



YANGTZE Project: Investigation and analysis of mass movements in the Three Gorges Reservoir area (P.R. China)

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Within the YANGTZE Project, we investigated mass movements in the Xiangxi Catchment (P.R. China). In this area, formations from the early Cambrian to the middle Jurassic can be found.

We directed our attention to parameters concerning activation or reactivation of given or potential mass movements and their hazard to existing settlements. Parameters like dip and dip direction of the underlying geological formations and their lithological character, exposition of the masses, direct contact to the dammed up Xiangxi River, drainage of surface water and other remediation measures, but also degree of weathering of outcropping hard rock and interaction between all of them were considered.

So far, the most determining parameters seem to be dip and dip direction of the geological formations and hydrogeological effects of surface water and quickly varying water levels. To a lesser extent, slope seems to affect the whole framework of interacting factors.

Our field investigations have shown that mass movements mainly occur in areas where alterable rock, primarily an interplay of silt- and claystones in Jurassic but also marlstones in Silurian formations, arises. In the investigated area, these mass movements mostly seem to be a combination of rotational and translational kind and reach the highest thickness. It also looks like that formations with a high clay content are most prone to activation of mass movements.

Remarkably, mass movements close to the Three Gorges Reservoir seem to be quite active while others over a certain altitude are dormant or inactive.