

# Livelihoods of Pastoral Migrants before and after Migration: The Case of Kibondo District, Tanzania

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## Abstract

It is acknowledged that pastoral migration is recognized as one of adaptation strategies towards declining grazing lands among pastoral societies in many Sub-Saharan African countries. Pastoral migration is used by pastoralists as the key strategy of handling their animals and sustaining their livelihoods as well satisfying their economic necessities in general. The study aimed at assessing livelihoods of pastoral immigrants who have settled in Nyalulunga village in Kibondo District, Tanzania. It examines the livelihoods of pastoral migrants before and after migration. A questionnaire interview was administered to 30 respondents in Nyalulunga village. Quantitative data were analysed by the statistical package for social sciences (SPSS) while thematic and content analysis were used to analyse qualitative data. The results show that livelihood diversification has emerged as a major adaptation measure of migrant pastoral households towards rapidly increasing population, severe droughts and the changing socio-economic environment. It was revealed that there was improvement in livelihoods of pastoral migrants when compared to that of their original areas. This was noted to be resulted from adoption of new and diversified livelihoods activities in their destination. Migrant pastoral societies have involved in various livelihoods activities including crop production, livestock keeping, trade, wage labour and driving motor vehicles so as to diversify income sources for household. The study concludes that pastoral migration still and remain to be significant not only as an adaptation strategy for pasture and water shortages but also for changing and improving livelihoods and their determination overtime. It is recommended that there is a need to identify and strengthen the positive livelihoods effects of pastoral migration and take all negative effects as opportunities for improvement of pastoral livelihoods.

**Key words:** Pastoral migrants, livelihoods, Kibondo district, Tanzania.

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## 1. Introduction

It is widely recognized that pastoralism is the backbone of the economy in many arid and semi-arid areas which is characterized by mobility with their herds to area with available resources such as pasture and water (Turner and Schletch, 2019). It is one of the most acceptable economic activity with efficient use of the scattered and variable rangeland resources including pasture and water (Koech 2014). It is an economic and social-cultural livelihood system that involves mobile livestock management systems through traditional knowledge, skills and experience obtained from previous years (Gaitho 2018; Nyariki and Amwata 2019).

The practices of pastoral mobility in Mwanza and Shinyanga regions dates back to 1970s (Mwambene et al. 2014; Izumi, 2017). In Tanzania, many pastoralists are observed to migrate from northern parts of Tanzania such as Mwanza, Shinyanga, Simiyu, and Tabora to other region looking for pasture and water. Regions such as Kigoma, Katavi and Rukwa are among their major destination regions due to their attractive vast areas suitable for grazing and crop cultivation (Mwambene et al. 2014; URT, 2015; Mwamfupe, 2015; Izumi, 2017; Ndesanjo, 20021).

Despite their role on improvement of food security, pastoralists are facing various challenges including, pasture shortages, recurrent conflict, inadequate infrastructures, water shortages, livestock diseases, inadequate market and inadequate off-farm income opportunities which consequently, led to decision to migrate to new destination (Wafula et al., 2022; Butt, 2016; Desalegn et al., 2017; Msambichaka and Onyango, 2019). Also, factors like changes in land use and land tenure systems, the conversion of traditional grazing lands into other uses and climate change impacts added to challenges facing them (Koech 2014; Gaitho 2018; Nyariki and Amwata 2019; Wafula, 2022). Further, an increasing changing condition in both the natural and social environment influenced pastoral migration in many African countries particularly migrating south of the equator (Awinia, 2020).

Pastoral migration is an important resource management strategy by herders and is significant for sustenance and flourishing of pastoralists in arid lands (Liao et al. 2020). Destination areas have been acknowledged to have pasture lands and water resources to be utilised for resilience improvement (Gatdet et al., 2021). For instance, the pastoral communities in Ethiopia move seasonally with their herds to places with water and pasture lands, and

come back to their areas of origin in other seasons when the pasture develops especially after some rains (Belete and Aynalem, 2017). The study results by African Union (2022) reported that in West Africa, pastoralists migrated from Mali and Burkina since the severe droughts of the 1970s and have settled around the areas in Northern Cote d'Ivoire. Similarly, pastoralists migrated from Niger and Nigeria and have settled permanently in Benin where they created new villages there and became agro-pastoralists. This promoted gradual stabilization of family settlements among pastoral communities. Similar findings on the participation in new livelihoods activities was reported by various authors.

Some scholars have reported on alternatives to solve challenges facing pastoral societies. For instance, a study by African Union (2022) reported that pastoralists have adopted different mechanisms so as to sustain their livelihoods. Some pastoralists have decided to reduce the size of their livestock and engage in intensive livestock keeping rather than extensive ones while others have decided to abandon or stop engaging in livestock keeping. Other options to pasture and water shortages are such as selling off assets, strengthening other livelihood opportunities, and investing in situ resilience measures (Kaczan and Orgill-Meyer, 2020).

Other scholars reported on the opportunities of the immigrant pastoralists in various destinations. For example, the pastoral immigrants were engaged in various socio and economic activities existing in the destination while initiating some unavoidable changes to the native community (Abshir, 2020). Emergence of new business opportunities such as business vendors and fish hawkers were some of the advantages of immigrant pastoralists in Rufiji district. Cultivation of some new crops both food and cash crops were declared to be among the positive impacts of in-migrant pastoralists. The coming of the agro-pastoralists led to the introduction of crops like sorghum, green pigeons, sweet potatoes and millet as well as improved availability of meat and milk which previously were not produced in the area (Komba and Mahonge, 2019). The crops were produced both for consumption and for sale which led to improved food security and new sources of income for households. The introduction of crops like sweet potatoes goes hand in hand with the introduction of new land use management practices like ridging due to the fact that cultivation of potatoes is primarily associated with ridging which consequently led to the adoption of new farming practices in the area. Further, pastoral migration led to the introduction of improved ploughing techniques which simplify crop farming activities (Komba and Mahonge, 2019).

Other changes reported to be associated with the coming of pastoralists, was increased population and improved social services in the area. The incoming pastoralists have various positive and negative impacts on native communities (Maswaga, 2013). For instance, in Rufiji district they led to various challenges such as land use conflicts with the natives, damage of crop on native farms and invasion of natives' land (Komba and Mahonge, 2019). In Ruvuma and Lindi regions the challenges resulted from in-migrants included land degradation and resource use conflicts (Mwambene *et al.* (2014). Also, Mwamfupe (2015) and Makoye (2012) suggested that the predominance of land use conflicts between the newcomers and the native community was one of the major challenges of pastoral migration in Rufiji district. Further, in their destination the pastoral migrants have been constrained by various challenges including food and health insecurity which are accelerated by both climate change and non-climatic conditions (Masambichaka and Onyango, 2019).

While various literatures have reported on the factors for pastoral migration and impacts of pastoral immigrants on the native communities (Mwambene *et al.* 2014; Mwamfupe, 2015; Makoye, 2012; Komba and Mahonge, 2019; Maswaga, 2013; Martin *et al.* 2014; Msambichaka and Onyango, 2019; Ndesanjo, 2021), there is inadequate understanding on the livelihoods of the pastoral immigrants in their destination area. The available literatures have reported on the impacts of pastoral migrants on the native communities without focusing on the pastoral migrants themselves, these left many unanswered questions on the livelihoods of the pastoral migrants in their destinations when compared to that of their original areas. Therefore, this study aims at filling those gaps by investigating the livelihoods of pastoral societies before and after migration with the case of pastoral migrants in Kibondo district.

### **Theoretical framework**

The study is guided by a modified version of the UK Department for International Development's (DFID) Sustainable Livelihoods Framework (SLF). The SLF comprises assets such as natural, physical, human, financial and social capital. Depending on the available livelihood opportunities, individuals or households develop a particular livelihood strategy and obtain certain livelihood outcomes (Fratzke and Salant, 2018). This approach is useful in studies related to household livelihoods and was used as a reference point in explaining the livelihoods of pastoral immigrants in Kibondo district while comparing to that of their original areas. Also, the SLF was useful in determining the accumulation of assets by migrant pastoralists and their resultant livelihood outcome in their destination. Through livelihood assets households construct possible livelihood strategies which

ends up with returns including improved incomes and food security for households (Carney, 1998). Decision making on various livelihood assets are guided by various institutions, processes and structures including formal laws and social expectations, cultural and societal sensitivities as well as legislative regimes and rules (Ellis and Allison, 2004). The SLF is significant in analysing household livelihoods and their assets and have been applied by various development agencies such as Food and Agricultural Organisation (FAO, 2006), Department for International Development (DFID) (Cahn, 2002) and the United Nations Development Programme (UNDP, 1997).

## 2. Material and methods

The study was conducted in Kibondo District, Kigoma region. Kibondo District was purposively selected because it is one of the districts with pastoral migrants in the region. The district officials helped in selecting the Busunzu ward due to availability of pastoral migrants in the area. Through purposive sampling the ward officials helped to select Nyaluranga village because has large number of migrant pastoralists when compared to other villages in the ward. Boyd *et al.* (1981) recommended that the sample size should entail a reasonable proportion of the units in the sampling frame but not less than 30 units. Therefore, through a snow ball technique, a sample of 30 migrant pastoral households were selected for interview. The study involved both primary and secondary data. Documentary review used to obtain secondary data while primary data were obtained through administered questionnaire, Focused Group Discussion (FGDs), Key informants, Field observation and transect walks. A questionnaire was administered to 30 respondents in the study village. Field observation and transect walks were important in confirming information obtained through administered questionnaire, FGDs and key informants. Both the quantitative and qualitative approaches were applied. Content and thematic analysis involved summarizing and categorizing themes as well as comparing and contrasting arguments provided by FGDs and key informants. Quantitative data were analysed by the statistical package for social sciences (SPSS) and excel spreadsheet whereby the descriptive statistics were applied. SPSS employed frequencies, means, percentages, proportions and cross-tabulations. The output from data analysis was presented in pie-charts, tables and graphs.

## 3. Results and discussion

### 3.1 Livelihoods activities by pastoral migrants before migration

The study revealed that before migration the majority of respondents practised livestock keeping and crop cultivation as their main economic activities in their original areas (Table 1).

Table 1: Household's livelihoods diversification before migration

Household's livelihoods activities before migration	Number of respondents (n=30)	Percent
Livestock keeping	28	93.3
Crop cultivation	25	83.3
Wage labour	6	23.3
Trade	2	6.7
Handcrafts	2	6.7
Charcoal making	1	3.3

Source: Field Survey (2024)

Table 4 depicts that before migrating to their destinations most of the pastoral households were mainly practising livestock keeping and crop cultivation as their main economic activities. They kept various animals including cattle, donkeys, sheep and goat and cultivated crops such as maize, cowpeas, cotton, paddy, and millet. Cotton and paddy were mentioned to be used for sale in order to obtain cash income. The discussion with key informants and FGDs showed that the involvement in diversity of activities was inadequate in their original places due to inadequate opportunities for livelihood diversification including poor infrastructures like transport facilities, inadequate market, shortage of water, and lack of electricity. These challenges were observed to restrict households to diversify their livelihoods.

According to KIIs and FGDs, the results show that pastoral societies did not prefer selling their animals but were interested to see increasing stock sizes overtime. One of the male group participants argued that,

*"We are producers and buyers of livestock but not the harvesters and sellers of livestock. Therefore, we struggle to increase our stock sizes through buying and multiplication through reproduction while resisting the sale of our livestock to limit their loss overtime."*

This indicates that pastoral societies prefer quantity rather than quality of livestock so as to maintain their wealth and prosperity. They believed that having large number of animals is the sign of wealth, the higher the number of or size of stock is the wealthier the person and the lower the size of stock or animals is the little the wealthier someone becomes.

Furthermore, it was observed that before migration, their activities were mainly based on gendered division of labour. The discussions with KII and FGDs showed that in their places of origin the pastoral societies had their extended households living in their Bomas with notable division of labour based on age and sex. Male adults were responsible for various economic activities including taking of their livestock while male youths served as the Moran responsible for defending their society against theft and any external invasion. Female youths were required to get married so as to contribute to increased livestock through payments of dowry. Women were responsible for home activities including taking care of their children and preparing food for the family. Further, it was reported that male youths were responsible for looking areas to feed their animals especially during drought period. For instance, they would move with animals to other villages or other wards or other districts with some grasses for their animals. They could be permitted by owners to feed their animals at some charges but after exhausting the grasses in the areas they move to other areas in search of grasses, and after rain they move back to their homes. For those with large stock sizes, grasslands within their region were not sufficient, which consequently facilitated the need to migrate to other regions.

It was also reported by FGDs and KIIs that their children were taught how to cope with existing traditions and norms including marriage. Hence, children were focusing on family activities and prepare themselves for marriage. The FGDs and KIIs reported that in their areas of origin, education was not a priority among pastoral societies, they saw no importance of sending their children to school while insisting them to abide to their norms and traditions of their society. It was argued by one of the male group participants that,

*By that time, sending children to school was just a wastage of time because they could gain nothing from there and remain impotent and conservative to our traditions, hence could not cope with the societal or family needs. When female youth get married was paying much because allowed increased stock of animals through payment of dowry”.*

This indicates that in their areas of origin, education was not a priority for their children. They were interested in marrying their youth rather than sending them to school or motivating them to study hard for academic advancement.

The findings on the livelihoods of pastoral households before migration was also reported by Ndesanjo (2021) who pointed out that the major economic activities among pastoral societies in their original places were livestock herding and crop cultivation. His study in Kwimba and Kishapu districts observed that pastoral societies less engaged in diversified activities due to inadequate infrastructural development in the area. Similarly, a study in Rukwa region by IZUMI (2017) highlighted that, before the 1970s, pastoral societies have been engaging in livestock keeping and crop cultivation as their main economic activities. This indicates that before migrating to new sites, pastoral societies had no or low livelihoods diversification in their original locations.

With regard to age set system, the results are similar to findings by Awini (2020) who reported that in their places of origin, the pastoral societies had extended pastoralist households that live in their bomas which were configured to serve various functions under gendered division of labour. In those Bomas male youths served as Moran warriors to safeguard against predators, theft, and tribal conflicts as well as inter-tribal conflicts which revolved around cattle rustling and retaliation. Also, the Bomas were serving as a way to pool livestock at different locations against risk from epidemics, which could affect their animal stocks. Further, male youth in bomas served as a reserved labour for preparation and construction of new settlement areas in case of migration. These results agree with findings by Ndesanjo (2021) who supports that the age set system was common in their original areas where by male youths who still lived with their parents were normally involved in the household's major activities such as livestock herding and crop cultivation. They were generally engaged in livestock husbandry especially of small animals and poultry which were also performed by their mothers. Herding of livestock around their homesteads was primarily done by young male aged from 10 to 14 years.

### **3.2 Household's livelihoods diversification after migration**

The study results show that in their destination, the majority of pastoral immigrants practiced livelihoods diversification. In Kibondo district, the pastoral immigrants were involved in various livelihoods activities such as livestock keeping, crop production, trade, wage labour and driving motorcycle (Table 2).

Table 2: Livelihood diversification among pastoral immigrants in Kibondo District

Household's participation	Responses (n=30)	Percent
<b>Livelihoods activities</b>		
Crop cultivation	28	93.3
livestock keeping	24	80
Trade	14	46.7
Wage labour	12	40
Drive motorcycle	6	20
Own motorcycle	4	13.3
Electronic money transfer	3	10
Own mills machines	2	6.7
Building houses	1	3.3
Charcoal making	1	3.3

Source: Field Survey (2024)

As illustrated in Table 2, in their destination area, pastoral immigrants were engaged in diversity of livelihoods activities. There were relatively higher percentages of respondents who practiced crop cultivation, livestock keeping, trade and wage labour as indicated by (93.3%), (80%), (46.7%) and (40%) of respondents, respectively. The FGDs and KIIs emphasised that the availability of factors like roads, markets, mobile money services and health centres in the destination areas opened up livelihood opportunities that promoted participation in livelihoods diversification among pastoral migrants in Kibondo district. These infrastructural developments have created opportunities for households' engagement in diversity of activities which consequently improved household livelihoods among pastoral households when compared to their previous livelihoods in their original areas. This indicates that infrastructural developments are essential in facilitating livelihoods diversification among households.

Crop diversification was also emerged as an important livelihood activity among pastoral migrants in Kibondo district. The majority of pastoral households in one way or another have been involved in crop diversification, such as from crop production for food to production for sale for instance the production of paddy, sunflower and palm oil for sale rather than for consumption, as well as practising irrigation farming rather than relying on rain fed agriculture. Further, they have involved in production of new crops that previously have not been produced such as beans, vegetables and sunflower so as to improve their income sources. Based on discussions with FGDs and KIIs, it was observed that crop diversification has been facilitated by market demand where food crops like paddy, maize, vegetables and sunflower as well as animal products like milk and meat have emerged as important goods, especially in urban areas. Hence, farmers wanted to benefit from the available marketing opportunities. An increasing demand for various food types in urban markets promoted increased participation in production and trade so as to improve household income and food security.

Moreover, pastoral migrants were diversified from traditional agriculture to intensified agriculture. They started using agricultural inputs like fertilisers, improved seeds and herbicide which led to improved agricultural productivity and its consequent improved household livelihoods. Further, the pastoral migrants have diversified from dependent on rainfed to irrigation farming such for maize, beans and vegetable farming, which helps to reduce the likelihood of crop failure, which consequently improved their resilience overtime.

With regard to livestock keeping, the majority of pastoral migrants indicated that they continued with livestock keeping at different degree. About 23.3% of respondents acknowledged that livestock keeping was still their main occupation even in their destination as it was in their original area while about 56.7% of respondents indicated to have practiced livestock keeping as an additional activity, and 20% of respondents indicated that they have abandoned the practices of livestock keeping and concentrated on other livelihoods activities (Table 3).

Table 3: Percentages of respondents on the degree of participation in livestock keeping in their destination

Household's participation in livestock keeping	Responses (n=30)	Percent
Livestock keeping as the main occupation	7	23.3
Livestock keeping as additional activity to crop cultivation	18	56.7
Abandoned livestock keeping	6	20
Total	30	100

Source: Field Survey (2024)



Table 3 depicts that about 56.7% indicated that livestock keeping was practiced as additional activity while 23.3% showed that livestock keeping was still their main occupation as it was in their original areas. Likewise, about 20% of pastoral households have abandoned livestock keeping and decided to concentrate on other livelihoods activities such as crop cultivation, trade and wage labour. This indicates that there is transformation in pastoral livelihoods whereby livestock keeping which was the main occupation of the many pastoralists in their original area has now emerged as an alternative activity while others abandoning it completely. This implies acknowledgement of importance of other activities relative to another.

According to FGDs and KIIs, the results show that the involvement in diversity of activities promoted the need to keep small stock sizes which consequently promoted the adoption of intensive livestock production. The decision to remain with small sizes of animals and adoption of intensive livestock production has a significant impact for pastoral transformation as it implies that the perception and status of pastoral migrants have changed from the belief on importance of large sizes of livestock as the main source of wealth into other activities such as crop cultivation and trade. More importantly, with intensive livestock production households focuses on keeping only few animals with high quality which can be accommodated to the available land on which to feed them which has a consequent impact on reduced pastoral migration in search for additional grazing land and water source. Moreover, the practices of intensive livestock production promote establishment of settled life rather than mobile life which also encourage more investment in the settled area while reducing the likelihood of migrating to other areas.

The adoption of intensive livestock production implies a shift from the perception on preferring high quantity rather than quality of livestock. This indicates that pastoral societies are being transformed from being the producers of livestock than harvesters into both producers, harvesters and consumers of what is produced. This consequently result into improved household income through the sale of their livestock as well as reducing the challenges of diminishing grazing land overtime, which consequently improves livelihoods and enhance resilience among pastoral societies.

Further, pastoral migrants were diversified into trade as indicated by 46.7% of respondents (see Table 2). This was confirmed by a visit at a small market in Nyalulunga village where a number of pastoral household members including women and youth were involved in trading activities. They had shops and kiosks where they traded in various goods including cereals like rice, maize, beans; drinks like water, soda, juice and bear; clothes like dress, sweaters, coats, shirts, T-shirts, trousers, blouses and skirts; spear parts for bicycles, motorcycles and ox-ploughs a well as selling. More importantly, they started engaging auction mart which dealt with selling animals.

The existence of various livelihoods opportunities allows households to select and opt a possible livelihood activity-based on one's interest, ability and affordability. Overtime, pastoralism have been decreasingly practiced while other activities like crop cultivation, trade and wage labour are increasingly practised over time. In their destinations they found themselves copying and adapting to the existing situations which forced them to ignore and abandon some of their traditional practices including ownership of large stock and age set system. This implies that migration has contributed towards various changes and transformations among pastoral societies. The continued exercise of abandoning pastoral activity and concentrating on other livelihoods activities has contributed to changes from pastoralists to agro-pastoralists and non-pastoralists while changing from migration or into settled life.

Further, there were involvement of some migrant pastoral household in wage labour as indicated by 40% (Table 2). It was revealed by FGDs and KIIs as well as by field observation that the involvement in wage labour led to reduced concentration on livestock keeping because it was observed that wage labour was a source of quick income. Both male and female of all ages worked as wage labour at areas such as in farms, at markets and mills machine. The dominant group in supply of wage labour was between 18 and 50, with few of ages above 50 and no one with age of above 60 due to aging where they become less energetic to perform various activities. The participation in wage labour by all groups both male and female implies the decline of age set system which could not allow women to participate in the supply of wage labour, which consequently promotes inclusive economic development. This also is an implication that commercialisation of labour has taken place in their destination areas.

Other livelihoods activities of pastoral immigrants included driving motorcycles, owning motorcycles and Electronic money transfer as indicated by 20%, 13.3% and 10% of respondents, respectively. Discussion with key informants and FGDs showed that despite the few ownerships of milling machines and motorcycles but have a significant impact on households because they created opportunities for livelihoods diversification especially job vacancies for youth. This because more youth could be employed in the mills machines and in driving

motorcycles which allows income generation for households. This implies that in their destination areas there were opportunities for livelihoods diversification when compared to their area of origin. This was attributed by the presences of infrastructural opportunities in the destination not existed in their area of origin.

While both male and female of various ages could participate in trade and wage labour, participation in driving motorcycled was selective in terms of age and sex whereby only youth male could be involved in the activity. This implies that livelihoods diversification among pastoral migrants led to the decline of gendered division of labour. In their destinations, pastoral migrants found themselves copying and adapting to the existing situations which forced them to ignore and abandon some of their traditional practices including ownership of large stock of animals and age set system which promotes more changes and transformations among pastoral societies.

Moreover, the involvement in diverse activities promoted increases access to income which promoted agricultural intensification. This is because diverse activities like wage labour, trade, crop cultivation and animal keeping provided access to income for buying agricultural inputs like fertiliser, herbicides and insecticides, necessary for improved agricultural productivity. Furthermore, the engagement in trade and wage labour reduced their dependence on livestock keeping and crop cultivation land, thus reducing the problem of land shortages.

The FGDs and KIIs showed that unlike in their original area where age set system was common, in the destination the system was no longer practical. For instance, in their destination, women and youth were involved in trading of livestock and animal products as well as in wage labour which was not common in their original areas. Moreover, female youth were also engaged in trade and wage labour and other small businesses in the area while male youths engaged themselves in activities such as repairing bicycles and shoe as well as driving motorcycles and working as wage labourers where required. The decline of age set system resulted from changes in environmental conditions and intermarriages between members from pastoral households and those of indigenous households. This indicates that traditional practices may be applicable to their original locations and impractical to new sites because different environmental conditions may not favour the new traditions in the area. The KIIs and FGDs reported that declining practices of age set system in their destination was also resulted from the changing perception on gender roles, changing environmental conditions and shortage of labour power for various households' activities as well as existence of various national and international policies and initiatives on equality between men and women. This was also confirmed through field observation and transect walks whereby youth and women were observed performing various activities like trade, crop cultivation and grazing animals. Women were taking care of their livestock which traditionally was primarily practiced by men. Also, women were moving to markets and other selling point where they involved in selling their selling livestock products such as meat and milk as well other commodities. This is one of the transformations whereby traditionally women were restricted from going outside their homes.

Findings on the practices of livelihoods diversification by pastoral immigrants was also reported by various scholars. For instance, a study by IZUMI (2017) in Rukwa region highlighted that pastoral migrants have made various investments in both agricultural and non-agricultural business and assets like motorcycles, houses and hotels as well as truck transportation. These changes have made pastoral migrants to emerge as large-scale farmers in Rukwa region. Similarly, a study by Akall (2021) indicated that in Turkana, north-western Kenya, migration of pastoral households promoted a shift from pastoral activities to irrigated agriculture and fishing activities as well as trade in food, beer brewing, and making and selling charcoal and fire wood to diversify their income sources. These results agree with the findings in Kenya by Avery (2014) who reported that pastoral migrants were diversified into irrigation farming with great potential to adapt to climate change impacts and achievement of improved food security which build resilience among rural communities. Also, they were involved in activities such as electronic money transfer, charcoal making, basketry, livestock trade, gardening, beekeeping and making building materials. These results are also similar to findings in Kenya by Wafula (2022) who emphasised that pastoral societies migrated to towns to search not only pasture and water but also diverse opportunities such as good market, wage labour and trade opportunities. Further, the findings on livelihoods diversification of pastoral migrants concurs with Ndesanjo (2021) who pointed out that pastoral migrants in Nsimbo and Uvinza have diversified into more livelihood activities than their counterparts in their original areas including Kwimba district in Mwanza and Kishapu district in Shinyanga region. In addition, a study by Sanou et al. (2018) indicates that diversification of livelihood has led to improved household wellbeing and reduced household vulnerability among pastoral societies. Similarly, a study by Alarcon et al. (2017b) in Nairobi City and by Tessema et al. (2019) in Ethiopia show that urban markets attracted pastoral migrants with extended stays while engaging in diversity of activities to sustain their livelihoods. Participation in livestock trade, petty trade, and wage earnings and the change from specialized pastoralism to sedentary life with non-farm activities has

allowed income diversification. Some pastoral migrants were engaged in irrigated agriculture particularly in cultivation of vegetables as well as in petty trade to improve food and income for households. Also, livelihoods diversification was done within pastoral activities such as from keeping indigenous animals to improved ones and from keeping only cattle to inclusion of other animals like pigs (Omolo and Mafongoya 2019; Schilling et al. 2016; Opiyo et al. 2015). Similar to these results on livelihoods diversification, a study in Ethiopia by African Union (2022) reported that through rural-rural movements, pastoral migrants have undertaken a diversity of productive activities such growing various food grains. In their new rural areas, they enjoy and utilise new land for production of enough food crops for both sale and consumption, which have significant consequences on the pastoral communities. Similar findings on livelihood diversification was reported by Gatdet et al. (2021) that in Gambella Region, Ethiopia migrant households have diversified their activities from livestock rearing to mixed agricultural practice and in non-agricultural activities such as wage labour and trade.

The positive outcome on the transformation among pastoral migrants from extensive to intensive livestock keeping was also reported by Ragkos and Nori (2017) in Mediterranean region that pastoralism has in fact undergone significant changes and transformations in recent years. Pastoralists have increased productivity through participation in various agricultural systems, including intensive livestock production and diversified crop production. It has also been reported that the current context of a high risk of abandoning pastoral activity is mainly due to the combined effect of economic restructuring, illustrated by increasing opportunity costs of resources required by pastoralists to carry out their activity in terms of labour and grazing land. Similarly, the study results by IZUMI (2017) indicated that the practices of selling out their animals led to reduced sizes of their stock which consequently facilitated the adoption of intensive livestock keeping. These results on intensive livestock keeping agrees with the findings by Nori and López-i-Gelats in Mediterranean (2020) that pastoralism have increased productivity through participation in intensive livestock production and diversified crop production. Many pastoralists in Sahel region have shifted from nomadism to a sedentary type of lifestyle. This made them to change from extensive into a more intensive livestock production system. It has been acknowledged that traditionally, cattle have been believed to be resilient assets with several forms of asset that can be consumed or sold when need occurs (Ripkey et al., 2021). Conversely, the benefits of livestock as a resilient assets have declined overtime due to climate change and cattle diseases which led to declining incomes generated from livestock keeping. This raised need to practise intensive livestock keeping and participation in alternative livelihood activities and (Ripkey, et al.,2021).

The study results on the changes from non-harvesting and selling livestock to selling out animals was also reported by other authors. A study by IZUMI (2017) who reported that in their destination households started selling out their animals in order to obtain cash for meeting family requirements other than food. The availability of market opportunities especially for meat and dairy products as well as animals have promoted improved production and management systems of their livestock which consequently lead to maximisation of their profits. While in the original areas, they seldom sell their animals, in their destination areas it emerged as a normal thing. They were able to sell their cattle and rarely bought them. Selling out their animals was contributed by various factors including market availability and emergence of liberalization policies in Tanzania whereby since 1980s various livestock traders were allowed to come even in remote areas for livestock trading.

The study results show that some pastoral migrants (20%) abandoned pastoral activities. These was also reported by other scholars. For example, a study in Euro-Mediterranean region pastoralists shown a characteristic of graduating from pure pastoralism to multiple income generating activities. Where as in their origin households have been sorely depending on the sale of animal as their main income source, in their destination they have acquired ability of having multiple income sources like trade, crops, and wage labour. Similar to these findings, a study in Euro-Mediterranean region pointed out that pastoralists and immigrant shepherds demonstrated a limited ability and interest in progressing on pastoral activities but they prefer looking for opportunities in other economic sectors, rather than pastoral activities (Nori & López-i-Gelats, 2020). These results agrees with Ndesanjo (2021) that some pastoral migrants have moved completely out of pastoralism into several cash earning activities. Following the changes taking place on environmental condition, mobile pastoralism is gradually changing to other sedentarised livelihood systems such as non-pastoral activities and agro-pastoralism.

The findings on transformation in gendered division of labour was also reported by other scholars. For instance, a study in various parts of Tanzania highlighted that there was a significant change in traditional relations between men and women where women were supposed to do some tasks which traditionally were reserved for men. Various traditions and the age systems were transformed which allowed men and women to perform various tasks depending on the available labour for a particular activity. For example, in their destination, women had to herd small livestock such as goats and sheep which traditionally their culture could not allow them. This is because there were few youths in the area and were away from their larger clan heads (Awinia,



2020). The results on declining age set in destination coincides with Ndesanjo (2021) that in their destination the age set system was transformed whereby women were also engaged in diversity of livelihoods activities such as crop cultivation, food vending, selling vegetables and tailoring. Men were reported to interfere women activities with higher returns and no interference to activities with less return. For example, crops which were regarded as female crops such as sweet potatoes, chick peas, and beans as well as small mammals and poultry with better prices in the market, men became attracted to and interfered the business and put under their control.

Similar results on the changing roles and responsibilities of household members were reported by Ripkey, et al. (2021) that to cope with change, traditional roles were transformed for example, livelihood strategies among women, who started engaging in small business activities, like selling breads or charcoal to supplement their income. Hence women used more time in search for family requirements rather than remaining at home for caring children at home. A study in Morogoro, Tanzania by Ripkey, et al. (2021) show that migration among pastoralists has influenced various socio-cultural aspects such as gender norms, food access, and food valuation. Due to the changing environmental conditions, there is continued transformations among pastoralists from traditional practices to modern practices available in the destination. The resultant sedentarised economy has provided opportunities for various groups of people with different ages to engage in various economic activities such as selling of agricultural produce, milk, and wage labour. This has empowered women with power and economic independence as well as more decision-making power on household issues (Woodhouse and McCabe, 2018; Lind et al., 2020; Ndesanjo, 2021).

While this study reported that in Tanzania, pastoral migrants moved with their herds to Kibondo district in search for pastureland and water, (Ndesanjo, 2021; Ripkey, et al., 2021; Awinia, 2020; IZUMI, 2017; Wafula et al., 2022), in the Euro-Mediterranean area, a study by Nori & López-i-Gelats (2020) pointed out that the pastoralists migrated without their herd so as to work as immigrant shepherds rather than pastoralists. They came in search of economic alternatives different from pastoral works which are available in their areas of origin. Despite that they had previous experience in livestock rearing, the type of work they were looking for was not limited to this domain (Nori & López-i-Gelats, 2020).

### 3.3 Livelihood outcomes of pastoral migrants in their destination

The study results show that there was an improvement in household's livelihood outcome. Generally, the majority of respondents indicated to have improved livelihood outcomes in Kibondo district when compared to that of their original areas (Table 4).

Table 4: Percentage of respondents on the status livelihood outcomes after migration

Status of livelihood outcomes in their destination	Number of respondents (n=30)	Percent
Improved	25	83.3
Unchanged	3	10
Deteriorated	2	6.7
Total	30	100

Source: Field Survey (2024)

As illustrated in Table 4, it was realised that pastoral migration promoted improved household livelihood outcome. About 83.3% of respondents indicated that their livelihood outcomes were improved while 10% of respondents showed that their livelihood status were unchanged while only few (6.7%) showed that their livelihood outcomes deteriorated overtime when compared to that of their original areas. Based on discussion with FGD and KIIs, it was noted that improved livelihood outcomes of pastoral migrants resulted from their participation in a portfolio of income generating activities which allowed income diversification which consequently promoted improved livelihood outcomes for households.

Various criteria were used to assess the status of their livelihood outcomes of pastoral migrants. According to GOK (2009), Household livelihood outcomes comprised of what household members achieve through their participation in various livelihood activities including food security, income, health status, assets accumulation and high status in the community. In this study various livelihood outcomes were used as criteria to assess whether there is improvement in livelihood outcome of pastoral migrants or not. The criteria used included income, education, food security, housing and assets accumulation. The respondents were requested to show the status of livelihood outcome in their destination area when compared to that of their original areas. The majority of household respondents strongly agreed that their livelihood outcomes of their destination areas were more improved rather than that of their original places (Table 5).

Table 5: Percentage of respondents on the livelihood outcomes of pastoral migrants

Aspects of livelihood outcomes	Response from respondents	Number of respondents (n=30)	%
Improved household income	Strongly Agree	21	70
	Agree	7	23.3
	Disagree	2	6.7
	Strongly Disagree	0	0
	Total	30	100
Improved education	Strongly Agree	19	63.3
	Agree	11	36.7
	Disagree	0	0
	Strongly Disagree	0	0
	Total	30	100
Improved food security	Strongly Agree	22	73.3
	Agree	6	20
	Disagree	2	6.7
	Strongly Disagree	0	0
	Total	30	100
Improved housing	Strongly Agree	21	70
	Agree	9	30
	Disagree	0	0
	Strongly Disagree	0	0
	Total	30	100
Improved assets accumulation	Strongly Agree	23	76.7
	Agree	6	20
	Disagree	1	3.3
	Strongly Disagree	0	0
	Total	30	100
Improved access to health services	Strongly Agree	16	53.3
	Agree	12	40
	Disagree	2	6.7
	Strongly Disagree	0	0
	Total	30	100

Source: Field Survey (2024)

As indicated in Table 4, the livelihood outcomes of the majority of pastoral migrants were found to be improved when compared to that of their original areas. About 70%, 63.3% and 73.3% of respondents indicated that their livelihoods outcome in terms of household income, education, and food security, respectively. The FGDs and KII reported that improvements in household's livelihood outcome was contributed by their participation in diversity of livelihoods activities such as crop cultivation, livestock keeping, trade, wage labour and driving motorcycles which allowed diversification of income sources among pastoral households. Furthermore, about 70%, 76.7% and 53.3% of respondents indicated to have improved housing, asset accumulation improved access to health services when compared to that of their original status before migrating to their new location (Table 4).

FGDs and KII reported that improvements in various indicators of livelihoods outcomes was mainly attributed by improved household income which allowed improved access to other livelihoods outcome such as education, food security, housing and accumulation of assets. This indicated that improved household income promoted improvements of other livelihoods outcomes as well as investments in various livelihoods activities such as crop cultivation, trade as well as livestock whereby some started keeping improved breeds. It was reported that, access to improved income promoted improved access to education and food security because it allowed ability for paying school fees for their children and purchase various food types at the market. Further, with improved income, pastoral households were able to build good houses using blocks and roofed by iron sheets which is different from *bomas* used in their areas of origin. Moreover, improved education allows efficient and improved participation in livelihoods activities with higher returns hence improved income for households. Furthermore, the discussion revealed that there was changes in the type and style of food consumption that was contributed by market availability which encouraged the consumption of purchased food types not produced by households. The changes and transformations on pastoral manners of food consumption have been promoted by migration which

provided access to new patterns of food consumption. Households shifted from their customary food sourcing which was heavily based in livestock products and some homestead crop cultivation, to higher dependence on staples and what the market could provide at affordable cost. These results agrees with study results by *Little et al. (2014) and Ripkey et al. (2021) who reported that* the changes in the type and style of food consumption led to declining consumption of traditional products as well as reduction in meat and milk production as well. The constraints on homestead crop production, and the decreased food availability from wild source contributed to shifts from own food sourcing to market-sourced foods. This shift has promoted the increased consumption of novel foods including more processed foods and become limited to what is available and affordable at markets that led to reduced animal sourced food consumption. This implies that migration has also resulted into transformation of not only consumption but also preparation of food staffs among pastoral migrants. For instance, the availability and affordability to refined oils, facilitated their use and increased consumption of fried foods among pastoral communities. This also explains a change from traditional means of food preparation such as boiling of meats and vegetables as well as traditional animal fats like ghee, into highly refined cooking oils which implies also a shift from animal fats to market oriented oils (*Ripkey, et al., 2021*).

More importantly, improvements of livelihood outcomes also depends on the available processes and structures in the areas. For instance, in Tanzania, the government policies on promotion of free education from primary to secondary levels and good health for all had significant impact on pastoral livelihoods improvements. Notably, the provision of government services including clean water and health services promoted improved wellbeing and prosperous life among pastoral households. It was revealed through FGDs and KIIs that a number of factors have contributed to achievements of improved livelihoods outcome among pastoral migrants. Improvements in infrastructures such as roads, markets, schools and health centres promoted participation in livelihoods diversification which led to improved livelihoods outcome. The presence of social services like schools and health centres close to households has improved their access and affordability to such services. For instance, children were encouraged to go to school than when located far from their areas as it was in their previous original areas. Moreover, it was revealed that ignoring their norms and traditions also contributed to raising interest to send their children to school rather than forcing them to keep animals or sending the sick person to hospital rather than going to which doctors. The FGDs reported that improved access to market allowed livestock trading for instance selling animals as well as animal products like milk, skin and meat. Also, the presence of market promoted participation in trade of various goods such as cereals, vegetables, oil, cooked food and drinks. It was also reported that market availability has facilitated creation of various income generating activities like carrying goods, packaging and loading, tailoring and shoe repair which consequently led to improved household income.

The findings on improved livelihood outcomes among pastoral migrants were reported by various scholars. For example, *Little et al. (2014)* stated that traditionally, livestock was considered as the primary livelihood and highly mobile resource among pastoral societies, but overtime they adopted and practiced various livelihoods activities. Due to changes in environmental condition they started shifting away from a highly mobile form and dependent on livestock for food to a more settled lifestyle while engaging in various livelihoods activities and consuming various food types. This is similar to study results by *Zampaligré et al. (2019)* that in addition to consumption of livestock products such as milk and meat, the Sahelian pastoralists also consumed purchased foods from nearby markets. Sahelian pastoralists obtained large share of their income from the sale of animals and animal products, especially cow milk. A study in Madaba Ruvuma Region by *Maswaga (2013)* showed that the arrival of pastoral migrants in the area, promoted the emergence of investors in poultry and milk processing factories while others invested in guest house businesses in transport facilities as well as in milling machines. The emergence of investors and socio-economic interactions between pastoralists and the natives has significant impacts on livelihoods of both the native and the pastoral migrants. Moreover, it was observed that the adoption of new food types led to improved food security among pastoral communities in their destinations.

The positive outcome on transformation of pastoral societies and improved asset ownership agrees with that of *IZUMI (2017)* who reported that households were able to own various assets such as mobile phones and improved houses such as brick houses roofed with iron instead of traditional wooden ones. A study in Ruvuma and Lindi Regions by *Mwambene et al. (2014)* highlighted that the construction of modern houses built by cement blocks and roofed with iron sheet was one of the improvements in livelihood outcomes for both pastoral migrants and the natives. This is similar to findings by *African Union (2022)* that over time, significant transformation have been observed among pastoral communities. There is slow but steady advancement among pastoral communities. For instance, the literacy rate was observed to decline among pastoral communities. The pastoral migrant communities have been progressively showing interest in sending their children to school which improves education status for household members. Access to education promote equality between male and female children to all societies which allows significant transformation among pastoral and other communities.

This improves access to jobs in both private and public sectors as well as in state administration from lower to higher levels.

#### 4. CONCLUSIONS AND RECOMMENDATIONS

The study results show that livelihoods of pastoral migrants were observed to be more improved in their destination when compared to that of their original areas. This implies that in their destination areas, the pastoral migrants experienced more opportunities than challenges faced. This was noted to be resulted from engagement in livelihoods diversification in their new site. This study concludes that pastoral migration still and remain to be significant not only as an adaptation strategy for resilient pastoralism but also for transformation of their livelihoods and their determination overtime.

Moreover, migration among pastoral societies has resulted into changing from extensive into a more intensive livestock production system. Many pastoral migrants to prefer engaging in both pastoral and non-pastoral activities rather than focusing on pastoral activities so as to reduce the risk of climate change impacts and other non-climate factors which affect their livestock. Other studies also supports these findings that in various parts of SSA pastoral communities have shifted from dependent on livestock to sedentary type of lifestyle. Despite the engagement in diversity of livelihoods activities, livestock keeping has remained the main occupation of some (23.3%) migrant pastoral households while others (20%) have stopped engaging in the practices of livestock keeping in the study area.

It is recommended that there is a need to identify and strengthen the positive livelihood effects and take all negative effects as challenges for improvement. The government and private sectors should recognise the positive livelihood outcomes of migration and strengthen them to ensure more opportunities among pastoral households to improve their livelihoods. It is also recommended that both the government and private sectors should educate pastoral societies on importance of livelihoods diversification, alternative livelihood systems, changing perceptions and mind-set on traditional perception. They have to impart them with new knowledge on value addition activities related to entrepreneurial activities such as fattening and milk processing to improve their livestock products so as to fetch good prices in both local and global markets to promote more transformation on pastoral households. Development of rural infrastructure in terms of road, market, electrification, telecommunication, etc., awareness creation through training and education, and rural credit facilities to provide equal opportunities for livelihoods diversification. Improvement of rural infrastructure is significant in promoting livelihoods diversification which consequently lead to livelihoods improvement pastoral societies.

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