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Carbon Stock of the Moist Afromontane Forest in Gesha and Sayilem Districts in Kaffa Zone: An Implication for Climate Change Mitigation

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Abstract : This study measures the carbon stock of the Moist Afromontane Gesha-Sayilem forest found in Gesha and Sayilem District in southwest Ethiopia. A stratified sampling method was used to identify the number of sampling point through the Global Positioning System. A total of 90 plots having nested plots to collect tree species and soil data were demarcated. The results revealed that the total carbon stock of the forest was 362.4 t/ha whereas the above ground carbon stock was 174.95t/ha, below ground litter, herbs, soil, and dead woods were 34.3,1.27, 0.68, 128 and 23.2 t/ha (up to 30 cm depth) respectively. The Gesha- Sayilem Forest is a reservoir of high carbon and thus acts as a great sink of the atmospheric carbon. Thus conservation of the forest through introduction REDD+ activities is considered an appropriate action for mitigating climate change.

Keywords : carbon sequestration, carbon stock, climate change, allometric, Ethiopia
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