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CONTAMINATED SITES 2020

TRNAVA | SLOVAK REPUBLIC

CONFERENCE PAPERS

OP KŽP
European Union
Cohesion Fund
MINISTRY OF ENVIRONMENT OF THE SLOVAK REPUBLIC
SLOVAK ENVIRONMENT AGENCY

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EVENT POSTPONMENT ANNOUNCEMENT

Scientific Committee and Organizing Committee announce that the 2020 edition of the Slovak Environment Agency's flagship event in the field of contaminated sites

the International Conference CONTAMINATED SITES 2020
will be rescheduled to Spring or early Summer, 2021.

Due to growing concerns over the coronavirus (COVID-19), and with the well-being of attendees, partners and staff as the number one priority, the Committees have decided that rescheduling the event is the only responsible course of action at this time. This decision was made after consulting with the SEA's management, the Ministry of Environment of the Slovak Republic, partners, and staff, to whom committees would like to express gratitude for their understanding, patience, and continued support.

The Scientific and Organizing Committee of the Conference

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CONTENTS

IMPROVED MANAGEMENT OF CONTAMINATED SITES IN SERBIA

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contaminated sites, management, projects, remediation, cadastre

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 with the Regulation on Reporting on contaminated sites and the List of polluting activities. In the past years, UNEP and other UN agencies provided project support with a strong capacity-building component for managing contaminated sites. By strengthening of administrative capacities, facilitating exchange of experiences and field investigation, these projects contributed to enhanced cooperation between institutions dealing with land management issues, but also to the increased share of sites where detailed surveys and remediation were carried out in comparison to the 2007.

INTRODUCTION

In the territory of the Republic of Serbia there are 709 sites identified as either potentially contaminated or contaminated, 557 of which belong in the first and 152 in the latter category. Divided according to the main types of localized sources of soil contamination, municipal waste landfills have the largest share of 31.17 % in the total number of sites, as is shown by 2016 data which is the same as in previous years. Out of 709 sites, 478 are either in need of or have undergone investigation and 103 are currently under investigation. There are 93 sites in need of remediation and 564 sites that may require one. In the period 2008–2015, the Ministry of Environmental

Protection issued approvals for 91 projects for rehabilitation and remediation.

In order to improve the management of contaminated sites in Serbia, the Ministry of Environmental Protection and Serbian Environmental Protection Agency (SEPA) cooperate with UN Agencies in a variety of projects.

RESULTS AND DISCUSSION

Investigation of industrial sites suspected to be contaminated was a part of the GEF-funded project *Enhanced Cross-sectoral Land Management through Land Use Pressure Reduction and Planning* which is implemented by United Nations Environment Programme (UNEP) in close cooperation with the Ministry of Environmental Protection and SEPA in the period 2015–2019 (Vidojevic et al, 2016, 2017). The Project aims at providing the lacking methodologies, knowledge and coordination mechanisms for sustainable and integrated management of soil as a natural resource. It supports the establishment of state, provincial and local networks for land use and soil quality monitoring, strengthening of administrative capacities and contributes to enhanced cooperation among institutions dealing with land degradation issues. The Project further on supports the development of a Cadastre of contaminated sites managed by SEPA and a policy framework for integrated land use management and its implementation at local level. The data and information for the selected 32 potentially contaminated sites collected from previous studies and through numerous consultations included: previous land use, type of industry, surface area, type and quantity of hazardous substances found at the location and in the surrounding area, soil and groundwater quality, as well as geological, pedological and hydrological features. The collected data are sorted and transferred to digital format in order to complete a database of contaminated sites. Field missions to the identified sites were conducted in the period September – December 2016 with the purpose to identify receptors of pollution and potential exposure routes, and to prepare and elaborate sampling programs, whereas the soil sampling itself took place in 2017 when 264 soil samples were analysed. The conducted research was the basis for creating a list of prioritized sites for remediation and a preliminary assessment of the risks that the selected sites pose to human health and the environment. For this purpose, the project team applied the Preliminary Risk Assessment Model for the identification and assessment of problem areas for Soil contamination in Europe – PRA.MS. The Project also received a contribution from the Italian Ministry of Environment, Land and Sea that enabled the development of Site Characterization Plans for two priority sites, in addition to the procurement of the laboratory analytical equipment, personal protective equipment and data storage server for SEPA as well as numerous study visits and opportunities for experience sharing with Italian expert institutions ISPRA, ENEA, ISS and INAIL (Falconi et al, 2018).

Additional investigation of sites contaminated with PCB is a part of another GEF-funded project *Environmentally sound management and final disposal of PCBs in Serbia* implemented by UNIDO in close cooperation with the Ministry of Environmental Protection and SEPA. Namely, in 2018, this project envisages further investigation of three sites where PCB contamination was previously confirmed through UNEP/GEF project, while a pilot remediation will be conducted at the most heavily polluted site.

Furthermore, through the WHO project funded by UN Environment's SAICM Quick Start Programme Trust Fund titled *Strengthening Serbian national capacities and inter-sectorial synergies for safe management of contaminated sites and related hazardous substances to prevent negative impact on human health and the environment* the methodology for the analysis of major health outcomes of residents living close to contaminated sites has been developed in 2018.

CADASTRE OF CONTAMINATED SITES

According to the Law on Soil Protection, the Cadastre of Contaminated Sites is a set of relevant data on endangered, polluted and degraded soil. Serbian Environmental Protection Agency (SEPA) has been constantly working to improve the methodology of data collection, quality and the way of systematization and presentation of data. The last updated database of the Cadastre shows that 709 potentially contaminated and contaminated sites have been identified and recorded on the territory of the Republic of Serbia.

The main purpose of the Cadastre is to provide systematic data on sources of pollution such as the type, quantities, methods and location of discharges of pollutants into the soil, in order to implement preventive or remediation measures. Data collection is defined in more detail in the Rulebook on the content and manner of keeping the cadastre of contaminated sites, type, content, forms, manner and deadlines for data submission. The Rulebook contains six forms that create the basis for data collection and are baseline for operating the Cadastre.

The content of the forms is given according to the phases of site research and phases of remediation implementation:

1. Form No. 1 – Identification of the contaminated site – Phase 1. This Form provides basic information about the site such as: name of the site, municipality/city where site location is, coordinates, ownership structure and what type of land use is at the location (Fig. 1);
2. Form No. 2 – Preliminary investigations of the contaminated site – Phase 2. This Form provides various information that may be relevant and determined by preliminary surveys such as: contaminated site and its area, depth of contaminated soil, groundwater pollution, proximity to sensitive areas (settlements, rivers, agricultural areas), type of land, etc;

3. Form No. 3 – Detailed research of the contaminated site – Phase 3. This Form provides detailed responses to the following questions: contaminated soil and its area, depth of contaminated soil, groundwater pollution, proximity to sensitive areas (settlements, rivers, agricultural areas), type of soil, etc;
4. Form No. 4 – Planned remediation – Phase 4. This Form provides information related to planned remediation techniques and costs, as well as planned remediation techniques to specific sources of pollution (if there are more than one);
5. Form No. 5 – Implemented remediation – Phase 5. This Form provides information related to the implemented remediation techniques and realized costs, as well as the application of remediation techniques to special sources of pollution (if there are more than one);
6. Form No. 6 – Monitoring after remediation – Phase 6. This Form provides information on monitoring state of the environment at a specific location after the applied remediation techniques.

   At the end of each phase, before submiting forms you need to answer folowing questions: Who is the Client of the phase, who verifies that specific phase, prices and costs for the specific phase and whether it is necessary to work on the next phase. Forms shall be completed sequentially to the extent which the contaminated site has been investigated and/or if remediation is planned or is already carried out.

   Reporting to SEPA is conducted once a year, by logging in to the application. All those who apply for request from SEPA or the person in charge of keeping the cadastre, have access to the application. There are two types of accounts for logging in after getting Administrator's approval and creation of account:

1. Logging as *Public user* – Logging this way there is just option to see and download all available data without any possibility of changing it and
2. Logging as *Legal entity* – This type of account is for all those who need to submit new data every year. They can manage its own data, get access to see and download data of another Legal entities but without possibility of changing it.

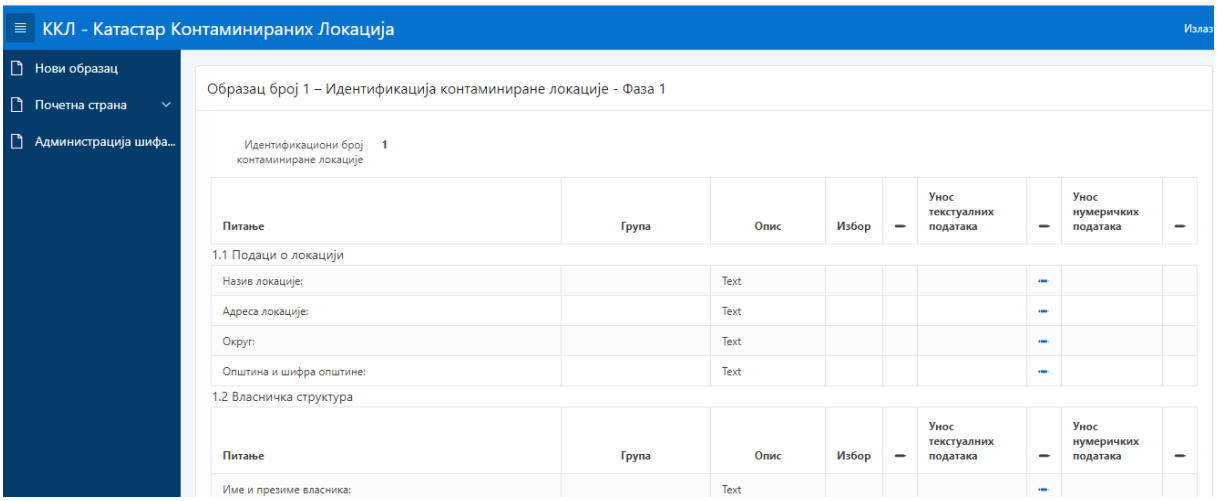

Fig. 1 Form 1 (Phase 1)

All questions could be answer by marking checkbox or or typing alphanumeric signs.

In the period October – December 2018, 8 regional workshops were held where representatives of local self-governments were trained to use and enter data into this application. As part of the previous project activities, on the first page after logging in, a map of the Republic of Serbia is provided with data from 32 locations where preliminary research on contaminated sites has been conducted (Fig. 2).

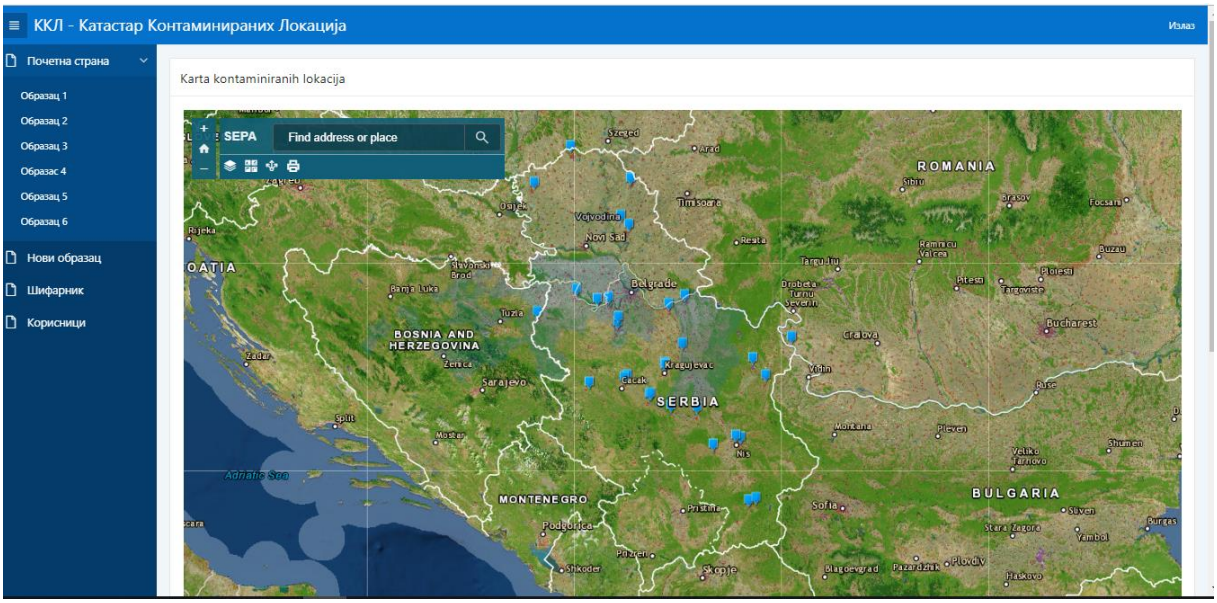

Fig. 2 Map of the Republic of Serbia with 32 preliminary investigated location

CONCLUSION

The results of 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 reporting system

for the national Cadastre of Contaminated Sites, developed capacity for the investigation and improved overall management of contaminated sites.

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