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WASTE DISPOSAL DURING THE WAR

Abstract. *The war in Ukraine has led to the collapse of the waste management system, causing waste accumulation and threats to the environment and public health. Disposal of construction, military, and medical waste has become especially challenging. Due to active hostilities and disrupted logistics, spontaneous landfills have emerged. This paper examines key problems and possible solutions.*

Keywords: waste management, war, environmental risks, construction debris, military waste, medical waste, hazardous materials, public health, logistics disruption

During the war in Ukraine, the waste management system has been severely tested. The destruction of the infrastructure that previously provided for the collection, sorting, and processing of waste has led to a significant accumulation of waste and created additional environmental and sanitary threats. The problem of disposing of construction waste that remains after shelling residential areas, enterprises, and critical infrastructure facilities has become particularly acute. The amount of hazardous waste has also increased, including debris from military equipment, ammunition remnants, fuel, and medical supplies used in hospitals and field hospitals.

Table 1

Peculiarities of Waste Management During the War: Problems and Possible Solutions

Type of waste	Problems	Possible solutions
Debris	Large volume, difficulty in export	Reuse, mobile recycling
Military waste	Toxicity, explosiveness	Controlled destruction, demilitarization
Medical waste	Infection risks, improper disposal	Special containers, safe incineration
Household waste	Uncontrolled landfills, lack of disposal	Organization of the collection, support of volunteers

Due to active hostilities and disruption of logistical routes, garbage removal in many regions has become difficult or impossible. In some frontline and temporarily occupied territories, spontaneous landfills have formed, posing a threat to the environment and the health of the local population.



Fig. 1. Waste Management Scheme During Wartime

A separate problem has been the disposal of medical waste, which has increased significantly due to the large number of wounded among civilians and soldiers. Bandages, syringes, ampoules with medicines, surgical materials require special processing, but due to the war this process is often not properly controlled, which can lead to the spread of infectious diseases. The lack of centralized collection and disposal of medical waste in conflict zones creates hazardous conditions for healthcare workers, patients, and residents. In such circumstances, there is a growing need for temporary but effective waste treatment units that can operate in mobile or semi-stationary formats. Additionally, raising awareness among medical personnel and volunteers about safe waste handling practices becomes crucial. The implementation of basic safety protocols, even in limited-resource settings, can significantly reduce the risk of contamination and disease transmission.

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