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AN ASSESSMENT OF THE EFFECTS OF POPULATION INCREASE ON LAND TENURE: IMPLICATIONS FOR AGRICULTURAL PRODUCTIVITY IN MBOZI DISTRICT, TANZANIA

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Abstract
This article investigates the influence of population increase on land tenure and its implications for agricultural productivity in Tanzania, drawing experiences from Mbozi District, Songwe Region. Two theories of population guided this study, namely the Boserupian optimism theory and the Malthusian pessimism theory. . Triangulation research design was adopted in this article such that both quantitative and qualitative methods were used to collect and analyse data. A total of 300 individual peasants were involved to respond to structured interviews; and four responded to unstructured interviews. In selecting these 304 respondents from 90,000 peasants, sex was used as a point of reference, followed by residence, wealth and education. Results show association (p-value = 0.035 and 0.001) between population increase and land tenure. As population grows, systems of arable land ownership become more intensive and arable land becomes scarce especially in urban areas. In other words, population growth influences agricultural production, thereby increasing productivity due to the availability of labour and market, as well as intensive land use. Such influence is not limited to the place of residence (urban vs. rural, p-value = 0.497). The article recommends that the Land Policy of 1995 and the Agricultural Policy of 2013 should be amended to fit the distribution of population in all parts of the country.

Keywords:Population Increase, Land Tenure, Agriculture, Production, Productivity,Mbozi District

1.0 Introduction

The increasingly growing world population enforces regular amendments of policies in different aspects. Policies on the spatial distribution of the population and land tenure and agricultural productivity can contribute to a better and more sustainable future for all. The growing population becomes resourceful for social, economic and environmental dimensions towards sustainable development. Consequently, government measures to promote sustainable land tenure and population redistribution are key to a successful implementation of the 2030 Agenda for Sustainable Development. Specifically, the Sustainable Development Goal (SDG) number 1, which insists that "No Poverty", based on target 1.2 on reducing poverty by at least 50 per cent; and Goal number 2, which insists Zero Hunger in target 2.3 aiming to double the productivity and incomes of small-scale food producers; and target 2.4 that seeks to attain sustainable food production and resilient agricultural practices. Based on these targets, population should not be a curse, but rather a blessing as per Boserup (1965). This is possible only if there is a wide implementation of inclusive and effective urban policies for sustainable development.

While large parts of Sub-Saharan Africa (SSA) can be characterized as land-abundant, scarcity of farmland is becoming an issue in a larger proportion of the continent as populations grow (Headey and Jayne, 2014). This issue is particularly critical in densely populated rural areas, where off-farm employment opportunities are limited, and the continued dependence on low-input and low-output traditional agriculture cannot sustain people's livelihoods. Large numbers of unemployed and desperate youth migrating to towns and cities, combined with increasing food prices, punctuate newspaper headlines concerning demonstrations and riots in a growing number of countries in SSA. Rapid and

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large increase in the prices of food and fuel resulting from financial crises in Western countries, as well as concerns about climate change, have spurred a new demand for land in Africa by national and international investors.

Given the increasing scarcity of land, land tenure security must be established to achieve efficient allocation of land among farm households and to promote investment in land improvement. Endogenous evolution of property rights institutions toward individualized and secure rights has typically been slow, particularly in customary tenure systems (Otsuka and Place, 2001).

Historically, there was a plenty of land in East Africa, which allowed shifting or long-fallow cultivation and pastoralism. However, as time goes, cultivation and land tenure systems have changed. For example, where population density increased slowly, land use systems gradually became more intensive as attested in the East African highlands. On the other hand, where land was abundant, more could be gradually brought into the farming cycle. But with rapid population growth, people are increasingly compelled to remain in their place whereas their farming techniques have not evolved sufficiently to permit sustainable permanent farming. As a result, tenure systems have become the most debatable aspect with regard to agricultural productivity. The growing trend of population leads to quickly changing land and property rights; and expropriation without compensation may occur and new land-related conflicts may arise. Extreme cases can be observed in countries such as South Africa, Mozambique, Uganda, Kenya, parts of Tanzania, Rwanda, the Central Plateau in Burkina Faso, and parts of Nigeria (Kasimbazi, 2017; Kirui & Mirzabaev, 2014).

Maghimbi (2007) observed that population increase has an influence on the size of land in that when the population density of a certain area is high, it is obvious that the size of arable land per individual will decrease which, in turn, reduces agricultural productivity of individual peasants. The majority of peasants in Tanzania occupy farms which vary from less than one to three hectares, with an average farm size of 2.4 hectares. Actually, farm sizes further vary across regions. For example, in predominantly tobacco farming areas of Ruvuma, peasants occupy farms with average size of 2.5 hectares, while in the smallholder coffee region of Kilimanjaro, the average farm size per individual peasant is 1.1 hectares. Such variation is due to population density as Kilimanjaro Region has experienced high population density of about 800 people square kilometre, making land scarcer and more expensive than in Ruvuma Region. Such a decline of farm size among peasants reduces agricultural productivity across space and time; though not always due to the influence of other factors which influence agricultural production like technology (ibid.).

Changes in population in Mbozi District have also caused changes in land tenure systems. Itani (2007) observed that in Mbozi District, the increased population has caused the Sikanyika and Simukonda native clans to shift from large-size to small-size land occupancy per household. In other words, during and even before 2006, peasants were occupying large tracts of land, which influenced more agricultural productivity per individual peasant; but from 2010, when the population increased, the declined farm size caused low agricultural productivity among peasants who were reluctant to adopt new cultivation systems that could facilitate high productivity despite the small size of land.

Boserup (1965) hypothesized that the increasing population density influences greater use of modern inputs, as well as a shift away from long-fallow periods to annual and multi-cropping practices. These changes are likely to increase the value and market of resources like land due to the diffusion of information on market prices, availability of products, and transportation costs (Baerenklau, 2005).

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Additionally, Malthus (1798) predicted that deaths and famine result from rapid growing population due to scarcity of land and other resources. Thus, all these theories have the same views that the increase of population increases land value and demand.

The population of Mbozi District is not static but rather; dynamic across time and space. Data from the National Bureau of Statistics Tanzania (2017), and the 2012 census in Mbozi show that the total population for only 20 wards was 446,339, of which 213,217 were male (47.8%) and 233,122 were female (52.2%). The trend of population growth and population density is changing from time to time; and place to place (Table 5.3). These changes also lead to changes in the patterns of land tenure by increasing pressure on land which, in turn, influences agricultural productivity. For example, the population density of 2012 for twenty (20) wards of Mbozi District made peasants in those wards face the scarcity of arable land. The population of Mbozi District has been increasing due to in-migration and fertility. In case of in-migration, the patterns of flow are from Ileje, Mbeya Urban, Momba District, Makete District and Rukwa to Mbozi. There are various reasons for this in-migration, but the most remarkable one is land and agricultural economy (Mulungu & Myeya, 2018).

2.0 Methods and materials

This study was conducted in Mbozi District as the best case study because it is one of the suitable agricultural zones in Tanzania with plenty of fertile land (almost 255,300 ha). The crops grown in the district include both cash and food crops. Among food crops are maize, paddy, beans, sorghum, sweet potatoes, banana and Irish potatoes. Maize has recorded the highest production in the district, followed by beans and paddy. There are also several cash crops, mainly coffee, pyrethrum, sunflower, sesame, tobacco and groundnuts. Despite being the suitable agricultural zone, its productivity does not suffice the requirements of the rapidly growing population due to statistical evidence of decreased number of the population employed in the agricultural, sector from 88 to 75%. The production of some crops like coffee has also been declining from 42,109.99 tons in 2011 to 30,307.71 tons in 2015 (ESRF, 2019).

The area was selected due to the fact that Songwe Region particularly Mbozi District is one of the BIG SEVEN national agricultural producers in the Southern Agricultural Growth Corridor of Tanzania (SAGCOT). The theme selected for this article is suitable because the population has also increased from 446,339 in 2012 to 510,599 in 2022, while the prospects for land tenure and agricultural productivity are not well known (National Bureau of Statistics, 2012, 2022). Other regions in the list include Rukwa, Katavi, Mbeya, Njombe, Iringa and Ruvuma. Table 1 below indicates the distribution of the households engaged in agriculture (URT, 1997; Mugabi, 2014). The researchers opted for a case study design to gain and present contextual, in-depth, and concrete knowledge about the influence of population increase on land tenure and the implications for agricultural productivity in Tanzania.

Both qualitative and quantitative approaches were used in this study for the sake of getting more factual, reliable, detailed and triangulated data. Secondary and primary data were used in order to enrich the article. Secondary data pertained to documentary review; and primary data was collected from peasants through structured and unstructured interviews, and observation from three villages (Mponela, Ndolezi and Matula); and three urban centres (Mlowo, Vwawa and Ihanda). The primary data was collected by administering questionnaires to 300 (200 males and 100 females) peasants in November, 2020. The villages were stratified based on potentiality of arable land and agricultural economy, whereas the 300 respondents were sampled through Yamane (1967) and Freund (1992) sample size determination methods.

This study employed both purposive and random sampling methods. In purposive sampling, the study used snowballing for key informants (peasants) who responded to open ended interviews. The key peasants were recruited through referrals from initial peasants. In random sampling, 300 peasants were selected to answer the close ended interviews or questionnaires. The selection applied the Yamane (1967) and Freund (1992) sample size determination methods. The sample size was determined through the estimation of the sample proportions using the formula: $n = \frac{Z_{\frac{\alpha}{2}}^2 Pq}{e^2}$.

Based on the formula, the assumption is that ***q*** is an estimate; let it be 0.5 (Note that **q** = 0.5 and p = 0.5 yield an optimal sample size from a mathematical point of view). ***P*** is population proportion; let it be 0.5. ***e*** is an error let it be 0.05658, ***z*** is the constant coefficient / multiplier; let $Z_{\frac{\alpha}{2}}$ be 1.96 and ***n*** is the sample size. $\frac{1.96x1.96x0.5x0.5}{0.05658x0.05658}$ = 300.

The population from where the sample was drawn is presented in Table 1.

Table 1: Sample Size

Sex of peasants	Total peasants	Sample	Area	Sample by area
Male	60000	200	Urban	60
			Rural	140
Female	30000	100	Urban	40
			Rural	60
Total	**90000**	**300**	**Total**	**300**

Source: *Mbozi District Council, (2023)*

As adopted from Busetto *et al.* (2020), Bengtsson (2016) and Creswell (2014), studies which involve quantitative approaches should have a large sample size in order to provide satisfactory data. The three hundred peasants were randomly selected to avoid biases in the findings within thirty to sixty minutes for each participant. Prior to their selection, the researchers introduced themselves by presenting the research permits and stating the significance of this study to individuals and to the nation at large. Hence, respondents understood the reason for the study and accepted willingly to provide the required data. To enrich the data from questionnaires, observation was also involved in which the study observed various means related to capacity building and agricultural issues. Purposive, snowballing and simple random sampling techniques were used in different ways and reasons. Purposive sampling was opted because the selected villages had characteristics that were appropriate to the kind of data needed in this study. In snow balling, Village and *Mtaa* leaders were used as a point of reference to recruit peasants in order to form part of the sample. Random sampling was applied in picking 300 peasants by Yamane (1967) and Freund (1992) sample size determination method. Subsets of peasants in Table 1 were selected from the population. The techniques were used at a time due to the fact that researchers focused on the quality of the available data, and used heterogeneous or mixed respondents so as to see if such differences brought homogeneous data for the purpose of securing validity and reliability of the findings.

Furthermore, in-depth interviews were conducted with four key informants, who were selected by snowballing technique, each lasting for 60 to 90 minutes. Interviews involved experienced villages, street leaders and one extension officer from the District Council and TaCRI; and were conducted in

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Nyiha or Swahili languages and later translated into the English language. The collected data was analysed by descriptive and content analysis methods. Quantitative data from the close-ended questionnaires was analysed through descriptive statistics by showing the frequencies of responses on the influence of population increase on land tenure. Such frequencies were derived using the Statistical Package for Social Sciences Version 20. That far, quantitative data was analysed by inferential statistics whereby, the SPSS-20 helped in data cross tabulation and generation of chi-square test and regression analysis which was used to test the association between demographic variables, and the influence of population increase on land tenure and its implications for agricultural productivity. The association was based on different variables of sex, residence, education, size of arable land, labour, intensification of arable land ownership, land demands and market and technology.

Qualitative data from reviewed literature and interviews was analysed by conceptual and relational content analysis, which allowed the authors to identify various data recorded during field communication with respondents by frequencies and associations; this was adopted from Creswell (2014). In the course of analysis, the unit of analysis was an individual peasant. All these procedures of data collection and analysis were done ethically by requesting permits from the district administration. That far, pilot study and triangulation were used to ensure validity and reliability. Additionally, multiple sources of data, mixed approaches of data analysis, secondary data and data from previous researches formed the grounds of proving validity and reliability in this article.

3.0 Results and discussion

This study examined the perceptions of peasants about the influence of population on land tenure system and agricultural productivity. It is shown that population increase influenced peasants to see the significance of arable land for different reasons such as the need for food to feed the increased population. The respondents had different views about the influence of population increase on land tenure system and consequential effects on agricultural productivity (Figure 1).

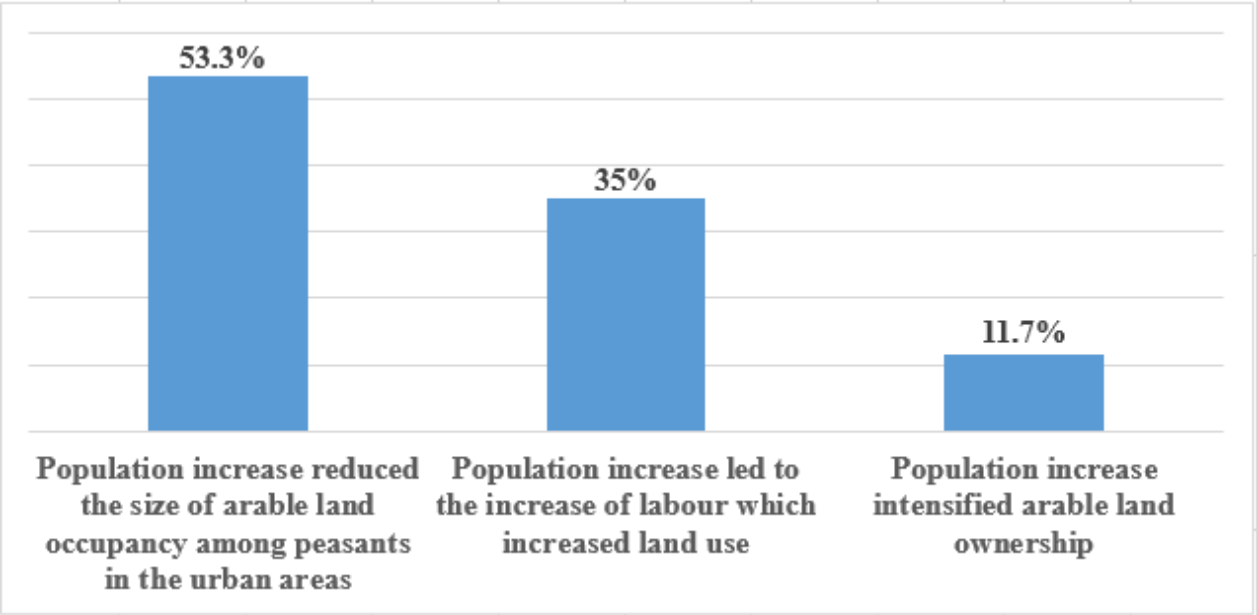

Figure 1: Perceptions about the Infulence of Increased Population on the Land Tenure System (n = 300)

Source: *Mbozi Field Survey, (2023)*

The findings in Figure 1 indicate that 53.3% (160) of respondents with different demographic characteristics said population increase reduced the size of arable land among peasants in urban areas. Similarly, 35% (105) of respondents perceived that population increase led to the increase of labourforce, which increased and intensified land demand and use; whereas 11.7% (35) viewed that population increase intensified the ownership of arable land.

The perceptions of peasants about the influence of population increase on land tenure system were cross-tabulated by sex, residence, wealth status and education level in order to examine statistical correlation of results (Table 2). To begin with sex, 73.1% (117) of male and 26.9% (43) female respondents said that population increase reduces the size of arable land among peasants in urban areas. Likewise, 62.9% (22) of male and 37.1% (13) of female respondents were of the view that population increase led to the increase of labourforce, which subsequently increased land use; and lastly, 58.1% (61) of male and 41.9% (44) of female respondents had a view that population increase intensified arable land ownership. These results were statistically significant since the chi square is 67.03 and p-value is 0.035. This means that population increase affects land tenure, eventually affecting agricultural productivity.

Moreover, the perceptions of peasants on population increase and land tenure system were analysed by residence. A part of respondents by residence said population increase reduced the size of arable land occupancy among peasants in urban areas, whereby 30.6% (49) of respondents were in the urban and 69.4% (111) were in the rural areas. So far, of the respondents who viewed that population increase led to the increase of labour, which increased land use, 40% (14) were in the urban and 60% (21) were in the rural. On the other hand, among the respondents who viewed population as increasing intensified arable land ownership, 35.2% (37) were in the urban and 64.8% (68) were in the rural. These findings did not indicate a statistically significant relationship between population increase and land tenure (χ^2 = 14.00 and p-value = 0.497).

Furthermore, the influence of population increase on land tenure system was analysed by levels of wealth of respondents in order to check the statistical association between population increase and land tenure. Accordingly, 13.8% (22) of rich respondents and 86.2% (138) of respondents in a medium wealth category said population increase reduces the size of arable land occupancy among peasants in urban areas. On the other hand, 40% (14) of rich respondents and 60% (21) in the medium wealth class said population increase led to the increase of labourforce which, in turn, increased land use and productivity. Likewise, 16.2% (17) of respondents in the rich category, and 83.8% (88) in the medium wealth class said population increase intensified arable land ownership, which led to effective land use, consequently triggering high productivity. These results were statistically significant since the chi-square is 138.46, and p-value is 0.001, which implies the existence of relationship between population increase land tenure. This means that as the population changes, there are also changes in land tenure systems through the entire history of agricultural production and, therefore, measures for land tenure systems are important in order to make the available arable land sufficient for the existing population.

Additionally, the aspect of levels of education among the respondents was also used to analyse the perceptions of peasants on the influence of population increase on land tenure system. Findings show that 53.1% (85) of the respondents with primary education, and 46.9% (75) with secondary education had the view that population increase reduces the size of arable land among peasants in urban areas. So far, among the respondents who said population increase led to the increase of labour, which also increased land use in the urban and rural areas, 51.4% (18) had primary and 48.6% (17) had secondary education; whereas among the remaining proportion of respondents who viewed population increase as

an intensifier of arable land ownership, 59% (62) had primary education while 41% (43) had secondary education. These findings did not reveal a statistically significant association between population increase and land tenure (χ^2 = 11.03 and p-value = 0.576). Table 2 illustrates.

Table 2: Population Increase and Land Tenure by Sex, Residence, Wealth and Education Level (n = 300)

Variables	Responses			Total
	Population increase reduced the size of arable land occupancy among peasants in urban areas	Population increase led to the increase of labour which increased land use	Population increase intensified arable land ownership	
Sex				
Male	73.1%	62.9%	58.1%	66.7%
Female	26.9%	37.1%	41.9%	33.3%
χ^2 = 67.03, degree of freedom = 2 and p-value = 0.035				
Residence				
Urban	30.6%	40.0%	35.2%	33.3%
Rural	69.4%	60.0%	64.8%	66.7%
χ^2 = 14.00, degree of freedom = 2 and p-value = 0.497				
Wealth				
Rich	13.8%	40.0%	16.2%	17.7%
Medium	86.2%	60.0%	83.8%	82.3%
χ^2 = 138.46, degree of freedom = 2 and p-value = 0.001				
Education				
Primary	53.1%	51.4%	59.0%	55.0%
Secondary	46.9%	48.6%	41.0%	45.0%
χ^2 = 11.03, degree of freedom = 2 and p-value = 0.576				
Total	**100%**	**100%**	**100%**	**100%**

Source: *Mbozi Field Survey, (2023)*

The results in Table 2 show that population increase affects land tenure system based on responses by sex, residence, wealth status and education (p-value = 0.035, p-value = 0.497, p-value = 0.001 and p-value = 0.576 respectively). These results meant that there is a statistically significant relationship between population increase and land tenure in the variables of sex, and wealth, while the relationship was insignificant in the variable of residence and levels of education. Thus, the influence of population increase on land tenure and its implications for agricultural productivity was not constrained by residence and education status. The effects of population increase cut across both rural and urban areas. The findings concur with the Boserupian optimism theory anticipated by Boserup (1965), whose suppositions indicate that the growing population increases population density, which then leads to intensive land demand; and such situation changes land tenure systems particularly from traditional to statutory land tenure system. Generally, the increase in population, which is associated with the advancement in farming technology and the emergence of agricultural markets, has a significant influence on land tenure system and productivity.

In an interview conducted at Ndolezi Village regarding the influence of population increase on land tenure system, one of the respondents stated that;

> Population increase has multiple contributions in land tenure and agricultural productivity; it leads to the increase of land demand and agricultural productivity because in-migrants increase population density, and increase markets for some crops, thereby increasing the demand for arable land. They also increase labour in agricultural production; and introduce modern cultivation systems, which phase out the traditional cultivation and tenure systems by shifting to modern tenure and cultivation systems. In our village, many in-migrants come from Ileje District because of its less fertile land, and move to Mbozi District for the purpose of occupying fertile land. The trend of land demand in Ileje District is lower due to many ups and downs and grits, thus it is not much suitable for agricultural production as compared to that of Mbozi District (Key Informant/Ndolezi Village/November, 2023).

The analysis of the perceptions of peasants on the influence of population growth on land tenure and agricultural productivity was also done by sex, residence and education as shown in Table 3.

Table 3: Role of population growth on land tenure and agricultural productivity (n = 300)

Variables	Increases land demands and market on agricultural products	Land grabbing	Technological change due to innovations	**Total**
Sex				
Male	90.2%	32.4%	57.1%	66.7%
Female	9.8%	67.6%	42.9%	33.3%
χ^2 = 96.040, df = 2 and p-value = 0.000				
Residence				
Urban	22.1%	53.9%	25.7%	33.3%
Rural	77.9%	46.1%	74.3%	66.7%
χ^2 = 296.49, df = 2 and p-value = 0.000				
Education level				
Primary	30.7%	96.1%	48.6%	55.0%
Secondary	69.3%	3.9%	51.4%	45.0%
χ^2 = 109.097, df = 2 and p-value = 0.000				
Total	**100%**	**100%**	**100%**	**100%**

Source: *Mbozi Field Survey, 2023*

In terms of sex, the results indicated that, 90.2% (147) of male and 9.8% (16) of female respondents said that population increase triggers land demands and market of agricultural products. Similarly, 32.4% (33) of male and 67.6% (69) of female respondents observed that population increase leads to land grabbing. Moreover, 57.1% (20) of male and 42.9% (15) of female respondents had the view that population increase leads to technological change due to innovations. These outcomes indicated a statistically significant relationship between independent and dependent variables since χ^2 was 96.040 and p-value was 0.000.

Moreover, in terms of residence, the results showed that 53.9% (55) of respondents in urban areas, and 46.1% (47) in rural areas perceived that population growth increases land demands and market of agricultural products. On the other hand, 53.9% (55) of respondents in urban areas, and 46.1% (47) in rural areas perceived that population growth increases land grabbing. Yet, 25.7% (9) of respondents in the urban and 74.3% (26) in the rural held the view that population growth influences technological change due to innovations. The results were statistically significant, with the chi-square test of 296.49, and p-value of 0.000. Therefore, the influence of population growth on land tenure and agricultural productivity is statistically significant.

In terms of education, the findings showed that 30.7% (50) of respondents with primary education; and 69.3% (113) with secondary education said that population growth increases land demands and market for agricultural products. Likewise, 96.1% (98) of respondents with primary education, and 3.9% (4) with secondary education had the view that population growth leads to land grabbing. Moreover, 48.6% (17) of respondents with primary education, and 51.4% (18) with secondary education perceived that population growth influences technological changes due to innovations. These results indicated a statistically significant relationship between the dependent variable and independent variables since the chi-square test was 109.097 and p-value 0.000. The results in Table 3 indicated a varied statistically significant relationship between the variables (p-value = 0.000, p-value = 0.000, and p-value = 0.000 respectively).

Therefore, the findings show that as population grows, land tenure becomes intensive; and in urban areas, arable land is limited due to urbanization. It has also been argued that population increase is an opportunity for fulfilling the SDGs, especially in the aspect of labourforce, market, technology and intensive utilisation of land resource for farming. This implies that both theories of Ester Boserup and Thomas Malthus are operational, what is important is the application of technology when coming to agricultural production especially in overpopulated areas where arable land is scarce. The Malthusian school is applicable in areas like Kilimanjaro; and this is evidenced by Maghimbi (2007), who investigated cultivation of coffee among peasants. The study found that the occupancy of small-sized arable land among peasants reduces agricultural productivity. The population increase has caused peasants to own very small pieces of land, and peasants are scattered throughout the mountains in places like Machame, Kibosho, Uru, Old Moshi, Kirua Vunjo, Kilema, Marangu, Mwika, Rombo, Ugweno, Gonja, Mbaga, and Mamba.

4.0 Results Implications

Farmers must farm more intensively as land resources become increasingly limited as the population grows. However, land scarcity and grabbing may occur from governments and farmers failing to respond quickly enough to create technologies to cultivate their land more productively regardless of size. As a result, periodical censuses should be carried out along with information on the trend of agricultural productivity and production as well as patterns of land tenure use. This is because the dominance of agriculture in the majority of African economies indicates the significance of land as an essential instrument for development and a major factor in determining an individual's ability to make an income in both agrarian and non-agrarian societies.

5.0 Conclusion and recommendations

The overall results show that the increase of population leads to the decline of arable land; but increases agricultural productivity in other ways. In terms of statistical association, responses based on sex and wealth status indicated a statistically significant relationship between population increase and land

tenure in Mbozi District. In the same vein, the relationship is not statistically significant in the variable of residence and education level. This implies that land tenure cuts across regardless the place of residence or one's level of education. Thus, population increase affects land tenure and agricultural productivity in both rural and urban areas. Therefore, the article recommends the following: -

i. Policies should be amended in such a way that they reflect the growing population in all parts of the country.
ii. Provision of education on land tenure and use to the growing population is important.
iii. Innovation of new technologies on farming systems.
iv. Lesson on urban agriculture will be helpful in enabling agriculture even in urban areas regardless of rapid population growth, which leads to the scarcity of arable land.

References

1. Baerenklau, K. A. (2005). "Toward an Understanding of Technology Adoption: Risk, Learning, and Neighborhood Effects", *Land Economics* 81 (1): 1-19.
2. Bengtsson, M. (2016). "How to plan and perform a qualitative study using content analysis", *Elsevier - NursingPlus Open,* Volume 2, 2016, Pages 8-14.
3. Boserup, E. (1965*). The Conditions of Agricultural Growth: the Economics of Agrarian Change under Population Pressure. Chicago*: Aldine Publishing Company.
4. Busetto, L., Wick, W. & Gumbinger, C. (2020). "How to use and assess qualitative research methods", *BMC Springer Nature, Neurological Research and Practice volume 2*, Article number: 14.
5. Creswell, J. (2012). *Educational research: Planning, conducting and evaluating quantitative and qualitative research,* 4th Ed. Upper Saddle River, NJ: Pearson Education.
6. Freund, J. E. (1992). *Mathematical Statistics*, 2nd Ed. Arizon State University.
7. Headey, D., Jayne, T.S. (2014). Adaptation to land constraints: Is Africa different? Food Policy, 48, 18–33.
8. Itani, J. (2007). "Effects of socio-economic changes on cultivation systems under Customary land tenure in Mbozi District, southern Tanzania". *African Study Monographs*, Graduate School of Asian and African Area Studies, Kyoto University
9. Kasimbazi, E. (2017). "Land Tenure and Rights for Improved Land Management and Sustainable Development", *Global Land Outlook Working Paper, September 2017.* United National Convention to Combat Desertification.
10. Kirui, O. K., Mirzabaev, A. (2014). Economics of land degradation in Eastern Africa, *ZEF Working Paper Series, No. 128, University of Bonn, Center for Development Research (ZEF),* Bonn.
11. Maghimbi. S. (2007). "Recent Changes in Crop Patterns in the Kilimanjaro Region of Tanzania: the Decline of Coffee and the Rise of Maize and Rice". *African Study Monographs,* Suppl.35: 73-83, March 2007.
12. Malthus, T. (1798). *An Essay on the Principle of Population,* Joseph Johnson
13. Mugabi, C. (2014). "Challenges Facing Land Ownership in Rural Tanzania: What needs to be done?" *Tanzania Land Policy Action Node: Economic and Social Research Foundation, Tanzania;* ESRF Policy Brief, No. 4/2014.
14. Mulungu, C. A., and Myeya, E. (2018). "Survival strategies and livelihood diversification of Ileje Migrants in Mbozi District, Southern Tanzania" *Journal of African Studies and Development,* Vol. 10(4).
15. National Bureau of Statistics (2012, 2022). *The 2012 Population and Housing Census, National Bureau of Statistics Ministry of Finance*, Tanzania in Figures -2012.

16. Otsuka, K., and Place, F. (2001). *Land tenure and natural resource management: a comparative study of agrarian communities in Asia and Africa*, Johns Hopkins University Press, Baltimore, MD, 2001.
17. The Economic and Social Research Foundation –ESRF, (2019). *ESRF Facilitates the Development of Regional Investment Guides*, Volume 19, Number 2, ISSN 0856 – 5791, July - December, 2019.
18. URT (1997). *Cultural Policy: Policy Statement of 1997.* Dar es Salaam.
19. Yamane, T. (1967). Statistics, an Introductory Analysis, 2nd Ed., New York: Harper and Row.