

Adverse Impact of Land Use Changes on Degrading Environment in Bertam River Catchment, Cameron Highlands, Malaysia

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ABSTRACT

The present study investigates the changes in pattern of land usage within the Bertam River Catchment, Cameron Highlands, Malaysia to understand the potential impact of such changes on environment. Digitization, change detection and slope analysis techniques were applied to analyze the changing status and trends of land usage over time (1984-2010) using GIS approach. Ten categories of landuse were identified and mapped. The analytical results revealed that substantial expansion of market gardening (16.37 km²) and urban area (4.15 km²) has taken place during the study period resulting in significant decrease in forest area (22.85 km²). A major modification of floriculture land type (8.04 km²) from market gardening was also observed in the study area. Land use changes were characterized by expansion of the land use types with higher development pressure (agricultural activities and urban) and reduction of some land use types with higher environmental value (forest and scrubland). All these changes were directly related to human impact and driven by socio-economic activities. The study revealed that the economic benefit from rapid landuse changes had ultimately resulted in potential impacts on environmental degradation in the area. Sustainable landuse planning and management is urgent to handle the equilibrium between environmental conservation with land use development and utilization.

Key Words: Bertam Catchment; Landuse Change; Change Detection; GIS; Environmental Degradation.