

# OPEN FIRES AND WASTE MANAGEMENT IN UKRAINE

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## **Abstract**

Municipal landfills are objects with increased environmental and technological hazards. Several scientific studies have defined three main hazardous factors of landfills: biogas generation, waste combustion and leachate drainage. In addition, the increased dangers are also coming from the transboundary migration of volatile toxic compounds caused by landfill fires. Ukrainian communities do know not very much about landfill fires and their consequence. More, they are not well informed about the risks to the environment and human health in such complicated issues due to unproductive waste management and insufficient scientific approach.

Two mainstreams of a day closely linked to open fires on landfills are climate change and circular economy, as the landfills are the placement of the last destination of a number of natural resources. The open fires and landfill fire occasions, their monitoring, prevention and elimination of consequences are a hot topic in Ukraine mainly due to the war unleashed by Russia. The enemies are destroying the municipal infrastructure of Ukrainian cities, causing problems to local communities. Fires are an old way of putting pressure on military groups and communities, which Russians currently use. Some cases included using phosphorus bombs and making arsons in the Chornobyl Exclusion Zone. In this context, landfills are an attractive target for sabotage. Landfill fires have enormous consequences and are easy to be launched.

Waste-related fires have increased in Europe over the past decade incrementing to climate change. The Swedish Institute has decided to fund cooperation projects in the Baltic Sea region with a special emphasis on supporting academic institutions and target groups in Ukraine. The multi-stakeholder project "Cooperation for Prevention and Mitigation of Fires and their Effects in the Baltic Sea Region" is one of 23 such upcoming projects. It unites researchers from Ukraine together with Swedish colleagues and scientists from Estonia, Latvia, Lithuania, Poland and Georgia. The participants will focus on achieving a broad exchange of experience and discussions of cross-industry innovative solutions. The Ukrainian team is determined to study issues of early warning and fire extinguishing technologies, as well as restoration of

affected landscapes. In particular, the researchers from Ukraine aim at improving GIS monitoring of occurrence risk and open fires, the building subsystems for active and passive fire protection, studying self-ignition, spreading and cessation of the burning of various materials typical to landfill content. It is planned to expand the subjects of educational disciplines that include the topics of cross-border migration of persistent organic pollutants and the impact of fires on human health. The created network will be important in the future for supporting the peaceful development and reconstruction of Ukraine.

**Keywords:** Fires, Landfills, Pollutions, Sustainable Landscapes, International Environmental Cooperation