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TECHNICAL EFFICIENCY IN ARABLE CROP PRODUCTION UNDER GORONYO IRRIGATION PROJECT OF SOKOTO STATE, NIGERIA

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ABSTRACT

The study examined the technical efficiency in arable crop production under Goronyo irrigation project of Sokoto State, Nigeria. Multi-stage sampling technique was used to sample 246 farmers and the limited cost-route approach was used with the aid of questionnaire. Stochastic frontier production function (SFPF) model was used in estimating farm level technical efficiency. The study also revealed the average technical efficiency index of rice, maize, cowpea and tomato farms to be 0.87, 0.79, 0.45 and 0.76, respectively and that technical inefficiency effect existed among the farmers. Estimates of technical efficiency of farmers revealed that average sampled farms operate 13%, 21%, 55% and 24% below the frontier output levels for rice, maize, cowpea and tomato farms under consideration. Farmers are fairly efficient technically in deriving maximum output from rice, maize and tomato farm and less technically efficient in the production of cowpea. Extension contact was one of the major factor that influences technical efficiency in the area, therefore, sustained farmers extension contact should be encourage by increasing frequency of contact where new techniques will be disseminated to the farmers to improve the use of available resource.

Keywords: Irrigation, Limited cost-route, Multi-stage, Production, Technical efficiency.