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POPs CONTAMINATED SITES IN REPUBLIC OF MOLDOVA: PROBLEM DEFINITION AND POSSIBLE SOLUTIONS

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The soil is an important and non-renewable natural resource which is a base for life and for supporting livelihoods. Healthy soil is an essential component of the agriculture production with the capability of supporting the ecosystems on which economic activities and livings rely (https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52006PC0232 [1] http://www.ipes-food.org/pages/CommonFoodPolicy [2]). However, soils are under increasing environmental pressure across the globe, and the associated soil degradation is raising extreme values in Europe due to a high population density and its related activities, such as industrial activity, inappropriate agricultural and forestry practices, tourism or urban development (https://esdac.jrc.ec.europa.eu/themes/soil-contamination [3]). The aim of this study is an evaluation of the status of contaminated sites in Republic of Moldova and problems of their management for the sustainable agriculture production. The 16 POPs contaminated sites were studied in 2020 year for the actualization of the current situation after the inventory project in 2009 – 2010 years. More detail risk assessment procedure was realized for the studied sites for the evaluation of possible impact to nearest ecosystems, agriculture production and human health. The obtained results showed that the situation from the past inventory (2009) is not changed essential for POPs contaminated sites. The high level of contamination was identified for the majority of sites, the level and spectrum of pollutants have not changed significantly. All studied sites have high environmental and public health risks. The remediation actions are required for all of them. These actions can include the utilization of in-site remediation technology and dumping of contaminated materials at the site. Several projects were made for the testing of in-situ remediation technologies like bio- and phytoremediation. The POPs degradation and microbiological properties of contaminated soils have been investigated in the application of the phytoremediation experiment and DARAMEND technology. The activation of soil microorganisms in the complex with “Green Chemistry” approach leads to the destruction of POPs in soil and decreasing of hazards from high polluted soil in the conditions of Republic of Moldova. The special requirement should be elaborate and later adopt regulation for each site based on guides of the European Union, and other actors in the field. The other important factor is to elaborate and approve environmental quality standards that indicate the admissible concentrations of hazardous substances in the soil based on the type of land use: agriculture, residential, commercial, and industrial. One of the most important strategies for the achievement of sustainable development is the promotion of a legislative system coherent with current requirements at the international level. The conclusion is that possible remediation action should to be developed after the complex study of pollution spectrum and geotechnical conditions for every polluted site by the complex approach.

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