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Land use activities in the tropics of Southeast Asia can have a substantial impact on the occurrence and severity of floods, landslides, debris flows, and severe soil erosion. In addition to generating widespread sedimentation and damage to streams and riparian habitat, these hazards pose significant risks to humans, infrastructures, and property in the runoff zone. The probability and severity of these natural hazards can increase related to timber harvesting, road building, vegetation conversion, urbanization, and recreation. Such land use activities in this region have placed natural resources at high risk, especially in mountainous forested areas.

The widespread conversion of native forests to permanent agriculture and plantations (e.g., oil palm, coffee, rubber, fruit trees) throughout Southeast Asia has accelerated erosion and landslide hazards. Associated with such land cover changes are low-volume roads, continued tillage, occasional burning, and other site disturbances. The relative extent of such impacts is strongly associated with the spatial and temporal attributes of land uses. Due to high rates of organic matter decomposition, many of these sites have only thin litter layers protecting the mineral soil. Therefore, disturbances associated with vegetation conversion can have profound impacts on infiltration capacity, stormflow runoff and pathways, and erosion. Long-term impacts on slope stability can occur related to decreases in vegetation rooting strength. Without understanding the controls on materials transported through and stored in headwaters, it is difficult to develop prudent long-term management plans for larger catchments. The interactions of land use with sediment and water pathways, as well as with natural hazards, have not been extensively studied in tropical ecosystems of Southeast Asia. Thus, land management agencies and water users are left to decide on acceptable activities based on poor scientific information and the biased perspectives of both environmental groups and the industrial sector. Nowhere in the world are natural resources more at risk than in developing rural regions of Southeast Asia.

Research in Peninsular Malaysia, Thailand, Myanmar, and Sumatra is focusing on *sources* and *pathways* of sediment, water, and related nutrients within managed catchments. Such a passive approach facilitates not only the assessment of the hazard or hydrogeomorphic process *on-site*, but also evaluates the linkage of the process to the catchment scale and downstream resources. For example, in the Bukit Tarek catchment in Malaysia, erosion (largely surface erosion with small-scale mass wasting) from logging roads and skid trails was about $275 \text{ t ha}^{-1} \text{ yr}^{-1}$ during the first 1½ years after selective logging. An important finding is that many of the discharge nodes from poorly designed logging roads are directly connected to the stream channel, thus enhancing sedimentation and potentially peak flows. Roads cut into hillsides may intercept subsurface water and reroute it into drainage systems or along the road surface, thereby enhancing peak flows. Road-related runoff facilitates stormflow routing to channels and causes channels to headcut, generating additional sediment. Mass wasting from roads occurs episodically, with little soil loss in many years and much erosion during years with large storms. In contrast, skid trails, which had few or no deep cut slopes and were more remote from channels, were generally poorly connected to streams; much of the sediment mobilized from skid trails was stored either on adjacent hillslopes or the trails themselves. Other research findings from northern Thailand, Sumatra, and Myanmar will be presented.