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Ministry of Environment of the Slovak Republic
Slovak Environment Agency

INTERNATIONAL CONFERENCE

CONTAMINATED SITES 2022

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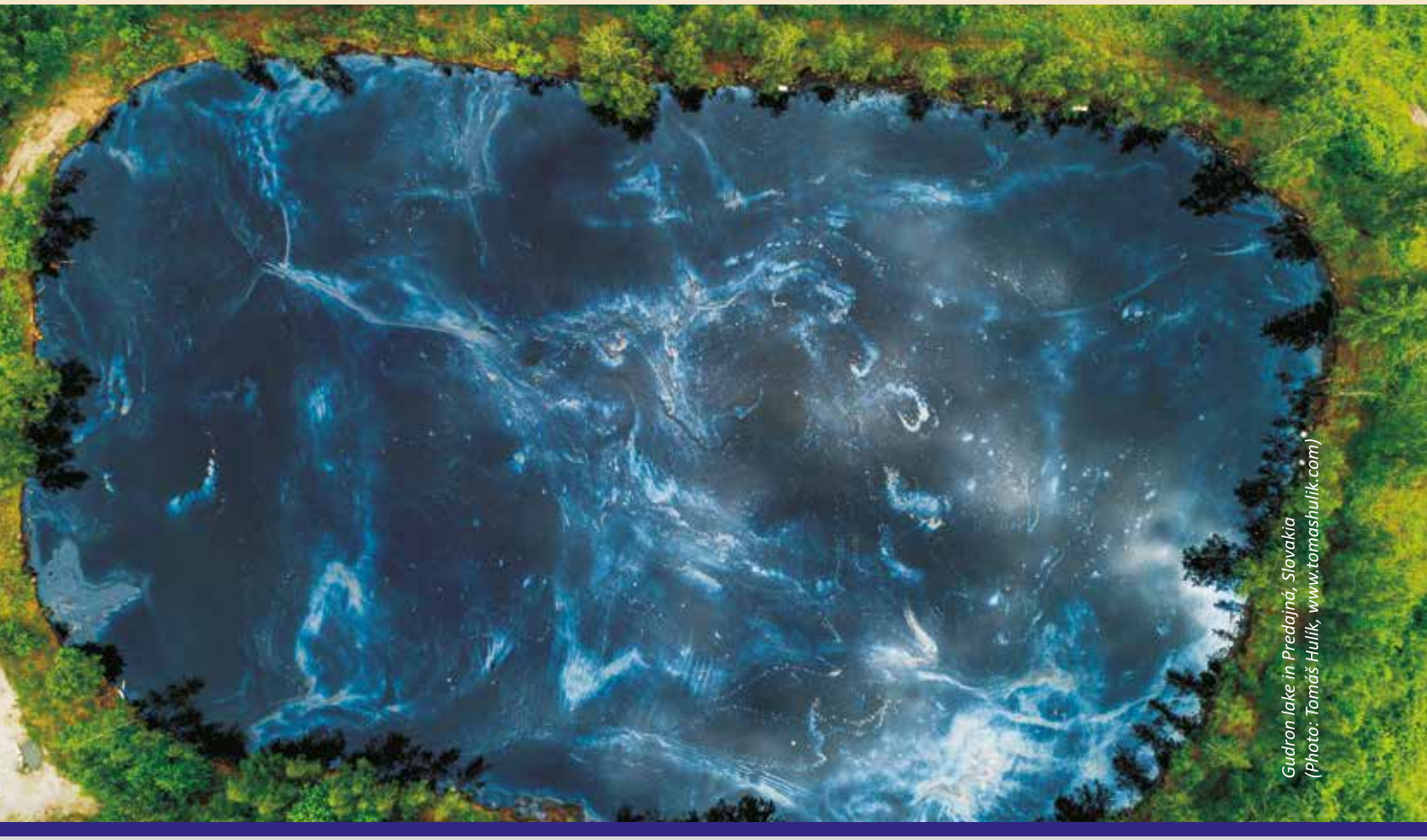

Gudron lake in Predajná, Slovakia
(Photo: Tomáš Hulík, www.tomashulik.com)

CONFERENCE PROCEEDINGS

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MINISTRY OF ENVIRONMENT OF THE SLOVAK REPUBLIC

SLOVAK ENVIRONMENT AGENCY

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CONTENTS

PROGRESS IN MANAGEMENT OF CONTAMINATED SITES IN THE REPUBLIC OF SERBIA 2021

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Contaminated sites, management, dumpsites, cadaster

ABSTRACT
This study presents a current situation in management of contaminated sites in Serbia. In 2015 the Ministry of Environmental Protection adopted the Law on Soil protection, which was the basis for the establishment of a comprehensive legal framework for the management of contaminated sites in the Republic of Serbia. Based on the latest State of the Environment Report for 2020 (SEPA, 2021) in the territory of the Republic of Serbia there are 213 sites identified as either potentially contaminated or contaminated. Waste disposal sites have the largest share of 71.83 % in the total number of sites.

INTRODUCTION
The primary authority responsible for the environment management and policy at the national level in Serbia is the Ministry of Environmental Protection. Under jurisdiction of the Ministry is the Serbian Environmental Protection Agency (SEPA) and the Inspectorate while on the territory of the Autonomous Province of Vojvodina jurisdiction has also the Provincial Secretariat for Urban Planning and Environmental Protection.
The Republic of Serbia has adopted a considerable number of environmental laws, which are helping her to make a considerable progress towards the objective of “approximation” to the EU legislation, in view of the Serbia’s overall goal of joining the European Union in the future. The main principles of EU environmental laws are already transposed into the Serbian legislation. In order to improve the management of contaminated sites in Serbia, the Ministry of Environmental Protection in the period 2015-2021 adopted the legal framework that enables progress in management of contaminated sites (Figure 1).

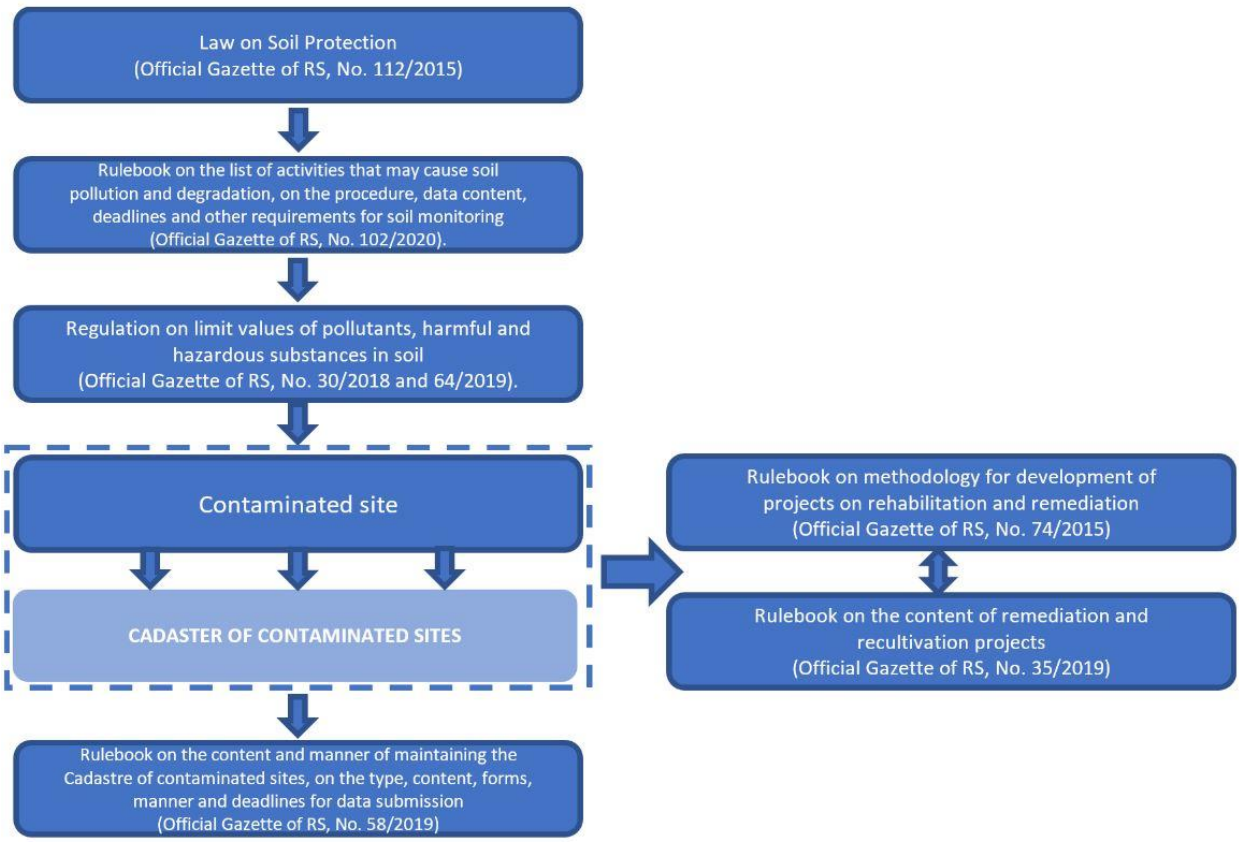

Fig. 1 Legal framework for contaminated sites management in Serbia

RESULTS AND DISCUSSION

Based on the data submitted to the Cadastre of contaminated sites, 213 sites were identified in the Republic of Serbia where activities that are carried out are regulated by the Rulebook on the list of activities that may cause soil pollution and degradation, on the procedure, data content, deadlines, and other requirements for soil monitoring ("Official Gazette of RS", No. 102/2020). Out of the total number of reported sites, the report on soil monitoring was submitted by 21 companies (State of the Environment Report for 2020, SEPA, 2021).

SEPA reported that total of 850,000 tons of municipal waste was landfilled at twelve sanitary landfills in Serbia, covering 42% of the population of the Republic of Serbia in 2021. This is significantly increase of accessibility to sanitary disposal of solid municipal waste, compare with 2016, where sanitary landfilling was available only for 14% of the population. Despite such great progress in the population's accessibility to sanitary landfills, a considerable amount of waste is still disposed on dumpsites. Those sites have the largest share in the identified contaminated sites – 71.83% (Figure 2).

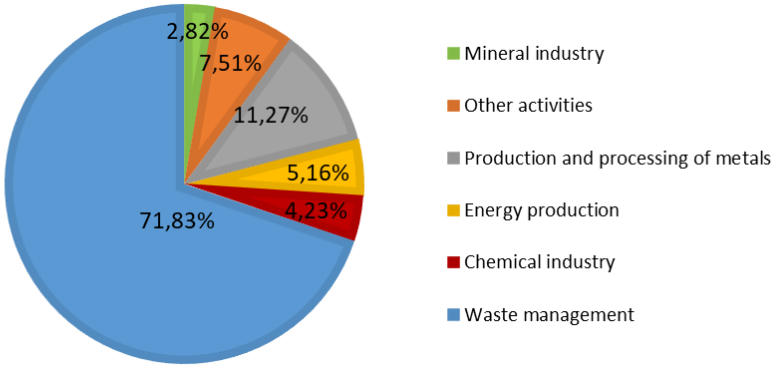

Fig. 2 Share of main localised sources of soil pollution in the total number of identified sites (%)

SOIL ANALISYS IN THE SURROUNDINGS OF DUMPSITES IN VOJVODINA REGION

In Vojvodina Region, the Provincial Secretariat for Urban Planning and Environmental Protection examined the degree of endangerment of non-agricultural land from chemical pollution in 30 municipalities and cities, at 113 illegal dumpsites. A total of 1,130 soil samples were analysed (State of the Environment Report for 2020, SEPA, 2021).

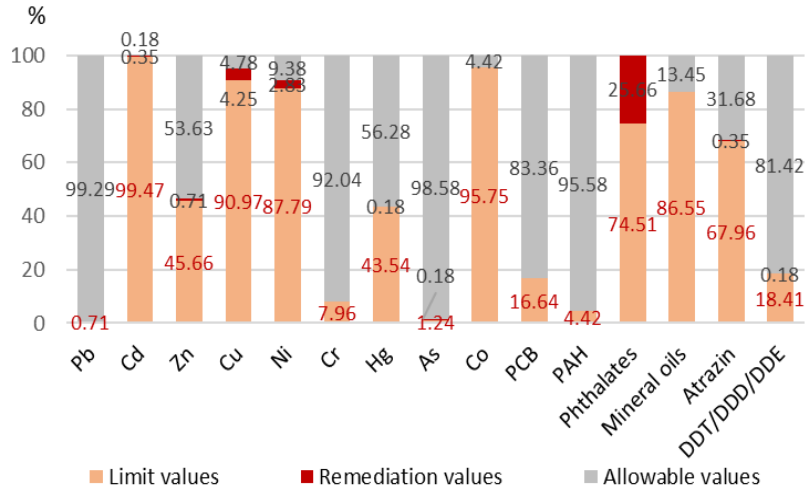

Fig. 3 Percentage of exceedances at depths of 0-30 cm in the central points of the dumpsites

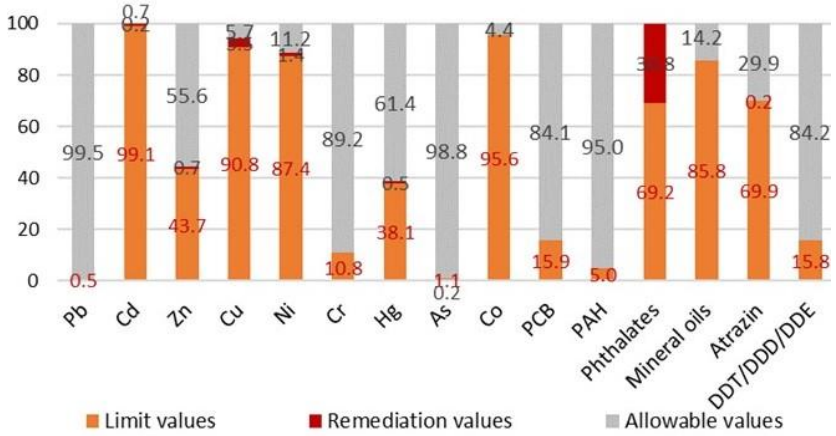

Fig. 4 Percentage of exceedances at depths of 30-60 cm in the central points of the dumpsites

The analysis of heavy metal content in soil samples showed that remediation values were exceeded for cadmium, zinc, copper, nickel, mercury, and arsenic.

Analysis of the pesticide content and their metabolites in soil samples showed that remediation values were exceeded for DDE/DDD/DDT and atrazine. Concentrations of total PCBs, PAHs and mineral oils exceeded the limit values, but did not exceed the remediation values. Analysis of the content of phthalate esters shows that the content of phthalate esters is higher than the remediation value in 319 out of a total of 1,130 samples (Figures 3, 4 and 5). The analyses were conducted in accordance with the Regulation on limit values of pollutants, harmful and hazardous substances in soil ("Official Gazette of RS", No. 30/2018 and 64/2019).

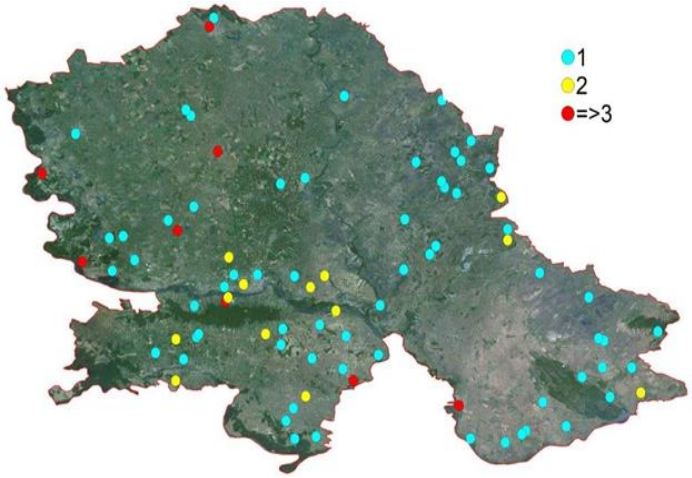

Fig. 5 Contaminated sites where remediation values (RV) of individual elements were exceeded

CONCLUSION

The results of improved legislation and cooperation between different UN Agencies and ministries in the projects related to contaminated sites on the territory of the Republic of Serbia include the improved contaminated sites data management and developed capacity for the investigation of contaminated sites. Inadequate waste disposal still represents the most significant localized source of soil pollution in the Republic of Serbia.

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[3] Rulebook on the list of activities that may cause soil pollution and degradation, on the procedure, data content, deadlines, and other requirements for soil monitoring ("Official Gazette of RS", No. 102/2020).
[4] Regulation on limit values of pollutants, harmful and hazardous substances in soil ("Official Gazette of RS", No. 30/2018 and 64/2019).
[5] Rulebook on the content and manner of maintaining the Cadastre of contaminated sites, on the type, content, forms, manner, and deadlines for data submission ("Official Gazette of RS", No. 58/2019).
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[7] Rulebook on the content of remediation and recultivation projects ("Official Gazette of RS", No. 35/2019).