

ABSTRACT

ESTIMATION OF CARBON RESERVE AT VARIOUS PERIODS OF FOREST MANAGEMENT IN PROTECTED FOREST AREA REGISTER 22 WAY WAYA OF CENTRAL LAMPUNG DISTRICT

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Register 22 Way Waya of Central Lampung District is a protected forest area. Since 1998 almost all forest areas have been encroached by people who live around the forest area and used as perennial crops. In 1999 the Forestry and Plantation with the community around the protected forest area through the Community Forest Program began to agroforestry. Measurement of carbon needs to be done because it can describe of CO₂ in the atmosphere that absorbed by plants (Hairiah and Rahayu, 2007). Carbon stock data in protected forest area Register 22 Way Waya will support to carbon emission and climate change impacts.

The research purposes was estimate above ground carbon at various periods of forest management in protected forest area Register 22 Way Waya of Central Lampung District.

The location of a study is the Protected Forest Register 22 Way Waya of Central Lampung District with an area of 5.118,000 hectares which is divided into 4 groups: (1) Working Area Community Forest (HKm) which has been managed by the community since 1999 covering an area of 1.049,000 Ha, (2) Working Area Community Forest (HKm) which has been managed by the community since 2004, covering an area of 2.500,804 hectares, (3) Working Area Community Forest (HKm) is designated as Block Protection covering an area of 882,731 Ha and (4) Protected Forest area Register 22 Waya Way of Central Lampung District that are not proposed by the community as the Working Area Community Forest (HKm), covering an area 685,465 Ha. The research was conducted in September until December 2010.

Estimation of carbon reserves methods using allometric equation based on studies of Kettering (2001), Arifin (2001), Hairiah (2002) and Van Noordwijk (2002). Dominant tree species are known to vegetation analysis at the level of trees, poles, saplings, seedlings and plants below.

The results showed that an increase in the amount of carbon reserves of ages Community Forest Management. Average carbon stocks in 1999 period is 180,704 Mg/ha; in the 2004 period is 148,054 Mg/ha; on the protection block is 211,568 Mg/ha and the area is not proposed as a Community Forest is 184,520 Mg/ha. Protection block has biomass, carbon absorption and carbon dioxide absorption biggest than the other 423,136 Mg/ha; 211,568 Mg/ha and 776,454 Mg/ha. Trees are the largest component of biomass, in the 1999 period is 68,22 %, in 2004 period is 73,97 % and protection blok is 65,04 %. In the area is not proposed as a Community Forest component of necromass lower plants that provide the greatest contribution, is about 53,09 %.

The results of vegetation analysis, in Protected Forest Area Register 22 Way Waya has 29 species of trees, 37 species of poles, 29 species of saplings and 35 species of seedlings and plants below. Dominant tree species in the 1999 period is rubber (*Hevea brasiliensis* Mull. Arg.) and sonokeling (*Dalbergia latifolia* Roxb.); in the 2004 period is sengon (*Paraserinthes falcataria* L.) and sonokeling (*Dalbergia latifolia* Roxb.); in the protection block is pulai (*Alstonia scholaris* R. Br) and sonokeling (*Dalbergia latifolia* Roxb.); in the areas is not proposed as a Community Forest is a durian (*Durio zibethinus* L.) and sugar palm (*Arenga pinanga*).

Key words : Carbon, Biomass, Protected Forest Area, Register 22 Way Waya, Management Period of Community Forest.