

PAPER

WASTE MANAGEMENT IN UZBEKISTAN: LEGAL FRAMEWORKS, INVESTMENT PROJECTS AND SOLUTIONS

Nurmetov Ismoil Alimbayevich^{1,*}

¹PhD, Associate Professor at Urgench State University

*ismoil_nur84@mail.ru

Abstract

This article examines the waste management system in Uzbekistan, legal frameworks within international conventions, recycling projects, and environmental initiatives against plastic waste. It explores sustainable solutions to environmental challenges through the implementation of circular economy principles.

Key words: Uzbekistan, waste management, recycling, environmental safety, circular economy, household waste, Basel Convention, investment projects, plastic waste, environmental culture.

Introduction

In Uzbekistan, an average of 14 million tons of waste is generated annually. Unfortunately, only 4–5 percent of this waste is recycled, while the remainder is accumulated in landfills. As a result, more than 7 million tons of greenhouse gases are released into the atmosphere from waste landfills each year, and approximately 43 thousand tons of toxic leachate seep into underground soil layers.

Waste recycling not only reduces negative environmental impacts but can also generate economic benefits. For this purpose, the Ministry of Ecology, Environmental Protection and Climate

Change, in cooperation with foreign investors, has developed a number of projects. In particular, investments totaling USD 1.3 billion have been attracted, under which it is planned to construct eight waste incineration plants and process landfill gas at the Akhangaran landfill [1].

One of the most important international legal instruments related to waste management is the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. This convention regulates the cross-border movement of hazardous waste between states [2]. By 1999, the number of parties to the convention had reached 132. Currently, the total

Compiled on: February 2, 2026.

Copyright: ©2026 by the authors. Submitted to *Advances in Science and Humanities* for possible open access publication under the terms and conditions of the [Creative Commons Attribution \(CC BY\) 4.0 license](https://creativecommons.org/licenses/by/4.0/).

volume of municipal waste worldwide amounts to 440 million tons per year, 80 percent of which is disposed of through landfilling. In Uzbekistan, the average daily amount of waste generated per urban resident is 1.2 kg, which equals 453 kg per year [3]. According to statistical data, in 2017 a total of 114.7 million tons of production and consumption waste was generated in the republic. Of this amount, 41.6 million tons (36.2 percent) consisted of non-recyclable hazardous waste, while 42.8 million tons (37.3 percent) were recyclable hazardous waste [4].

As of 2019, 296 special sites for waste disposal and utilization were operating across the country. Among them, 221 were designated for solid municipal waste, 16 for industrial waste, 4 for construction waste, 21 for sludge storage, 15 for waste warehouses, and 19 were classified as special landfills. In addition, 23 facilities were available for the disposal of hazardous waste [5].

Literature Review

Scientific literature addressing international environmental relations reflects Uzbekistan's state policy aimed at ensuring environmental sustainability, particularly issues of international cooperation in this field. The works of G. Abdullaeva, B. Alikhonov, N. Ikramova, T. Tillyaev, R. Tursunova, S. Davletov, and others also cover various aspects of environmental protection. For example, S. Davletov's scientific article highlights key aspects of state policy on ecology and environmental protection at a new stage of national development [6].

Analysis and Results

The Republic of Uzbekistan acceded to the Basel Convention in accordance with a resolution of the Oliy Majlis dated December 22, 1995, and this international document entered into force for the country on May 7, 1996 [7]. In order to ensure compliance with the requirements of the convention, the government developed the necessary legal framework. In particular, relevant regulations were introduced based on the resolution of the Cabinet of Ministers "On the Regulation of the Import and Export of Environmentally Hazardous Products and Waste into and out of the Republic of

Uzbekistan."

To further regulate legal relations related to waste management, the Law "On Waste" was adopted on April 5, 2002. This law created a legal basis for reducing the negative impact of waste on the environment and for managing waste on a legal foundation [8]. During 2001–2005, the project "Introduction of Cleaner Production and Development of a Sustainable Cleaner Production Program in Uzbekistan" was implemented. In 2004–2005, a national strategy and action plan for waste management were also developed.

The country is pursuing a consistent and comprehensive policy on environmental protection, rational use of natural resources, and improvement of the sanitary and environmental condition of territories. In particular, during 2014–2016, an additional 41 sanitation service organizations and 157 economically managed units responsible for household waste transportation were established in cities under district improvement departments. Furthermore, 1,427 units of special equipment were purchased, including 990 vehicles intended for the transportation of solid municipal waste.

In recent years, within the framework of large-scale reforms, the Presidential Decree "On Improving the System of State Governance in the Field of Ecology and Environmental Protection" and the Resolution "On Measures to Radically Improve and Develop the System of Municipal Waste Management in 2017–2021" were adopted [9]. In 2017–2018, extensive efforts were undertaken to develop the infrastructure of the solid municipal waste management system. As a result, 13 state unitary enterprises, 172 of their district and city branches, and 9 waste management clusters were established, making it possible to provide sanitation services to nearly half of the country's population.

Among the pressing problems are the insufficient organization of solid municipal waste collection and transportation services in rural settlements, the unsatisfactory condition of sectoral infrastructure, and the failure of existing landfills to fully comply with sanitary and environmental standards. To address these shortcomings, the Resolution of the President of the Republic of Uzbekistan dated April 17, 2019 approved the "Strategy for the Implementation

of Activities Related to Solid Municipal Waste Management in the Republic of Uzbekistan for 2019–2028” [10].

In addition, within the framework of the “Environmental Protection Concept until 2030,” specific tasks have been defined to reduce the volume of industrial waste and prevent the negative impact of hazardous waste on public health and the environment [11].

In 2019, another important international document was adopted—the Law of the Republic of Uzbekistan “On the Ratification of the Stockholm Convention on Persistent Organic Pollutants (Stockholm, May 22, 2001).” This convention, which entered into force in 2004, currently has 182 parties. According to experts, Uzbekistan’s accession to this convention does not have a negative impact on the chemical industry or agriculture, as the substances regulated by the convention are not actually used in the country.

On March 24, 2025, by Presidential Resolutions No. 116 and No. 118, measures were approved to implement investment projects aimed at generating electricity through the incineration of solid municipal waste. The main objectives of these projects are to improve the environmental situation, introduce advanced technologies in the waste processing sector, and attract direct foreign investment.

Agreements on joint development were signed between the Ministry of Ecology, Environmental Protection and Climate Change, the Ministry of Investments, Industry and Trade, the Ministry of Energy, and six major companies from the People’s Republic of China and the United Arab Emirates. Within the framework of projects with a total value of USD 1.28 billion, it is planned to:

- incinerate more than 4.7 million tons of waste annually;
- generate 2.1 billion kWh of electricity;
- sell electricity worth USD 97 million;
- save 152 million cubic meters of natural gas;
- reduce greenhouse gas emissions by 2.4 million tons;
- create 1,200 new jobs.

These projects are planned to be implemented during 2025–2027 in the Andijan, Bukhara, Jizzakh, Kashkadarya, Navoi, Namangan, Samarkand,

Syrdarya, Fergana, and Tashkent regions, as well as in the city of Tashkent [12].

In 2025, the construction of modern waste-to-energy plants was launched in the Samarkand region (the “Khushrav” settlement of the “Navruz” mahalla, 15 hectares) and in the Andijan region (Khojaabad district, “Khidirsha” mahalla citizens’ assembly, 17 hectares).

Within the Samarkand project, USD 150 million in investment was attracted by the Chinese company Shanghai SUS Environment LLC. The planned facility will process up to 1,500 tons of waste per day and generate 240 million kWh of electricity annually, creating 150–200 new jobs.

The Andijan project is being implemented with the participation of China International CAMCE, with planned investments of USD 140 million. The plant will also process 1,500 tons of waste per day and generate 240 million kWh of electricity annually, creating 150 new jobs. Both projects are scheduled to be fully commissioned during 2025–2027 [13].

At the same time, the regulatory and legal framework aimed at increasing public environmental awareness is being strengthened. In particular, the Presidential Resolution “On Approval of the Concept for Enhancing Environmental Culture of the Population until 2030” places special emphasis on developing environmental culture among the younger generation.

In this regard, the increasingly popular plogging activities—combining waste collection with physical exercise—help raise environmental responsibility among young people and develop skills in waste sorting and recycling. This initiative is becoming not only a form of practical environmental activism but also a key component of a sustainable lifestyle culture.

Currently, plastic waste has become a serious global environmental threat. The long decomposition period of plastic products leads to pollution of soil, water, and air, negatively affecting biodiversity and human health. Addressing this problem requires, above all, a fundamental change in consumer attitudes toward the environment. In this context, the “7R” principle—Rethink, Refuse, Reduce, Reuse, Recycle, Repair, and

Replace—serves as an important tool for shaping environmental responsibility.

To implement these approaches in practice, the Agency for Waste Management and Circular Economy Development operates under the Ministry of Ecology, Environmental Protection and Climate Change of Uzbekistan. The main tasks of the agency include organizing separate collection and transportation of municipal waste (excluding industrial waste), maximizing waste recycling or incineration while ensuring environmental safety, establishing systematic sanitation services, attracting investors to the waste management sector through public-private partnerships, and ensuring the targeted use and repayment of loans obtained from international financial institutions under state guarantees. This institutional approach is aimed at providing a systemic solution to the problem of plastic and other types of waste and creates a solid foundation for sustainable environmental development.

Conclusion

The systemic reforms being implemented in the field of waste management in Uzbekistan are expanding opportunities to ensure environmental safety, protect nature, and promote the rational use of resources. The state is strengthening the legal framework within international environmental conventions and implementing large-scale investment projects for waste recycling and waste-to-energy conversion. In particular, raising the environmental culture of the population is an integral part of the strategic path toward environmental sustainability in the country.

References

1. Экологик барқарорликни таъминлашга қаратилган лойиҳалар кўриб чиқилди. 21.10.2024 // www.president.uz
2. Базельская конвенция о контроле за трансграничной перевозкой опасных отходов и их удалением. Базель, 22 марта 1989 года // www.lex.uz
3. Давлетов С. Атроф муҳитни муҳофаза қилиш, маиший чиқиндиларни йиғиш ва қайта ишлаш тизимида давлат бошқаруви органлари // Жамият ва бошқарув, 2018. №21(3). – Б. 33–37.
4. Салимов Х., Рахматов Ю. Урбоэкология: муаммо ва ечимлар // Экология хабарномаси, 2017. – № 4. – Б. 45–46.
5. Қонун ҳужжатлари маълумотлари миллий базаси, 31.10.2019 й., 06/19/5863/3979-сон.
6. Davletov S.R. Environmental issues in Uzbekistan at the modern stage of development // *Academica: An International Multidisciplinary Research Journal*. Vol. 10 Issue 5, May 2020. P. 1775–1780.
7. Ўзбекистон Республикаси Олий Мажлисининг Ахборотномаси, 1995 й., 12-сон, 278-модда.
8. Арипов Д.У. Ўзбекистон Республикасида чиқиндиларга оид экологик-ҳуқуқий муаммолар. Юридик фанлари номзоди дисс. ... автореф. – Тошкент, 2008. – Б. 5.
9. https://www.norma.uz/uz/qonunchilikd_yangi
10. Қонун ҳужжатлари маълумотлари миллий базаси, 18.04.2019 й., 07/19/4291/2960-сон.
11. Қонун ҳужжатлари маълумотлари миллий базаси, 31.10.2019 й., 06/19/5863/3979-сон.
12. Ekologik barqarorlikni ta'minlashga qaratilgan loyihalar bo'yicha qo'shma shartnomalar imzolandi. 30.10.2024. // www.sanitation.uz
13. Ikki viloyatda maishiy chiqindidan elektr energiyasi olinadigan zavodlar qurilishi boshlandi. 2025-08-04 // www.gov.uz