MAPUTO DECLARATION AND ZANZIBAR AGRICULTURAL EMPLOYMENT CREATION

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Abstract: The study examined the impacts of the levels of implementation of the Maputo Declaration on agriculture and employment creation in Zanzibar by using quarterly time-series data from 2009 – 2019, collected from secondary sources. In analyzing the factor which affects the employment creation on agriculture (EMPL), the vector error correction model (VECM) was used for estimation and before that unit root test and cointegration has been applied. The result showed that the three independent variables (GCEP, GREP, and GDP) have a positive long-run relationship to the dependent variable (employment) at a significant level of 5%. Thus, the increasing government expenditure in agriculture causes the rise in employment creation in Zanzibar. The government expenditure on the agriculture sector in Zanzibar still is not sufficient due to the requirements of the Maputo Declaration. The study recommends that the Revolutionary Government of Zanzibar (RGoZ) should in line with the Maputo Declaration on its budgetary allocation to agriculture and apportion at least 10% of the annual budget to boost the agricultural sector as well as to increase employment opportunities.

Keywords: Maputo Declaration, Agriculture, Employment, Zanzibar.

1. INTRODUCTION

The report provided by the Food and Agriculture Organization (1990) shows approximately 1.3 billion people work in agriculture in the world and 97% of them coming from developing countries. That report concludes that 30 to 50% of inhabitant revenue in a rural region is obtained directly from agricultural activities. So that the measured sources of employment creation come from agricultural value chains such as retail trade, food processing and transportation of agricultural products. Besides that, the rural poverty report delivered by the International Fund for Agricultural Development (IFAD 1995) shows that each additional United State Dollar obtained from the agricultural sector produces another 30 to 80 cent outside the sector.

The employment opportunities were seen to be a major problem in different African countries, many research that tends to overcome that problem comes with results to proper uses of the agricultural sector. Thus, the Africa head of state met to gather in Mozambique in 2003 and made the first declaration on agriculture which is called "Maputo Declaration on Agriculture". In that declaration agreed to gather and provide commitments that require each member of the African Union to allocate at least 10% of the annual budget and achieve 6% annual agricultural growth on its GDP. This occurred after the head of state

recognized that improving agricultural output is the key to alleviating poverty through job development and rising opportunities, especially for women and young people, food security and improving resilience (CAADP 2001).

Zanzibar as a semi-autonomous country within Tanzania made the target of achieving 6% of annual growth of the agricultural sector through Zanzibar's Strategy for Growth and Reduction of Poverty (SGRP II /MKUZA II:) as the strategy of implementation of Maputo declaration (MKUZA II – 2010-2015). This paper, therefore, examined the implementation status of the Maputo declaration on agriculture employment creation in Zanzibar. The study was based on the secondary data obtained from various institutions including the Office of Chief Government Statistics (OCGS) in Zanzibar, Zanzibar, Ministry of Finance and Planning (MoFP) in Zanzibar, Zanzibar Ministry of Agriculture, Natural Resources and Fisheries, Bank of Tanzania (BoT) and some online reports. The layout of the rest of the study is organized as follows. Section 2 shows the theoretical and empirical review of the Maputo declaration on agriculture. While section 3 shows the methodology used, section 4 shows the outcomes and argument and finally, section 5 represents recommendations and conclusion.

2. LITERATURE REVIEW

2.1 The empirical literature review on public expenditure.

The 54 African heads of states believed that agriculture is the pillar of employment in most African countries (Maputo declaration 2003). The different author contributed to the impacts of public expenditure in general and in agriculture on employment creation below are some of them:

Adolph Wagner (1917) published his book titled "Law of the Increase of State Activities" and called Wagner's Growth of Public Expenditure'. In his hypothesis, Wegner concludes that there was a positive and direct association between general regime expenditure and overall economic growth in country. This means that higher expenditure of the government automatically rise the function of the state. Thus, it can be considered that if the government increases its spending on agriculture will result in an improvement in agricultural growth. On the other hand, Rostow – Musgrave (1999) makes research and concludes that fiscal policy influences economic growth through allocation efficiency, economic stability and income distribution. This is means that when the government expends properly in different ways such as providing basic infrastructure facilities and other projects will lead to economic growth.

Keynesian (1936) Public spending is defined as an e factor that used as a policy tool to stimulate economic development. Due to Keynesian regime, public spending can contribute positively to economic development. Rising public spending then contributes to a rise in jobs and investment by multiplying the impact on overall request.

2.2 The empirical literature review on government expenditure in agriculture and Maputo declaration on agriculture.

Uger (2016) comes with its research titled central expenditure of government on the agricultural sector at Nigeria. Results of study show that not a strong relationship of independent variables with dependent variables caused by the government allocating inadequate funds to the agricultural area existed. Study suggests the government would provide priority in the agricultural sector through budget allocation and to ensure proper release of that money, well govern agricultural inputs distributed to peasant and create commodity markets.

(Amumu 2009) assessed the Nigerian agricultural sector and budget allocation. This study examined the place of agriculture vis – a vis the priority sector through the allocation of funds from the national budget between 1990 to 2008. The results showed that the Nigerian government neglect the declaration of Maputo commitment of distributing at smallest 10% of the annual budget because the fund allocates to agriculture was very low. The average of the budget in those years is 2.6% in the agricultural sector, the priority is seen in other sectors such as education, administration and defense.

Some studies dealing with the Maputo declaration and agricultural spending at large are conducted like Iganiga et al (2011), Okezie et al (2013), Eyitope et al (2015) makes investigation on this question in respect the government spending for agricultural output and sectors of agricultural at large in Nigeria, those paper conclude that increase spending on agriculture enhance improvement of agricultural output in Nigeria as well as employment creation at large and recommend the government to be in line with the implementation of the commitment of the Maputo Declaration in 2003.

Other studies have examined exclusively the relationship between public spending and agricultural growth and poverty reduction through job creation Zhang (2000). These studies show that there is growth and job creation resulted from government expenditure in agriculture.

The empirical literature review discussed above show that positive association of agricultural sector growth and employment creation, moreover the fund allocated to agriculture has positive impacts on its, this means that the more funds allocated to agriculture the higher the agricultural output which led economic growth and enhance opportunities in job creation and employment.

3. METHODOLOGY

The study applied descriptive statistic and then VECM used on determine presence of a long-term connection between employment and factor which affect the level of employment by considering the government expenditure on both recurrent and capital as the commitment of Maputo declaration on agricultural and other variables. Before the data interpreted on VCEM has passed to the different steps like testing for stationarity and co-integration of the variables.

3.1 Study Model Specification

To meet the goal of the study the basic model of the study designed as follows: -

$$\mathbf{EMPLt} = \boldsymbol{\beta_0} + \boldsymbol{\beta_1}\mathrm{GREP}_t + \boldsymbol{\beta_2}\mathrm{GDP}_t + \boldsymbol{\beta_3}\mathrm{GCEP_t} + \boldsymbol{\beta_4}\mathrm{POPU_t} + \boldsymbol{\beta_5}\mathrm{INFL} + \boldsymbol{\varepsilon_t} \cdots\cdots\cdots (1)$$

Whereby.

EMPL_t = Quarterly Employment on Agriculture in Zanzibar at a time t

GREP_t = Quarterly government recurrent expenditure in Agriculture at a time t.

GDP   =   Quarterly Gross Domestic Product in the US Dollar at a time t.

GCEP_t = Quarterly government capital expenditure at a time t

POPU = Quarterly population growth of Zanzibar

INFL= Quarterly inflation rate

Always data seem to be more strict and meet the expectations of an arithmetical implication procedure after transforming into logarithmic form before doing the analysis (Tian 2014). Hence all the variables were transformed by applying the logarithm. The logarithm model is designed as the following:

$$\mathbf{LEMPLt} = \boldsymbol{\beta_0} + \boldsymbol{\beta_1}\mathrm{LGREP}_t + \boldsymbol{\beta_2}\mathrm{LGDP}_t + \boldsymbol{\beta_3}\mathrm{LGCEP_t} + \boldsymbol{\beta_4}\mathrm{LPOPU_t} + \boldsymbol{\beta_5}\mathrm{LINFL} + \boldsymbol{\varepsilon_t} \cdots\cdots\cdots (2)$$

3.2 Estimation Techniques

The estimation techniques were grounded on approach of the time-series data. It characteristics that variables were checked by, testing for stationery, co-integration of the variables and vector error correction model.

3.2.1. Testing Unit Root

Because the data was macroeconomic so the random walk could be available (Nelson & Plosser 1982), So to check the availability of unit root problem is very important because it could enable to overcome the problem of spurious. ADF test was used to testing the unit root for the hypothesis that every sequence has a unit root problem. So, it was the first stages of the estimate the data before proceeding to other stages.

3.2.2. Co-integration analysis

After examining the stationarity of each time-series data, another stage was to symbol out the co-integration among the observed variables. It was investigated whether the stochastic patterns had a long-run association in the analyzed component, which is expected to contain unit roots. Under this method of Johansen (1991) describes two distinct test statistics for co-integration. the Maximum Eigenvalue and trace test. From this method it enables to assess the co-integration of the selected factors.

3.2.3. Investigate the Vector Error Correction Model (VECM)

According to Granger (1988), if two variables are co-integrated, there is a sign of causation between them at least in one direction. Thus, the VECM inside the context of the VAR model, VECM examined the trend of causality between variables. It was considered appropriate for the analysis of objectives by using one model. The VECM is estimated as shown below: -

$$\Delta EMP_t = T_1 \sum_{i=1}^{k-1} u_{1i}\Delta EMPLt + \sum_{i=1}^{k-1} v_{1i}\Delta GCEP_{t-i} + \sum_{i=1}^{k-1} w_{1i}\Delta GREP_{t-i} + \sum_{i=1}^{k-1} X_{1i}\Delta GDP_{t-i} + \sum_{i=1}^{k-1} Y_{1i}\Delta INFL$$

$$+ \sum_{i=1}^{k-1} Y_{1i}\Delta POPU + e_t$$

4. FINDINGS AND DISCUSSION

4.1 The Result of Descriptive framework

Descriptive statistics are applied to check the normal distribution of variables. Therefore, the conventional way of verifying normality is to do a descriptive study of the variables used. Table 2 delivers the calculation of mean, median, skewness, kurtosis, and likelihood values. For every sequence, the mean over median ratio is shown to be approximately one, which reflects the distribution normality and accepted that the series has the characteristics of normal distribution. The null hypothesis of the usual distribution of every variable grater then 5% was not rejected by the Jarque-Bera test, signifying that the sequence is normally distributed. The kurtosis for every vector is observed near 3, signifying the normality of distribution. The analysis verified, that the variables have spreading normality.

Table 4.2 the result of descriptive statistics for the variable

	LEMPL	LGCEP	LGDP	LGREP	LINFL	LPOPU
Mean	7.8739	2.7033	7.7168	2.9166	1.8087	1.5046
Median	7.7634	2.8303	7.7043	2.8909	1.7404	1.5173
Maximum	8.2679	3.8689	8.0320	3.1650	2.6878	1.5303
Minimum	7.1981	0.6621	7.4360	2.6504	0.9932	1.4231
Std. Dev.	0.3107	0.9634	0.1901	0.1523	0.4444	0.0309
Kurtosis	2.6898	2.5256	1.8365	2.2295	2.8277	4.7521
Jarque-Bera	2.4305	2.3997	2.6372	1.1252	0.3213	24.661
Skewness	-0.5544	-0.5205	0.1457	0.0710	0.1907	-1.6110
Probability	0.2966	0.3012	0.2675	0.5697	0.8515	0.0004
Sum	346.45	118.94	339.54	128.33	79.583	66.203
Observations	44	44	44	44	44	44

Author's using E–Views 10(2021)

4.2 The Result for tested Unit Root

To check stationarity of data unit root applied at the level, at the first difference and a second difference for each variable. Three variables (GCEP, GREP and INFL) were found to be stationary at the first difference and the other three variables (EMPL, GDP and POPU) were found to be stationary at the second level.

Table 4.3 Stationarity results

ADF RESULT- SECOND DIFFERENCE						
Trend and Intercept						
Variables	**T-Statistics**	**Test Critical Values**			**Prob****	**Results**
		1%Level	5%Level	10%Level		
EMPL	-2.4286	-4.2193	-3.5338	-3.1983	0.0001***	Stationary
GCEP	-6.0889	-4.2117	-3.5297	-3.1964	0.0001**	Stationary
GDP	-2.5242	-4.2528	-3.5484	-3.2070	0.0004***	Stationary
GREP	-4.8739	-4.2627	-3.5529	-3.2096	0.0022**	Stationary
INFL	-5.6701	-4.2436	-3.5442	-3.2047	0.0002**	Stationary
POPU	0.5952	-4.2528	-3.5484	-3.2070	0.0001 ***	Stationary
** ** Stationary at the first difference at the 0.05 level**						
** *** Stationary at level Second difference at the 0.05 level**						

Source: Authors" Calculation by Using E–Views 10 Outputs

4.3 Results of Johansen Co-integration Trace Test

The Trace Test in Table 4.5 below indicates the existence of 4 cointegrating eqn(s) at the 0.05 level significance level. This cointegrating equation means that for linear combination exists between the variables that force these indices to have a relationship over the entire period. The probability shows the significance at the result on (None and at most 1 up to at most 3). Due to this, we can conclude that there is a linear relationship between variables.

Table 4.5 Johansen Cointegration Results – Trace Test

Test Trace				
Hypothesized No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**0.05 Critical Value**	**Prob.****
None *	0.9466	253.2178	95.7536	0.0000
At most 1 *	0.9232	162.346	69.8188	0.0000
At most 2 *	0.7881	82.7764	47.8561	0.0000
At most 3 *	0.4641	34.6625	29.7970	0.0127
At most 4	0.3101	15.3203	15.49471	0.0531
At most 5	0.1156	3.8085	3.8414	0.0510

Source: Authors" Computation Using E–Views 10 Outputs

Johansen Cointegration Results – Max-Eigenvalue Test

Table 4.6 below shows the Max -Eigenvalue test result which shows the existence of 3 cointegrating eqn(s) at the 0.05 level significance level. The cointegrating equation means to have a linear combination that exists between the variables which forces these indices to have a relationship over the entire period. The probability shows the significance at the result on (None and ant most 1 up to at most2) and result reject the null hypothesis

Table 4.6 The Results of Johansen Cointegration – Max-Eigenvalue Test

Maximum Eigenvalue				
Hypothesized No. of CE(s)	**Eigenvalue**	**Max-Eigen Statistic**	**0.05 Critical Value**	**Prob.****
None *	0.9466	90.8715	40.0775	0.0000
At most 1 *	0.9232	79.5698	33.8768	0.0000
At most 2 *	0.7881	48.1139	27.5843	0.0000
At most 3	0.4641	19.3421	21.1316	0.0874
At most 4	0.3101	11.5118	14.2646	0.1304
At most 5	0.1156	3.8085	3.8414	0.0510

Source: Author Computation by Using E–Views 10

4.4 The results of the Vector error correction model (VECM)

The result above shows that all variables were co-integrated in all the models and proves there is a long-run relationship exists between the variables at equilibrium. Based on the objective of this study, this section presents and discusses the estimated results of the relationship between that independent variable (GCEP, GREP, GDP INFL, POPU) and the dependent variable (EMPL).

The table 4.7 below shows the results of the vector error correction model. It exposed that the coefficient of determination (Adj. R-squared) is 0.7712. Therefore, 77% variation in agricultural Employment (EMP) described by government Capital expenditure (GCEP), government Recurrent expenditure (GREP) Gross Domestic Product (GDP), Population growth (POP) and Inflation rate (INFL). The coefficient of the Error Correction Model (ECM) seemed with a negative sign and it was statistically significant at the 5% level. This means that the short-run problems have been adjusted to long-run equilibrium. The ECM results also show that employment in agriculture is adjusted quickly to changes in the dependent variables by 58.5%. The Durbin Watson value founded to be 1.95 which is approximately 2.0, proposed a smaller level of autocorrelation is

anticipated. The F-statistic of 5.8494 is significant at the 5% level meaning that the overall model is satisfactory. From this regard, the results obtained in this study lead to the conclusion that allocating more funds to the agricultural sector is the key to increase in agricultural output and create employment.

The result of data in all variables was estimated through the following question,

$$logEMP = 39.6289 + \log 1.302440GCEP + \log 0.93813GREP + \log 0.46534 \, GDP - \log 2.242216POPU - \log 0.124920 \, INF$$

The results from the estimated equation above showed that the coefficient of the constant term is 39.6287 implying that at zero performance of the various explanatory variables used, employment creation stands at 39.6287 units.

Continuing with the results, the explanatory variable (GREP) was positively signed and statistically significant. Also shows that government recurrent expenditure on agriculture (GREP) had a positive and significant effect on employment (EMP) creation in Zanzibar during the period of the study. This result implies that a unit change in government recurrent expenditure on agriculture caused agricultural employment to change positively. These findings are in tandem with a prior expectation. With these results, the alternative hypothesis which stated that there is a significant relationship between aggregate government recurrent expenditures and agricultural output in Zanzibar was accepted.

Likewise, the Gross Domestic Product (GDP) coefficient is seen to has a positive sign and statistically significant at the 5% level. This result means that GDP has a positive impact and significantly every year to the agricultural employment in Zanzibar. Moreover, the coefficient of population growth rate (POPU) is negative and most significant. When the population rate increase causes agricultural employment to depress in Zanzibar. This situation is qualified to the fact that increasing population could result in an increase in the labor force in a situation hereby the market depends less on new employment in the agriculture sector at that period. Due to that result, it was believed that population growth has a significant effect on agricultural employment in the Zanzibar economy. It tells the majority in the need for the government to inject more funding to the agricultural sector around the country is provided to go into mechanized improved agricultural activities every year.

Finally, inside of Inflation rate (INFL), its coefficient was negative and not statistically significant at 5% in influencing the changes in agricultural employment. Consequently, the real inflation rate was found to be an insignificant variable in this concern. However, can harm agricultural employment and clearly shows that a high inflation rate threatens the level of employment.

The study tested the hypothesis and the result obtained show that there is the existence of a positive relationship between government expenditure on agriculture and employment creation in Zanzibar. This indicates that government expenditure on agriculture and employment creation in Zanzibar move in the same direction and hence the higher the public spending on agricultural development programs in Zanzibar, the higher the growth rate of employment in the economy. This result conforms with perspectives of Maputo declaration of 2003 as well as several empirical studies such as Ariwa (2018), Yuanshen (2016), Uger (2016), Benin and Yu, (2012), Newettie, (2017), Michał (2019). They had all showed a positive response on the employment creation from governmental expenditure on the agriculture sector in various countries around the world.

Table 4.7 Result of Vector Error Correction Model

Vector Error Correction Estimates					
Standard errors in () & t-statistics in [], Prob at 0.05 in *					
	D (GCEP	D(GREP)	D(GDP)	D(POP)	D(INFL)
CointEq1	-0.9289	-0.8651	-0.3086	0.4730	-0.239
Standard errors	(0.5135)	(0.1800)	(0.0139)	(4.3830)	(0.3110)
T-statistics	[2.536290]	[2.465401]	[3.342006]	[2.51157]	[0.4016]
Prob.	0.0126*	0.0442*	0.0011*	0.041*	0.6888
Coefficient	1.3024	0.9838	0.4653	-2.2422	-0.1249
R-squared	0.771232				
Adj. R-Square	0.652273				
C	39.6289				
Durbin Watson	1.950035				
ECM (1)	-0.585393				

Source: Authors' Computation by Using E–Views 10

5. CONCLUSION AND RECOMMENDATIONS

This study aimed to examine the Maputo declaration on agriculture and agricultural employment creation in Zanzibar. In this regard, the results obtained from this study lead to the conclusion that allocating more funds to the agricultural sector is the key to an increase in agricultural output which results in the creation of employment.

The result shows that three explanatory variables (GCE, GRE and GDP) have a positive impact on employment creation (EMP). This implied that independent variables have a major impact on agricultural employment creation and the position of these factors can be considered by the government as good resources of job creation. The magnitude of the coefficient especially on GCEP and GREP variables showed that it would take a few years for the Zanzibar economy to feel the impact of government expenditure in the agriculture sector on employment creation. The results obtained from this study lead to the conclusion that allocating more funds to the agricultural sector is the key to an increase in agricultural output and create employment. The study then recommends that the government of Zanzibar (RGoZ) should maintain strategies and commitment to the Maputo declaration on agriculture by allocating at least 10% of its total budget to the agricultural sector each year. Also, RGoZ should boost expenditure on agricultural development projects and activities particularly in improving agricultural infrastructure like irrigation and provide a conducive market for farmers and provide an advantageous environment for local peasant farmers as well as foreign investors to ensure they invest in different positions of the agricultural value chain.

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