Geophysical Research Abstracts, Vol. 7, 10952, 2005
SRef-ID: 1607-7962/gra/EGU05-A-10952

The Hydrological Impact of Land Use and Forest: Comparison Studies in Two Catchments in Mekong River

A. Youan Guo (1), B. Ying Huang (1), C. Congyun Wang (2) and D. Liqun Wu (1)

(1) Yunnan Hydrological and Water Resources Bureau, Yunnan, China, (2) Institute of ecology, Yunnan University, Yunnan, China, (gya@vip.163.com)

Land use and forest play an important role in catchment hydrological processes. A comparison study was carried out in two catchments, Fengqing and Xiaojie, which are within the same climatic and geomorphologic zone, to investigate the impact of land uses and forest on catchment runoff and sediment flux. Water discharge and sediment flux data in 2003 were examined and it was found that although the annual average water discharge in Fengqing was 2.5 times of that in Xiaojie, the annual average sediment flux in Xiaojie was 4.2 times as much as in Fengqing. The main reason for this phenomenon was the different land uses. The dominant land use in Xiaojie was farmland, which accounted for 56.15% of this area. And many of the crops are planted along the slope. Whereas in Fengqing, the farmland was only 31.9%, with forest accounted for 56.15%. Besides, the different vegetation type also contributed to the different soil erosion status. The forest in Fengqing comprised of ever-green b road leaf vegetation, Yunnan pine forest (pinus yunnanensis), bamboo forest and bushes. Compared with the forest of Fengqing, the vegetation in Xiaojie had less diversity. It was composed of only Yunnan pine forest and bushes.

This research my provide information on decision making in water and soil conservation in the upper Mekong River.

Key word: Land use, Forest, Water discharge, Sediment flux, Impact