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## Production Efficiency under Different Agroforestry Practices in Ondo State, Nigeria

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### Abstract

The study examined production efficiency of some agroforestry practices, which is gradually replacing the traditional farming in Nigeria. This development is in order to conserve land resources and improve productivity. Given that productivity is a function of efficiency of resource use, this study examines the efficiency of different agroforestry practices in Ondo state of Nigeria.

A multistage sampling technique was adopted in selecting the farmers used in this study. In the first stage of sampling, five local government areas (LGAs) were selected from the existing eighteen LGAs of the State. In the second stage, 10 villages, were randomly selected each from the 5 LGAs. In the third stage, twenty-five agroforestry farmers were randomly selected from each village based on the list of agroforestry farmers in the areas. This gives a sample size of two hundred and fifty (250) respondents.

A structured questionnaire was the instrument used in collecting the relevant information from the respondents i.e. primary data were used in the study. The tools used for analysis to meet the objective of the study include the Data Envelopment Analysis (DEA), the Analysis of Variance (ANOVA) with a further t-test to test for efficiency differences among different practices.

The results showed that 10.3% of the farmers operated at full efficiency. This implies that about 89.7% were inefficient. The average technical efficiency was 44.7% for the whole sample. For the different agroforestry systems analysed, the average technical efficiencies were 41% (homestead), 52% (agrosilvicultural) and 73% (agrosilvapastoral) respectively. The input slacks further revealed that only land is a serious constraint while other resources are over-used. This implies that such resources can be reduced without necessarily affecting the level of output. The ANOVA results revealed significant differences in average technical efficiency between homestead and agrosilvicultural practices. Recommendations arising from the results of the study include extension-education awareness campaigns among farmers.

**Keywords:** Agroforestry, Data Envelopment Analysis (DEA), efficiency, Nigeria