

Soil Degradation Processes in Marginal Uplands of Samar Island, Philippines

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Abstract : Marginal uplands are fragile ecosystems in the tropics that need to be evaluated for sustainable utilization and land degradation mitigation. Thus, this study evaluated the dominant soil degradation processes in selected marginal uplands of Samar Island, Philippines; evaluated the important factors influencing soil degradation in the selected sites and identified the indicators of soil degradation in marginal uplands of the tropical landscape of Samar Island, Philippines. Two (2) sites were selected (Sta. Rita, Samar and Salcedo, Eastern, Samar) representing the western and eastern sides of Samar Island respectively. These marginal uplands represent different agro-climatic zones suitable for the study. Soil erosion is the major soil degradation process in the marginal uplands studied. It resulted in not only considerable soil losses but nutrient losses as well. Soil erosion varied with vegetation cover and site. It was much higher in the sweetpotato, cassava, and gabi crops than under natural vegetation. In addition, soil erosion was higher in Salcedo than in Sta. Rita, which is related to climatic and soil characteristics. Bulk density, porosity, aggregate stability, soil pH, organic matter, and carbon dioxide evolution are good indicators of soil degradation. The dominance of *Saccharum spontaneum* Linn., *Imperata cylindrica* Linn, *Melastoma malabathricum* Linn. and *Psidium guajava* Linn indicated degraded soil condition. Farmer's practices particularly clean culture and organic fertilizer application influenced the degree of soil degradation in the marginal uplands of Samar Island, Philippines.

Keywords : soil degradation, soil erosion, marginal uplands, Samar island, Philippines

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