Assessment of Soil Quality as Affected by Topography and Farming Practices in the Rice Terraces in Ifugao, the Philippines

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In the Rice Terraces of the Philippine Cordilleras, there have been serious issues such as watershed destruction and low productivity. However, few studies discussed the soil environment at present, nevertheless, it would contribute to making farming more sustainable. Therefore, the soil quality, mainly focusing on the soil chemical properties, was assessed in this study. Soil analysis and interviews using questionnaires and group discussions were done. Soil samples were collected considering different topography such as elevation and farming practices. The soil was collected from each elevation at first. Even at the same elevation, the other soil samples were also collected from the fields which are unique in its topography and farming practices in order to identify the effects of mentioned unique points on soil quality. Results showed that topography and farming practices affected the soil quality of the field. Soil acidity was observed in some fields and it caused cation leaching from the topsoil. Organic matter (OM), Total Nitrogen (TN), and Available Phosphorous (AP) increased as elevation decreased, which indicated that they were transferred from the upper. In addition, fields just below the village have high OM and AP. This may be due to domestic wastewater. TN and Available Potassium (AK) were generally smaller than target values in the whole area. From the interview, it was also found that farmers have little awareness of soil environment. Based on the findings, some proper farming and land management were proposed such as how to improve soil quality as well as soil physical conservation.

Keywords: rice terraces, Cordilleras, soil quality, soil environment, organic matter

