities initiative, which includes Tajikistan as a participating country together with 16 other countries under **Window I-II of the Green Cities 3 programme (GCF) (EBRD-55845, EBRD-55846).**[15] This initiative emphasizes strategic urban planning, energy efficiency, and environmental sustainability, with waste management identified as a core component of climate-resilient urban development. By embedding waste infrastructure improvements within broader city-level planning, the EBRD promotes long-term sustainability and systemic change rather than stand-alone projects.

The World Bank has played a central role in advancing waste management in Tajikistan over the past decade, evolving from the integration of solid waste components within rural water, sanitation and resilience projects to financing dedicated urban waste infrastructure. Its engagement follows a dual strategy, combining support for basic waste services in rural areas with targeted investments in municipal solid waste systems in urban centers, particularly in Dushanbe.

Key interventions include the **Rural Water Supply and Sanitation projects (P162637; P177325**) and the **Socio-Economic Resilience Strengthening project (P168052**), which incorporated waste management to improve environmental health and community resilience.[16] This approach culminated in **the Dushanbe Sustainable Urban Development Project (P179630, 2020–2025),** a flagship initiative with a substantial waste management component aimed at modernizing municipal services in the capital. Complementary

[14] EBRD, Dushanbe Solid Waste Management Project https://www.ebrd.com/home/work-with-us/projects/psd/38901.html#project-description1, November 2025

[15] EBRD, Green Cities 3 - Window I (GCF)< https://www.ebrd.com/home/work-with-us/projects/psd/55846.html#customtab-125c2bf821-item-1ba01b3c31-tab>, December 2025

[16] Early Warning System (EWS), < https://ewsdata.rightsindevelopment.org/administration/projects/?status=pending&assignee=137>, December 2025

preparatory work, notably the Dushanbe Landfill Feasibility Study (IDA V4910-TJ), underscores the World Bank's shift toward large-scale, climate-responsive waste infrastructure.[17] With additional projects in the preparation pipeline, the World Bank's engagement reflects a sustained and strategic commitment to modernizing Tajikistan's waste management systems within a broader sustainable development and climate resilience framework.

The Dushanbe Sustainable Urban Development Project (P179630), financed by the International Development Association (IDA) of the World Bank with approximately USD 40 million, aims to comprehensively modernise the solid waste management system in the city of Dushanbe. The project adopts an integrated "end-to-end" approach, covering all stages of waste management from collection to final disposal. It supports improvements in existing systems for waste collection, transport, processing, and disposal, while laying the groundwork for a more sustainable, circular model. As part of this transition, pilot initiatives are planned for source-separated waste collection, recycling, and composting.

To implement this project, a Project Implementation Unit (PIU) was established in Dushanbe in 2024 under the State Unitary Enterprise Smart City to oversee the implementation of the World Bank-funded Dushanbe Sustainable Development Project (DSDP). An assessment of institutional, structural, economic, and socio-environmental impacts was required to evaluate the current condition of the city's municipal solid waste landfill. The findings indicate that expansion of the Dushanbe landfill is necessary. For the assessment of socio-environmental impacts, the international company **Ecoline International LLC (Bulgaria)** was contracted, with assistance provided by the local public organisation Peshsaf.[18] The results of their assessment are now accessible on the official Smart City website.[19] Despite the significant work completed by the Smart City, State Unitary Enterprise (SUE) over the past year, the project has encountered setbacks. SUE

[17] Ecoline International, DUSHANBE SUSTAINABLE URBAN DEVELOPMENT PROJECT (DSUDP), "Environmental and social management framework for the Dushanbe city municipal solid waste (MSW), collection system"< https://dsc.tj/wp-content/uploads/2025/10/1-ESMF-2025.pdf>, December 2025

[18] Interview with Sangin Boboev, the Director of Smart city. December 2025

[19] Ecoline International, DUSHANBE SUSTAINABLE URBAN DEVELOPMENT PROJECT (DSUDP), "Environmental and social management framework for the Dushanbe city municipal solid waste (MSW), collection system" < https://dsc.tj/wp-content/uploads/2025/10/1-ESMF-2025.pdf>, December 2025

specialists conducted a detailed study and analysis of the project's institutional and structural aspects and prepared a Preliminary Social and Environmental Impact Assessment (ESIA) for the Dushanbe Municipal Landfill Expansion Project. According to PIU of this project 1 to 1.5 million USD has been spent for this assessment stage of the project.[20] However, in November of the same year, they were informed that the project had been postponed rather than merely rescheduled. No justification was provided at the time, although subsequent decisions to redirect the funds to another project may explain this outcome.

As a result, the SUE work in this sphere is likely to be transformed after January 1, 2026.[21] A key focus of the project was the reconstruction and environmental remediation of the city's main landfill. Planned interventions include improving its sanitary conditions, implementing environmental monitoring, and reducing negative environmental impacts, including methane emissions.[22] The project also supposed to provide for the procurement of modern specialised equipment. This includes garbage trucks, waste containers, and equipment for landfills and collection points. All procured assets will be transferred to municipal enterprises, improving operational efficiency and the quality of waste management services. Pilot programmes for separate collection, recycling, and composting of organic waste are another major component.[23] These initiatives aim to diversify waste streams and reduce the share of waste sent to landfills, while generating practical models that can be scaled up in the future. Finally, the project includes comprehensive institutional support.[24] This encompasses the development of a waste management strategy, plans to enhance the efficiency of municipal public enterprises (SUEs), staff training, implementation of a performance management system and preparation for a phased tariff reform. These measures are designed to improve the financial sustainability and long-term viability of waste management services.[25] Overall, the World Bank is financing the preparation and implementation of a comprehensive

[20] Interview with local authorities, PIU staff of the SUE, December 2025
[21] Interview with Sangin Boboev, the Director of Smart city. December 2025
[22] Ibid
[23] Ibid
[24] Ecoline International, DUSHANBE SUSTAINABLE URBAN DEVELOPMENT PROJECT (DSUDP), "Environmental and social management framework for the Dushanbe city municipal solid waste (MSW), collection system" < https://dsc.tj/wp-content/uploads/2025/10/1-ESMF-2025.pdf>, December 2025
[25] Ibid

urban project that combines infrastructure investments, technological upgrades, innovative pilot solutions and institutional strengthening, laying the foundation for a sustainable waste management system in Dushanbe.

Description of situation

> *"If the total volume of discarded waste were placed on flatcars, it would create a train extending over 67 kilometres, approximately the distance from Dushanbe to the Uzbekistan border."*[26]

Dushanbe is the capital and largest city of Tajikistan, as well as its main political, economic, scientific and cultural center. It is located in the Hissar Valley at an altitude of 750–930 metres above sea level, and the Dushanbe River flows through the city. Administratively, the city is divided into four districts: Somoni, Sino, Ferdowsi and Shokhmansur.

Dushanbe serves as the seat of the highest governmental authorities and is home to major infrastructure. As a key industrial, commercial and financial hub, Dushanbe also boasts a highly developed service sector. As of 2023, the city's population exceeds 1.2 million residents, and it continues to experience rapid urban growth and socio-economic development.[27] Dushanbe is developing rapidly, but it faces long-standing challenges that need to be addressed, including the provision of drinking water, sewage systems, transportation issues, and the collection and processing of solid household waste. In addition, widespread urban pollution is worsened by insufficient environmental awareness and a lack of civic responsibility. Waste management efforts are severely constrained by limited public understanding, a shortage of trained personnel, inadequate funding, and a widespread failure to recognise the critical environmental and social implications of improper waste disposal. Without decisive intervention, these challenges threaten to intensify pollution and undermine the sustainability of urban environments.

[26] Saifiddin Karaev, Asia Plus, "Every resident of Tajikistan throws away 100 grams of plastic daily",, https://asiaplustj.info/ru/news/tajikistan/society/20241219/kazhdii-zhitel-tadzhikistana-ezhednevno-vibrasivaet-100-grammov-plastika, December 19, 2024

[27] Ecoline International, DUSHANBE SUSTAINABLE URBAN DEVELOPMENT PROJECT (DSUDP), "Environmental and social management framework for the Dushanbe city municipal solid waste (MSW), collection system" < https://dsc.tj/wp-content/uploads/2025/10/1-ESMF-2025.pdf>, December 2025

The Dushanbe landfill has been in operation for 39 years and remains active, despite sustainable development goal SDG 12.5, which requires that by 2030 waste generation is substantially reduced through prevention, recycling and reuse.[28]

Figure 5: Municipal Waste collection points, Source: from different resources

Lack of culture and irresponsibility are leading to this beautiful city drowning in trash. and the authorities need to consider how to address this problem. Dushanbe operates approximately 2,000 municipal waste collection points that are used daily by the population. Solid waste removal services are provided by five state-owned unitary enterprises (SUEs) furnished with specialised vehicles and equipment. Of these enterprises, two serve the Sino district, while one operates in each of the Somoni, Firdavsi and Shokhmansur districts. Collectively, these entities remove more than 1,200 tons of waste per day.[29]

[28] United Nations Department of Economic and Social Affairs Sustainable Development: Targets and Indicators, accessed on 30.03 2026

[29] Ecoline International, DUSHANBE SUSTAINABLE URBAN DEVELOPMENT PROJECT (DSUDP), "Environmental and social management framework for the Dushanbe city municipal solid waste (MSW), collection system" < https://dsc.tj/wp-content/uploads/2025/10/1-ESMF-2025.pdf>, December 2025

As previously noted, only a single landfill is currently operational in Dushanbe, despite the city having 91 designated sites, with this active landfill covering an area of 22 hectares.[30] With the exception of the facilities in Roghun, Tursunzoda, Bokhtar and Khujand, most landfill sites, including Dushanbe's, fail to comply with the technical requirements outlined in SNiP 2.8.11-83. (Figure 5) Common deficiencies include the absence of perimeter fencing, lack of systems for recording incoming waste, improper waste burial and disposal practices, and the absence of landscaping measures. Furthermore, many landfills are situated in close proximity to rivers and open areas, which contributes to water, soil and air pollution, particularly as a result of uncontrolled waste burning.[31]

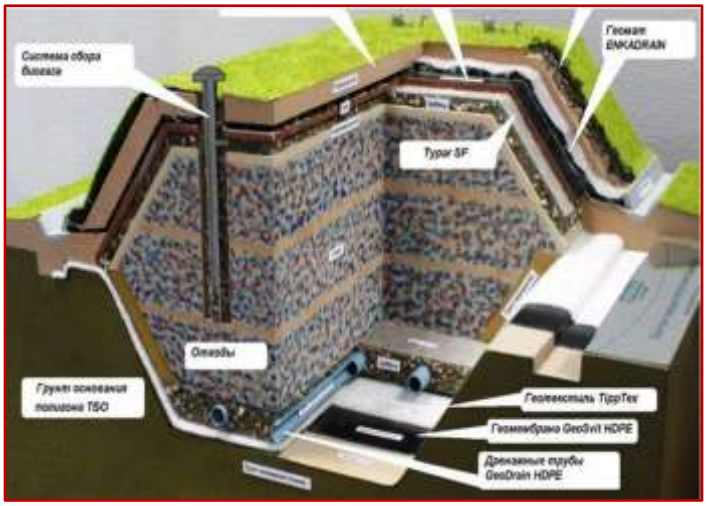

Figure 5: Requirements for landfills construction, Source: from presentation of Committee representatives

Unprocessed household waste can be seen as "frozen" economic resources because it comes from raw materials. Over the past 30 years, a large amount of this waste has built up. Research shows that more than 40% of landfill material can be recycled and reused.[32]

Properly processing this waste could save money for industries, support a circular economy, reduce pollution, and cut the need to import new materials. This means that landfills are not just an environmental problem, they are also a valuable source of resources if recycling and recovery systems are improved.[33]

According to Saidakhamad Akrampur, a senior specialist at the Capital Department of Environmental Protection, the volume of waste generated in Dushanbe has been steadily

[30] Form the presentation of local authorities, Nematzoda N, Committee of environment protection, 22 January 2026, Dushanbe.

[31] Form the presentation of local authorities, Nematzoda N, Committee of environment protection, 22 January 2026, Dushanbe

[32] Faziljon Fatulloev, Asia Plus, "Why are there no waste recycling plants in Tajikistan?", https://asiaplustj.info/news/tajikistan/society/20220426/pochemu-v-tadzhikistane-net-musoropererabativayutshih-zavodov, April 26, 2022

[33] Faziljon Fatulloev, Asia Plus, "Why are there no waste recycling plants in Tajikistan?", https://asiaplustj.info/news/tajikistan/society/20220426/pochemu-v-tadzhikistane-net-musoropererabativayutshih-zavodov, April 26, 2022

increasing. While each resident produced approximately 115 kilograms of waste per year in the 1980s, the current figure has risen to over 1.5 tonnes of household waste per person annually.[34] Furthermore, in the first eleven months of 2025, approximately 751,516.6 tons of municipal solid waste were collected from residential areas throughout the republic and disposed of at landfill sites.[35]

On the way to Vakhdat, 11 kilometres from Dushanbe, a landfill stretched over 22 hectares. The stench of waste can be felt a couple of kilometres before the landfill itself. People live near the landfill, many of them also work here, collecting and sorting waste into bags. Many of them have no education, but they do not complain, in their opinion, this job is no worse than any other, and they manage to earn from 200 to 500 somoni per day (20-50 USD). According to representatives of the Rohi Svalka community, many individuals accumulated wealth by profiting from waste sorting and the resale of recyclable materials collected from nearby landfills, which enabled them to purchase land in the surrounding areas.[36]

[34] Asia Plus, "Why are there no waste recycling plants in Tajikistan?", https://asiaplustj.info/news/tajikistan/society/20220426/pochemu-v-tadzhikistane-net-musoropererabativayutshih-zavodov, April 26, 2022

[35] From the provided report information by State Department for Supervision of Land Use and Protection of Land, General Mineral Resources and Waste Management of the Committee for Environmental Protection under the Government of the Republic of Tajikistan, December 2025

[36] Interview with representatives from landfills nearby community, December 2025

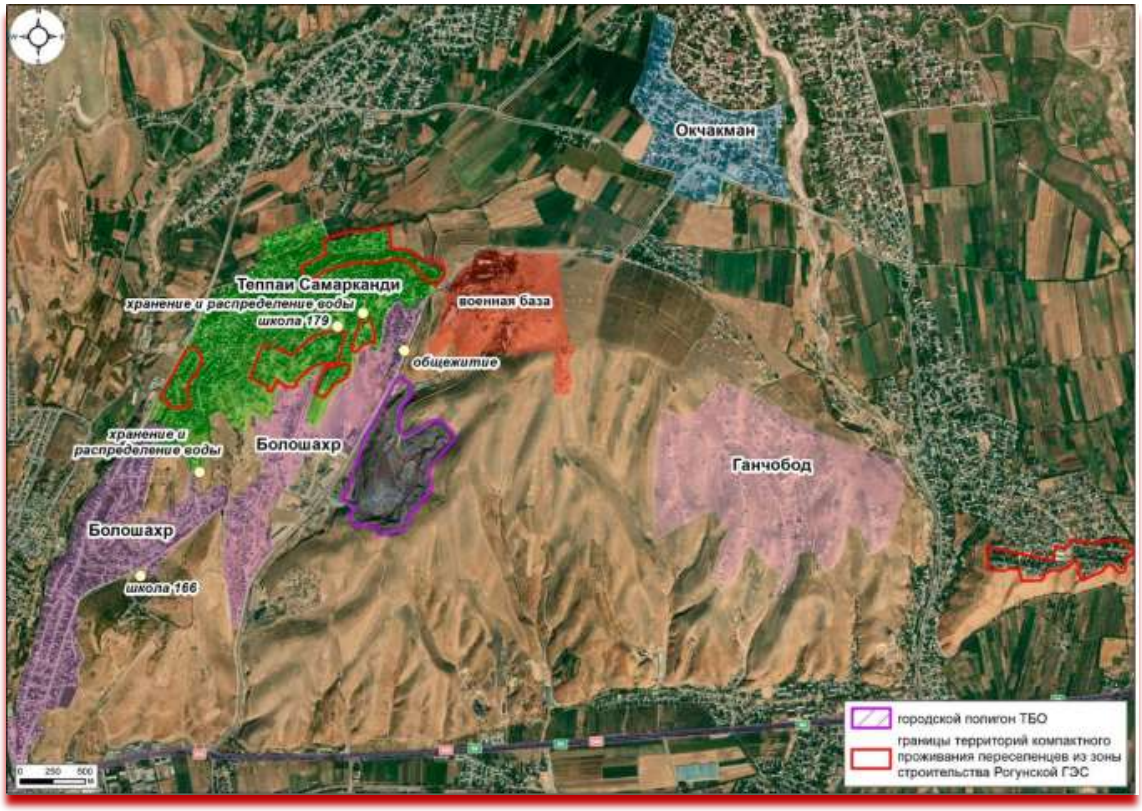

Figure 6:MSW landfills in Dushanbe and nearby settlements. Source: ESMF report 2025

With regard to informal waste pickers, there is no precise estimate of their number; however, according to a recent report, approximately 900–1,300 individuals may be engaged in waste collection within the city, and this figure is subject to significant fluctuation.[37] The majority of waste pickers collect valuable recyclable materials for sale to intermediaries or processing facilities. A smaller number search for items intended for personal use. In most cases, individuals engage in informal waste picking due to limited employment opportunities. However, a minority use this activity as a supplementary source of income alongside their primary or seasonal employment, pensions, disability benefits or other forms of support.

Persons who are not employed by the state-owned enterprise “Dushanbe Municipal Solid Waste Landfill” nevertheless work daily at the landfills; according to officials, each of these individuals is covered by a formal contract. Community representatives also report

[37] Ecoline International, DUSHANBE SUSTAINABLE URBAN DEVELOPMENT PROJECT (DSUDP), “Environmental and social management framework for the Dushanbe city municipal solid waste (MSW), collection system” < https://dsc.tj/wp-content/uploads/2025/10/1-ESMF-2025.pdf>, December 2025

that some people arrive in minibuses and pay an entrance fee to access the main landfills for the purpose of collecting waste.

These people sort waste into categories: glass, metal, plastic, and earn between 200 and 500 somoni per day for this hard work. They pay 1 somoni per kilogram of glass, 1.5 somoni per kilogram of metal, and between 20 dirams and 1 somoni for plastic.[38] They produce between 5 and 10 large bags per day, which they hand over to arriving vehicles. In this packaged form, the waste is sent for recycling.[39]

Experts attribute the involvement of individual residents in waste collection and recycling to the weak waste management strategy of local authorities.[40] Rajab Makhmadov collects plastic bottles in Dushanbe and sells them in two ways: clean bottles to beverage vendors for 50 dirhams to 1 somoni each, and dirty/dented ones to recyclers for 1 to 1.3 somoni per kilogram. Makhmadov earns money this way and believes his work is beneficial, but is reportedly unaware that his activities might be illegal.[41] Hundreds of other people are involved in collecting and selling waste in the capital. The exact number is unknown. The country's authorities also do not provide specific statistics on this matter.[42] Most of them operate according to the same scheme: they collect all kinds of household items, paper, iron and rubber from the capital's landfills, deliver them to waste recycling facilities, and earn a small fee for the service.[43]

The Law on Industrial and Consumer Waste lacks clear criteria for illegal waste handling by residents, relying instead on Article 232 of the Code of Administrative Offences, which imposes fines of 72–216 somoni (USD 6.70–20.10). Collecting and processing waste informally is illegal and violates Tajikistan's Code of Administrative Offenses. However, to ensure the operation of recycling enterprises and considering the population's poor socio-economic conditions, lack of jobs, and the fact that informal waste collection is the only source of income for some residents, authorities often turn a blind eye to these practices.

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[38] Asia Plus, "The landfill near Dushanbe continues to burn. But there are rumors that a recycling plant will soon be built there", < https://asiaplustj.info/ru/news/tajikistan/security/20241029/musornii-poligon-okolo-dushanbe-prodolzhaet-goret-no-govoryat-chto-skoro-tut-postroyat-pererabativayutshii-zavod>, October 29, 2024

[39] ibid

[40] Asia Plus "How illegal waste collection and recycling in Dushanbe threatens human health and the environment", <https://asiaplustj.info/news/tajikistan/society/20241210/kak-nezakonnii-sbor-i-pererabotka-musora-v-dushanbe-ugrozhaet-zdorovyu-lyudei-i-okruzhayutshei-srede>, December 10, 2024

[41] Ibid

42 Asia Plus "How illegal waste collection and recycling in Dushanbe threatens human health and the environment", <https://asiaplustj.info/news/tajikistan/society/20241210/kak-nezakonnii-sbor-i-pererabotka-musora-v-dushanbe-ugrozhaet-zdorovyu-lyudei-i-okruzhayutshei-srede>, December 10, 2024

43 Ibid

As a result, despite legal ownership of waste by generators and municipal bodies, inadequate legislation and strategy have enabled the proliferation of informal and illegal waste collection, undermining environmental and public health standards. Ibodullohi Makhmadullo of the Environmental Protection Committee notes this fine is ineffective, with just 30 people penalised in the first half of 2024 for prohibited landfill scavenging, despite hundreds of informal collectors operating openly in Dushanbe. Enforcement is further hindered by minimal surveillance: CCTV covers only 50 of 1,805 landfill sites (2.7%), while unregulated residential trash bins encourage indiscriminate disposal. Officials point to the absence of a comprehensive national waste management strategy, including transportation, recycling and private sector regulation as the main challenge. Although a strategy is in development, no timeline for adoption is public. Based on official assessments, more than 100 waste transport vehicles are required in Dushanbe to transfer solid waste from residential areas to designated landfill sites.

When landfills burn, they release harmful chemicals into the air that can cause cancer and genetic damage in humans. Dioxins and similar compounds are especially dangerous because they can build up in the body and lead to serious illnesses, including cancer.[44] Fires are constantly occurring at the landfill, and these fires are actually an emergency situation; they are incredibly harmful both to humans and to the local ecosystem. The ground and air are contaminated, and people living nearby suffer from various diseases without realising their true cause. Despite the evident environmental and health risks associated with living near a landfill, these dangers receive little public attention. As one interviewed woman explained, “At first, the smell of incineration was very difficult for us, but over time we became accustomed to it.”[45]

44 Asia Plus, “The landfill near Dushanbe continues to burn. But there are rumors that a recycling plant will soon be built there”, < https://asiaplustj.info/ru/news/tajikistan/security/20241029/musornii-poligon-okolo-dushanbe-prodolzhaet-goret-no-govoryat-chto-skoro-tut-postroyat-pererabativayutshii-zavod>, October 29, 2024

[45] Interview with a community representative, inhabitant of household living near the landfill, December 25, 2025

Figure 7 Rahi Svalka, landfill road, source: Experts's photo

Despite this situation, the number of households located near the main landfill in Dushanbe has been increasing steadily. The landfill is situated approximately 11 km from the city center, along a road locally known as "**Rahi Svalka**" (landfill road) or "**Boloi Shahri"** (City Up). According to a long-term resident of the area, six years ago there were only 10 households, whereas the number has now risen to approximately eighty.[46] In addition, the area includes the Roguuniyon mahalla (community), whose residents were resettled long before, when construction of the Rogun project first began. This area is characterised by a severe lack of basic facilities, including schools, hospitals and commercial services. Water is supplied by tanker trucks on a paid basis, and children are required to go to the nearby area of ***Teppai Samarqand*** (Samarqand pick) for education. According to representatives of the local community, the local administration has pledged to relocate the landfill to a different site in response to the growing number of households in the area. The growing number of households in this area can be attributed to several factors, including the demolition of old buildings in the city center to make way for new construction, increased internal migration, and the development of informal economic activities related to waste collection, which has become a source of income for many residents.

[46] Interview with a community representative, inhabitant of household living near the landfill, December 25, 2025

Regarding waste composition (Figure 8), the data have not been updated since 2017. According to officials, this is primarily due to the lack of qualified specialists and the absence of appropriate technical capacity assessment required to conduct comprehensive waste composition analyses.[47] The last morphology investigation was undertaken by the Scientific Information Center of the Intergovernmental Commission for Sustainable Development of the International Fund for the Protection of the Aral Sea.[48] According to other experts, waste composition analyses should be conducted in collaboration with the government statistics agency and supported by contracted companies providing technical assistance.[49]

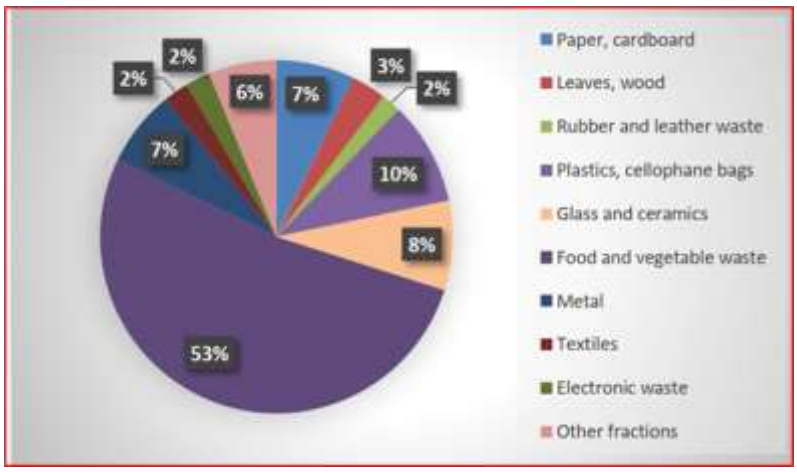

Figure 8: Solid waste composition by fraction. Source: From Presentation of Committee representatives

Consequently, current assessments rely on outdated data, which may affect the reliability of planning and decision-making in the waste management sector. Official regulations require that waste morphology be updated every five years, given that waste composition may change. Based on waste morphology data collected in 2017, plastics and cellophane bags accounted for roughly 10% of the overall waste composition. Considering the continued growth in the daily use of plastic materials, this proportion may have increased since then. Meanwhile, organic waste, which is primarily food and vegetable waste, constituted the largest share, representing about 53% of the total waste stream. Tajikistan faces significant challenges in waste management. According to World Population Review, in 2024 the country was classified among those with a very high level of waste pollution. The Mismanaged Waste Index (MWI) for Tajikistan reached 87.1%, indicating that a large share of waste is either not collected or improperly disposed of. As a result, waste, particularly plastic often accumulates in landfills, rivers, and urban areas,

[47] Form the presentation of local authorities, Nematzoda N, Committee of environment protection, 22 January 2026, Dushanbe
[48] Form the presentation of local authorities, Nematzoda N, Committee of environment protection, 22 January 2026, Dushanbe
[49] During the discussion at the workshop, 22 January 2026.

contributing to soil and water pollution, harming wildlife, and negatively affecting public health and quality of life. This issue reflects the broader global plastic waste crisis, as only about 9% of plastic worldwide is recycled.[50]Experts consider plastic pollution to be the most serious problem. In 2024, the world produced approximately 400 million tonnes of plastic waste.

According to official data from the Committee for Environmental Protection under the Government of the Republic of Tajikistan, Tajikistan generates more than 9 million tonnes of municipal solid waste annually, including approximately 322,000 tonnes of plastic waste. Residents of large cities produce over one kilogram of waste per person per day, about 100 grams of which is plastic. In the ten largest cities alone, this results in roughly 150,000 tonnes of plastic waste each year. However, only about 2.6% of plastic waste is recycled, while the majority is either landfilled or inadequately managed, contributing to significant environmental and public health impacts.[51]

Plastic destroys ecosystems, harms human health, and exacerbates climate change.[52] Plastic is used in almost every industry today, from the automotive industry to medicine. As it was mentioned above every resident of Tajikistan throws away 100 grams of plastic daily. Single-use plastic products are not recycled or returned to the economy, overburdening recycling systems and often ending up in the environment. The most common ones include bottles, packaging, bags, disposable tableware and packaging foam. Plastic is almost everywhere: in rivers, lakes, and oceans, on city streets and in rural areas, in landfills, and even in deserts and sea ice. [53] Plastic harms ecosystems by starving fish that ingest its microparticles. It is hazardous to human health, as micro- and nano-plastics accumulate in organs, including the liver and testicles. Plastic production exacerbates climate change, accounting for over 3% of global greenhouse gas emissions.[54] By 2060, the volume of plastic waste is projected to nearly triple, reaching one billion tonnes per year. If current trends continue, almost half of this waste will end up in

[50] Saifiddin Karaev, Asia Plus, "Every resident of Tajikistan throws away 100 grams of plastic daily",, https://asiaplustj.info/ru/news/tajikistan/society/20241219/kazhdii-zhitel-tadzhikistana-ezhednevno-vibrasivaet-100-grammov-plastika, December 19, 2024

[51] Aliya Hamidullina, Asia Plus, "A Second Life for Plastic: How Tajikistan Can Profit from Waste Recycling", https://asiaplustj.info/ru/node/350839, July 25, 2025

[52] Interview with a community representative, inhabitant of household living near the landfill, December 25, 2025

[53] Ibid

[54] Asia Plus, "UN: The world produced 400 million tons of plastic waste in 2024. How does this affect nature and humans? https://asiaplustj.info/news/world/20250512/oon-v-2024-godu-mir-proizvel-400-mln-tonn-plastikovih-othodov-kak-eto-vliyaet-na-prirodu-i-cheloveka", May 12, 2025

landfills, incinerated, or released into the environment.[55] The most pressing challenge at present is the recycling of plastic waste. Although plastic recycling facilities operate in three cities: Dushanbe, Vahdat, and Khujand, their capacity is extremely limited and insufficient to process even a small share of the waste generated on a daily basis, let alone accumulated legacy waste.[56]

Another major environmental problem was related to mercury-containing lamps. In response to these concerns, the government adopted the Resolution entitled "On Measures to Create a System of Safe Collection, Storage, Transportation and Recycling of Mercury-Containing Lamps" in 2009. According to official data, a total of 2,157,449 mercury-containing lamps were stored in different locations. Of these, 81,050 lamps were located at the Dushanbe landfill, 1,771,483 at JSC "Charog" in Isfara, and 215,886 at JSC "Tajik Aluminium Company". By 2025, authorities planned to neutralise 2,150,428 mercury-containing lamps, while 55,489 lamps were expected to remain stored at the Tajik Aluminum Company.

Regarding electronic waste, the government has assigned responsibilities to the Ministry of Industry and Trade of Tajikistan, which is expected to develop a national strategy and establish specialised facilities for the collection and recycling of electronic waste, including components such as batteries from electric vehicles. However, the country currently lacks adequate infrastructure for systematic e-waste collection and processing.[57] At present, much of this waste is collected by private actors and intermediaries, who export certain components such as used batteries and electronic parts to countries like China and Iran for further processing and recycling.[58] This reflects both the growing economic value of electronic waste and the limited domestic capacity for its safe treatment and recycling.

[55] Ibid

[56] Current time, Anushervon Aripov, "The biggest problem is plastic recycling." How is Tajikistan solving its waste problem?", https://www.currenttime.tv/a/tajikistan-recycling-garbage/29979240.html, June 2019

[57] During the discussion on WM workshop, 22 January 2026, Dushanbe.

[58] During the discussion on WM workshop, 22 January 2026, Dushanbe.

Small waste recycling companies

According to Tajikistan's Committee for Environmental Protection, there are currently 74 small waste recycling facilities operating across the country (Figure 9**).**[59] At present, only 4% of waste is recycled, highlighting a significant shortfall in the capacity of existing waste recycling plants.[60] Some of these enterprises operate unofficially, emphasising that the main reason for this is to avoid the additional costs of obtaining licenses from the Ministry of Industry and Trade and the Committee for Environmental Protection.[61] Community representatives confirm the existence of six factories near the landfills in Dushanbe, producing items such as water pipes, bricks, and plastic bags. They also reported the construction of a few additional factories in the area.[62]

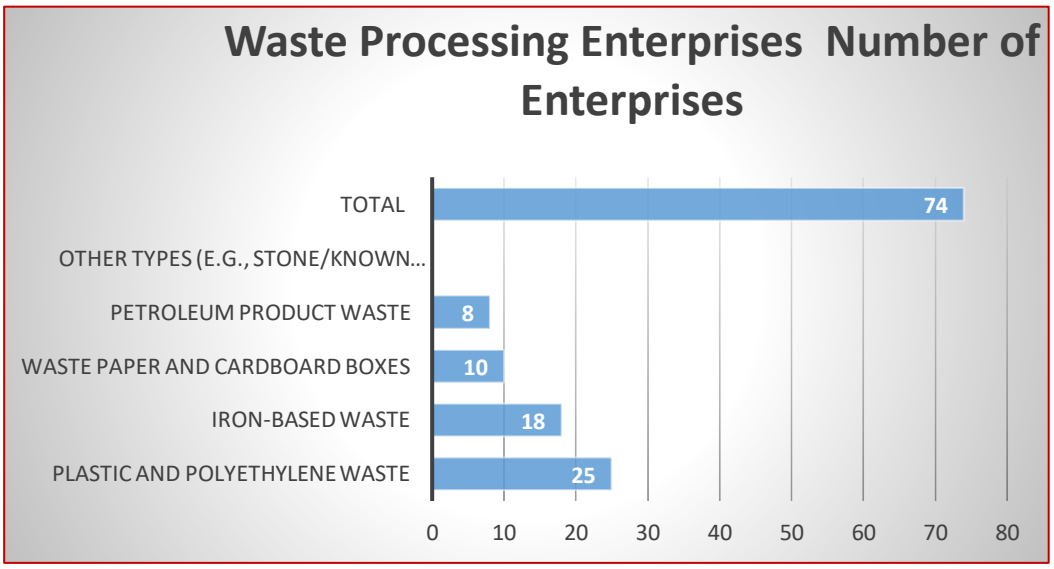

Figure 9: Waste Enterprises, Source: Asia Plus

To obtain a waste recycling license in Tajikistan, a business must be registered with the Tax Committee. Additionally, numerous other permits are required: fire safety permits from the Fire Service, production permits from the Ministry of Industry and Trade, and

[59] Asia Plus "How illegal waste collection and recycling in Dushanbe threatens human health and the environment", <https://asiaplustj.info/news/tajikistan/society/20241210/kak-nezakonnii-sbor-i-pererabotka-musora-v-dushanbe-ugrozhaet-zdorovyu-lyudei-i-okruzhayutshei-srede>, December 10, 2024

[60]Form the presentation of local authorities, Nematzoda N, Committee of environment protection, 22 January 2026, Dushanbe

[61] Asia Plus "How illegal waste collection and recycling in Dushanbe threatens human health and the environment", <https://asiaplustj.info/news/tajikistan/society/20241210/kak-nezakonnii-sbor-i-pererabotka-musora-v-dushanbe-ugrozhaet-zdorovyu-lyudei-i-okruzhayutshei-srede>, December 10, 2024

[62] Interview with community representatives near the landfills, December 2025

permits for the release of waste and pollutants into the atmosphere from the Committee for Environmental Protection.[63]

Moreover, they are required to provide regular bribes to relevant local authorities from their income in order to avoid routine inspections. Recycling plants in the country are primarily privately owned and accept waste from individuals for processing. Waste recycling companies that are legal entities are subject to fines of 200 to 300 calculated units (14,000 to 21,600 somoni or USD 1,284 to 1,980) for failure to comply with environmental requirements during waste storage, transportation, and use, in accordance with Article 239 of the Code of Administrative Offenses of the Republic of Tajikistan.[64] Ibodullohi Makhmadullo says waste processing plants primarily deal with recycling. For example, plastic is used to make plastic containers or polyethylene bags, paper is often used to make toilet paper, and petroleum products are used to make tyres, sports field surfaces, and rubber products.[65] The exact volume of capital flows in this sector is impossible to estimate. According to Ibodullohi Makhmadullo, the products manufactured by these enterprises are used for economic activity within the country and are not exported abroad. However, according to some other resources, they export recycled plastic containers to Uzbekistan, where they are used to make plastic bags.[66] According to information from the Committee for

Figure 10:Waste processing plants, source: from presentation of Committee representatives

63 Asia Plus "How illegal waste collection and recycling in Dushanbe threatens human health and the environment", <https://asiaplustj.info/news/tajikistan/society/20241210/kak-nezakonnii-sbor-i-pererabotka-musora-v-dushanbe-ugrozhaet-zdorovyu-lyudei-i-okruzhayutshei-srede>, December 10, 2024

64 Asia Plus "How illegal waste collection and recycling in Dushanbe threatens human health and the environment", <https://asiaplustj.info/news/tajikistan/society/20241210/kak-nezakonnii-sbor-i-pererabotka-musora-v-dushanbe-ugrozhaet-zdorovyu-lyudei-i-okruzhayutshei-srede>, December 10, 2024

65 Asia Plus "How illegal waste collection and recycling in Dushanbe threatens human health and the environment", <https://asiaplustj.info/news/tajikistan/society/20241210/kak-nezakonnii-sbor-i-pererabotka-musora-v-dushanbe-ugrozhaet-zdorovyu-lyudei-i-okruzhayutshei-srede>, December 10, 2024

66 Interview with activist, environment protection issues journalist, Z. Golubeva, December 2025

Environmental Protection, the country recycles just over 23,000 tonnes of waste annually. The total waste volume is 4 million cubic metres.[67]

Since 2020, several promises have been made by officials in the media on building a solid waste management system or the construction of a large recycling facility. However, for now only a brief assessment has been implemented of the existing solid waste management system in Dushanbe from 2022 to 2024. Therefore, currently, waste collection and recycling are carried out by private waste recycling companies, without legal compliance and using the services of private individuals.[68]

Some officials highlight the importance of small recycling companies, as well as the contribution of local business people who provide waste containers in several villages near Dushanbe and surrounding districts, particularly given the limited capacity of responsible public authorities.[69] Despite this potential, the government has not significantly facilitated the growth of small enterprises in the sector, as obtaining licenses remains difficult. Waste management is increasingly viewed as a valuable economic resource, and the authorities appear to prioritise attracting large-scale investments that could consolidate control over the sector, potentially leading to monopolistic arrangements rather than encouraging a broader base of small private operators.

According to the director of the state-owned enterprise Dushanbe Solid Waste Landfill, the city mayor has ordered the construction of a solid waste processing plant at the existing landfill site, with completion targeted for 2025. He further stated that the facility will be built by a Chinese company and will not only recycle waste but also produce fertiliser using gas generated through combustion processes.[70] A small recycling plant was built in the city back in 2011, but it is unable to process all the waste coming from the capital -daily approximately 1,500 tonnes of household waste arrive at the landfill daily.[71]-

[67] Asia Plus "How illegal waste collection and recycling in Dushanbe threatens human health and the environment", <https://asiaplustj.info/news/tajikistan/society/20241210/kak-nezakonnii-sbor-i-pererabotka-musora-v-dushanbe-ugrozhaet-zdorovyu-lyudei-i-okruzhayutshei-srede>, December 10, 2024

[68] Asia Plus "How illegal waste collection and recycling in Dushanbe threatens human health and the environment", <https://asiaplustj.info/news/tajikistan/society/20241210/kak-nezakonnii-sbor-i-pererabotka-musora-v-dushanbe-ugrozhaet-zdorovyu-lyudei-i-okruzhayutshei-srede>, December 10, 2024

[69] During the discussion at the WM workshop on 22 January, 2026, Dushanbe.

[70] Asia- Plus, "A landfill near Dushanbe continues to burn. But there's talk of a recycling plant being built there soon", < https://asiaplustj.info/ru/news/tajikistan/security/20241029/musornii-poligon-okolo-dushanbe-prodolzhaet-goret-no-govoryat-chto-skoro-tut-postroyat-pererabativayutshii-zavod>, October 29, 2024

[71] Asia- Plus,"A landfill near Dushanbe continues to burn. But there's talk of a recycling plant being built there soon", < https://asiaplustj.info/ru/news/tajikistan/security/20241029/musornii-poligon-okolo-

Efforts to modernise waste management have been ongoing, but progress has been limited. In February 2020, Dushanbe's Deputy Mayor, Makhmadsaid Zubaidzoda, announced that a waste-processing plant would be constructed in the capital by the end of the year and that negotiations were underway with the European Bank for Reconstruction and Development (EBRD) and the Asian Development Bank. He further noted that the mayor's office had received proposals from Chinese, Arab and Italian companies, from which five promising offers had been shortlisted. One year earlier, the Chinese company Pinggao Group Co. Ltd. had also sought government approval to build such a facility.[72]

However, the subsequent fate of these prospective investors remains unclear. According to other sources, in 2024 officials from the Dushanbe city government held discussions with a delegation representing Chinese investment and technology companies, including Xiongan Times Technology Group and Abit Investment (Hong Kong). The primary focus of the meeting was the improvement of solid waste management in the capital. Representatives of the Chinese companies presented a concrete proposal for the construction of a waste-processing facility, emphasising that such infrastructure is essential for enabling the recycling of solid waste. The discussions centred on areas of potential cooperation that aligned with the interests of both parties.[73] The waste management sector in Tajikistan remains largely monopolised by the state, with local authorities allowing only small enterprises to operate. According to some sources, foreign companies interested in establishing recycling facilities have been denied licences, likely due to the substantial revenue potential of the sector.[74]

The Dushanbe Sustainable Urban Development Project (P179630), funded by the International Development Association (IDA) of the World Bank with approximately USD 40 million and planned for 2023–2026, was intended to comprehensively modernise the city's waste management system. However, its recent halt has sparked significant debate over its objectives, financial viability, and practical feasibility. According to some officials,

dushanbe-prodolzhaet-goret-no-govoryat-chto-skoro-tut-postroyat-pererabativayutshii-zavod>, October 29, 2024

[72] Ibid

[73] Khovar, "The construction of a waste processing plant was discussed in Dushanbe", < https://khovar.tj/rus/2024/09/v-dushanbe-obsuzhdyon-vopros-stroitelstva-predpriyatiya-po-pererabotke-othodov>, September 14, 2024

[74] Interview with anonymous respondent, December 2025

the construction of a fully equipped recycling facility would require an investment exceeding USD 100 million, and at present, the necessary resources to undertake such a project are not available.[75]

At present, the government appears to prioritise other sectors over solid waste management. Initiatives such as modernizing the city through the construction of new high-rise buildings and establishing new agencies, including the state unitary enterprise Smart City, are considered more urgent. Analysis suggests that the recent interruption of Dushanbe Sustainable Urban Development Project of the World Bank (P179630), which was mentioned in previous section, is closely linked to the ongoing and ambitious Rogun Dam project. Initiated during the Soviet era in 1976, the Rogun Dam is often regarded as Tajikistan's most significant national undertaking and is central to the government's strategy for achieving energy independence and expanding regional electricity exports. However, the project also represents one of the country's largest financial commitments. In this context, the President ordered that the remaining USD 39 million of World Bank funding allocated to the Dushanbe Sustainable Urban Development Project be redirected to the Rogun Dam,[76] with construction targeted for completion in 2027 and full operational status planned by 2030.

Toward a greener and smarter future

Despite the slow progress in improving the waste management system, several notable achievements can be observed. These include the adoption of a new Environmental Code, the preparation of the National Waste Management Strategy through 2035, ongoing sectoral reforms, the establishment of the state unitary enterprise Smart City to implement relevant initiatives and active efforts to attract investment. Collectively, these developments represent initial steps toward the modernization of the country's waste management infrastructure.

Moreover, Dushanbe has begun leveraging technological solutions to enforce cleanliness regulations and promote responsible waste management practices among the urban population. According to offitials's provided reports, in order to strengthen oversight and

[75] Interview with officials on WMS, Dushanbe, December 2025
[76] Interview with officials and WB representatives, December 2025

control over waste accumulation points, particularly in environmentally vulnerable areas, the Committee installed a total of 152 surveillance cameras. Of these, 92 were placed in cities and districts of Sughd Region, 50 in the city of Dushanbe, 2 in Hisor, 6 in Bokhtar, 1 in Khuroson district, 4 in Shahritus district, and 4 in the city of Kulob.[77] However, according to environmental activists, complaints submitted to the relevant authorities based on camera surveillance evidence often receive no response. As a result, activists increasingly rely on social media to organize and promote environmental clean-up campaigns.[78]

According to information provided by the Committee for Environmental Protection under the Government of the Republic of Tajikistan to Asia-Plus, designated waste collection points are being established around newly constructed modern residential buildings in the capital. These sites incorporate new technologies designed to enhance the efficiency of waste management and are being implemented in accordance with directives issued by the city's mayor. At these collection points, waste is to be segregated in line with environmental standards and deposited into clearly labeled containers indicating specific waste types, a measure intended to simplify sorting for residents. The primary objective of these facilities is to raise public awareness and strengthen environmental education. In line with the mayor's decree designating 2024 as the "Year of Environmental Education" in Dushanbe, ongoing efforts are focused on the repair and modernization of waste collection infrastructure.

In accordance with the Chairman's order, environmental protection departments and divisions in cities and districts facilitated the installation of 396 special containers for the collection of plastic packaging, while entrepreneurs contributed an additional 1,027 containers. Consequently, a total of 1,423 plastic collection containers are currently in use.[79]

[77] From the provided report information by State Department for Supervision of Land Use and Protection of Land, General Mineral Resources and Waste Management of the Committee for Environmental Protection under the Government of the Republic of Tajikistan, December 2025

78 During the discussion, workshop on 22 January, 2026, Dushanbe

79From the provided report information by State Department for Supervision of Land Use and Protection of Land, General Mineral Resources and Waste Management of the Committee for Environmental Protection under the Government of the Republic of Tajikistan, December 2025

Figure 11: New waste collection container at the city center. Source: Expert's photo

In collaboration with various stakeholders, including educational institutions and local communities, organised cleaning campaigns were conducted to maintain nearby living areas. Following the Chairman's Order No. 01 dated 2 January 2025 on the "Local Area Cleanliness" and "Highway Cleanliness" environmental campaigns, extensive sanitation activities took place nationwide during the first eleven months of 2025. The "Local Area Cleanliness" campaign was held 2,563 times, engaging 328,461 participants and removing 6,406 cubic metres of waste to designated disposal sites. Simultaneously, the "Highway Cleanliness" campaign occurred 2,271 times with 113,330 participants, cleaning 2,040,478.3 square metres of roads and pedestrian areas and collecting 4,446 cubic metres of waste. Media coverage included 815 audio visual reports.[80]

[80] From the provided report information by State Department for Supervision of Land Use and Protection of Land, General Mineral Resources and Waste Management of the Committee for Environmental Protection under the Government of the Republic of Tajikistan, December 2025

Figure Cleaning campaign 12: initiatives, Sources: from Committee presentation

Furthermore, a total of 50 electric garbage scooters were supplied to enhance operational support for municipal institutions across cities and districts.[81] For enhancing environmental awareness and promote waste prevention, a total of 466 information banners were installed along highways and near administrative buildings, including 264 banners placed by environmental protection authorities and 202 banners installed by entrepreneurs.[82]

The country itself recognises the importance of establishing large-scale waste recycling and management facilities, as the capacity of existing small plants is insufficient to handle the overall volume of waste generated. Experts emphasise that the establishment of an effective and officially regulated waste management system is essential. The state can play a central role in regulating the sector through a range of policy instruments, including preferential loans, direct public investment, the creation of favourable conditions for lawful operations, simplified licensing procedures, and the enforcement of extended producer responsibility mechanisms. In addition, experts highlight the importance of centralised waste processing. This approach involves accurately identifying the composition of waste and processing it at large-scale facilities in order to increase the volume and quality of recycled outputs. Public–private partnerships (PPPs) are also considered a critical mechanism, whereby the state collaborates with private sector actors through formal cooperation agreements, while local authorities provide supportive operating conditions.[83] Such arrangements would encourage recycling companies to function within the legal framework. Furthermore, experts stress the need for public awareness campaigns to educate citizens about proper waste management practices,

[81] From the presentation of local officials during the workshop on 22 January in Dushanbe

[82] Ibid

[83] Asia Plus "How illegal waste collection and recycling in Dushanbe threatens human health and the environment", <https://asiaplustj.info/news/tajikistan/society/20241210/kak-nezakonnii-sbor-i-pererabotka-musora-v-dushanbe-ugrozhaet-zdorovyu-lyudei-i-okruzhayutshei-srede>, December 10, 2024

relevant legal requirements, and sanitation standards. Ensuring fair wages and decent working conditions for employees in the waste management sector is also identified as a key component of a sustainable and effective system.[84]

Conclusion

This research has highlighted the deeply rooted and interrelated challenges confronting Tajikistan's municipal solid waste management system. The findings reveal an obvious governance paradox: despite the existence of extensive international environmental commitments and a formal national legal framework, the sector remains constrained by weak implementation, limited enforcement capacity and fragmented institutional coordination. Current practices are dominated by environmentally unsustainable landfill disposal, the near absence of integrated recycling or recovery systems and the expansion of an informal waste-picking economy driven by economic precarity. Although Development Finance Institutions (DFIs) have provided substantial financial resources and technical assistance, their interventions have yielded limited and often unsustainable outcomes, failing to stimulate the systemic reforms required for long-term sectoral transformation. The redirection of funding from the Dushanbe Sustainable Urban Development Project exemplifies the vulnerability of donor-supported initiatives to shifting domestic political and economic priorities, underscoring persistent misalignments between external investment frameworks and national governance realities. Dushanbe serves as a critical case illustrating these systemic failures. The environmental degradation and public health risks associated with the city's landfill-dependent model are significant and disproportionately affect surrounding communities. Moreover, insufficient public awareness, weak civic education and limited opportunities for stakeholder participation perpetuate a cycle of environmental neglect and institutional inactivity. Consequently, the transition toward a sustainable and circular waste management system cannot be understood solely as a technical or financial undertaking; rather, it constitutes a complex socio-political challenge that requires sustained political commitment, institutional accountability and an integrated socio-economic approach.

[84] Asia Plus "How illegal waste collection and recycling in Dushanbe threatens human health and the environment", <https://asiaplustj.info/news/tajikistan/society/20241210/kak-nezakonnii-sbor-i-pererabotka-musora-v-dushanbe-ugrozhaet-zdorovyu-lyudei-i-okruzhayutshei-srede>, December 10, 2024

Recommendations

To address these structural deficiencies and advance sustainable waste governance in Tajikistan, the following targeted recommendations are proposed for policymakers, development partners and civil society actors.

1. **Advancing Governance and Institutional Clarity:** Effective reform begins with robust legal and strategic foundations. It is recommended that the Law on Production and Consumption Waste and the Environmental Code be amended to introduce enforceable mandates for waste segregation at source, establish extended producer responsibility (EPR) frameworks and institute deterrent penalties for environmental violations. Alongside this, the formal adoption and public dissemination of a National Waste Management Strategy through 2035 is critical. This strategy should be operationalised through a transparent roadmap, complete with measurable targets, dedicated funding and obligatory public reporting. Furthermore, clarifying the distinct mandates of the Committee for Environmental Protection, local authorities of government and the Committee for Housing and Communal Services (service delivery) would reduce institutional ambiguity. Empowering municipal waste enterprises with greater operational and fiscal autonomy would also enhance local responsiveness and efficiency.

2. Prioritizing Strategic Infrastructure Investment: Investment should be directed toward scalable, intermediate systems that build capacity incrementally. Before committing to capital-intensive end-point facilities, focus should be placed on decentralised solutions such as material recovery facilities, community composting programs, and secure handling systems for hazardous domestic waste. Modernizing the logistical backbone of waste management through fleet renewal, data-optimised collection routes and the phased introduction of segregated containers in urban centres is equally vital. Underpinning all infrastructure planning must be a comprehensive, independent local waste audit. Updated data on waste composition is essential for evidence-based policymaking, effective private sector engagement and the development of viable recycling markets.

3. Formalizing and Integrating the Informal Sector: The significant contributions of informal waste pickers should be recognised and integrated into the formal system. A deliberate formalisation framework is needed to register, train and organise these workers into cooperatives or social enterprises. This process must be accompanied by the provision of safety equipment, access to healthcare and their inclusion in value chains with fair compensation. Aligning national development strategies with the creation of formal 'green jobs' in waste management and recycling can further promote social inclusion while building a skilled workforce for the sector.

4. Enhancing Development Finance with Accountability: Engagement with Development Finance Institutions (DFIs) should be structured to maximise sustainability and accountability. Future project agreements should incorporate explicit governance conditionalities, linking fund disbursement to verifiable progress in transparency, anti-corruption and citizen participation. A defined portion of financing must be allocated to sustained capacity building for municipal staff and the development of financially sound service models. To ensure accountability, independent monitoring mechanisms should be established, granting citizen oversight groups access to project data and the authority to commission external impact assessments.

5. Fostering an Engaged and Informed Public: Systemic change requires active societal participation. A sustained, multi-channel national awareness campaign on waste reduction and segregation, integrated into educational curricula and community programmes is fundamental. In parallel, upholding the principles of the Aarhus Convention by guaranteeing public access to environmental data, project documents and performance metrics is crucial for building trust. Finally, institutionalising permanent multi-stakeholder dialogue platforms bringing together government, financiers, operators, civil society and waste worker associations will ensure collaborative planning and sustained oversight.

Overall, transforming Tajikistan's waste management system requires a departure from fragmented, project-based interventions toward a comprehensive and coordinated reform agenda. By aligning regulatory enforcement, strategic investment, private sector participation, social inclusion, and civic engagement, the country can begin to convert its current environmental liabilities into a foundation for sustainable urban development, improved public health outcomes, and a more resilient circular economy.

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