

AHMAD IBRAHIM NRP. 16.03.5.1.1.00007. Estimasi Stok Karbon Pada Ekosistem Hutan Mangrove Di Desa Lembung Paseser, Kecamatan Sepuluh, Kabupaten Bangkalan. Dibawah bimbingan **Dr. Firman Farid Muhsoni, S.Pi., M.Sc**

ABSTRAK

*Meningkatnya kandungan karbon dioksida (CO₂) di udara akan menyebabkan kenaikan suhu bumi yang terjadi karena efek rumah kaca/pemanasan global. Pentingnya peranan mangrove dalam pencegahan pemanasan global, dimana hutan mangrove mampu menyerap dan menyimpan karbon (C) dan bentuk biomassa. Penelitian ini bertujuan untuk mengetahui kerapatan vegetasi jenis tegakan mangrove, total biomassa atas permukaan dan bawah permukaan, Serta mengetahui stok karbon atas permukaan, bawah permukaan dan stok karbon tanah. Serta mengetahui serapan CO₂ atas permukaan, bawah permukaan dan stok karbon tanah pada kawasan hutan mangrove yang ada di Desa Lembung Paseser. Pengambilan data stok karbon yang di ambil dalam penelitian menggunakan metode non-destruktif sampling yaitu tanpa merusak dengan menggunakan model persamaan allometrik. Sedangkan penelitian dilakukan pada 3 stasiun dan setiap stasiun terdapat 6 plot. Hasil penelitian menunjukkan pada kawasan penelitian di temukan 9 jenis mangrove *Rhizophora mucronata*, *Rhizophora stylosa*, *Rhizophora apiculata*, *Sonneratia alba*, *Avicennia marina*, *Avicennia alba*, *Ceriop tagal*, *Ceriop decandra*, *Aegiceras c*. Total kerapatan jenis mangrove pohon sebesar 2.900 ind/ha, pada anakan 206.400 ind/ha dan tingkat semai 3.480.000 ind/ha. Nilai rata-rata kandungan biomassa diatas permukaan sebesar 87,21 ton/ha, bawah permukaan (akar) 36,07 ton/ha. Total rata-rata stok karbon sebesar 231,69 ton/ha, terdiri dari: stok karbon diatas permukaan 40,75 ton/ha, bawah permukaan (akar) 16,95 ton/ha dan tanah 173,98 ton/ha. Total rata-rata serapan CO₂ mangrove sebesar 849,51 ton/ha, terdiri dari diatas permukaan 149,44 ton/ha, Bawah permukaan (akar) 62,15 ton/ha, dan tanah 637,93 ton/ha.*

Kata kunci: Mangrove, Biomassa, Stok Karbon, Serapan CO₂.

AHMAD IBRAHIM NRP. 16.03.5.1.1.00007. Carbon Stock Estimation of Mangrove Forest Ecosystem in Lembung Paseser Village, Sepuluh District, Bangkalan Regency. Supervised by **Dr. Firman Farid Muhsoni, S.Pi., M.Sc**

ABSTRACT

*The increasing of carbon dioxide (CO₂) in the air causes an increase in earth's temperature which occurs due to the greenhouse effect / global warming. Mangroves play an important role in preventing global warming. It is because mangrove forests are able to absorb and store carbon (C) in the form of biomass. This research aimed at determining mangrove stand density, surface layer and subsurface layer of total biomass, as well as to determine surface and subsurface carbon stock, and soil carbon stock. In addition, this research also tried to find CO₂ uptake on surface layer, subsurface layer and soil carbon stock of mangrove forest area in Lembung Paseser village. The data of carbon stock was taken using a non-destructive sampling method, by using the allometric equation model, therefore there was no damage during the process. Meanwhile, the research was conducted in 3 stations and each station had 6 plots. The results showed that in the study area it was found 9 types of mangrove *Rhizophora mucronata*, *Rhizophora stylosa*, *Rhizophora apiculata*, *Sonneratia alba*, *Avicennia marina*, *Avicennia alba*, *Ceriop tagal*, *Ceriop decandra*, *Aegiceras c*. The total density of mangrove tree was 2.900 ind / ha, in saplings was 206.400 ind / ha and seedlings level was 3.480.000 ind / ha. The average value of biomass content in the surface level was 87,21 tons / ha, in the subsurface (roots) was 36,07 tons / ha. The average value of total carbon stock was 231,69 tons / ha, consisting of: carbon stocks above the surface of 40,75 tons / ha, the subsurface (roots) of 16,95 tons / ha and the soil layer of 173,98 tons / ha. The total average value of mangrove CO₂ uptake was 849,51 tons / ha, consisting of: in the surface level of 149,44 tons / ha, the subsurface (roots) of 62,15 tons / ha, and the soil of 637,93 tons / ha.*

Key Words: Mangrove, Biomass, Carbon Stock, CO₂ Uptake.