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Landslides along the Jordanian Dead Sea coast triggered by the lake level lowering

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Nowadays, the level of the Dead Sea lowers of one meter per year and this rate is accelerating. It is one of the major environmental disasters of the XIX century, similar to the fate of the Aral Sea. Here too, the phenomenon is entirely related to the poor management of fresh water resources by the riparian states. Since the sixties, the level of this terminal lake dropped by 28 meters and its surface shrunk by a third. Most of the new emerged lands are unstable but, after the Treaty of Peace signed in 1994 by Israel and Jordan, they attract the attention of the investors to develop huge tourist and industrial infrastructures.

Concomitantly of this development, the landscape evolves quickly because of thousands of sinkholes, kilometric subsidence and numerous landslides. Lots of scientific articles focused on the first two hazards but, until now, none of them discussed the problem of landslides.

In this paper, we first describe the environmental degradation along the Jordanian Dead Sea coast. Then, based on our ground observations of landslides, we discuss the dynamic of the triggering factors in relation with the evolution of the hydrogeological setting. In conclusion, we show that the recent industrial and tourist infrastructures are not sustainable if the dynamic of the geological setting and remedial work are not taken into account in the land planning policy, especially regarding the set back of the river banks.