

## **Estimating soil organic carbon at takasago Takasago Unimas Educational Forest for forest rehabilitation**

### **ABSTRACT**

Soil Organic Carbon (SOC) has long been known as an indicator of soil health. This study aims to estimate the amount of SOC at Takasago-UNIMAS Educational Forest, a postconstruction site, for forest rehabilitation. Since 2018, rehabilitation approaches have been conducted in the UNIMAS campus to restore these land areas via enrichment planting. The estimation of SOC was conducted at three sites; Secondary Forest (SF), Enrichment Planting site (2018) (EP18) and Enrichment Planting site (2019) (EP19). In each study plot, soil samples from different depths were collected for further analysis. Our findings showed that the soils in SF portray the highest amount of Total Carbon and Nitrogen, suggesting that this site may not have been considerably affected due to the past land use. Moreover, the estimation of SOC in all sites indicated that SF shows the highest mean at 2007.0 g/m<sup>2</sup> at the soil depth of 0-30cm, followed by EP18 and EP19. From the estimation, it can be concluded that although the period of establishment in EP18 and EP19 may have contributed to the lower SOC as compared to SF, the SOC estimation from this study could be a value-added option in determining the state of soil recovery and, possibly, the effectiveness of enrichment planting for forest rehabilitation.