Environmental Geoscience in Southeast Asia: Current Trends and Future Challenges

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Southeast Asia is a high growth area, both from the population and development perspectives. As a result of rapid development, the region has been subjected to tremendous land use changes, hastening certain geological processes, which threaten human safety and the environment. In addition, human activity depending on limited resources such as land, soil, water and minerals has also adversely impacted the ecology of the region. The importance of environmental geoscience was brought to fore in Southeast Asia over the past two decades due to geological hazards. Problems associated with slope stability, subsidence, erosion and floods are among the geological hazards common to all countries of this region, particularly in densely populated areas where natural conditions are made worse by human intervention. Other issues that presently require environmental geoscience inputs include resource and energy utilization, conservation of physical heritage, waste disposal as well as identification and cleanup of polluted land and water. Solutions to these problems require multidisciplinary inputs as well as new knowledge and approaches. Pilot initiatives that relate to integrated management of basins, watersheds and coastal zones, which involve scenario generation, are being undertaken in Malaysia, Thailand and Indonesia. These initiatives, based on remote sensing, have brought in a wealth of information to the region. However, on its own, such data cannot provide conclusive answers to ensure the integrity of the environment. There is an urgent need to fill knowledge and data gaps for improved management and decision-making in this region and environmental geoscience has an important contribution to make, in this context.