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Abstract Submission for 2014 Abstract Submission

## Abstract

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**Title:** Water erosion vulnerability of upland watersheds under different forest covers in the Chittagong Hill Tracts, Bangladesh

**Abstract:**

Water erosion is the most serious environmental problem in hilly watersheds of Bangladesh, and is a major concern for forestry and agricultural productivity. It is therefore necessary to identify land use practices that will control this problem in order to establish sustainable watershed management strategies. In this connection, the study was carried out in 21 different sites in the Chittagong Hill Tracts (CHTs) by conducting direct field assessments of soil loss under various land uses using erosion pins and pedestals measurement during the period 2009-2010. The results showed that average soil loss was highest (64 t ha<sup>-1</sup>yr<sup>-1</sup>) in deeply-tilled agricultural slopes, followed by *Tectona grandis* plantations (47 t ha<sup>-1</sup>yr<sup>-1</sup>), while the lowest soil losses (13 t ha<sup>-1</sup>yr<sup>-1</sup>) were recorded in bamboo plantations. Among the other forest plantations studied, soil loss rates were comparatively smaller under mixed-plantations (17 t ha<sup>-1</sup>yr<sup>-1</sup>) and *Gmelina arborea* plantations (30 t ha<sup>-1</sup>yr<sup>-1</sup>). Land use was the most significant factor explaining these erosion rates compared to slope and soil characteristics. This study can be useful to identify areas with high erosion risk and to develop adequate soil conservation measures in the hilly watershed of the CHTs.

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