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Implication of the Economic Stability on the Farmer's Income–Poverty Nexus in Tanzania

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Abstract: ***Economic growth has been stable and impressing since 2000, but poverty reduction has not been showing significant improvement. This paper was seeking to find economic growth patterns in relation to the poverty reduction trend through farmer's income. The results show insufficient connections between three components, that means both economic growth and farmers' income are increasing which shift labour forces from agriculture to nonagricultural causing poverty with the highly deteriorating livelihood of rural people. The results revealing that population growth rate is the main cause of increase of poverty. To amend the situation the study is suggesting establishment of the following; the proper link between farmer and available opportunity which is a proper connection between economic growth and farmer's income -poverty nexus, and there is also a need to sustain economic growth base on awareness raising on family plan to slow down the rate of population growth.***

Keywords: Economic Growth, Poverty, Farmer's Income, Tanzania

1. Introduction

Expressing the stability of the economic growth in relation to poverty reduction and farmer's income is tricky, partly because the relationship is multifaceted and dynamic. To understand the relation, there is a need to see the background and phases of the economy. Tanzania passes through distinct phases of socioeconomic development since 1961 after independence, which has made a tremendous contribution to the current economic situation. The first phase was from 1961-1980, where the country had deliberated effort to build national unity. The second phase was from 1981 to 1995 with main focus on macroeconomic stability and quality of public financial management, policy development and implementation, reducing government expenditure and minimize domestic and non-concessional borrowing. In this phase there was an adoption of structure adjustment and reforms which were aimed at restoring stabilization and growth with no clear socioeconomic transformation targets. The phase is characterized by rapid but jobless growth (Kilama & Wuyts, 2014), low productivity within and between productive sectors in which agriculture absorb all surplus labour within the economy. However, there was a degree of improvement in the degree of environment of economic growth. The third phase was from 1996-2013, in this phase the country embarked on more comprehensive economic and social policies implementation with the focus in the development agenda. The target was on higher level of investment in human capital and physical infrastructure, improvement of business environment and strengthening of government capacity (Lyatuu, Nie, & Fang, 2015; Utz, 2008) is the result of second phase efforts.

Recently the country's focus is on the economic development in the context of improving livelihood of farmers by strengthening its fiscal position through fiscal consolidation measures but targeting to be middle income country through transformation towards semi-industrialized economy(Lyatuu et al., 2015). The measure goes hand in hand with different strategies developed which encounter number of challenges to compete, but using its policy to spurs economy in a wide gains and make use of its available opportunities and engender economic development in rural areas, then its competition policy will very quickly triggered significant increases in productivity and investment in the manufacturing sector provided that inclusive agriculture is a major driver of the economic development.

This study is assessing the implication of the economic growth stability to the relationship between poverty reduction and farmer's income in Tanzania. The study is taking in consideration of Tanzania target to reduce poverty by half by the year 2015 (Millennium Development Goal one target) which has created needy for this study. The understanding of the implication of economic growth pattern on the two components which affects lives of people residing in rural area more than urban is major concern as migration has been increasing. In view of the stability of the growth rate since 2000, Tanzania is targeting to reduce poverty as per MKUKUTA targets and MDG goal one, however,is only one year left before the target (2015), hence the studydepict the possibility of achieving the target through understanding of the nexus between trio-components (economic growth, poverty and farmer's income).

2. Methodological Approach

2.1. The Conceptual Framework

The framework is based on research contributions by data gathered from the surveys carried out by National Bureau of Statistics (NBS) (i.e. Agriculture sample census 2007/08, National Panel Survey 2010/11, household budget survey 2011/12, National census 2011/12 and World Bank. The model is composed of one dependent variable, poverty. To be more specific, the study took into account one important measurement of poverty reduction as it related to development of farmer's income which leads to economic growth. The study also used strategies/programme developed as one of the moderating variable.

2.2. Data Sources and Analysis Techniques

The study adopted a case study design with a quantitative research approach. The study represented on exploratory, explanatory, and descriptive of the events happening on a growth trend of Gross Domestic Product (GDP) over a period 1980 to 2013. The study used secondary data from public sources, such as survey data from World Bank, NBS and their publications for the period 1980-2013. Other sources of information were gathered from fact and figures reports and Economic Reports from World Bank (WB), Bank of Tanzania (BOT), Ministry of Finance, Ministry of Livestock and Fisheries Development (MLFD), Ministry of Agriculture, Food Security and Cooperatives (MAFC), Oxford Poverty and Human Development Initiative (OPHI) and Tanzania Investment Reports. The rationale for using secondary data in this study was to triangulate the facts for the relationship between economic growth, agriculture (farmer's income) and poverty. Quantitative techniques were employed based on the relevant research reports and origin of the data, such as World Bank indicators, NBS statistic guideline, Food and Agriculture Organisation of United Nations (FAO) and International Monetary Fund (IMF) suggestions. The study run regression through stationary data.

2.3. Empirical Analysis of Poverty analysis through Income approach

The arithmetic of GDP growth decomposition to the agriculture, industry and service sectors are necessary in understanding the growth of the economy in Tanzania. Assume GDP is represented by Y and A as agricultural GDP, *I* as industrial GDP and *S* as service GDP.

$$\text{So, } Y = A + I + S \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Differentiation of equation 1 divided by Y will be

$$\dot{Y} = \frac{\Delta Y}{Y} = \frac{\Delta A + \Delta I + \Delta S}{Y}$$

$$= \frac{\Delta A}{A} \cdot \frac{A}{Y} + \frac{\Delta I}{I} \cdot \frac{I}{Y} + \frac{\Delta S}{S} \cdot \frac{S}{Y} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

$$\text{Let's take} = \frac{A}{Y}; \beta = \frac{I}{Y}; \gamma = \frac{S}{Y} \quad \ldots\ldots\ldots\ldots\ldots\ldots (3)$$

Where α, β, γ, are the shares of Agriculture, Industry and Services in GDP

$$\text{But } \acute{A} = \frac{\Delta A}{A}; \acute{I} = \frac{\Delta I}{I} \text{ and } \acute{S} = \frac{\Delta S}{S} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (4)$$

By substituting equations 3 and 4 in equation 2 we will get

$$\dot{Y} = (\alpha \cdot \acute{A}) + (\beta \cdot \acute{I}) + (\gamma \cdot \acute{S}) \quad \ldots\ldots\ldots\ldots\ldots\ldots (5)$$

The equation 5 states the growth in GDP is equals to the sum of the product of the share of each sector.

But in relation to income: N represents number of poor population, Gn is gini, Z is poverty level, Y1 income

From the poverty equation $p_1 = \frac{1}{N}\sum_{i=1}^{N}\left(\frac{\text{Gn}}{Z}\right), Gn = (z - y_1).I(y_1 \leq z)$

$$P = (Z - Y_1) * I(Y_1 - Z)(Z - Y_1)$$
$$= (Z - Y_1)(IY_1 - IZ)$$
$$= ZIY_1 - ZIZ - Y_1IY_1 + Y_1IZ$$

Y_1IY_1 - Y_1IZ are zero due to the fact that investments by small scale farmers are infinitesimal,

Then the equation is simplified to; $P = Z(IY_1 - IZ)$

Assume the poverty level Z is 1, and IY_1 is farmers' income denoted by Y and IZ is the investment in Agriculture denoted by A, then

$$P = Y - A \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (6)$$

In the modeling of the nexus between income and poverty the study use the relation that include the constant term but ensuring time series has a constant mean and constant variance to be stationary. The following relation was employed in the study:

$$Log(Poverty) = \alpha + \beta log(Income)$$
$$lnP = \alpha + lnI + \varepsilon_t$$

For the factors that contribute to poverty in Tanzania the equation used was:

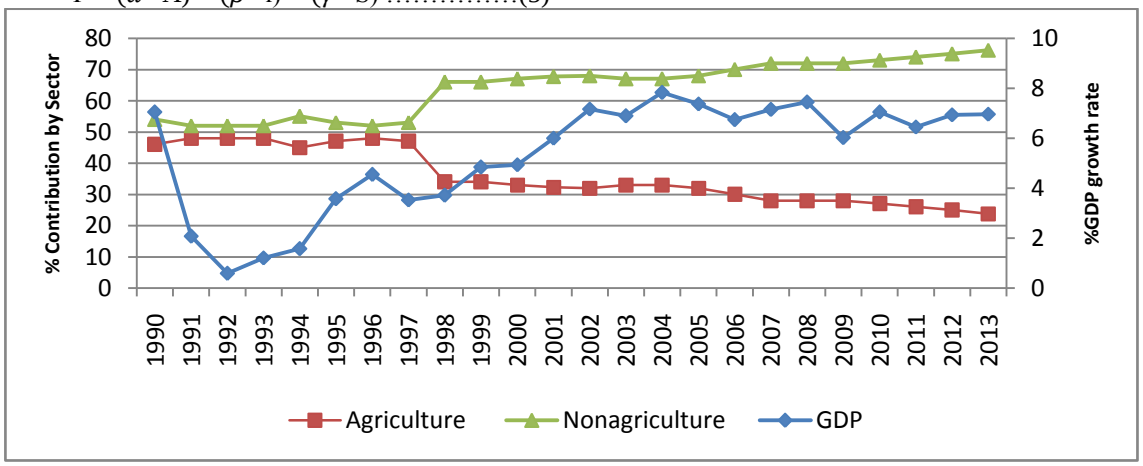
$$P = \alpha + \beta \sum F_i + \varepsilon_t$$

Where *P* is poverty and *F* is factors and $i^{th}$is GDP, Population, population growth rate, income and Gini coefficient.

3. Experience of Economic Growth and Poverty through income approach

3.1. Economic Growth and Macroeconomic Stability

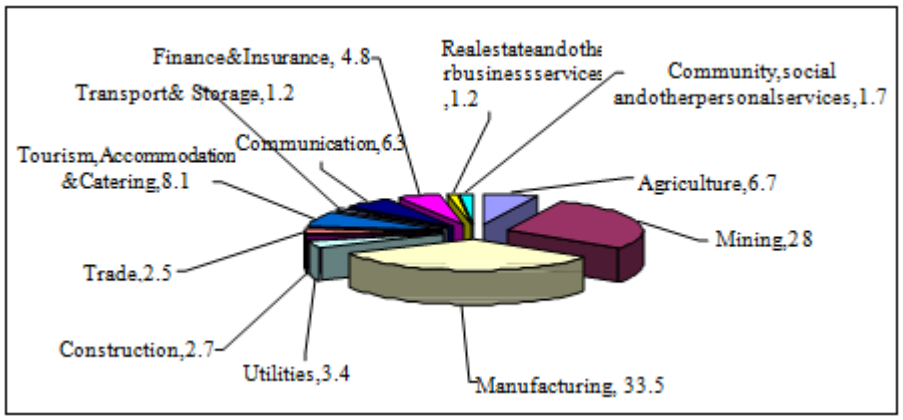
Tanzania's economyhas been resilient to shocks and has remained buoyant with a growth rate of 7% (African Economic outlook, 2012) (lowest was 6.8% in 2012 and highest was 7.1% in 2013) which is above the region average since 2000 (figure 1). Despite that the economy is depending on agriculture, in past recently, service sector has managed to surpass agriculture with tremendous fast growing rate while agriculture rate is still retarding slowly (figure1).



Data Source: *NBS survey 2007/8 and Tanzania census 2012(authors' own calculations)*

Figure 1: Percentage Agriculture and Non agriculture Sectors Contribution to the GDP for 1990-2013

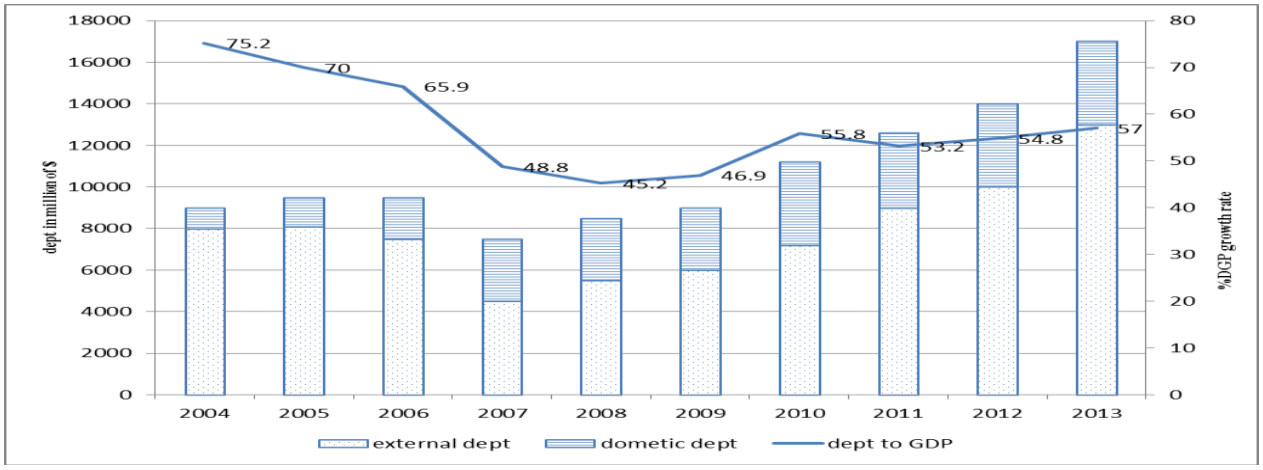
The service sector account about a half of GDP (while agriculture account about quarter of the GDP) grown at an average rate of 8% left out other sector with slow growing rate (agriculture growth rate was below 4% in 2013). The agriculture sector in total GDP decreased from almost 50 percent in 2000 to 23.7 percent in 2013; while service sector maintained its growth with slim increase from 47% to 48% in the same period (figure1).



Source:Tanzania Investment Report, 2004
Figure 2: Sectoral Distribution of FDI Stock, 2001 (percent)

Comparing the Foreign Direct Investment, Tanzania is tops destination in East Africa (EA) (United Nations Conference on Trade and Development (UNCTAD) data of 2013) with United State Dollars (USD) 12.7 billion in foreign direct investment (FDI) stock, while Kenya and Uganda had USD 3.4 billion and USD 8.8 billion respectively. However, the stock of FDI for the agriculture is hitherto very low notwithstanding that agriculture is source of income for three quarter of Tanzanian population (Figure2). Poor performance in agriculture has caused fluctuation in inflation and hence increases in national debt that has been destabilizing the economy.

The inflation rate dropped to less than 5 percent in early 2000s and started to rise gradually in 2005, but dropped in 2009 but then rise to 19 percent in mid-2011(MAFAP, 2013) before regaining single digit in 2012. Inflation rates may be acceptably low, keeping these rates low implies that the economy is stable and is likely to remain so, as it stipulated by the East African Community (EAC) monetary convergence criteria of restricted long-term rates of inflation at the range of 8%.



Source of Data: Bank of Tanzania (BOT), author's own calculations
Figure 3: National Dept and Dept to GDP ratio

Tanzania's debt stock was USD 17,690.5 million at the end of June 2013(BoT, 2013a), which is an increase of 40.6 percent and 25.1 percent from the amount recorded at the end of corresponding period in 2011 and 2012(MoF, 2013). The increase in national debt relative to GDP indicates that the government will have no much flexibility to use its tax revenue to address domestic needs instead is worrying to pay its foreign creditors (figure 3). Sumila (2013)reported that Tanzania's external debt stock reached $12.5 billion at the end of July 2013, a different of $500 billion from the previous month (June, 2013). Means a large proportion of outstanding debt been utilized for the balance of payments and budget support followed by education, social welfare, transport and telecommunication.

4. Empirical Result and Discussion Analysis

4.1. The trend of Agriculture Contribution to the GDP Compared to Other Sectors

The economic growth pattern and the modest growth of agriculture sector since 2000 has been gauged through

indicators such as changes in technology, infrastructure development, prices of agricultural products, changes in yield of agricultural produce and acreage under crops over time, despite the fact that it has not been translated into poverty reduction or livelihoods improvement. The economic growth changes according to structural changes (equation 5) which caused massive shifted of contribution to the GDP from agriculture to the service sector, which makes it difficult for the poverty reduction due to fact that poverty is concentrated in rural area, where agriculture is most practiced.

Figure 1 depicts the contribution of Agriculture (Agriculture includes forestry, hunting, and fishing, crops and livestock production) (in relation to other sectors) to the real GDP for the past two decades. The average contribution for the year 1990-1997 was 47.12% followed by the other 10 years which had huge drop to an average of 32.18% in the year 1998-2008, and the drop to 26.8% in 2012 then to 23.7% in 2013. Since then (1998) agriculture growth rate has not exceeded 4-5% per year(OECD, 2013), although it provides employment to almost 70% of Tanzania population. The trend shows decreasing factor with the gain of contribution in the nonagricultural (Nonagricultural sector is Service and industry, where service sector includes hotels and restaurants, transport, financial, professional, and personal services such as education, health care, and real estate services) sectors, especially service sector which has been stable since 1998 to 2015, with an average of 46.5%. Utz (2008) explained the contribution to the overall GDP as 8.7%, 5.9%, and 4.8% in the period of 2000-2005 for the industry, service and agriculture sectors consecutively. The analysis of sectoral contribution to the increase in the average GDP growth rate from 2.5 percent in period of 1990-1995 to 6 percent in the period of 2000-2005 confirms growth was accelerated in all sectors; with contribution of 1.4%, 1.3% and 0.8% for the service, industrial and agriculture sectors consecutively(Utz, 2008), showing agriculture contribution is decreasing, that reduce the hope for poverty reduction. Nevertheless, the economic growth changes over time, not only in terms of their rate of expansion but also in terms of their structure and the evolution of relative productivity between and within the sectors (Lyatuu et al., 2015). Thus, economy does not just grow in size but also changes in appearance. Therefore, figure 1 depict historical trajectory short-run ups and downs in the rhythm of quantitative expansion of Tanzania's aggregate economic output, and not growth history of Tanzania as it associated with major process of institutional and structural changes with massive relative price changes that invariably take place in a growing economy as argued by Kilama & Wuyts (2014).

This study found that the pattern depicted in figure 1 gives useful background information on what happened after economic reform in the 1980s, which lead to a period of market openness from the mid-1980s triggers the high growth rates which started in the late 1990s. In a matter of fact the pattern shows clearly how the sectoral distribution of GDP has shifted away from agriculture to nonagricultural. The share of agriculture in GDP has dropped drastically, but still maintaining high share of employment (62.8%). Which means the agricultural labour remains 'locked' because agricultural productivity is low, as it was argued by Rune (2005) that labour productivity in agriculture remains persistently low because agriculture acts as a refuge sector of excess labour. Whilst, Mpango (2013) postulated that 'increased productivity in agriculture will increase production and boost the country's economy with massive reduction in poverty.

4.2. Stability in Economic Growth versus Agricultural Growth

Agriculture share of contribution to the GDP decreased to 23.8%, while service sector increased to 49.4% in the same period (Table 1). Lyatuu et al. (2015)translated this as a paradigm shift of work force from agriculture to the service and structural transformation. However, mining sector with a small share in the economic growth reported to have large share in the export earnings than any other sector.

Table 1: Sector's Share to the GDP in Percent (3 year average)

YEARS	2001-03	2004-06	2007-09	2010-12
Agriculture and Fishing	29.9	27.7	25.5	23.8
Crops	20.9	19.6	18.2	16.9
Industry and construction	18.5	20.1	21.2	21.7
Mining and quarrying	1.9	2.5	2.6	2.3
Manufacturing	8.4	8.9	9.4	9.7
Construction	5.5	6.2	6.7	7.1
Services	45.8	46.4	47.8	49.4
Trade and repairs	13.2	13.3	14.1	14.7
Transport & Communications	6.6	6.9	7.5	8.5
Real estate and business	10.3	10.2	10.2	10.2
Public administration	7.2	7.9	7.9	7.8

Source: NBS and BoT, 2013a, author's own calculations

The decision of the country to pursue a policy of macroeconomic stabilization resulted into accelerated economic growth and low inflation. This study found that the growth rate of the agriculture sector fluctuated from 0.8 percent in 1998 to 5.9 percent in 2004 while GDP growth fluctuated from 4.1percent (1998) to 7.8 percent (2004) then declined to 3.1 % (2009). The agriculture sector has persistently registered a lower growth rate (4 percent) than the industry (8.3 percent) and service (7 percent) sectors in the period of 2009-2013.

Slow agricultural growth has led to a gradual structural shift to nonagricultural (table1), possible reason of shift is migration of youth from rural to urban area as stipulated by Lyatuu et al. (2015) that urban households at national level increased from 26 percent in 2002 to 33 percent in 2012; whilst those in rural areas, decreased from 74 percent in 2002 to 67 percent in 2012, which means youth shift the workforce from agriculture to nonagricultural sector. The shift of workforce of youth from agriculture to nonagricultural may be instigated by multiple reasons, including poor access to; credit, land, inputs, water for irrigation and or market for their produce. With the obvious reason that youth would like to take credit, but financial providers do not offer credit without collateral informs of assets or property owned by a borrower (youth has no ownership of any assets). Some observers note that the principles of acquiring credit in agriculture require ownership of assets, however, land (with no proper tittle

deed) use for any form of agriculture is not respected and do not help poor farmers to overcome barriers to obtaining loan (Chachage, 2010; Hakiardhi, 2009). Although, since 2013 the government has requested financial institutions in Tanzania to accept traditional land title certificates as collateral in loan acquisitions because they are legal documents, but still nothing substantial has been done to change the facts for prerequisites of issuing loans. The attempt has been made in 2004 when government policy on economic empowerment was issued to allow farmers to use their land as collateral to acquire loans from various financial institutions. But there is no enacted law or prepared bill to protect indigenous land ownership in rural areas which is still relies on the village land Act No 5 of 1999 to uphold the rights of Tanzanians living in rural areas. But the fact is, financial providers in rural areas face particular problems in selling land that was taken as collateral. This study found that, people in rural area acquire their land through inheritance, which affects the status of being used as collateral. The same finding is also supported by Proctor & Lucchesi (2012) reported 51 percent of households in Sub-Saharan Africa (SSA) inheriting land that is already under cultivation were the most common means for their young people to obtain land. This means, the land of youth can only be available when their parent, retired from agricultural work or if they have decided to shift their activities to nonagricultural sector or if they die. The fact is, youth cannot stand by waiting to get land from inheritance rather will look for opportunity elsewhere. Since the nonagriculturalsector seems to be the most attractive with new technologies, then most youth shift their workforce to nonagricultural sector.

4.3. Tanzanian Farmers' Wealth Status

Ownership of basic assets is an indicator of household socioeconomicstatus, which articulates farmer's wealth. The research findings show that about seventy percent (70.4%) of households in the Tanzania own land or farm, of which rural area ownership is higher (85.8%) than urban areas (41%). The average per capita holdings is 0.12 ha, whereby the small holder farmeroperates between 0.2 and 2.0 ha. This study found that the population that are engaged in agriculture as such is 65.6% (i.e. 85% are in rural and 15% in urban) with only 42% (86.7% rural and 13.3% urban) farmers deals with livestock, this is similar finding with that of NBS (2014). It is surprising that the basic asset ownership is slightly higher (21.4%) in rural areas than in urban areas (20.9%), however, this is the effect of immigration from rural to urban, but those youth that secure jobs in urban area, tend to invest back in the rural area they are residing from. Unfortunately, the increase in the cost of living created tension among farmers and non-farmers, with a scenario that most government employees are engaged in agriculture as secondary activities that supplement their low income (since their wages are relatively low). This scenario has increased the number of the people in the country engaged in farming activities either as a primary or secondary source of income. It is interesting that the implicit cost that is associated with the investment in agriculture is affecting most of farmers' income. Most farmers tend to calculate profit without considering concealed cost, specifically their time spent in such activities. When farmer realized they have spent more than what they have earned they become frustrated, and see agriculture as non-paying business. It is true that agriculture is taken as subsistence or a last resort after failing to get an opportunity of working in the nonagricultural sector. However, commercial agriculture requires massive investment such as; infrastructure for irrigation, farming skills (acquired from the farmer field schools), research and technology, not only for eluding risk in agriculture but also change farmer's income and improve rural livelihood.

It's impressive to see farmer field school trainingimpact skills to farmers, especially on the concept of commercial agriculture, whereby farmers adopted and focus on market opportunities and made the choice that will lead to profit earning than subsistence farming. Farmers started doing agriculture as a business, even if one can afford to produce one bag of sunflower, he/she can still access market through collective group. The farmer's group collects produce from their members and sells in a lump sum to attract higher prices since they will have high bargaining power in one voice. Above all the importance of producing quality products, consistent supply of the produce and timing in harvesting has tremendously reduced post-harvest loss and increased income of members of the group. Farmers have gained knowledge on marketing behavior, such as selling products as individually can get a low price, but selling in a collective unit can earn more than 50% of what individual sales can earn.

4.4. Comparison between Income and Poverty

4.4.1. Average Income for Farmers Compared to Nonagricultural Income

The income of the farmer in Tanzania is averagely higher than the minimum wages of the nonagricultural sector. Table 2 shows the income of the farmer calculated with the assumption that, at least all the household members were involved in one way or another in the production. The household is actively engaged in the agriculture and produce at least two crops and own three heads of ruminants and some poultry. In practice, there are some farmers who are explicitly livestock keepers (nomads) and some who are explicitly crop producers.

Table 2: Average income of the farmer for 2003, 2008 and 2013 at a constant price of 2008

Indicator	Income in Tshs			Income in USD		
	2003	2008	2013	2003	2008	2013
Average Annual HH Crop Income	722,252	6,378,741	7,658,264	58	5123	6151
Average Annual HH livestock Income	133,526,552	15,987,198	24,111,771	10,725	12,841	19,366
Total Average Annual HH farm income	134,248,802	22,365,938	31,770,034	10,783	17,964	25,517
Average per capital farm income	1,678,270	2,795,900	3,971,200	1,350.5	2,263	3,175.5

*1$ exchange rate of 2008 of Tshs 1245 *Income from Forestry was not included

The results in table 2 shows the household with at least 7 members of a household earning very low in 2003 (Tshs 722,252) for crop annually, which increased by 98.9% in 2008 and only 16.7% in 2013. Livestock increased by 16.5% from 2003 to 2008 and huge increase was recorded in 2013 which is almost 33.7% increase. If the farmer is doing integrated farming then, in 2003 recorded low income compared with following years, which is contributed by poor income from the crop. This makes the per capita income being lower in 2003 but increased by 40% in 2008 and then increased by 30% in 2013.

Table 3: Comparison of the Average per Capita Income for Farmer and Non-farmer for 2013

Average per capita Income	TSHS	USD
Farmers	10880.1	8.7
Casual labourer	874.5	0.7
Regular employees	4056.9	3.3
Other employees	3874.6	3.1

Comparing income of different people earning with farmers in 2013, table 3 shows huge differences. The highest income is from farmers followed by regular employees. The fact is the other income was taken from the minimum wages so the comparison might not be very fair but it reflects the reality. This shows that, if a farmer is concentrating explicitly in agriculture can increase its income and reduce poverty in rural area. The issue is the scenario where the farmers who harvest well in a village will share his/her harvest with the relatives/friends who might be lazy doing nothing. The situation in Tanzania is disturbing as most people will call themselves farmer meanwhile they are not actively engaged in agricultural activity and they have no income. So for the official information most people with no job will say they are farmers when asked by anyone during the survey, but on the ground the active farmers are few.

Table 4: Regression result between poverty and income in different quintile

The dependent variable was Poverty at $1.25 in PPP of 2011	Coef.	Const.β	Std. Err.	t-test	R^2	Sig (P>t)
GNI Annual%, PPP (at a constant 2011 international $)	-0.041	3.531	0.033	-1.238	0.865	0.0022*
Income share held by highest 20%	-0.172	10.790	0.033	-5.268	0.558	0.0000*
Income share held by highest 10%	-0.177	8.325	0.028	-6.296	0.643	0.0000*
Income share held by lowest 10%	-0.068	3.811	0.396	-0.171	0.610	0.0088*
Income share held by lowest 20%	-1.865	8.962	0.642	-2.904	0.526	0.0080*

Data source: World Bank, Authors own calculation

When comparing income and poverty basing on the purchasing power parity of the 2011 for the poverty line $ 1.25 a day; an increase in 1 % percentage of annual gross national income will decrease poverty by 0.041% (Table 4). Since the GNI is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income from abroad, which cannotsay how much wealth is distributed. Then this study investigated income shared by different quintiles. Table 4 shows the results whereby increasing income of the share held by lowest 20% has high decrease in poverty (1.865%) than any other quintiles. This shows that changing of the income has huge effect for the many poor in the lowest shares. This is well portrayed in figure 4 where most poor are concentrated in the lowest 20% control.

Compare the income by the wealth quintile (table 5) it shows that poorest quintile earned less than one dollar a day ($0.3) which was the same in the year 2007, which shows the poor remained poor. Other quintiles had less than one dollar a day, but in year 2007 there were some improvement of the income to at least a dollar per day (except the 2nd poor quintile). The huge different (50% increase) was shown on the least poor. When we compare the geographic location rural area shows to be in the disadvantage, whereby income is still low (less than $1.25 a day).

Table 5: Percent of Households with their Average Monthly Income for 2000 and 2007, at a constant Tshs price 2000

Wealth Quintile	2000		2007		% change
	Percentage of Households	Average Monthly Income, Tshs	Percentage of Households	Average Monthly Income, Tshs	2000 to 2007
Poorest	36.2	10,853	46.0	10,891	0.4
2nd	43.5	14,662	51.7	22,253	51.8
3rd	43.9	21,912	54.3	43,894	100.3
4th	49.7	34,896	53.9	54,221	55.4
Least Poor	49.5	65,292	48.2	125,135	91.7
Geographical area of Residence					
Dar es Salaam	46.9	81,850	51.0	108,053	32.0
Other urban	55.4	59,891	46.6	98,063	63.7
Rural	42.3	19,178	52.1	32,305	68.4
Tanzania Mainland	**44.6**	**31,209**	**50.8**	**50,999**	**63.4**

Source: Hoogeveen et al., 2009

In fact, rural area shares poverty than urban area, however, the study found that income is not a reason for poverty but the rate of increase in population is major reason (percentage of household size in rural increase while in urban decreased) (table 5). The Household size increase without increase in the food, so share of the same food for more people is the source of poverty. This is well depicted (figure 5) in the consumption of the day by different quintile under the poverty line set up as shilling 1200 ($1.25) a day in 2012.

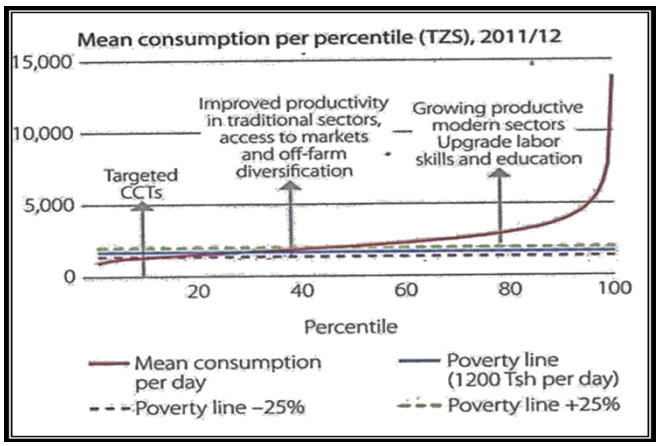


Figure 4: Mean Consumption per percentile in Tshs for 2001/2012

The income in terms of consumption in a day shows by the majority of the people who are in the lower 20% quintile consume less than one dollar a day (figure 4). This shows vividly that all the farmers who are actively engaged in the agriculture activities income are far above one dollar per day; hence the poverty is much originated in other source rather than from active farmers.

4.5. Stability of Economic Growth in Relation to Poverty Reduction in Agriculture Perspectives

The famous book of Wattles (2006) on "*Science of Getting Rich*" argue that "*it is true that existing governments keep the masses in poverty but this is because the masses do not think and act in the certain way. If the masses move forward, all systems must be modified to accommodate the forward movement".* This statement can be compared with the situation in Tanzania where therate of increase in the GDP is steady with at least in the average of 7% for 14 years, but it has not being well translated to the lives of people. The average growth rate of 3.5% in 1990s has impressive jump to the average of 6.9% between 2001 and 2010 (URT, 2011), but poverty is still pervasive even though the proportion of people living below the basic needs and food poverty lines has fallen. The reason behind is the rate of increase in population (i.e. 2.7%) (figure5), which means the rate of increase in population is higher than the rate of reducing poverty; hence caused the poverty reduction rate unnoticeable(NBS, 2001, 2007).

Table 6: Poor Population, headcount ratio, Poverty gap for 1991-2012 (based National poverty line) [Tanzania national poverty line for 2012 was Tshs. 869.5 ($0.62)a day for food line and Tshs 1,216 ($0.86) a day for basic need line.]

Item	Poor Population (in Million)			Headcount Ratio			Poverty gap		
Location	**1991**	**2001**	**2012**	**1991/92**	**2001**	**2012**	**1991**	**2001**	**2012**
Tanzania	9.8 (100%)	12.1 (100%)	12.67 (100%)	38.6	35.3	28.2	11.8	10.4	6.7
Rural	8.0 (82.1%)	9.6 (79%)	10.7 (84.1%)	40.8	38.6	33.3	12.7	11.5	7.8
Other urban	1.2 (12.6%)	1.6 (13.6%)	1.8 (14.4%)	28.7	25.9	21.7	8	7.7	5.5
Dar es Salaam	0.5 (5.3%)	**0.9** (7.4%)	0.2 (1.5%)	28.1	**17.6**	4.2	7.5	**4.1**	**0.8**

Source: NBS Household Budget Surveys of 1991/92, 2001/01 and 2011/12(authors' own calculations)

Since the pattern of economic growth, suggest the main reasons of steady economic growth rate in Tanzania has not been relieving poverty in rural area, and the growth rate in agriculture sector has been slower than nonagricultural sectors, therefore, agriculture has low influence to the GDP growth, that the way it was in 1970s and 1980s, when it contributed about 50 percent of total GDP(MAFAP, 2013). The increase in poverty head country ratio and population in a basic need poverty line as portrayed in table 6, indicates clearly that the rate of reducing poverty has been very small compared to the rate of increase in population. It is also revealed by the number of assets owned by the people who have increased tremendously with slightly or no change in livelihood of the people.

Table 7: Gini Coefficient and Their index for 1991-2012 (based on National poverty line)

Geographical Region	Gini Coefficient			Theil Index	
	1991	2001	2012	1991	2001
Tanzania	0.34	0.35	0.34	0.185	0.199
Rural	0.33	0.32	0.29	0.184	0.177
Other urban	0.34	0.35	0.37	0.201	0.214
Dar es Salaam	0.30	0.34	0.35	0.152	0.208

Source: NBS Household Budget Surveys (authors' own calculations)

However the gap between poor and rich is still the same, but compared with regional the income or consumption distribution in the country is slightly low (Gini coefficient 0.34 (2012)). It was surprising to see that the distribution within the country has no significant different between rural and urban area, but Dar es Salaam showed significant different (table 7).

This study found that poor household in rural area distributes their wealth equally than people urban areas where the inequality increase was more modest. Comparison of the equality for the past 20 years, the results shows no significant different in the average, but comparison of past five years in 2007 where Gini coefficient was 0.37 shows significant different. This means that the income has not been changing much between poor and rich, but going to specific area, rural area show significant from previous years by recording Gini of 0.29 while disparity has increase in urban area and slightly in Dar es Salaam (table 7). There is no doubt that the poor area (rural) has tried to share their income equally while other areas shifting their income to the rich. Using the Theil [The Theil index is calculated as $T = \frac{1}{n}\sum_{k=1}^{n} \frac{x_k}{X} ln\ (\frac{x_k}{X})$, where $X = \frac{1}{n}\sum_{k=1}^{n} x_k$ and x_k are the share of the stock K in the total output] index to measure output concentration, the study found that the economy is more diversified than the regional economy (East African and Sub-Saharan Africa), recorded low value of the theil index (table 7).

Table 8: Percentage of Poor Population/Household by Area, based on Food and Basic Need Deprivation in 2012

Item Deprived	% Population in			% Household in		
	Dar es salaam	Other Urban	Rural	Dar es salaam	Other Urban	Rural
Food	1.0	16.7	82.3	1.2	16.9	81.9
Basic Needs	1.5	14.4	84.1	1.5	15	83.4

Source:Data from NBS (Household Budget Survey 2011/12) (Authors own calculations)

Table 8 shows number of poor people with the nature of deprivation. At one extreme, Dar es Salaam is substantially better off (1% poor population deprived of food) than the rest of the country; as expected rural households, 84.1% population deprived of basic needs, and were much poorer than those in urban areas. But it is not surprising that population in urban area are deprived of food than basic needs unlike the rural and Dar es salaam (table 8)

The basic question one can ask is what can be done to stop poverty. Aikaeli (2010)reported poverty incidence in rural area as a broad and deeper than urban because of relative low income for the rural people that was also found to be true in this study in a general case, but not for active farmers. The analysis of this study shows the number of poor people are increasing; example in the period of 2001-2007 the number of poor has increase by 1.3 million (i.e. number of poor people were 11.5 million in 2001 and 12.8million in 2007) (Policy Forum, 2010). The reason behind is increase in number of population (increased from 25.5million in 1990 to 34 million in 2000and then to 45million in 2012) has led to increase in demand hence poorer people has increased (table 11).

Table 9: Percentage Distribution of Poverty Transitions (poor who exit and enter) from 2008 - 2011

Status	Tanzania	Rural	Urban	Dar es Salaam	Other Urban	Rural area
Never poor	71.2	61.4	89.4	**97.7**	83.4	59.2
Poor in 2008	18.5	24.2	7.8	1.5	12.2	25.9
Poor in 2011	8.1	11.3	2.0	1.0	3.3	11.9
Always poor	2.2	3.1	1.0	**0**	1.1	3.1
total	100	100	100	100	100	100

Source: NBS National Panel Survey 2011/12 (authors' own calculations)

Nevertheless, there is larger regional differences in poverty reduction in the period of 2000-2013 within Tanzania, the similar findings were reported by Utz, 2008. This indicates that poverty reduction can be well maximized by focusing on agricultural development which is the sector that employ majority of Tanzanian and mostly are poor.According to Amani (2005), if targeting each individual agricultural sector separately, per capita agricultural income would grow at 1.4 percent annually, twice the cumulative growth rate generated.The table 9 revealed the number of people who enter and leave poverty every year. Surprisingly, Dar es Salaam has no group of people who are permanently poor but most poor people enter and leave poverty. Rural area is the one that shows high percent of the permanent poor (3.1%). The results also shows that in 2008 there were so many poor people where by in 2011 big number exit poverty for both rural (53%) and urban (74%). The record shows that in rural area almost 40% of peoplewere in transition, leaving and exit poverty; despite of the fact that rural is agriculture production area.

Table 10: Multidimensional Poverty Index (MPI) in Tanzania by Region in 2012

Region	*Multidimensional Poverty Index (MPI = H×A)*	*Poor People(H)*	*Average Intensity Across the Poor (A)*	*Population Vulnerable to Poverty*	*Population in Severe Poverty*
Tanzania	0.332	65.60%	50.70%	21%	33.4%
Arusha	0.278	58.40%	47.60%	26.00%	28.90%
Dar es Salaam	0.117	*26.70%*	43.70%	21.20%	*8.30%*
Dodoma	0.476	87.40%	54.40%	10.70%	58.20%
Iringa	0.284	62.10%	45.80%	19.40%	21.30%
Kagera	0.371	72.60%	51.10%	20.50%	39.40%
Kigoma	0.389	76.70%	50.70%	19.30%	37.70%
Kilimanjaro	0.133	32.40%	41.10%	35.00%	5.30%

Lindi	0.451	83.90%	53.80%	14.80%	51.10%
Manyara	0.354	67.50%	52.50%	24.70%	39.60%
Mara	0.382	75.30%	50.70%	18.60%	40.70%
Mbeya	0.307	64.40%	47.70%	25.20%	26.70%
Morogoro	0.31	62.60%	49.50%	22.70%	31.00%
Mtwara	0.348	70.30%	49.40%	20.80%	34.10%
Mwanza	0.375	71.60%	52.40%	18.70%	35.30%
Pemba 1	0.321	61.90%	51.90%	23.10%	32.60%
Pemba 2	0.277	57.50%	48.30%	25.80%	25.20%
Pwani	0.295	58.40%	50.40%	26.40%	26.80%
Rukwa	0.381	73.70%	51.70%	19.50%	43.20%
Ruvuma	0.27	57.60%	46.80%	27.10%	24.00%
Shinyanga	0.414	77.10%	53.70%	15.60%	46.00%
Singida	0.365	70.30%	51.90%	24.30%	39.40%
Tabora	0.417	76.30%	54.60%	18.50%	43.40%
Tanga	0.321	64.20%	50.00%	19.00%	32.20%
Unguja 1	0.281	57.60%	48.90%	24.20%	26.30%
Unguja 2	0.144	*34.50%*	41.90%	28.80%	*6.60%*
Unguja 3	0.082	*19.60%*	41.70%	34.80%	*3.90%*

*The bolded (except first row or Tanzania) are the first three regions with high incidence of poverty
*The italicized figures are the lowest three regions with incidence of poverty
Source: Oxford Poverty and Human Development Initiative (OPHI) 2013

Utz, 2008 suggested that, agriculture is potential for poverty reduction if proper measure to foster growth in agriculture will be taken to increase farmer's income. However, the study realized that poverty was well reduced through shift from agriculture to other source of income and migration from rural to urban area. The analysis shows that the shifting from agriculture to nonagricultural activities in rural areas has been important contributor to poverty reduction in urban area, similar results were also reported by Utz (2008). This is clearly revealed by household budget survey data of 2007/2008 showing that poverty dropped from 28.1% to 17.6% for Dar es Salaam, 28.7% to 26% for other urban area and a slim drop from 40.8% to 38.7% in rural area. Meaning, huge drop in urban area is due to labour force shift from rural to urban as it is also argued by Lyatuu et al. (2015). However, Dar es salaam had huge drop as it account 50% of the FDI stock and flows(Utz, 2008), which might not be a good example for poverty reduction strategy in the country.

The multidimensional poverty index (MPI) analysis is based on three dimensions (education, health and living standards) and each dimension has indicators; (education indicators are year of schooling and school attendance, health indicators are child mortality and nutrition and living standards indicators are sanitation, electricity, cooking fuel, drinking water, floor and assets). The principle for MPI is that a person is declared poor if he or she is deprived at least one third of the weighed indicators within the dimension. However, the results show that MPI is 0.332 (table 10), means at least one third of the Tanzanian are deprived at least one of the dimensions.

4.6. Major Factor that cause Poverty Increment

By following the trend of growth of different factors in figure 5 that trigger to the regression analysis, the figure shows all parameters growing with different rates.

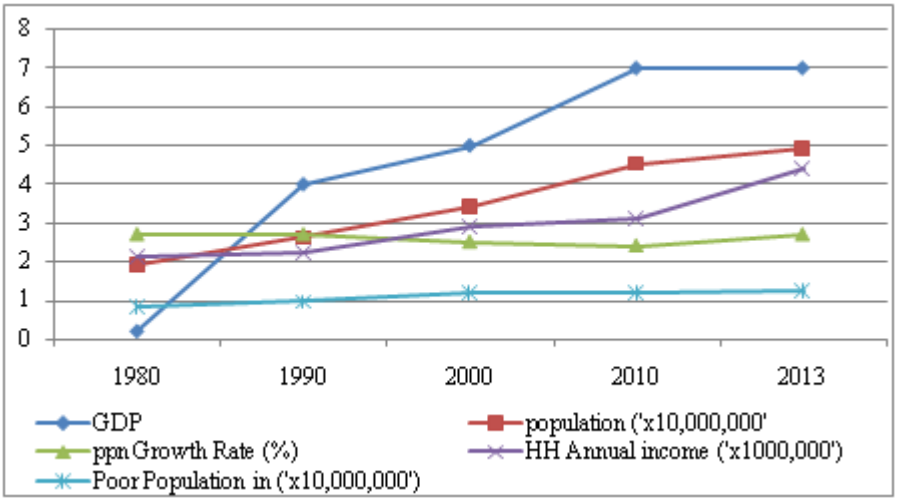


Figure 5: Relation between GDP growth rate, population, poor population, Population Growth rate and Income

Regression analysis was done to see what are thefactors that affect poverty. The results of the analysis revealed that population growth rates has significant effect on poverty increase (portrayed in table 11), as population increase poverty increase as well, which means family income cannot support increasing numbers of people.

Table 11: Regression results for Factors affecting poverty in Tanzania

Poverty (at $1.25 a day)	Coef.	Std. Err.	t	Sig.(P>t)	[95% Conf.Interval]	
gdp	-0.00192	0.00945	-0.20	0.8410	-0.02186	0.018017
population	-0.27410	0.146254	-1.87	**0.078***	-0.58266	0.034472
Population growth rate	-0.30602	0.042141	-7.26	**0.000***	-0.39493	-0.21711
Farmer's income	-0.01229	0.040891	-0.30	0.7670	-0.09856	0.073981
Innequality	7.29449	2.611518	2.79	**0.012***	1.784672	12.80432
Income (PPP)	0.00236	0.007432	0.32	0.7550	-0.01332	0.018041
Cons	0.01864	0.591652	0.03	0.9750	-1.22964	1.266912

Data source: Tanzania National Bureau of statistics and World Bank, Authors own calculations

4.7. Inclusive Growth for Agriculture Development

Numerous strategies have been developed in Tanzania since independence, although mostly were based on solving certain shock/problem. The strategies/programmes such as *MKUKUTA (2005)*, *Kilimo kwanza (2009)*, Southern Agricultural Growth Corridor of Tanzania (SAGCOT) (2010), Tanzania Agriculture and Food Security Investment Plan (TAFSIP) (2011) and *Big Results Now* (2013) were developed to replace other strategies which were ineffective. The implementation of the strategies which were seems to be hesitant due to several reasons were replaced by the new one. Good documents have been developed during implementation process but many documents end up to be filled in the shelves with impressing reports attached to them, but work on the ground seem to be less or not done at all. The National Development Vision 2025, envisage the economy to be transformed from a low productivity agricultural economy to a semi-industrialized through modernization and highly productive agricultural activities that are integrated with industrial and service activities in urban and rural areas. To realize the vision, the process of transformation must include education and skills development, infrastructure and agriculture investment, information and technology improvement, proper supply of inputs, access and reliable market for produce and availability of extension services as the main areas of focus. If all these are inclusive then the economic growth will be on right truck and attainable.

The poor integration of rural areas in the economy, such as poor access to the market and input has significantly contributed to drawback effort of rural economic growth and poverty reduction. The analysis of the survey data of 2007/2008 and data from census of 2012 gave clear indication that rural development and informal sector activities are direct drivers to the poverty reduction. Inclusion of informal sectors in the economic growth proved to be an important transmission mechanism that allowed the poor to participate in economic growth opportunities originating in the rural development initiatives. The results of this paper support Utz (2008) findings which stipulated that although economic growth was significantly higher in urban than in rural areas in the period from 1990/01 to 2000/01, modest rural growth has clearly dominated the faster urban growth with respect to its effect on poverty reduction. In 2000-2012 the economic growth effect on poverty reduction was unnoticed due to high increase in population in the same period.

4.8. Is the Future of Poverty Reduction Effort depends on Agriculture?

Agriculture is still a backbone of Tanzania as it provides employment to the majority of people in rural and urban area. The sector has high potential in creating jobs by linking with agro-processing, consumption and export and without forgetting its provision of raw materials for the industries, hence gave chance for the market of manufactured agricultural goods. Take example of the livestock sector that can be leveraged to contribute to employment creation and poverty reduction simply by improving methods of raising animals. The evidence shows that, average annual increases in the populations of cattle and of sheep and goats have been declining by an average of 1.4 and 1.2 percent for sheep and goats respectively; these growth rates are less than half that of the human population(MAFAP, 2013). The reports of Tanzania Investment Center (TIC) shows that the interest generated by FDI in 2008-2011 for the agriculture went to negative (-2.2 million US$) compared with other sector which were positive(BoT, 2013b). This is to say the issue of food security in Tanzania will be in a tension if immediate measures will not be taken as soon as possible to revamp agriculture which is directly related in poverty reduction.

4.9. Rebuilding Economic Growth for Better Agriculture and Poverty Reduction

To improve rural development and livelihood of the poor, Tanzania economic growth has to show impact to the life of the people. Growth that is not translating to poverty reduction is like the growth with no clear target. The argument by World Bank (2008), not all growth processes generate an equal amount of overall growth or an equal amount of poverty reduction. Besides poverty is more severe in the rural area, the alleviation process is less favourable to the poor rural than the urban. This is not only standing factor, other factors like policy reform implementation to favor rural development has direct impact on poverty alleviation. However, for the government to increase spending and expansion of land under cultivation it requires increase of productivity and private investment as a primary driver of growth. The political willingness towards investment in agriculture, specifically on irrigation infrastructures is necessary to replace risks of farmer's relying on the rainfed agriculture. Once farmers are assured of water for irrigation then the productivity will be automatically improved.

On the other hand, positive economic growth–poverty nexus need the following; increase incomes from the main source of livelihood of the poor, ensure new income generating opportunity for the poor, reduce vulnerability to shocks that

affect the income of the poor, increase government revenue for pro-poor expenditure and increase private transfer and strengthened social safety net while decreasing population growth rates. This can be done by enhancing agricultural productivity through focusing on agriculture and agriculture-related activities as the main driver to reduce poverty. From the memory lane, agriculture is the source of livelihood for almost three quarter of the population, of which more than 25 percent are poor. There is deliberate need to help the poor to generate more income, to shift their production to more profitable agricultural products, and guide them to the proper shift to the income-generating opportunities outside of agriculture in both rural and urban areas.

To mould the economy by availing opportunity available to everyone, strategies and policies should be focusing on the inclusive growth to ensure agriculture, manufacturing, infrastructure, mining, tourism, services and logistics are well integrated each other to ensure smooth business. Strategies and programme developed should have clear mandate to translate broadly framework into focused operational strategies and coordinateimplementation. It is equally important to ensure that institutional arrangements are in place that link farmers to the available opportunities, such as reliable road infrastructure, market access (local and international), input supply, irrigation infrastructures and reduce nuisance taxes.

5. Conclusion Remarks

The pattern of economic growth recorded high for the past two decades is a good sign for the stability of the economy in Tanzania. However, the key in sustaining economic growth is to ensure four pillars of food security, such as food availability, food access, food stability and food utilization are well achieved and well given priority as the end goal for any strategy or programme developed and implemented. The study found insufficient connection between economic growth, farmer's income and poverty reduction, but the population growth rates show significant effect on poverty increase. Because the major reason is not low income but the fast growth of the population, which caused migration of the labour force from the rural to the urban area. The recent trend has made uneven distribution of people, which caused deprivation of at least one dimension of the MPI to the population residing in rural as well as in urban. Majority of people lives in the rural area (70%) and employed in agriculture (62.7%) that gives no choice for poverty being disassociated from the overdependence of rural households on agriculture. Deliberate effort is needed to create a proper link between farmer to the available opportunity which will turn out as a proper connection between economic growth, farmer's income and poverty nexus. To sustain economic growth there is a need to develop capacity of farmers and remould the drivers of economy towards the absorption of new innovation and technology in agriculture sector, focus on investment in human resource development in the community infrastructure in rural area to maximize productivity. Although the major factor for poor people to be an increase is population growth rate, but still there other factors that constrains economic growth and hinder efforts of poverty reduction while stagnating Agriculture.

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