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Geo-hazards in Pamir Plateau along China-Pakistan Economic Corridor

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China-Pakistan Economic Corridor(CPEC) is an important strategy project of "One Road, One Belt" proposed by China leaders, it will connect the eastern Asian and the Middle Easter by railway, high way, communication cable, oil-gas pipelines, and industrial parks etc., this will provide benefits for more than 100 million people. However , CPEC will pass through Pamir Plateau: one of the most complex

geological area in the world, it faced a mass of heavy geo-hazards in this section, which serious impeded the construction.

The geo-hazards were affected by the geological setting. Based on the references analysis and field expedition, this paper revealed 4 category control factors for geo-hazards:

(1) the whole geomorphology is "high plateau, low valley" ; (2) the neo-tectonic movement is active, but there are significant different between the north (China section) and the south (Pakistan section) separated by Karakoram mountains, the former mainly controlled by tectonic, featured normal

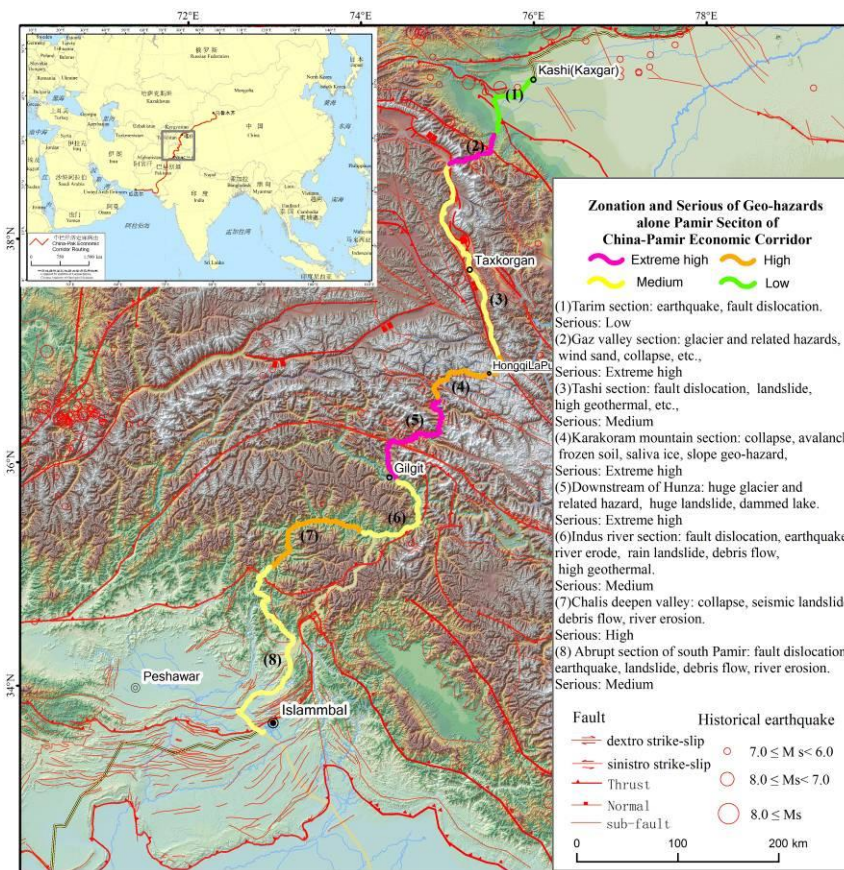


Figure 1: Zonation of geo-hazards along Pamir Section of CPEC

fault valley, the latter controlled by coupling dynamics from both the inner and the outer, featured thrust tectonics and deep valleys; (3) the strata also have difference: metamorphic rock and moraine debris in the north, Cenozoic intrusion rock and alluvial-pluvial moraine deposition in the south; (4) inland arid and mainland monsoon moist responds to the north and the south weather respectively.

The geo-hazards along Pamir section can be divided into four categories: (1) tectonic active geo-hazards, including fault dislocation, high geological stress, high geothermal, high PGA; (2) glacier and related hazards, including glacier debris flow, glacier flood, glacier lake burst, glacier surge; (3) slope geo-hazards, including moraine landslide, collapse, dammed lake, flow sand slope; (4) environmental hazards, including wind sand, frost soil, snow avalanche, saline ice, erosion and collapse bank.

The series of geohazards can be divided into 8 sections with special geo-hazard features respectively, which are shown in Figure 1.

