

## GEORGIAN MANGANESE(GM) IMPACT ON THE SOILS IN IMERETI REGION

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Soil Contamination by heavy metals in terms of environmental pollution is one of the most important problems, modern industrialization is the one of the common reason for this. Manganese plant in Chiatura and Zestafoni municipalities has a negative influence on soils in Western Georgia, insofar it is contaminated with heavy elements such as manganese, copper, zinc, lead and arsenic. In comparison with the city of Chiatura, where the manganese is mined, the concentration of these elements are higher where manganese is processed (Zestaphoni), which can be explained by the possibility that the manganese aerosols are released into the air and causes pollution of the soil. This is confirmed by air pollution monitoring results by the National Environment Agency in 2016-2017 which indicate that manganese dioxide and dust concentrations in the air exceed the permissible norms. What about copper, zinc, lead and arsenic content in soils, all these metals exceeds the maximum permissible concentrations.