

Theme 05: Investment opportunity in industrial sector, circular economy and policy guidelines
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Landslide risk management in Khyber Pakhtunkhwa, a policy brief

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Khyber Pakhtunkhwa (KP), Pakistan, is highly susceptible to landslides due to its rugged terrain, seismic activity, and climate change-induced shifts in rainfall patterns. Landslides pose significant threats to human life, infrastructure, and the natural environment. The growing frequency of landslides in KP is driven by poorly planned infrastructure development, deforestation, and unsustainable land-use practices. These activities exacerbate slope instability, especially in mountainous regions. Climate change has further intensified the risk by altering precipitation patterns and accelerating glacier melting. The proposed multi-pronged approach for sustainable landslide risk management in KP, advocates for a comprehensive landslide hazard zonation and risk assessment framework, integrating spatial analysis, real-time monitoring, and community-based disaster risk reduction. Developing a tailored policy for KP requires integrating scientific tools such as GIS-based landslide susceptibility mapping and rainfall threshold models for early warning systems. Effective land-use planning is essential, focusing on slope stabilization, reforestation, and regulation of construction activities in hazard-prone areas. Sustainable practices like nature-based solutions, including watershed management and afforestation, can significantly reduce soil erosion and enhance slope stability. The policy guidelines highlight the importance of capacity building, stakeholder collaboration, and community engagement in disaster preparedness. By adopting innovative solutions and strengthening institutional frameworks, KP can mitigate landslide risks while promoting the sustainable use of natural resources, thereby protecting vulnerable communities and preserving the region's environmental integrity.

Keywords: Landslide; risk management; KP; policy guidelines; sustainable