TECHNICAL PROGRESS AND EFFICIENCY CHANGE IN MAIZE PRODUCTION IN NORTH CENTRAL NIGERIA

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ABSTRACT

This study analyzed the technical progress and efficiency change in maize production in North-Central Nigeria. Secondary data from 5 States (Benue, Kogi, Kwara, Niger and Plateau) in the zone were used for this study. Maize secondary production data from 1992 to 2016 were collected from Food and Agriculture Statistical (FAOSTAT) data banks, Federal and State Ministries of Agriculture and National Bureau of Statistics (NBS). Malmquist Total Factor Productivity Index (MTFPI), based on Data Envelopment Analysis (DEA), was used to analyze the efficiency change and technical progress of the crop. The results of the analysis reveal that in maize production in the area, about 0.4% technical efficiency change contributed to the production efficiency of maize over the period studied. The mean technical change indicated 5.7% improvement in production technologies, which led to maize productivity growth of about 1.8%. In comparing the technical efficiency change with the technological change among the States studied, it was found that all the States recorded greater technological change than technical efficiency change in their maize production. Based on these findings, therefore, the study recommends farmers' training on farm techniques to increase production. They should be encouraged to accept improved crop varieties from research institutes. They should allocate the production resources properly and adopt improved technology to achieve better maize production efficiency in the study area. Policies that will enable maize farmers to get support in forms of input subsidy and credits to acquire modern farm technologies will motivate them to increase maize production efficiency.

Key words: Technical progress, efficiency change, maize-production, North-Central Nigeria

INTRODUCTION

In Nigeria, food is scarce despite the abundance of resources, although, the report of National Bureau of Statistics (NBS) (2016), estimated the Gross Domestic Product (GDP) of maize to have risen from 73.46 billion Naira in 2013 to about 78.43 billion Naira in 2015. The impact of this rise in the GDP is yet to be felt in an average Nigerian homes through availability of sufficient food. The high population growth rate at about 2.7%, has resulted to increase in food consumption to about 150kg and 214kg per person for grains and root crops respectively. However, Nigeria is known to be the tenth world's producer and consumer of maize at about 10.4 million tonnes (FAO, 2007; Ojo, 2000 and Philip *et al*., 2006). According to Abdulaleem *et al*. (2019) and Akintayo and Rahji (2016), technical progress and efficiency change are the necessary sources of agricultural productivity growth in Nigeria. Thus, information on technical progress and efficiency change of the production technology of maize is vital for policy formulations (Nkamleu *et al.*, 2008). Since Nigeria's agriculture is subsistence and traditional with low production output (Central Intelligence Agency (CIA), 2014; World Bank, 2008) and technical progress and efficiency change are the major components of agricultural total factor productivity of a country, region or state, the knowledge of them is important. Most of the maize quantity consumed in Nigeria is known to be produced in North-Central Nigeria, yet, previous studies have not clearly established the technical progress and efficiency change in its production in the area. Studies, such as those of Jatto *et al.* (2015), Ajao (2011) and Adepoju (2008) concentrated more on identifying certain socio-economic characteristics of the farmers to influence agricultural productivity in Nigeria without providing adequate information that can solve the food inadequacy in Nigeria.

This study attempted to provide suggestions that can contribute to solution to food scarcity in North-Central Nigeria by bridging the gap caused by paucity of research information on the subject. Policy makers are expected to be guided by information derived from this study, as technical progress will enable them assess whether the existing technology has been fully utilized and optimum efficiency achieved in the sector or if there was need to alter them. Investors will be guided by such policies to make investment decisions, while the rural poor and small scale farmers are expected to benefit directly or indirectly from the policies by adjusting their productions resources to improve maize output, earn more income and develop themselves. The study has indicated more areas for further studies. This study, therefore, aimed to analyze the technical progress and efficiency change in the production of maize in North-Central Nigeria from 1992 to 2016. The objectives of this study are to: (i) determine the evolution of efficiency in the production of maize in North-Central Nigeria and (ii) determine the technical change or progress observed in the production of maize in the study area

Theoretical and Analytical Framework

Agricultural economists simply refer the theory of production efficiency and productivity as the combination of variable production inputs with a fixed input to produce output. The expression of the relationship between variable inputs and fixed input at a minimum level to produce maximum output is referred to as the production function. Production function as a mathematical or quantitative description of input-output relationship in the production process, which provides the direct measurement of the resource productivity parameters (Ojo, 2013). Technical Progress is an improvement or a change in the utilization of the resources or technique to produce an output. Efficiency change, on the other hand, is the ability to increase output by utilizing the available resources through proper allocation without wastage. However, parametric and non-parametric approaches can be used to measure technical progress and efficiency change. The parametric approach relies on econometric techniques, which includes simple regression analysis (SRA) and stochastic frontier analysis (SFA) (Dharmasiri, 2001). Non-parametric approach, such as Data Envelopment Analysis (DEA) involves the construction of index numbers, such as, Malmquist, Fisher, Tornquist and Laspeyes index numbers (Daskovska *et al.*, 2010, Ojo, *et al.*, 2012). This approach does not require input or output prices for its construction, and is thus, the most often preferred method in situations where there are price fluctuations, inaccuracy or non-existent and the objectives are unknown, differ, or difficult to implement, since cost minimization or profit maximization are not necessary (Mohammadi and Ranaei, 2011).

Data Envelopment Analysis (DEA), based on Malmquist productivity index methodology as a non-parametric method, allows the evaluation of relative efficiency of decision-making units (DMUs) of multiple inputs into multiple outputs, to produce a single comprehensive measure of performance (efficiency score) for each unit (Cooper *et al*., 2011). These were introduced by Caves, Christensen and Diewert in 1982, for varying return to scale (VRS) technologies, assuming overall efficiency and a trans-log technology for output distance functions. The DEA creates an envelope of observations that are most efficient at each set of weights, although, could not provide direct estimates of the Malmquist index (MI), but the geometric mean of two MI which equals a scaled Tornqvist-Theil productivity index (Ojo, 2012 and Zelenyuk, 2006). It does not require the prescription of the functional forms of the relationships between inputs and outputs, needed in the statistical regression approaches, as the variables can be measured in different units (Cooper *et al.,* 2007). Under evaluation, the output-oriented score (Ø) may be greater than or equal to 1, and Ø-1 is the proportional increase in output achievable, as the input quantities remain constant. The 1Ø defines technical efficiency score and varies between 0 and 1, while input and output slacks indicate the efficiency of DMU (Cooper *et al.*, 2011). According to Grilo and Santos (2014), two DEA models commonly used for the measurement of efficiency are the basic frontier model known as the Charnes, Cooper, and Rhodes (CCR) model; built on the assumption of variable returns to scale (VRS) of activities, known as the Banker, Charnes, and Cooper (BCC) model.

Conceptually, productivity in agriculture is often used synonymously with efficiency as it relates output to input in production process (Nkamleu *et al*., 2008). There are four major independent sources of productivity change, such as, technical efficiency change (TEC), technical change (TC), scale efficiency change (SEC), and an input mix effect (IME). Technical progress or change refers to a shift in the production frontier through time, determined with the use of Malmquist total productivity index (MPI). The calculation depends on DEA technique, which is a linear programme, which involves the use of distance function, which, if equals to 1, implies that the production unit is technically efficient or inefficient if otherwise (Daskovska *et al*., 2010). The Malmquist productivity indexes, when decomposed gives the technical change and the efficiency change as are expressed in equations (1) and (2):

$$\text{Efficiency Change} = \frac{d^s{}_0(y_t, x_t)}{d^s{}_0(y_s, x_s)} \text{ --------(1)}$$

$$\text{Technical Change} = \frac{d^s{}_0(y_t, x_t)}{d_{s0}(y_t, x_t)}\left[\frac{d^s{}_0(y_t, x_t)}{d^s{}_0(y_s, x_s)} \times \frac{d^s{}_0(y_t, x_t)}{d^t{}_0(y_t, x_t)}\right]^{1/2} \text{ ----- (2)}$$

Where:

$d^s{}_0(y_t x_t)$ = distance from period t observation to the period t+1 technology. The efficiency change ($EFFCH_{crs}$) component is equivalent to the ratio of the Farrell technical efficiency in period t to the Farrell technical efficiency in period t+1, under the constant return to scale. Pure technical change measures the shift in the reference production frontier curve, while the efficiency change measures the catch-up attempt. Technical efficiency change in equation (2), based on Lee *et al*. (2011) indication, can further be decomposed into scale efficiency change (SECH) and pure efficiency change (PECH), as shown in equations (3) and (4), thus:

$$SECH = \left[\frac{E_{vrs}^{t+1}\left(x^{t+1} * y^{t+1}\right) / E_{crs}^{t+1}\left(x^{t+1} * y^{t+1}\right)}{E_{vrs}^{t+1}\left(x^{t+1} * y^{t+1}\right) / E_{crs}^{t+1}\left(x^{t} * y^{t}\right)} * \frac{E_{vrs}^{t}\left(x^{t+1} * y^{t+1}\right) / E_{crs}^{t}\left(x^{t+1} * y^{t+1}\right)}{E_{vrs}^{t} * \left(x^{t} * y^{t}\right) / E_{crs}^{t}\left(x^{t} * y^{t}\right)} \right]^{1/2} \quad \text{-----(3)}$$

$$PECH = \frac{E_{vrs}^{t+1}\left(x^{t+1} * y^{t+i}\right)}{E_{crs}^{t}\left(x^{t} * y^{t}\right)} \quad \text{----------------- (4)}$$

Therefore,

TECH = SECH * PECH

$$TECH = \left[\frac{E_{vrs}^{t+1}\left(x^{t+1} * y^{t+1}\right) / E_{crs}^{t+1}\left(x^{t+1} * y^{t+1}\right)}{E_{vrs}^{t+1}\left(x^{t+1} * y^{t+1}\right) / E_{crs}^{t+1}\left(x^{t} * y^{t}\right)} * \frac{E_{vrs}^{t}\left(x^{t+1} * y^{t+1}\right) / E_{crs}^{t}\left(x^{t+1} * y^{t+1}\right)}{E_{vrs}^{t} * \left(x^{t} * y^{t}\right) / E_{crs}^{t}\left(x^{t} * y^{t}\right)} \right]^{1/2} * \frac{E_{vrs}^{t+1}\left(x\, t+1 * y^{t+1}\right)}{E_{crs}^{t}\left(x^{t} * y^{t}\right)} \quad \text{-- (5)}$$

Where:

E = Efficiency, t = base period, t+1 = subsequent period, x = input quantity, y = output quantity.

In developed countries, technical efficiency and technological progress have been found to be the major determinants of productivity and high gross domestic product (GDP). But in Africa, technical progress, rather than efficiency change had been found to be the principal source of productivity growth (Alene, 2010). Nsiah and Fayissa (2017) in a study of trends in agricultural production efficiency and its implications for food security in sub-Saharan African countries found agricultural aid, capital infrastructure for the agricultural industry, sanitation and good governance to be the main drivers of agricultural efficiency and its growth. However, Kifle and Wondemu (2016) opined that small-scale farming exhibits scale, technical and scope economies and thus, the opportunities for increasing productivity through improved efficiency. In Nigeria, Jatto *et al.* (2015) and Ajao, (2011) attempted the DEA approach for similar studies on determinants of agricultural productivity, but the studies concentrated mainly on identifying socio-economic factors as the major determinants of agricultural productivity, without assessing the actual technical progress and efficiency change in the production of agricultural output, which is the focus of this study.

RESEARCH METHOD

The Study Area

North-Central Nigeria, which is made up of Benue, Kogi, Kwara, Niger, Nasarawa, Plateau States and the Federal Capital Territory (FCT), Abuja was chosen for this study. The zone occupies about 296,898 km^2 in land area, with a population of about 22,887,250 people as at 2016 (National Bureau of Statistics (NBS), 2016). It is located between Longitudes 2^o 30′ to 10^o 30′ East and Latitudes 6^o 30′N to 11^o 20′ North. More than 77% of the people in this zone are rural dwellers, mostly engaged in one form of agricultural activity or the other (Aregheore, 2009). The zone has the wet season from March to October and the dry season from November to March. The annual rainfall ranges from 1,000 to 1,500mm at the average of about 187 to 220 rainy days, and average monthly temperature ranges of 21^{o}C to 37^{o}C. The Forest Savannah Mosaic, Southern Guinea Savannah and the Northern Guinea Savannah make up the vegetation. The zone is characterized by extensive swampy lowland areas along the valleys of rivers Niger and Benue; large hills, mountains, plateaus and deep valleys. The vegetation, soil and weather patterns of the zone favour the cultivation and production of wide varieties of foods, industrial and cash crops of various types. The available rivers and dam enable irrigation farming during the dry seasons. The area consists of more than 40 ethnic groups, which include the Egbira, Koro, Gade, Idoma, Tiv, Nupe, Kadara, Kambari, Kamuku, Agatu, Basa, Eggon and Gbagyi ethnic groups, among others. The people in the zone are mainly farmers, hunters, fishermen and artisans. The major crops grown in the zone include rice, maize, millet, sorghum, yam, potatoes, cassava, cowpea, soybean and vegetables.

Method of Data Collection

Secondary data were used in this study. Secondary production data on maize from 1992 to 2016 for each State and the zone were collected from National Bureau of Statistics (NBS), States' Agricultural Development Programmes (ADPs), States and Federal Ministry of Agriculture, Abuja. The secondary data collected included maize annual outputs (tonnes), the production inputs, such as farm size cultivated (hectares), seed (tonnes), labour (man-days) and fertilizer (tonnes) and capital (Naira and Kobo).

Analytical Techniques

Evolution of efficiency and technical change or progress observed in the production of maize were achieved using a non-parametric approach (Data Envelopment Analysis (DEA)), based on Malmquist Total Factor Productivity Index (MTFPI). This is because DEA approach is a deterministic method based on linear programming, which neither considers the random errors (statistical noise) nor requires predefinition of the distribution of the error term. The results of the analysis were compared among the States studied. The evolution of different estimated efficiencies (technical, pure and scale efficiency changes) over time were presented using graphs and Tables.

Model specification

Malmquist total factor productivity index (MTFPI)

In the use of Malmquist TFP index (MTFPI), distance functions were calculated between the two periods (t and t+1). Linear programming (LP) problems was solved, using constant return to scale (CRS) to maintain uniformity of the variables. This distance is defined as inverse of Farrell's ratio between an output quantity change index and input quantity change index (Farrell, 1957). The required LPs are as expressed in equations (6) and (7):

$$[D_0(X^{k*}, Y^{ky})]^{-1} Z^k, \theta^k = \text{Max } \theta^{k*} \quad \text{-----------} \ (6)$$

Subject to:

$$\sum_{k=1}^{N} Z^k Y_j^k \geq Y_j^k, \theta^{k*} \quad \text{j=1..., j}$$
$$\sum_{k=1}^{N} Z^k X_h^k \geq X_h^{k*} \quad \text{h=1..., H}$$
$$Z^k \geq 0 \quad \text{k=1..., N}$$

$$[D_0^{t+1}(X_{t+1}^{k*}, Y_{t+1}^{k*})]^{-1} = \text{Max } \theta^{k*} \quad \text{-----------} \ (7)$$

Subject to:

$$\sum_{k=1}^{N} Z^{k*} X_{t+1}^{k*} \geq Y^{kh} \theta^{k*} \quad \text{j=1..., J}$$
$$\sum_{k=1}^{N} Z^k X_h^k \geq X_h^{k*} \quad \text{h=1..., H}$$
$$Z^k \geq 0 \quad \text{k=1..., N}$$

Where:

D_0 is the output distance function; t is the initial period ; t+1 is the proceeding period; Y is the output quantity; X is the input quantity; N is the total population of farmers studied; k is the number of the State studied; $k*$ is the particular State whose efficiency is being measured; j is the set of outputs; h is the set of inputs; Z^k is the weight of the k^{th} State's data and θ is the efficiency index, which is equal to 1 if k* State is efficient in producing the output vector. A less than one efficiency index indicates inefficiency in production. The Malmquist Index between period t and t-1 is still defined as the geometric mean of two Malmquist Index vectors (Ludena, 2010).

Data Envelopment Analysis (DEA) Model:

The DEA model is formed from Linear programmes LP (6) and (7), which are the points at which production points were compared to technologies from different time periods, which θ parameter is between 0 and 1. (Daskovska *et al.*, 2010) . Thus, equations (6) and (7) can be expressed as in equation (8) as the DEA model:

Maximize: $Y^k = Y_1Z_1 + Y_2Z_2 + Y_3Z_3 + Y_4Z_4 + Y_5Z_5$

Subject to:

$$A_{11}X_1 + A_{12}X_2 + A_{13}X_3 + A_{14}Z_4 + A_{15}Z_5 \le H$$
$$A_{21}X_1 + A_{22}X_2 + A_{23}X_3 + A_{24}Z_4 + A_{25}Z_5 \le L$$
$$A_{31}X_1 + A_{32}X_2 + A_{33}X_3 + A_{34}Z_4 + A_{35}Z_5 \le C \quad \text{-- (8)}$$
$$A_{41}X_1 + A_{42}X_2 + A_{43}X_3 + A_{44}Z_4 + A_{45}Z_5 \le S$$
$$A_{51}X_1 + A_{52}X_2 + A_{53}X_3 + A_{54}Z_4 + A_{55}Z_5 \le F$$
$$Y^kZ^k \ge 0$$

Where:

Y^k denotes maize output (in tonnes); X_1, X_2, X_3, X_4, X_5, denotes decision variables; Y_1, Y_2 Y_3, Y_4 denotes output coefficients maximized; A_{ij} denotes Input-Output coefficients; H = Farm size cultivated (hectares); L = Labour used for the period of t activity (man-day); C = Working capital used at period t (Naira and Kobo); S = Quantity of seeds planted during period t (tonnes); F = Quantity of fertilizer used at period t (tonnes); Z^k = Weight of the k^{th} state's data (tonnes). However, efficiency change (EFFCH) was determined with the use of equation (1) and technical change (TECCH) was calculated from equation (2). In using these models, the efficiency change (EC) and technical change (TC) over the years obtained were presented with the use of graphs and Tables to show their evolution.

RESULTS AND DISCUSSION

Evolution of Efficiency change in the Production of Maize in North-Central Nigeria

The trend of the efficiency changes in the production of maize in North-Central Nigeria is as shown in Table 1. The highest technical efficiency change was 1.123 observed in 2015, from the positive contribution of both pure and scale efficiency changes, which indicates a 12.3% growth in technical efficiency change.

Table 1. Efficiencies changes in maize production in North-Central Nigeria

Year	Pure Efficiency Change	Scale Efficiency Change SECH	Technical Efficiency Change TEFFCH	Technological Change TECHCH	Total Factor Productivity Change TFPCH
1992					
1993	1.000	0.996	0.996	0.917	0.943
1994	1.000	1.006	1.006	0.925	0.931
1995	1.000	1.000	1.000	1.064	1.064
1996	1.000	0.968	0.968	1.022	0.921
1997	1.000	1.003	1.000	0.917	0.952
1998	1.000	0.990	0.880	1.135	0.999
1999	1.087	1.082	1.076	1.206	1.172
2000	0.809	0.767	0.772	1.113	0.917
2001	1.089	1.013	1.091	0.886	1.198
2002	1.109	0.912	1.011	1.076	1.088
2003	1.003	1.052	1.055	1.094	1.110
2004	1.000	0.956	0.956	1.021	0.976
2005	0.978	0.988	0.965	0.957	0.924
2006	1.023	1.017	1.041	0.830	0.986
2007	0.860	0.980	0.921	1.203	0.990
2008	0.998	0.916	0.915	1.175	0.984
2009	1.011	1.140	1.120	1.102	0.952
2010	1.170	1.180	1.110	1.019	1.108
2011	1.000	1.030	1.055	1.198	1.135
2012	1.000	0.967	0.967	1.091	1.055
2013	1.000	1.061	1.061	0.867	0.998
2014	1.000	0.920	0.920	1.215	1.145
2015	1.000	1.110	1.123	1.072	1.170
2016	1.000	1.180	1.100	1.180	1.120
Mean	1.000	0.996	0.996	1.057	1.018

Source: Computed results from field survey, 2017

The mean scale efficiency change suggested a 0.4% reduction in its contribution to technical efficiency change. This meant that much farmland area was not allocated to maize production throughout those years in North-Central Nigeria. Thus, maize production recorded regress in technical efficiency change.

Technical Progress in Maize Production in North-Central Nigeria

Technical progress of maize production in the study area is as shown in Table 2. Technological change was observed to fluctuate, with its highest value recorded in 2016 at 1.180. This indicated 18% improvement in the maize production technique used, which represents the highest technical progress. However, the mean technological change indicated increase in the contribution of the production technology at 5.7% to the productivity change of maize in the study area. It further implied that technological change contributed more than technical efficiency change, which is in agreement with the findings of Mustapha and Salihu (2015), where the production of maize and cowpea were found to be technologically efficient in Nigeria. Abdulhameed and Galadima (2016) also found maize production in Lafia Local Government Area of Nasarawa State, Nigeria, to be technologically efficient and profitable.

This mean technical progress of maize production over the period studied indicated the need for about 4.3% improvement in the overall maize production technique used. The result also complied with the findings of Hassan *et al.* (2014), where maize production in Nigeria was found to be technically progressive.

Table 2 Technical progress in maize production in North-Central, Nigeria

Year	Technological Change TECHCH	Technical Progress TECHPR	Total Factor Productivity Change TFPCH
1992			
1993	0.917	-0.083	0.913
1994	0.925	-0.075	0.931
1995	1.064	0.064	1.064
1996	1.022	0.022	0.990
1997	0.917	-0.083	0.920
1998	1.135	0.135	0.999
1999	1.086	0.086	0.531
2000	1.113	0.114	0.614
2001	0.886	-0.113	0.811
2002	1.076	0.076	1.088
2003	1.094	0.094	1.150
2004	1.021	0.021	0.976
2005	0.957	-0.043	0.924
2006	0.830	-0.167	0.986
2007	1.103	0.103	1.132
2008	1.127	0.127	0.874
2009	1.102	0.102	0.952
2010	1.019	0.019	1.108
2011	1.175	0.175	1.135
2012	1.091	0.091	1.055
2013	0.867	-0.133	1.085
2014	1.115	0.115	1.120
2015	1.072	0.072	1.130
2016	1.180	0.180	1.145
Mean	1.057	0.057	1.018

Source: Field survey, 2017

Comparison between efficiency change and technical change of maize

The crop's performance in terms of technical efficiency change and technological change for all the States studied were compared and the result is presented in Tables 3. Although, the study is not a comparative one, the use of DEA model based on Malmquist index in the analysis is less data demanding and allows the decomposition into technical efficiency and technological changes, thus, there is the need for the multilateral comparison. It was observed that in all the States studied, technological change was greater than the technical efficiency change and maize was produced with an average technical efficiency change of 0.996, which was less than the average technological change of 1.029. This implied that all these States employed better production techniques in the maize production, which contributed to the productivity growth of the crop in the area.

Table 3. Comparison between technical efficiency change (TEFFCH) and technological change (TECHCH) for the maize production among the five selected States studied

STATE CROP MEANS	TEFFCH	TECHCH	TEFFCH > TECHCH	TECHCH >TEFFCH
BENUE	0.996	1.025		*
KOGI	0.984	1.007		*
KWARA	1.000	1.053		*
NIGER	1.000	1.044		*
PLATEAU	1.000	1.016		*
MEAN	0.996	1.029		

TEFFCH = Technical Efficiency change; TECHCH = Technological change; > = Greater than.
* = Yes, the change is greater or contributes more to productivity growth (growth in total factor productivity-TFP) than the other one
Source: Field survey, 2017

Thus, technical efficiency change was low by 0.4% per year, while technological change improved by 2.9% over the period studied. Since the overall mean technological change was greater than the mean technical efficiency change, the mean technological change, therefore, was the main contributor to maize productivity growth over the period studied.

CONCLUSION AND RECOMMENDATIONS

Analysis of technical progress and efficiency change in the production of maize in North-Central Nigeria was carried out with the use of secondary data, gotten from the Food and Agriculture Statistical (FAOSTAT) data banks, Federal and State Ministries of Agriculture and National Bureau of Statistics (NBS). Technical efficiency change, technological change and technical progress were the major drivers of maize production. Maize production was technically efficient in all the States but was severely constrained by technological change. The study revealed that for maize production to increase in the study area, the recommendations to be undertaken were that: Maize farmers should concentrate on self-capacity building where necessary, through trainings on farm techniques to increase efficiency and obtain optimum output. They should be encouraged to accept improved crop varieties from research institute. They should allocate the production resources properly and adopt improved technology to achieve maize productivity growth in the study area. Policies on agricultural implement acquisition for improved production should be formulated, since both technical efficiency change and technological changes were found to be the contributors to maize productivity growth in the study area. When these are done, they will be able to increase maize output, reserve more marketable quantities, generate more income and improve themselves. develop their immediate communities and the entire nation as a whole.

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