

Soil erosion intensity due to different land use patterns in Nuwara - Eliya District, Sri Lanka

MKAA Amali¹ and Ranjana UK Piyadasa²

Ragala Grama Niladari Division under Walapane District Secretary's Division of Nuwara Eliya District in Sri Lanka is severely affected by soil erosion intensive due to changing of the traditional land use pattern within the last decade. Ragala average elevation is about 1600 meters and its annual average rainfall is over 2500 millimeters. Geomorphologically study area form with mountains, valleys and different slope ranges. According to the facts of survey department Ragala main land use was maintained until last few years. But beginning 1990s some tea estates were converted in to potato lands due to economical facts. That new trend was led to increase the intensive of soil erosion. Even extreme lands such as steep slopes were converted in to potato lands. As a result of this directly affect to soil erosion and it helps to generate more harmful results because Ragala is a hilly watershed area of Uma Oya which is a main tributary of River Mahaweli.

Objective of the research study was identifying the differences of soil erosion within potato, tea and forest cultivation areas. According to the study the quantity of sediment was measured flowing water through the above cultivation lands with and without rainy season in high and low slope areas. This study proved that flowing water through potato cultivation lands have relatively the most sediments contained in high slopes areas in rainy seasons. Mention comparatively further more about it; the potato cultivation land's soil erosion rate is three times higher than the poor managed tea estate. Not only that but also the intensively of soil erosion in potato cultivation land is five times higher than the forest cultivation areas. Finally this study proved those potato lands in steep slopes has a higher intensive to soil erosion.

Key words: Geomorphology, land use, Precipitation, Sediments, Watershed

¹ Department of Irrigation, Colombo, Sri Lanka

² Department of Geography, University of Colombo, Sri Lanka