CHAPTER TWELVE

DOES CAUSALITY EXIST AMONG AGRICULTURAL FOOD PRICES, EMPLOYMENT AND FOOD CROP PRODUCTION IN NIGERIA?

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Abstract
The level of food crop production in Nigeria is far less than what is needed to attain food security. Studies have attributed this scenario to various reasons, one of which is the low-income farmers earn for producing food crops occasioned by low prices. This paper leveraged the current hikes in food prices and examined the causality among agricultural food prices, employment, and crop production. The theoretical framework for this study is Okun's law and Fisher's theory, using time series data from 1991 – 2020. Toda Yamamoto's causality test was used for the analysis. The results showed that agricultural food prices and employment influenced food crop production in Nigeria. This study recommends the revival of Marketing Boards at all levels of government to attain sustainable high domestic prices of food that would lead to the reduction of unemployment in agriculture and, subsequently, the attainment of increased food production in Nigeria.

Keywords: Food Prices; Employment in Agriculture; Food Crop Production.

Introduction

Food crop production is an essential segment of agriculture and vital in reducing food insecurity in a country. The problem of food insecurity is a sick phenomenon biting hard on the Nigerian economy in the face of vast fertile land for cultivation and a high level of unemployment. This problem of food insecurity and unemployment in Nigeria is a challenge to researchers, the government, and the general public. One can also attribute

this problem to the over-dependence on the oil sector and the negligence of the agricultural sector. This negligence may also lead to the low income earned by participants in the agricultural sector. Most youth would rather stay unemployed than engage in any agricultural activity that would pay them low. This might also be one of the reasons why most of the African Indigenous Foods (AIF) are neglected, as most of them command low prices.

As far back as 1987, Schafer (1987) attributed the low agricultural output of many developing countries to low prices as it work against the farm sector, especially as a result of state-regulated low prices. Dorward (2012) also argued that to promote structural change and economic growth, the government seeks long-term falls in food prices. This level of Price discrimination operates against the agricultural sector in many developing countries where farmers make up the majority of the population, but they are underrepresented politically, so they tend to be passed over in favor of the urban group, such as entrepreneurs, well-organized workers or employees of the public administration and state-owned enterprises. These low prices cause farmers to get little value from their investment, which subsequently discourages them from investing more in the sector. Dorward (2013) also maintained that low prices of food discourage the government and private individuals from investing and conducting research in the agricultural sector leading to a reduction in food production. Low food prices also lead to very low value-additions and even losses. Farmers switched out of production and reduced input use.

Alternatively, it is argued that agricultural prices should be raised to offer producers incentives to expand production and create employment in the agricultural sector. Schulz (1964) and Keynes (1936) ascertained the plausibility of this scenario; in Keynes's theory, aggregate demand price is the expected revenue from the sale of output produced at a given level of employment. As a result, different aggregate demand prices correspond to different employment levels in an economy, implying that employment moves in proportion to price levels, such that as food prices rise, agricultural employment also rises. In Schulz's (1964) high pay-off input model, there is a considerable output if agricultural resources are invested efficiently; in this case, an increase in employment in agriculture is an investment that will increase food production.

Amid this era of high food prices, it is important to take a closer look at the role food prices play in employment creation. These high food prices could be a blessing in disguise to pull the unemployed to the agricultural sector, thereby boosting food production and bringing back our neglected AIF. This paper seeks to answer this question: what causal relationship exists among Food prices, Agricultural Employment, and food production in Nigeria?

Food prices, which define how much the bottom 70% of the Nigerian population can take home, could remedy the issue of unemployment and increase food production. This study has become necessary in empirical literature, economic theory, and policy formulation. Empirically, this study is unique because, to the best of the researcher's knowledge, it is rare to find a study that has traced the causality among food prices, employment in the agricultural sector, and food production. However, the majority of the research on food prices, under the perusal of the researcher, has shown a positive influence of food prices on the economy at large without a particular emphasis on employment creation in agriculture and food crop production. It has become very difficult to formulate policies that will closely give a guide to such effects.

I expect that the outcome of this research will show how food prices could remedy the unemployment problem and food crop production in Nigeria. This will help policymakers formulate policies accordingly. The work will also serve as a reference point for other researchers who may wish to further research in this area. The rest of the paper is structured as follows: a review of related literature and theoretical review is in Section 2, Section 3 contains methodology, results, and discussion in Section 4, whereas Section 5 presents the conclusion and recommendation.

Review of Related Literature

Conceptual Review

This paper has adopted the definition of food prices given by Roser and Ritchie (2021), which is that food prices refer to the average price level for food across countries, regions, and on the global level. Food prices have an impact on both the producers and the consumers of food. Several factors, factors such as geopolitical events, global demand, exchange rates, government policy, disease and crop yield, energy cost, the level of natural

resources available for agriculture, food speculation, and changes in the use of soil and weather events, determine the decrease or increase in food prices. It is proxied by the FAO Food Price Index (FFPI), which is the measure of the monthly change in international prices of a basket of food commodities. It consists of the average of five commodity group price indices weighted by the average export shares of each of the groups. Agricultural employment, as used in the paper, connotes the economically active persons who gain a significant part of their income from agriculture. It includes all persons who work full-time or part-time on agricultural holding as defined by the statistics and forecasting department at the Ministry of Agriculture. Food Crop production, as used in this paper, is taken to mean the production of edible food crops in Nigeria. It is measured by the Food Production Index.

Theoretical Review

Fisher (1973) published the first statistical study of the relationship between inflation and unemployment in his article titled "A Statistical Relation between Unemployment and Price Changes." Fisher saw the causation from inflation to unemployment as a genuine and straightforward causal relationship that the ups and downs of employment are, in large part, the effects of price rises and falls. Thus, a rise in food prices will cause employment in agriculture to increase.

Okun (1962) holds that a one percentage point falls in unemployment (that is, a one percentage rise in employment) is linked to a three percentage increase in the nation's output. It suggests that an increase in transitory output is accompanied by a decrease in transitory unemployment. The law suggests the existence of a specific empirical relationship between economic growth and the change in the rate of unemployment. Part of the enduring appeal of Okun's law is its simplicity since it involves two important macroeconomic variables. In reality, though, Okun's law is a statistical relationship rather than a structural feature of the economy; it has since then been used as a benchmark by policymakers to measure the cost of higher unemployment and the benefits of lower unemployment in an economy given the inverse relationship with the output of the nation. According to Okun's law, an increase in agricultural employment will lead to an increase in food crop production.

Empirical Review

Marktanner and Noiset (2013) simulated how a doubling of food prices affected absolute poverty and the food price-adjusted real income. The results showed that rising food prices contribute most to an increase in the world's income inequality. Another study conducted by Khan and Ahmed (2011) maintains that the rise of global food prices could reduce demand for food exports, ultimately affecting the decline in net exports that are part of the national income. Arndt, Jones, and Salvucci (2015) argued that once relative prices of food increase, inequality of real consumption increases substantially. The study conducted by Apergis and Rezitis (2011) on food price volatility and macroeconomic factors concluded that food price volatility reduces the overall economic welfare of a country.

Contrary to the view that higher food prices are bad news from all angles and for all countries, Walsh and Yu (2012) uphold that higher food inflation is associated with declining income inequality; Wiggins (2010) also points out that, often, much of the food production comes from farmers in low-income countries; higher prices mean windfall gains for them. These gains are likely to be spent on local goods and services, with strong multipliers in additional job creation and income generation for others on low incomes. Dorward (2013) carried out a study on agricultural labor productivity, food prices, and sustainable development; the study concluded that low prices of food discourage the government and private individuals from investing and conducting research in the agricultural sector, leading to a reduction in food production. Low food prices also lead to very low-value additions and even losses. Farmers switched out of production and reduced input use.

Oluwatoyin and Balcilar (2012) maintained that the increase in food prices is associated with the recent discovery of the petroleum product substitute "ethanol." Since bio-ethanol is mainly produced from food crops such as sugar cane and corn, the demand for ethanol production from these crops, particularly by emerging markets such as China, has imposed enormous pressure on the demand for food and food prices. The study investigated the impact of the increase in food prices on the global economy using the food producer price and consumer price index; the study examined the gain on the producer side and the loss on the consumer side as a result of the increase in food prices and how the gain and loss has impacted on economic growth. Descriptive analysis and the bare-bone Solow growth model were used in the study on data from 126 different countries, beginning from 2000 to 2009. The results from the findings showed that the increase in food prices, as observed from the increase in food producer

prices, has a positive impact on economic growth, signifying that the increase in food prices has some benefit on global economic position. The findings also showed that the consumer price index has a positive but insignificant relationship with economic growth, implying that the increase in the food consumer price index is not as detrimental to global economic growth as one would expect. Instead, there has been global benefit.

Aina, Ayinde, and Falola (2015) employed time series analysis to evaluate the effect of price variation on rice production in Nigeria between 1970 and 2011. Empirical evidence from their study revealed that the price of rice and the quantity of production positively affect each other, which corresponds with the theory of supply. Thus, a decrease in the price of rice reduces the quantity produced by the farmers so as not to run into a loss in the production process. Folorunso (2015) examined the impact of the Fadama program on food productivity and the poverty status of root and tuber crop farmers in Nigeria.

Evidence from the study revealed that age, family size, farmers' level of education, farm size, and farmers' farming experience were the socioeconomic factors identified in the study area, while the identified change in income for participants was insignificant for non-participants in the study areas. The work recommended that farmers should be advised through the Agricultural Development Programme of Benue, Kogi, and Plateau States on allocating their resources to enhance overall productivity and net farm income to reduce their poverty status.

Methodology

The data for food prices used in the study was sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin; Food Crop Production is proxy by the Food Production Index and was gathered from the World Bank Bulletin, while the data on employment in agriculture was obtained from the Global Economy. Thus, the analysis utilized time series data. This study employed the Toda-Yamamoto (TY) model for analytical purposes. The TY Approach was chosen because the unit root test result of the variables used in the work showed a mixed order of integration ranging from level 1(1) to order 1(2). According to Ezie and Ezie (2021), the Toda-Yamamoto model gives room for this type of series, that is, even when the series are integrated at level 1(0), first 1(1), and second 1(2) levels. Thus, with this kind of series, the TY approach was employed to make inferences. The practical Model in TY form is specified below**.**

$$FP_t = \alpha_0 + \sum_{t=1}^{k} a_{1i} FP_{t-i} + \sum_{j=k+1}^{k+d_{\max}} a_{1i} FP_{t-j} + \sum_{t=1}^{k} \phi_{1i} EAG_{t-i} + \sum_{j=k+1}^{k+d_{\max}} \phi_{1i} EAG_{t-j} + \sum_{t=1}^{k} \beta_{1i} FPR_{t-i} + \sum_{j=k+1}^{k+d_{\max}} \beta_{1i} FPR_{t-j} + \varepsilon_{1t} \quad ----1$$

$$EAG_t = \alpha_0 + \sum_{t=1}^{k} a_{1i} FP_{t-i} + \sum_{j=k+1}^{k+d_{\max}} a_{2i} FP_{t-j} + \sum_{t=1}^{k} \phi_{1i} EAG_{t-i} + \sum_{j=k+1}^{k+d_{\max}} \phi_{2i} EAG_{t-j} + \sum_{t=1}^{k} \beta_{1i} FPR_{t-i} + \sum_{j=k+1}^{k+d_{\max}} \beta_{2i} FPR_{t-j} + \varepsilon_{1t} \quad ----2$$

$$FPR_t = \alpha_0 + \sum_{t=1}^{k} a_{1i} FP_{t-i} + \sum_{j=k+1}^{k+d_{\max}} a_{2i} FP_{t-j} + \sum_{t=1}^{k} \phi_{1i} EAG_{t-i} + \sum_{j=k+1}^{k+d_{\max}} \phi_{2i} EAG_{t-j} + \sum_{t=1}^{k} \beta_{1i} FPR_{t-i} + \sum_{j=k+1}^{k+d_{\max}} \beta_{2i} FPR_{t-j} + \varepsilon_{1t} \quad ----3$$

The maximum order of integration is $d_{\max}$, Optimal lag length is indicated as k and determined by all the information criteria: The sequential modified LR test statistics, the Final Prediction Error (FPE), Akaike's Information Criterion (AIC), Schwarz Information Criterion (SIC), and the Hannan-Quinn Criterion (HQC) selected lag three (3) as the optimal lag length, therefore, lag 3 was used for the Toda Yamamoto model estimation in the study. TY method was used in this study as an alternative to the Granger causality test, given that the time series integration process is not the same. For I(0), I(1) and I(2), it means the three series are of different orders of integration.

Results and Discussion

Descriptive Statistics

The descriptive statistics of the variables used` in the model are presented on Table 1

Table 1: Descriptive Statistic

Variables	**FPR(Index)**	**EAG (%)**	**FP (%)**
Mean	77.99373	43.85633	103.8084
Maximum	110.0352	50.57000	369.8030
Minimum	45.16000	34.46000	15.70709
Skewness	-0.029797	-0.296807	1.315301
Kurtosis	1.946533	1.615811	3.807374
Jarque-Bera	1.391680	2.835446	9.464905
Probability	0.498655	0.242265	0.008805
Observations	30	30	30

Source: Extract of Author's Computation from E- views 10

The descriptive statistics in Table 1 showed the mean values of Food Production (FPR), Employment in Agriculture (EAG) and Food Prices (FP) to be 77.99373, 43.85633% and 103.8084% respectively. It can also be inferred from the results of the descriptive statistics that the maximum value (110.0352) of food production was in 2020. The year (2020) also

showed the maximum value (369.8030) of food prices. However, in this year, employment in agriculture did show a minimum percent (34.4600%), while the minimum values of food production (45.1600) and food prices (15.70709) were in 1991. From the description, food production and food prices showed their maximum values in the same year (2020), and their minimum values also appeared in 1991. It can be inferred from the description that food prices and food production move together. Employment in agriculture does not conform to theoretical backings that prices induce employment. This is because, when food prices were at their peak in 2020, the percentage of employment in agriculture in that year was at its minimum. This could be attributed to the prevalence of insecurity and COVID–19 in the country in that year which prevented many people from engaging in agricultural activities.

The standard deviation for food production, employment in agriculture and food prices were 18.63047, 5.618418 and 95.95366 respectively, showing that, all the variables of the study are highly volatile. The skew statistics showed that food production and employment in agriculture are negatively skewed while food price is positively skewed. Kutosis statistic showed food production and employment in agriculture to be platykurtic while food price is leptokurtic.

Unit Root Test

All the variables in the model were subjected to unit root test using both Augmented Dickey Fuller (ADF) unit root test, Philip Perron (PP) unit root test and Ng and Perron unit root test results are presented in Table 2, Table 3 and Table 4 respectively.

Table2: Augmented Dickey Fuller (ADF) unit root test results

variables	ADF@ level	ADF@ First Difference	ADF@ Second Difference	ADF@ level	ADF@ First Difference	ADF@ First Difference	Order of Integration
		Constant			Constant And Trend		
FPR	-0.3719	-2.8143	-20.6736***	-3.3428	-3.6631**		1(2)
FP	11.2552	0.3944	-5.6659***	-2.6112	-1.1499		1(2)
EAG	-0.2446	-1.8364	-4.9419***	7.5955	-1.1501	-6.0499***	1(2)

Source: Extract of Author's Computation from E- views 10

*** Probabilities<0.01, ** Probabilities <0.05, * Probabilities <0.1.

Table 3: Phillips-Perron Unit Root Test Results

Variables	Phillips-Perron @ Level	Phillips-Perron @ First Difference	Phillips-Perron @ Second Difference	Phillips-Perron @ Level	Phillips-Perron @ First Difference	Phillips-Perron @ Second Difference	Order of Integration
FPR	-0.5117	-9.8818***		-3.9327	-9.7008***		1(1)
PR	15.7369	2.3788	-5.5521***	9.3015		-6.9198***	1(2)
EAG	1.4682	-1.8267	-4.9392***	-2.9369	-1.6225	-5.1325***	1(2)

Source: Extract of Author's Computation from E- views 10

*** probabilities<0.01, ** probabilities <0.05, * probabilities <0.1.

Table 4: Ng and Perron Unit Root Test Results

Variables	MZa	MZt	MSB	MPT	MZa	MZt	MSB	MPT	Order	
	Constant				Constant and Trend					
FPR	0.5485	0.2995	0.5459	23.584	-64.826***	-5.6902***	0.09***	1.418***	1(0)	
D(FPR)	-26.7683***	-3.6584***	0.137***	0.9152***	-15.7274*	-2.8035*	0.178*	5.7977*		
FP	4.6423	3.3470	0.7209	64.896	2.0090	0.9128	0.4543	63.2716		
D(FP)	3.0923	1.3021	0.4210	22.8587	-5.4680	-1.2810	0.2342	15.5996		
D(FP 2)	-1.4033	-0.5450	0.3883	11.2833	-15.500*	-2.711*	0.174*	6.2977*	1(2)	
EAG	1.450	0.864	0.595	31.255	-5.5110	-1.6410	0.2977	16.4777		
D(EAG)	-3.1482	-1.2498	0.3970	7.7742	-6.8569	-1.7639	0.2572	13.3551		
D(EAG 2)	-40.7097***	-4.5111***	0.111***	0.6031***	-11476***	-75.7502***	0.006***	0.008***	1(2)	

Source: Extract of Author's Computation from E- views 10

*** probabilities<0.01, ** probabilities <0.05, * probabilities <0.1.

From the results of the unit root test presented in Table 2, Table 3 and Table 4 both the Augmented Dickey-Fuller (ADF) unit root test, Philip Perron (PP) unit root test and Ng and Perron unit root test showed that the variables used in the work have a mixed order of integration ranging from level 1(0), order 1(1) and order 1(2) and according to Ezie and Ezie (2021) Toda-Yamamoto model gives room for this type of series, that is, even when the series are integrated at level 1(0), first 1(1) and second 1(2) levels. Thus, the TY Approach for the study becomes necessary to ascertain the causal relationship among food prices, agricultural employment and food crop production.

VAR Lag Order Selection

The VAR lag order selection and the VAR models were first estimated as presented on Table 5

Table 5: VAR Lag Order Selection

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-399.1753	NA	3.46e+08	31.01349	31.20704	31.06922
1	-248.7738	242.9563	11416.28	20.67491	21.64267	20.95359
2	-221.7658	35.31818	5409.626	19.82814	21.57012	20.32976
3	-171.6740	50.09181*	517.3035*	17.20569*	19.72188*	17.93026*
4	-157.0119	10.15062	1077.324	17.30861	20.59902	18.25613

Source: Extract of Author's Computations from E-views 10

Lag result from Table 5 reveals that all the criteria: the sequential modified LR test statistics, the Final Prediction Error (FPE), Akaike's Information Criterion (AIC), Schwarz Information Criterion (SIC), and the Hannan-Quinn Criterion (HQC) selected lag three (3) as the optimal lag length, therefore, lag 3 were used for the Toda Yamamoto model.

Causality Test among Agricultural Food Prices, Employment and Food Production

The causal relationship among variables of the study were established using Toda Yamamoto Causality Test.

Table 6: Result of Toda Yamamoto Granger Causality Test
Dependent variable: FPR

Excluded	Chi-sq	Df	Prob.
EAG	48.11537	3	0.0000
FP	21.45245	3	0.0001
All	48.88900	6	0.0000

Source: Extract of Author's Computation from E- views 10

The result of the Toda Yamamoto Causality Test indicates that independently, Employment in Agriculture and Food Prices influenced food production at 1% level of significance in line with the findings of Aina, *et al* (2015) and Wiggins (2010). The combined influence of all (Employment in Agriculture and Food Prices) on Food Production is also significant at 1% level of significance. Otherwise, there is no other causal

relationship existing among the variables in the Model. This finding is in line with the postulations in the theory of production function which states that production is the function of labor and also the law of supply, the higher the price, the higher the quantity suppliers are willing to produce and supply.

Forecast Error Variance Decomposition Results among Variables in the Model

In order to determine the variance decomposition among the variables in the model, a ten years forecast horizon was used and the results are presented on Table 8,9 and 10.

Table 8: Forecast Error Variance Decomposition Results of FPR by EAG and FP

Period	**S.E**	**FPR**	**EAG**	**FP**
1	1.720700	100.0000	0.000000	0.000000
2	2.040666	98.18236	0.502178	1.315459
3	2.676691	57.18755	24.87094	17.94151
4	3.512147	58.90812	24.69587	16.39602
5	4.108646	44.90742	39.44227	15.65031
6	4.719286	42.77827	42.10094	15.12078
7	5.525559	38.38734	45.47879	16.13387
8	6.359448	38.74344	43.89722	17.35935
9	7.023737	38.72565	42.62984	18.64451
10	7.587563	39.78524	39.70659	20.50817

Source: ***Extract of Author's Computations from E-views 9***

Information from Table 8 shows that the variance decomposition results reported within a 10-year horizon neither employment in agriculture and food prices explained shocks in food production in the first and second year of the forecast period. However, from the third year throughout the forecast period, the explanation of employment in agriculture and food

prices to shocks in food production appears to be significant as 52% of the explanations in the 3rd year, 61.7% in the 7th year and 60.3% in the 10th year while only 57% of the explanation to shocks in food production in the 3rd year, 38.3% in the 7th year and 39.75% in the 10th year explain its own shocks. It is also obvious from the results that employment in agriculture explained more of the shocks in food production. This confirms the theory of production that production is the function of labor.

Table 9: Forecast Error Variance Decomposition Results of EAG by FPR and FP

Period	**S.E**	**FPR**	**EAG**	**FP**
1	0.171286	8.811120	91.18888	0.000000
2	0.311054	9.392477	90.16582	0.441707
3	0.427175	6.153675	93.33464	0.511686
4	0.511583	4.429360	93.90856	1.662078
5	0.574481	3.525395	94.10167	2.372940
6	0.612791	3.151319	93.93276	2.915918
7	0.633450	3.110436	92.98735	3.902213
8	0.645201	3.918392	90.12780	5.953805
9	0.664206	6.241170	85.47581	8.283023
10	0.696247	8.785329	81.11587	10.09880

Source: ***Extract of Author's Computations from E-views 9***

It can be inferred from Table 9 that employment in agriculture seems to be an endogenous variable in the model because over 80% of the explanations to its shocks are explained by itself through the study forecast period. This means that other variables in the model – food production and food prices have little to explain the shocks in employment in agriculture in Nigeria.

Table 10: Forecast Error Variance Decomposition Results of FP by EAG and FPR

Period	S.E	FPR	EAG	FP
1	4.732376	23.60223	13.49996	62.89780
2	8.015067	37.30344	13.36606	49.33050
3	9.866943	31.94213	22.44724	45.61063
4	11.68326	26.16592	31.50131	42.33276
5	14.13567	26.89837	29.86242	43.23922
6	17.05700	30.60025	22.77646	46.62329
7	20.00750	34.89951	17.03572	48.06477
8	22.83793	37.47242	13.07474	49.45284
9	26.46834	40.27148	10.08844	49.64008
10	31.27115	42.60515	8.603294	48.79156

Source: ***Extract of Author's Computations from E-views 9***

As indicated in Table 10, 62.8% of shocks in food prices is explained by itself while the remaining 37.2% is explained by employment in agriculture and food production in the first year of the forecast period. It can also be inferred from Table 10 that food prices is an exogenous variable in the model as more than half of its change throughout the forecast period is explained by food production and employment in agriculture except in the first year. It is also noticed that apart from the first and fifth year of the forecast period food production explained more than 30% of the variations in food prices. This is understandable as the quantity of goods available determine its prices in the law of supply.

Conclusion and Recommendations

The paper concludes that independently, Employment in Agriculture and Food Prices influenced food production at 1% level of significance. The combined influence of all (Employment in Agriculture and Food Prices) on Food Prices is also significant at 1% level of significance. Otherwise, there is no other causal relationship existing among the variables of the Model in Nigeria.This finding is in line with the postulations in the theory of production function which states that production is the function of labor. The study also concluded that given the fact that mechanized agriculture is very low in the country, standard deviation shocks in

employment in agriculture exacerbate negative impact on food production.

The study recommends the revival of marketing boards at all levels of government to attain sustainable high prices of food that will induce the reduction of unemployment to agricultural employment and subsequently, the attainment of increased food production in Nigeria, the study encourages the establishment of the Staple Crops Processing Zones (SCPZ) in order to attract private sector agribusinesses to set up processing plants in zones of high food production with a aim of processing food crop products, this will prevent the excesses of food during bumper harvest that most times pull down food prices. It will also boost employment in the sector. In doing this the Federal Government should put in place appropriate fiscal, investment and infrastructural policies for the SCPZ such as tax breaks on the import of agricultural processing equipment; tax holidays for food processors that are located in these zones; supportive infrastructure by the government in roads, logistics, irrigation, flood control, storage facilities and power so that farmers in the clusters will be linked to these Staple Crops Processing Zones. In view of the findings that, a shock in agricultural employment impedes food production, the study also recommended the encouragement of mechanized agriculture in the country.

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