

Influence of mining on the agricultural plots of field and waters in the river Kvirila Valley

Besik Kalandadze¹, Peter Felix-Henningsen²

¹ Iv. Javakishvili Tbilisi State University, 0179, Tbilisi, Georgia. 3 Chavchavadze Ave.
besik.kalandadze@tsu.ge

² Justus Liebig University Heinrich-Buff-Ring 26 (IFZ) D-35392 Giessen, Germany
peter.felix-h@agrar.uni-giessen.de;

At present, global environmental pollution is one of the world's major problems. Emission of chemical elements is often an unforeseen phenomenon, and soils, water reservoirs and hydrologic network can get polluted with industrial waste, while some other sources of pollution are unforeseen discharges in case of emergencies, emission of aerosols into the atmosphere, etc.

Since the startup of Chiatura manganese ore deposit treatment (this amounts to 130 years now) to 2005, 230 734 009 mln. tons of raw ore has been extracted and 110 713 614 mln. tons of marketable products has been realized. Manganese ore is mostly extracted by open cast mining. As the ore is dressed at the plant, the river Kvirila permanently gets polluted with manganese ore admixtures. The content of manganese ore in the river Kvirila is 10-12%. The data of the field studies and analytical data prove that the soil and cultural plants, besides manganese ore, get polluted with different heavy metals, such as nickel, arsenic, etc. Accumulation of large amounts of heavy metals in the hydrosphere and soil and inclusion of heavy metals in the biological chain may have major harmful effect on the people's health in the region and biosphere.