REFLECTIONS ON LANDSLIDES IN WESTERN TYROL

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Geologists from the Department for Geology act as the Tyrolean Government's technical appraisers and consulting experts on a wide range of projects of different scales. Tyrol, with its steep mountain slopes, narrow valleys and extremely varied geological setting poses an extraordinary challenge for geological questions.

Decisions based on fundamental expert opinions should only be made if the genesis of the assessment area is well understood. Verifications in the outfield show that this is not always the case. Therefore, the Tyrolean Department of Geology conducts fundamental research in partnership with research institutions and planning offices of engineering geology to obtain a reliable information base for professional decisions.

Recent studies have shown that it is necessary to research the genesis of the landscape around the "Fernpass" area, the estuary of the Oetztal River and the region around Koefels (Oetz Valley) due to reasonable doubts about the origin of the particular landscapes from landslides. Comprehensive geological field work and analyses illustrate that in all three cases a genesis by large-scale land-sliding processes is disproved based on many contradictions.

The "Fernpass" area is part of a remnant valley floor. The sparsely occurring blocks resembling a landslide area are products of an intense and still active solution of sulfate karst disjointing the superposed dolomitic rocks. Numerous sinkhole depressions characterize this region. The assumed landslide scarp area represents a typical alpine cirque.

The landscape around the estuary of the Oetztal River into the Inn is the product of a structural-geological induced rockfall from the Tschirgant onto the Inn- and Oetztal glacier during the late glacial period. After glacier ice melting the rockfall masses accumulated on the underlying solid rocks of the Northern Calcareous Alps which were exaggerated by intense sulfate karst.

The area of Koefels is an area with regional subordinated rockfalls and two mass movement areas. The ruined landscape is marked by deep fractures in the Augengneiss basement and the occurrence of pumice. An appropriate explanation for this morphology is the explosion of an extraterrestrial object in the atmosphere resulting in an impact from its fragments. This event must have happened in postglacial times.