SUMMARY

RICHO PUTRA IDEA, Departement of Urban and Regional Planning, Faculty of Engineering, University of Brawijaya, January 2016, *Economic and Environmental Benefits of Livestock Manure Waste Management on Gadingkulons Rural Farmers Communities,* Academic Supervisor: Dr. Tech. Christia Meidiana. ST., M.Eng and Kartika Eka Sari, ST., MT.

Village in Gadingkulon, Dau district, Malang have been using biogas derived from manure as a renewable energy source. However, there are only 40 heads from a total of 309 families of farmers who use biogas. Constraint of the construction AD (anaerobic digester) faced by the farmers is the required cost to build a biogas digester which is about Rp 7,000,000,- ; thus. Unless they receive external financial supports, farmers could not afford to make biogas digesters independently. Another obstacle encountered in the manufacture of biogas digester is the lack of cows owned by individual farmers for the manufacture of a biogas digester. Therefore, this study aims to count the number of digesters resulted from the grouping, to calculate the greenhouse gas reductions in the Gadingkulon village, to analyze factors which influence the non-biogas farmer community to construct biogas digester. Analysis used in this study includes spatial cluster analysis, greenhouse gas emission reductions analysis, and logistic regression analysis. The results of this study indicate the results of the analysis of spatial clusters. the average distance between homes in Krajan as far as 9 meters and Princi as far as 10 meters. This distance is used as a reference in the grouping of farmers for the construction of biogas digester communally. So in Krajan obtained a grouping of farmers as much as 15 groups with details of 4 m^3 capacity biogas digester 4 units, 6 m^3 and 10m^3 7 units 1 unit. Princi obtained a grouping of farmers in a total of 32 groups with details of 4 m3 capacity biogas digester as much as 9 units, 11 units 6 m^3, 8 m^3 6 units, 4 units of 10 m^3 and 12 m^3 1 unit. So the digester can be built as many as 43 units. Grouping results in the construction of biogas digesters also produce economic benefits gained from the purchase of LPG gas savings. Within one month of the total savings of the whole group gained Rp 3.360.000. After grouping and manufacture of biogas digester communally it will obtain the greenhouse gas reductions that the CH_4 gas as much as 2.50 $x10^{-4}$ GgCH4 and Gas N_2O as 5,0$x10^{-4}$ Gg N_2O. after conversion to the unit of carbon dioxide equivalent (CO_2e) emission reductions obtained for CH_4 in units of carbon dioxide equivalent (CO_2e) of 152.5 x 10^{-4} Gg CO_2e and N_2O in units of carbon dioxide (CO_2e) equivalent of 15.5 x 10^{-4} Gg CO_2e. So that the grouping can be performed optimally and to benefit economically and environmentally, the addition of a communal biogas digester needs to consider factors that affect people in possession of the biogas digester. Based on the results of logistic regression analysis of factors that affect the community in controlling interest in biogas digester is influenced by four variables: age variable, the availability of livestock, land availability and the availability of information.

Keywords: ad (anaerobic digester), emission reduction,spasial cluster analysis