Origination of Mudflow Processes.Geological FactorsCausing the Processes (By the Example of Duruji River Basin)

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Georgia is a very mountainous country. Complex geological structure of its relief causes formation of the natural disasters such as floods, avalanches, landslides and mudflows,etc. Among them, the most devastating natural phenomenon is mudflow. This is a stream of sandand stones,and clay logged with water and carrying awaytrees and shrubs, and sometimes other inclusions as well.At thereliefinclined with average or steep angle, formation of mudflows is caused by water-saturated eluvial-deluvial-proluvial depositswhich occur as a result of heavy and long rains,intense snow or ice melting, water pond breakand so on. Mudflows are characterized with suddenness and short-term progress; theirhigh velocity (10 m/sec and more) anddevastating effectis caused by their total mass (0.-1.5 mln m^3) and drifting rocks (3-10 tones and more).Moving in thenarrow gorge mudflow leavesa deep incised stream channel, and leaving the gorge it widens on the flatlands, where it can form a powerful debris cone and cover buildings and agricultural arablewith derived solid material, claim the lives of people and animals.

Mudflow processes are characterized by the periodicity of the processes, which may be repeatedin 20-30 years or more. In some regions, seasonal periodicity is observed as well. The major factor, causing the mentioned processes,is a geological structure of the region, which itself forms another key factorsuch as feeding source relief. It is also important a structureof initial rocks constructing the relief, their resistance orpronenessto weathering and character of the seasonal changes of the atmospheric precipitation intensity.

The best coincidence of the factors supplying mudflow processes in Kakheti region is observed in the Duruji river basin. It is reflected by numerous activations of the process. In the present report it will be considered in detail both regional factors and geological-morphological bases supplying mudflow processes in the Duruji river basin, reasons of their origination and preventive measuresagainst mudflows, that have been conducted here since 1906 until 90-ies of the 20th century and are to be done at present.