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The Impact of Migration on Land Tenure and Agricultural Productivity in Mbozi District, Tanzania

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Abstract

This paper examines the factors influencing in-migration, the influence of migration on land tenure and agricultural productivity and the outcomes associated with the influence of migration on land tenure and agricultural productivity. It also assesses intervention measures of land tenure and agricultural productivity. A total of 300 respondents were involved in the study. Data collection and analysis employed both quantitative and qualitative methods. Data was collected by the use of questionnaires, observation and documentary review. The results revealed that migration was one of the factors that influenced land tenure systems and agricultural productivity. Other factors were availability of land for settlement and renting, population increase, the rise of land and crop prices, coupled with the availability of business and social services established in urban centres like Ihanda, Vwawa and Mlowo. These were further influenced by good road and railway infrastructure to neighbouring countries like Zambia and the Democratic Republic of Congo, besides its proximity to highly populated districts like Rungwe, which pushed a lot of people to the district. The presence of relatives who were ready to accommodate new arrivals also contributed to the in-migration to the district. The study concludes that migration will continue to influence land tenure and agricultural productivity in the district as long as urbanization is increasing at a rapid rate, and economic opportunities are also increasing compared to neighbouring districts like Ileje. It is recommended that cross-cutting policies should be amended because issues of land tenure and agriculture depend on multiple factors, including migration.

Keywords: *migration, land tenure, productivity, urbanization, Tanzania*

1. Introduction

Migration involves a movement of people from their usual place of residence to other places for a minimum of six months (Wilson, 1985). It differs from 'commuting', which is a movement from one's home to a place of work or business (Zongo, 2010). Meanwhile, land tenure involves regulations introduced by people in a society on issues of land ownership (Mekasha, 2018). As a whole, land tenure security on agricultural land productivity is essential in promoting sustainable development in countries that depend on agrarian economy. These two factors for agrarian economy are influenced by different factors including migration. Nonetheless, unlike in developed countries,

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property rights over agricultural land in developing countries is rather feeble because it is established through continuous use of the land without possession of formal land titles (Galiani & Schargrodsky, 2010).

Migration has been affecting land tenure system and agricultural productivity in many countries. For example, the urban population in China in in 2011 exceeded the rural population for the first time, with an urbanization level of 51.3% (Rao et al., 2015). The floating population reached 180 million in 2009, with 145 million rural-urban migrants (Meng, 2012). In comparison, there were only 25 million rural-urban migrants in 1990. This rapid expansion of the urban population is currently the most defining feature of urbanization that leads to high rate of unemployment in China, which has shifted the patterns of migration from rural-urban to urban-rural, hence the value and demand of land has increased because the principal means of livelihood of many in-migrants and immigrants is agricultural production, where the primary factor of production is land.

The case of migration under resettlement programmes was also observed in Zimbabwe to have influenced the land tenure system and agricultural productivity. Studies by the Stiftung and the Institute of Development Studies (2004) and Mutanda (2013) identified various groups affecting land tenure systems and productivity. One of such groups is that of war veterans who, in many parts of the world, needed resettling immediately after the end of World War II in 1945. This was the situation in Zimbabwe after the war of liberation. As such, following the efforts to address the land challenges confronting the country and the resettlement programme in the country, there were changes in the land tenure patterns and agricultural productivity in the country that started in the 1980s. Thus, various means of effective use of land were designed to manage such changes through relocating the population, and redistribution of land among peasants and farmers so as to increase agricultural productivity. In drier parts of the country where there was no agriculture under irrigation systems; here livestock keeping was practised. In an effort to restore racial equality and raise agricultural productivity in the country, black indigenous farmers were empowered; easy access to land by all citizens of Zimbabwe was ensured; full-cost recovery, with the beneficiaries having an option to purchase the land within the 99-years lease period, was guaranteed; creation of a cadre of black indigenous farmers was done; breaking the gap between white and black commercial farmers was effected; and facilitating input support for commercial agriculture by indigenous farmers was done, and purposeful empowering of black entrepreneurs in the economy of Zimbabwe was done.

Similar cases were also observed in northern Tanzania, around Mount Kilimanjaro, where the migration of young males and females is evident in many households as a way of increasing economic opportunities specifically for marginalized women (Lerise, 2001 a&b). In the southern portion of the country, in the remote area of Lindi Region, over 60% of the families

interviewed were found to have at least one migrant family member whose principal means of livelihood depended on land for agricultural productivity (Lerise, 2001 a&b).

Mbonile et al. (1996) also studied female rural-urban migration from the countryside in Tanzania to the city of Dar es Salaam, and found that such migration was dominated by economic motives because profitable activities were unevenly distributed in the different regions of the country. This kind of movement obviously reduced the involvement of women in agricultural production in a pattern of land tenure much dominated by males in these rural areas. On the other hand, the study by Mbonile (1996) in Makete district examined the struggle of the people in trying to break away from the vicious circle of labour migration. He found that people from Makete opted out of subsistence agriculture and circular wage labour migration, and went to business. Such an option influenced land tenure and productivity.

Liviga and Mekacha (1998) conducted a study about youth migration and poverty alleviation for petty traders (*wamachinga*) in Dar es Salaam. Their observation showed that the decision to migrate was not voluntary, but it was influenced by problems experienced at home. Furthermore, the study reported that rural-urban youth migration had a negative impact on both areas of out-migration and in-migration. In the context of land tenure and productivity, such pattern led to the decline of pressure on land, and consequently low agricultural productivity in some areas.

Also, Lee (1980) observed that the pattern of in-migrants from urban to rural areas in Korea during the census of 1965-1970 periods were permanent because many in-migrants were returning to their provinces of birth, whereas the pattern of rural-urban migration was found to be temporary. Furthermore, the inter-district migration was found to be 5.2% of migrants returning to their birthplace, and the movement decreased to 4.1% for those going to urban areas. Since many in-migrants were being forced by the need for arable land for agricultural production, the urban-rural migration pattern was found to have more significant effects on the land tenure system and agricultural productivity than the pattern of rural-urban migration.

In the case of Mbozi District, the influence of migration on the land tenure system and agricultural productivity has been very frequent since the colonial period. There are some traditional means in the district that allow migrants or outsiders to have access to land, which eventually influences land tenure and agricultural productivity. Usually, the migrants infiltrate into the district gradually by using tutors who welcome them first on a temporary agreement, before land is permanently allocated to them. Sometimes some sort of invasion is undertaken, whereby migrants invade open spaces, including sacred land, which often leads to conflicts, although such conflicts dissolve with time due to intermarriage and ethnic relationships (Brock, 1966; Zongo, 2010).

The influence of migration on the land tenure system in Mbozi District began in the 1920s when the British colonial government appointed Hall in 1941 to investigate the local migration of Nyakyusa, and other related tribes like the Ndali, to the Mbeya region, which incorporated the Mbozi District. Hall (1945), and later Brock (1966), found that the main cause of out-migration was population pressure in the places of origin, and shifting cultivation that allowed new in-migrants to settle among the indigenous population who were largely of the Nyiha and Nyamwanga tribes. Almost similar cases were observed in the influx of in-migrants like the Sukuma and Maasai, which has influenced the demand for land and the growth of agricultural economy in many parts of Tanzania, including the Usangu Plains and Mbozi District (Mbonile et al., 2007; Mulungu & Myeya, 2018). As mentioned earlier, in northern Tanzania, around Mount Kilimanjaro, the migration of young people in many households as a way of increasing economic opportunities, specifically for marginalized women, has influenced land tenure and agricultural productivity (Lerise, 2001 a&b).

The Mbozi District is inhabited by different ethnic groups such as the Nyiha, Nyakyusa, Nyamwanga, Ndali, Bungu, Lambya, Kinga, Chagga and Hehe (Mulungu & Myeya, 2018; NBS, 2016). According to the 2012 population census, its population was 446,339 people; of which 213,217 (47.8%) were male and 233,122 (52.2%) were female.

1.1 Theoretical Perspective

This study was guided by different theories and models related to migration and land tenure as well as agriculture, including the push-pull theory of migration, the Boserupian optimism theory, and the Malthusian pessimism population theory.

Regarding migration, the study was guided by the push-pull theory of migration, which was introduced by Lee (1966), to explain the main factors controlling people's decision to migrate (Figure 1). The major assumption of the theory is that every area has positive and negative factors that encourage or discourage people to live in such area.

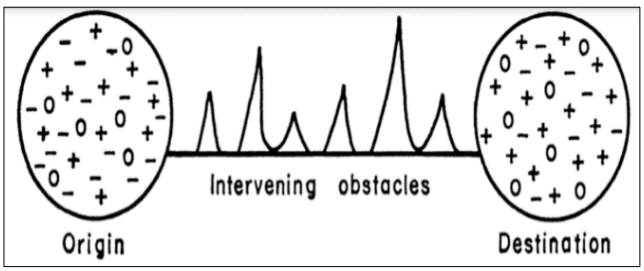

Figure 1: Pull-Push Theory
Source: Lee (1966)

The main factors that might encourage people to remain in their place of origin include ownership of property like land for settlement and accommodation, and the presence of suitable physical conditions, such as good climate. On the other hand, there are factors that push people out of their place of origin, including wars, poor climatic conditions, poverty and diseases. Alternatively, there are factors that make people indifferent when it comes to out-migration, which include low level education, poor financial capacity and the lack of awareness.

The positive and negative factors affecting migration are found in both the places of origin and destination, and they are generally known as migration aspirations. However, there are major differentials between the factors associated with the place of origin and those associated with the place of destination. Hence, for someone to migrate, the advantages in the place of destination must outweigh those in the place of origin. Yet the actual advantages and disadvantages of an area can be experienced by living in the area of migration where some migrants may face problems such as the lack of employment and the lack of land for settlement and assimilation, which may discourage them from continuing living in such an area. Generally, between the area of origin and destination, there are intervening obstacles which may be either slight insurmountable; these include distance, transport cost and physical barriers such as lakes, oceans and mountains. Furthermore, personal factors which affect an individual's decision to migrate are associated with stages in the life cycle as one enters the labour force or marriage. This theory is applicable to this study because issues of availability of arable land and agricultural opportunities are pull factors which cause the influx of immigrants in the district.

Secondly, the Boserupian Optimism Theory and Malthusian Pessimism Population Theory were applied in this study. In Boserup's model, an agrarian community has a fixed territory and an array of discrete production techniques from which to choose: forest fallow, bush fallow, short fallow, annual cropping and multi-cropping. Each of these stages entails different cultivation techniques and the model implies a progression from less to more intensive cultivation system. In this context, 'intensification' implies that a greater proportion of available farmland is placed under cultivation in a given year, where the length of the average fallow period for land that has been used for production is shortened. She observed that increasing population pressure provides the primary stimulus for innovation and intensification. Core to her model is the notion that technological change is induced or impelled by a critical population density. Based on this explanation, these models provide guidelines on the systems of land tenure and their influence on agricultural productivity in Mbozi District.

The cited literature, theories and models are applicable in Mbozi District since there is a fast-growing population caused by migration and no scholar has studied such population phenomenon in relation to land tenure and agricultural productivity. Thus, this study specifically explored the factors influencing in-

migration and its influence on land tenure and agricultural productivity in Mbozi District, Tanzania and finally it investigated the outcomes associated with the influence of migration on land tenure and agricultural productivity. This article is organized in five sections. These are abstract, introduction, materials and methods, results and discussion, and conclusion and recommendations.

2. Materials and Methods

In this study, a triangulation research design was applied, and Mbozi District was purposely selected because it has a long history of huge influx in-migration from neighbouring ethnic groups and settlers from abroad who, to a large extent, brought different patterns of land tenure. The district is located between latitudes 8^0 0' and 9^0 12' South, and longitudes 32^0 7' and 33^0 2' East. Random and purposeful sampling were used, where the former was used to select households with experience on land tenure. The focus was on fifteen (15) wards (Figure 2).

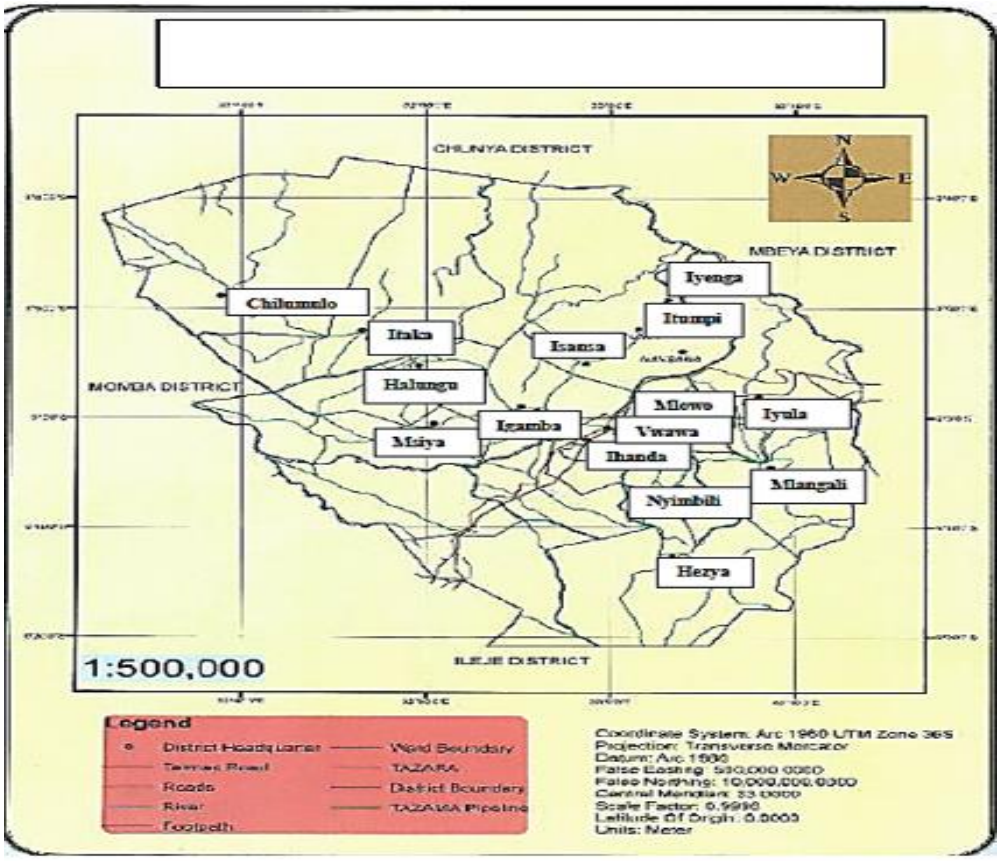

Figure 2: Area of the Study
Source: Mbozi District Council, 2020

Some of the urban centres that were involved in the study were the south-west part of Mlowo, Ilolo, Ilembo, Mwenge, Masaki, Mbimba Mlimani and Old Vwawa. Along some of these streets, there were peasants who were occupying arable land and farming. Given the fact that studies that involve quantitative techniques should have a large number of respondents to affirm the validity of findings and draw conclusions (Kothari, 2004), 300 peasants were randomly selected for the structured interview. In addition, the observation technique was also applied in data collection to enrich the data from questionnaires. The sample size was determined through the estimation of the sample proportions using the formula (Freund, 1992):

$$n = \frac{Z_{\frac{\alpha}{2}}^2 Pq}{e^2}$$

Basing on the formula, the assumption is that q is an estimate, let it be 0.5 (note that if q = 0.5 and p = 0.5, this 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 $Z\_(\alpha/2)$ be 1.96; and n is the sample size. Thus:

$$\frac{1.96 \times 1.96 \times 0.5 \times 0.5}{0.05658 \times 0.05658} = 300.0034611, \text{approximately to 300 peasants.}$$

The selected sample size was adequate for the quantitative analysis, and also provided enough data for the study (see Table 1). Documentary review was also one of the techniques used to collect data.

Table 1: Sample Size of the Study

Sex category of the respondents (peasants)	Population of peasants	Sample size	Distribution of respondents	Resident
Male	60000	200	60	Urban
			140	Rural
Female	30000	100	40	Urban
			60	Rural
Total	**90000**	**300**	**300**	

Source: Mbozi District Council, 2020

As mentioned earlier, quantitative data was analysed by descriptive statistics, which involved the SPSS_20, while qualitative data was analysed by content analysis. In the analysis, the unit of analysis was an individual peasant. Ethical considerations were ensured by requesting research permit from the district administration; and asking for consent from respondents. Validity and reliability were ensured by carrying out a pilot study, and the use of triangulation in data collection and analysis.

3. Results and Discussion

Through the study, it was possible to identify several factors that pulled people from one place to another in Mbozi District. The influence of migration on land tenure and agricultural productivity was further explored. Finally, the outcomes associated with the influence of migration on land tenure and agricultural productivity were studied. The pull factors are discussed in the following sub-section.

3.1 Pull Factors

In the course of exploring factors that pulled people from one place to another in Mbozi District, the study considered historical factors, land for settlement and renting, business and social services, proximity and presence of relatives in the district.

3.1.1 Historical Factors

Historical factors for migration in Mbozi District have been responsible for changing several patterns of land tenure, use and agricultural productivity. The study found that the main ethnic group in the district is the Nyiha, who are believed to have migrated from Cameroun in 2000 BC like all Bantu major ethnic groups. Before moving to Mbozi District they settled close to the present Mombasa in Kenya, where there is an ethnic group called the Nyika. Besides the historical migration, another aspect of migration related to land tenure was the development of large-scale plantations that were largely opened by the British colonial government, which forcefully settled war veterans of the Second World War (1940-1945) who faced huge unemployment immediately after they were released from the battlefield (Knight, 1974; McCall, 1982). Similarly, findings by Gulliver (1955), Mbonile (1995) and Mulungu (2017) report that during the colonial period people were migrating to areas with available land for cultivation and permanent settlement in Rungwe and Mbozi Districts; as well as in areas with sisal and sugar plantations in the east and northeast regions of Morogoro, Tanga, Kilimanjaro, and Arusha. There was also a long-distance migration to gold and copper mines in South Africa, Zimbabwe, Zambia, and the Democratic Republic of Congo. Other destinations for long-distance migrants from Ileje district included Morogoro, Mwanza, Njombe, Iringa, Ruvuma, Rukwa, Katavi, Dodoma, Kigoma, Tanga, Mara, Tabora, Arusha, Zanzibar and Dar es Salaam.

3.1.2 Land for Settlement and Renting

For a long time there has been plenty of land in Mbozi District that has attracted settlement for people from inside and outside the district. Consequently, the most documented pulling factor in Mbozi District has been the availability of land for settlement and agricultural production (55.1%). This is followed by another

similar factor: the availability of land for renting (15%), which has attracted people from as far as Dar es Salaam and neighbouring cities like Mbeya; and small towns like Njombe and Makambako. Hence, compared to neighbouring districts like Ileje, Rungwe and Mbeya, the availability of land for settlement and cultivation in the district has attracted several in-migrants. Such migrants have influenced land tenure, and eventually agricultural productivity (Table 2).

Table 2: Pull Factors to Mbozi District

Determinants	Percentage (n=300)
Land for settlement	55.1
Land for renting	15.0
Business/social services	16. 2
Proximity	7.7
Relative presence	6.0
Total	**100.0**

Source: Field Survey, 2020

3.1.3 Business and Social Services

Business and social services are factors that influenced land tenure and agricultural productivity before, during and after the colonial period. In the colonial period, people migrated to Mbozi District to work in the coffee plantations that had been established by colonial settlers and Second World War veterans. Nonetheless, these employment opportunities were intensified years before and after independence, when Chief Nzowa of Igamba eradicated the colonial concept of labour reserve by encouraging peasants to grow coffee as a cash crop in the 1950s. This decision encouraged thousands of casual labourers during the coffee-picking period to in-migrate to the district from neighbouring areas, some of whom ended up settling in as permanent in-migrants. In the early 1940s, about 65% of the employees in the coffee plantations in Mbozi area were largely Nyakyusa and Ndali, who ended up acquiring land for settlement and farming. These people in-migrated to this area despite strong resistance from the local population and the native authority of the Mbeya district (Swilla, 2005; Brock, 1966). Another factor behind youth in-migration to Mbozi District was the existence of better business prospects than those available in places of origin, since, due to its reliable infrastructure, the district is a gateway to markets in neighbouring countries such as Zambia (Msokwe, 2018).

3.1.4 Proximity

Proximity means nearness in space, time and relationship. In this study, proximity accounted for 7.7% of the in-migration into Mbozi District from neighbouring highland and lowland districts with high population pressure, which used out-migration as an adjustment measure to ease land pressure.

Historically, out-migration from the densely populated areas of the southern highlands began in the 1940s during the colonial period, when conflicts on land tenure between the indigenous population (the Nyiha) against Nyakyusa and Ndali in-migrants were recorded by Hall (1945), and much later by McCall (1982). The latter found that the densely populated areas of Rungwe (171 people per km^2), Kyela (168 people per km^2), and Ileje (65 people per km^2), recorded a negative net-migration because of high out-migration even during the post-independence period. Knight (1974) noted that, as early as the 1920s, the Mbozi area has been settled by various ethnic groups who have working in the large cash crop plantations. These results are similar to what was observed by Brock (1966) and Raikes (1986), who traced these conflicts among ethnic groups in Mbozi District.

3.1.5 Presence of Relatives in Mbozi District

The study studied the presence of relatives in Mbozi District in the issue of land tenure and agricultural productivity. The presence of close relatives/friends who accommodated new migrants was one of the most salient determinants of in-migration to Mbozi District (Mbonile, 1996; Oucho, 1996). As a whole, the presence of relatives who had migrated earlier to the district played a significant role in new in-migrants deciding to migrate to, and settle in, Mbozi District. This shows that factors such as the presence of relatives and/or friends who could assist in early accommodation costs and the search for jobs was one of the deciding factors when it came to potential migrants looking for destination areas. Such trend of migration due to the presence of relatives at the point of destination influenced land tenure and agricultural productivity in the district, though to a small proportion (6.0%). The current study results concur with findings by Holm (1992) who observed that migrants who get information from others who have already migrated can also join the bandwagon. The current results are also in line with those of Oucho (1996) who noted that the determinants of migration to a particular destination area included the presence of close relatives and friends that were readily available to provide assistance to new migrants. The findings also concur with the situation observed in Ghana by Caldwell (1969), that 45% of migrants provided temporary accommodation and food to new migrants and helped them look for jobs.

3.2 Impact of Migration on Land Tenure and Agricultural Productivity

Different demographic variables have explained the trend of migration of people from other districts to Mbozi District and its influence on land tenure and agricultural productivity. Through such variables the study explored several perceptions from the respondents whose responses on the influence of migration on land tenure and agricultural productivity are presented in Table 3.

Table 3: Impact of Migration on Land Tenure System and Agricultural Productivity

Some Demographic variables	Impact of In-migration on land tenure and agricultural productivity					Total
	Rural-urban migration leads to decline of labour in agricultural production	Urban-rural migration increase the rate of agricultural production	Rural-urban migration increases food demands	Two patterns of migration increase the diffusion of agricultural technology	I don't know	
Residence						
Urban	18(56.2%)	59(29.5%)	10(58.8%)	9(56.2%)	4(11.4%)	100(33.3%)
Rural	14 (43.8%)	141(70.5%)	7(41.2%)	7(43.8%)	31(88.6%)	200(66.7%)
$\chi^2 = 251.94$, df = 4 and p-value = 0.000						
Education						
Primary	29(90.6%)	95(47.5%)	12(70.6%)	13(81.2%)	16(45.7%)	165(55.0%)
Secondary	3(9.4%)	105(52.5%)	5(29.4%)	3(18.8%)	19(54.3%)	135(45.0%)
$\chi^2 = 282.97$, df = 4 and p-value = 0.000						
Age						
15-45	14(43.8%)	81(40.5%)	11(64.7%)	12(75.0%)	15(42.9%)	133(44.3%)
46 or +	18(56.2%)	119(59.5%)	6(35.3%)	4(25.0%)	20(57.1%)	167(55.7%)
$\chi^2 = 101.82$, df = 4 and p-value = 0.037						
Total	**32(100%)**	**200(100%)**	**17(100%)**	**16(100%)**	**35(100%)**	**300(100%)**

Source: Mbozi Field Survey, 2020

Table 3 presents the results about the influence of migration on land tenure and agricultural productivity. The analysis considered the demographic variables of residence, education and age of the respondents. With regard to residence, the results show that 18 (56.2%) respondents in the urban area and 14 (43.8%) in the rural areas opined that rural-urban migration led to a decline of labour in agricultural production. It was followed by 59 (29.5%) respondents in the urban area and 141 (70.5%) in the rural areas who said that urban-rural migration increased the rate of agricultural production due to the increase of land demand and use. Further, 10 (58.8%) respondents in the urban area and 7 (41.2%) in the rural areas were of the view that rural-urban migration increased food demand; while 9 (56.2%) respondents in the urban area and 7 (43.8%) in the rural areas thought that two patterns of migration -- i.e., rural-urban and urban-rural -- increased the diffusion of agricultural technology in both rural and urban areas. These results were statistically significant with a chi-square test of 251.94 and *p*-value of 0.000; meaning that there was a relationship between the variable of residence and the role of land tenure in the variable of the influence of migration on agricultural productivity.

An analysis of the influence of migration on land tenure and agricultural productivity was done by using the variable of the level of education. The results indicate that 29 (90.6%) respondents with primary education and 3 (9.4%) with secondary education reported that rural-urban migration led to a decline of labour in agricultural production; whereas 95 (47.5%) respondents with primary education and 105 (52.5%) with secondary education had the view that urban-rural migration increased the rate of agricultural production. There were other respondents who said that rural-urban migration increased food demand, and of these, 12 (70.6%) had primary education and 5 (29.4%) had secondary education. Moreover, 13 (81.2%) respondents with primary education and 3 (18.8%) with secondary education were of the opinion that the two patterns of migration increased the demand for diffusion of agricultural technology, whereas 16 (45.7%) respondents with primary education and 19 (54.3%) with secondary education were ignorant of the whole question of migration and its effects. These results showed a statistical significance of the relationship between the variable at the chi-square test of 282.97 and *p*-value of 0.000.

Moreover, the analysis of the role of in-migration on land tenure system and agricultural productivity by age of the respondents indicated that 14 (43.8%) respondents aged between 15 and 45 years, and 18 (56.2%) respondents aged 46 years and above thought that rural-urban migration led to decline of labour in agricultural production. Contrary to this view, 81 (40.5%) respondents aged between 15 and 45 years, and 119 (59.5%) respondents aged 46 years and above showed that urban-rural migration increased the rate of agricultural production. Moreover, 11 (64.7%) respondents who were aged

between 15 and 45 years, and 6 (35.3%) respondents aged 46 years and above had the view that rural-urban in-migration increased food demand. In the same variable, 12 (75.0%) respondents aged between 15 and 45 years, and 4 (25%) respondents aged 46 years and above said that the two patterns of in-migration increased the diffusion of agricultural technology. Lastly, 15 (42.9%) respondents aged between 15 and 45 years, and 20 (57.1%) respondents aged 46 years and above did not know the influence of in-migration to agricultural productivity. There was a statistical significance of the relationship between the variable in the findings since the chi-square test was 101.82 and *p*-value was 0.037.

The results in Table 3 show that rural-urban migration leads to decline in labour and land use; urban-rural migration leads to high land use and demand; rural-urban migration increases food demands; and that two patterns of migration increase the diffusion of technology on land use. Further, land tenure system and agricultural productivity by residence, education and age (*p*-values = 0.087, 0.000, = 0.000, and = 0.037, respectively) indicated various statistical associations of the relationship between the variables. This means that the influence of migration on land tenure and agricultural productivity through the factor of in-migration was further determined by residential status, education level, and age of the peasant in Mbozi District. There is a probability of getting similar results in the aspects of residence, education level and age of the peasants in further studies in this aspect.

Photo 1: Coffee at Igamba Village

Source: Mbozi Field Survey, 2020

Observation has also indicated the contribution of migrants on the adoption of cash crops in some villages like Igamba of Mbozi District. Photo 1 shows coffee as one of the dominant cash crops in the district, which has influenced land tenure and use.

Generally, the patterns of land tenure after in-migration affected agricultural productivity and increased the trend of cash and food crop cultivation, and the value of land. The findings are similar to those of Mulungu and Myeya (2018): that most of the coffee farmers were small-scale producers who depended on rain-fed cultivation, and most of them were in-migrants from Ileje District who settled largely in Igamba, Msiya, Itaka and Halungu wards.

3.3 Outcomes of migration on land tenure and agricultural productivity

3.3.1 New technology on land tenure system and agricultural productivity

Migration of people from other districts brought new technology to Mbozi District. The study identified different new technologies for improving agricultural productivity, including boundary identification and verification, new farming skills, technologies of farm field schools in land tenure; the use of modern seeds, chemical fertilizers, tractors and ploughs, groundnuts-curing machines, and chemicals for weeding. Such technologies have reduced physical pressure on the environment during land use, occupancy and agricultural production; have improved the quality of life and living standards as food prices have dropped; and savings have increased, hence facilitating high productivity.

3.3.2 Innovations on land use and production systems

Migration of people from other places such as Ileje, Rungwe and Tukuyu has influenced the introduction of new and treated seeds of crops like maize (Pundamilia, Tembo, Tumbili and Simba type of maize by a company known as SEED.CO), coffee, beans, sunflower, which have in turn increased productivity to meet the needs of the growing population. Similar to Malthus' (1798) postulations, such positive outcomes of migration and population growth on land tenure and agricultural productivity were dissimilar in urban centres. In urban centres, the study found that population increase in centres like Vwawa and Mlowo led to a decline of agricultural productivity due to change of land from arable land to permanent urban settlements.

3.3.3 Contract farming

Contract farming in Tanzania has been influenced by various factors, including the migration of farmers and peasants. Actually, the aim of local farmers to attach themselves to large farming companies like Kilombero sugarcane farms, as Kuzilwa et al. (2015) noted, is to gets support from such companies, which subsequently purchases their products at guaranteed prices. Again, hiring land pays the most if a company enters into a contract with individual farmers, rather than a contract between one peasant who is a land holder and another peasant who is a land leaser.

3.3.4 Urbanization and deforestation of traditional forests

Various centres in Mbozi District have emerged following the influx of people from other districts. Such centres are Vwawa, Mlowo, Iyula, Msia, Mlowo and Ihanda. So far, the emerging centres have led to the deforestation of important forests, including the Mwene Nzunda forest at Vwawa town centre. Forecasts indicate that the clearance of these forests may lead to climatic change in the near future if the case becomes serious due to the need for settlement, fuel, firewood and timber for construction.

3.3.5 Other outcomes associated with migration on land tenure and agricultural productivity

The study identified and examined other associated outcomes of migration on land tenure and agricultural productivity. These outcomes include increase in the period of land occupancy (20%), inevitability of financial support (35%) and population increase (45%). These were further influenced by another factor, the existence of a good road and railway infrastructure that connects to neighbouring countries like Zambia and the Democratic Republic of Congo.

Table 4: Pull Factors of Migrants to Mbozi District

Outcomes	Percentage (n=300)
Increasing period in land occupancy	20.0
Financial support	35.0
Population increase	45.0
Total	**100.0**

Source: Field Survey, 2020

Table 4 shows that the period of land occupancy influenced the land tenure system and agricultural productivity. Peasants who owned land had higher productivity than those who were renting land. Moreover, agricultural holding gives more room for a peasant to produce more crops because they use land effectively to get profit before the expiry of the agreed land contract. It was found that land holding allows more agricultural productivity due to the fact that farming in the owned land gives freedom of choice about the kind of crops to be cultivated regardless the length to harvesting stage. Land holders were able to cultivate even coffee and avocadoes.

Furthermore, the study found that financial support influenced the land tenure system because peasants who were getting financial assistance from various macro- and micro-finance stakeholders were able to buy agricultural implements and expand networks of markets for agricultural produce. Moreover, cultural diffusion influenced the land tenure system and agricultural productivity. This diffusion of culture was influenced greatly by the influx of people from other parts of Tanzania like the Ndali, who changed all indigenous

systems of cultivation such as *ntemele* and *etumba* cultivation systems. Also, old cultivation systems were phased out due to modernization introduced by scientists and extension officers who brought new and treated seeds of crops like coffee and avocadoes.

In addition, population increase changed the system of land tenure and agricultural productivity, as population increase led to further demand of land and food, leading to intensification of agriculture and productivity. This demand influenced agricultural productivity through innovation on land use and the introduction of new and treated seeds of crops like maize (Pundamilia, Tembo, Tumbili and Simba), coffee, beans, sunflower (Hysun, Records and Kenya fedha), leading to high productivity. Nonetheless, in some areas and urban centres like Vwawa and Mlowo, population increase led to the decline of agricultural productivity due to change of arable land to permanent urban settlements.

4. Conclusion and Recommendations

The results revealed that there are several factors through which in-migration influence land tenure and agricultural productivity in Mbozi District. These include employment opportunities in large-scale coffee plantations, the availability of land for settlements, population pressure in neighbouring districts like Ileje District, availability of social services, and the presence of relatives who inspire other relatives to migrate by accommodating them on arrival in the district. There are several attributes that influence land tenure system as well as agricultural productivity, e.g., migration which raised productivity due to the increase of labour and changing systems of land tenure. Above all, in-migrants to Mbozi brought changes to cultivation systems and introduced new seeds, including those of food and cash crops like sunflower, coffee, and potatoes.

Following the trend of urbanization, as the study observed, it is recommended that afforestation, reforestation and agro-forestry be undertaken to arrest land degradation and maintain a good climate for farming systems. The study further recommends the amendment of policies to be cross-cutting in nature because issues of agriculture depend on multiple connected factors. As it has been observed, migration itself cannot affect agricultural productivity without the influence of land tenure. So, agricultural policies should also focus on issues of land tenure and migration. Thus, relying on the 2013 Agricultural Policy and the 1995 Land Policy is not enough: these need to be updated to fit the current situation in the country.

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