

Untuk memenuhi persyaratan agroforestry, maka harus ada tanaman kehutanan (jati). Dengan adanya kebijaksanaan khusus tersebut, maka pola optimalnya berubah menjadi jati sebanyak 558 batang pada lahan 0,1674 hektar (30%); tanaman pangan pola 2 seluas 0,2292 hektar (53,92 %) dan hijauan pakan ternak 0,0914 hektar (16,39%) dengan jumlah ternak 1 ekor sapi per tahun. Keuntungan yang akan diterima juga berubah menjadi Rp 19.647.353,- turun sebesar 6,22% dari pendapatan bersih pola optimal usahatani sebelum diterapkan kebijaksanaan khusus, dan meningkat sebesar 20,80% dari keuntungan pola usaha petani.

(3) Pada usahatani kombinasi 3, dengan pemilikan lahan rata-rata seluas 0,5776 hektar, pola optimal akan diperoleh apabila lahannya ditanami tanaman pangan pola 3 (jagung-kedelai-kacang tanah-ubi kayu) seluas 0,5776 hektar (100 %). Pada pola optimal usahatani kombinasi 3, keuntungan petani akan meningkat sebesar 67,72 % dari 10.469.427,- menjadi Rp 17.559.086,-. Dengan adanya kebijaksanaan khusus, maka pola optimalnya berubah menjadi jati sebanyak 577 batang pada lahan seluas 0,1733 hektar (30%) dan tanaman pangan pola 3 seluas 0,4043 hektar (70%). Keuntungan yang akan diterima juga berubah menjadi Rp 17.337.280,- turun sebesar 1,26% dari pendapatan bersih pola usahatani optimal sebelum diterapkan kebijaksanaan khusus, dan meningkat sebesar 65,60% dari keuntungan pola usaha yang diterapkan oleh petani.

**OPTIMIZING LAND USE IN AGROFORESTRY BASED FARMING
(A case study in Sub district Playen, Regency of Gunungkidul)**

ABSTRACT

The present study was in Banyusoco, a village close to forest area in Sub district Playen, Regency of Gunungkidul. The objective of the study was to determine optimum agroforestry based farming suitable to the area so that maximum profit can be materialized. Seven activities were considered : (1) teak growing, (2) food crop growing of scheme 1 (corn-soybean-cassava), (3) food crop growing of scheme 2 (corn-peanut-cassava), (4) food crop growing of scheme 3 (corn-soybean-peanut-cassava), (5) palm sugar production, (6) cow raising, and (7) goat raising. Three combinations of the seven activities were evaluated (1) Combination 1 : teak growing + food crop growing of scheme 1 + palm sugar production, (2) Combination 2 : teak growing + food crop growing of scheme 2 + cow raising, and (3) teak growing + food crop growing of scheme 3 + goat raising.

Analisis was done covering 25 years, as local inhabitants normally log the teak they are growing after 25 years. Future value was calculated based on the present value by assuming interest rate of 12 % per year. Farmer income was maximized using linier programming through Tora Optimization System computer software. The results are as follows

(1) Using combination 1, with an average land holding of 0.5953 hectare, optimum condition will be reached if 1,372 teak trees are grown in an area of 0.4188 hectare (69.18%) and 28 coconut trees are grown in the rest of the area 0.4188 hectare (31.82%). In this scheme, farmer profit will increase by 17.63% : from Rp 17,689,565.- to Rp 20,823,388.-.

(2) Using combination 2, with an average land holding of 0.5580 hectare, optimum condition will be obtained if food crops of scheme 2 (corn-peanut-cassava) is grown in an area of 0.4774 hectare (85.56%) and grasses are grown in the remaining area : 0.0806 hectare (14.44%). In this scheme, profit will be increase by 28.82 %, from Rp 16,262,904.- to Rp 20,950,790.-. However, as teak growing is a must in the agroforestry being considered here, the optimum condition will be reached if 558 teak trees are grown in area of 0.1674 hectare (30%), the food crops of scheme 2 are grown in the area of 0.2292 hectare (53.62%), and grasses are planted in the rest of the area: 0.094 hectare (16.39%) destined for one cow being raised.

Key word 1. Agroforestry, 2. Optimizing,
 3. Profit