

## Abstract

*Land use planning is the process of regulating human activities in utilizing and managing a land in accordance with the capacity of the land. In this study an analysis of land use for agricultural activities in Cianjur Regency was considered by considering two obstacles, namely land area and cost. With the use of this land, it can support decision making in selecting and practicing the best allocation of land, thus making agricultural production in Cianjur Regency increase. The optimization method used is the Genetic Algorithm. Genetic algorithm is an optimization method used to solve a problem by finding an optimal solution. The test results in this study indicate an average fitness value of 14.64 and the value is converging in iterations 37, this is due to the process of elitism which involves the best individual. The most optimum allocation of land, namely maize commodity in Cidaun Subdistrict is 1568.78 ha, so that it can become a leading commodity in Cianjur Regency. While cassava is not a priority to be planted in several districts, because the optimum land area produced is 0 ha. Through this research it is shown that genetic algorithms are able to find the spread of the optimum solution for land allocation of each commodity.*

**Keywords:** *land use, genetic algorithms, optimization.*