

The Neglect of Local Residents' Livelihood Issues in the Urbanising Peri-Urban Mwanza City, Tanzania

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Abstract

Urbanisation is a powerful force for human development and progress in most cities. Numerous recent studies have shown that rapid urbanisation taking place in most cities of developing countries is associated with the destruction of livelihood assets in the peri-urban areas. The paper assesses the impact of urbanisation on the livelihoods of local residents in peri-urban Mwanza City, Tanzania. In doing so, the paper applies the trends analysis to capture the changes of livelihood assets and livelihood vulnerability of local residents in the peri-urban settings. The sustainable livelihood framework has been applied in the study as an analytical tool. Data were collected from 302 households in the study ward of Buswelu using both probability and non-probability sampling approaches. Structured interviews, in-depth interviews, field observation and documentary review were adopted as methods of data collection. The findings exhibit that urbanisation of peri-urban Mwanza City has destroyed the livelihood assets of most local residents. That, in turn, has negatively affected their livelihoods. Many households have lost their lands while others have suffered disproportionately from highly commercialised environment in terms of accessing goods and services. Besides, lack of knowledge and skills, and financial constraints have significantly hampered local peri-urban residents from taking the opportunities created by the urbanisation process. This study establishes that urbanisation has affected the peri-urban local residents' livelihoods due to loss of assets during the passage from nature-based resource provisioning to the urban economy. It is, therefore, recommended that cities and municipal authorities should address the livelihood needs of peri-urban local residents for inclusive and sustainable peri-urban livelihoods.

Keywords

Livelihood Assets, Local Residents, Livelihood Transformation, Peri-Urban

1. Introduction

Urbanisation is a progressive transition of human population from rural to urban regions as their primary residence (UN DESA, 2018). Currently, 56.2% of the global population lives in urban areas and it is further anticipated that by 2050 this amount will rise to 68.4% (UN-Habitat, 2022). By 2050, it is anticipated that urbanisation will have contributed to an additional 2.5 billion people living in urban areas around the world, with a significant proportion of increase happening in Asia and Africa (UN, 2019; UN DESA, 2015). Although Africa remains having the lowest rate of urbanisation globally (43.5%), the continent's urban growth rate has been the fastest over the past 20 years (with the growth of 3.5% annually) (African Policy Circle, 2020; UN-Habitat, 2022). This growth rate is anticipated to continue until 2050 (UN-Habitat, 2014a). It is predicted that by 2025 greater percentage of Africa population will live in cities compared to 28% in 1980, 34% in 1990, and 43.5% in 2020 (UN-Habitat, 2022).

Given that cities produce more than 80% of the global Gross Domestic Product, high urbanisation rates and per capita income are closely associated (UN, 2019). Urbanisation is an important tool for economic development and long-term sustainability (Kuddus et al., 2020). Urbanisation is linked to industrialisation in industrialised nations. Yet it occurs in emerging and Sub-Saharan African nations during periods of slow economic growth (Chembo, 2011). This is because rapid urbanisation in Africa is a result of increase in human population and not economic factors. Thus, economy has insignificant contribution to the betterment of living standards of the people in cities.

Rapid urbanisation in Africa is associated with significant challenges. As the surging demand for urban land use, cities are expanding into peri-urban areas consuming land to serve that purpose (UN-Habitat, 2014b). It is worth noting that peri-urban areas are places where urban and rural activities mingle (Farrington et al., 2002). The areas are in the front line of urban modification and change. It is progressively apparent that peri-urban areas are currently becoming places with a lot of activities and changes taking place due to rapid urbanisation and population growth.

So far, UN (2019) anticipates that cities with over 100,000 dwellers will expand by 170% in 2030 affecting the peri-urban and rural areas drastically. This will lead to multiple changes in land use, recurrent land transactions, rapid population densification and emerging rises in land value in peri-urban areas (Kuddus et al., 2020). This will further alter the livelihoods of peri-urban local residents as a response to the change of traditional livelihood assets (African Policy Circle, 2020; UN DESA, 2022).

For instance, change of rural land use into urban land use alters lives of peri-

urban residents from directly deriving their livelihoods from nature-based capitals to urban livelihood resources (Kaganga, 2019). That is because urbanisation processes tend to push peri-urban dwellers to join the urban money economy for consumption of goods and services rather than relying on subsistence agriculture and having access to free resources (Meikle et al., 2001).

Urbanisation also transforms the social capital of local residents in peri-urban regions. Rapid increase of newcomers in peri-urban areas erodes the existing communities' networks and social cohesion (African Policy Circle, 2020). This happens because cities become more fragmented and diverse socially and culturally and less likely to be coherent as it is the case in rural areas (Farrington et al., 2002). Importantly, social capital remains critical and a valuable resource which contributes to the livelihoods of the peri-urban dwellers principally in the times of emergency and socio-economic change (Farrington et al., 2002).

Like many African cities, Mwanza, the second largest city in Tanzania after Dar es Salaam, is experiencing rapid urbanisation. With urbanisation of 33% and annual urban population growth rate of 6.7% (Worrall et al., 2017), the city has been featured by increase in the number of people and spatial expansion of urban areas. The population of the area has been growing over time, from 223,013 people in 1988 to over 800,000 in 2012. The present population of Mwanza City is 1,245,000 people (UN DESA, 2022), and it is anticipated to reach 2.4 million people by 2035 (MCCR, 2017).

The rapid urbanisation of the city has been linked with increase in the number of social services, small scale industries and surveyed plots for residential spaces in peri-urban areas (Worrall et al., 2017). However, since the main economic activity practised by majority of peri-urban residents in Mwanza City is agriculture (MCCR, 2017), the change of agricultural land into urban use has affected their livelihoods.

The majority of local residents in peri-urban areas are Sukuma ethnic group who are traditionally cattle herders and crop growers. They depend on their crops and cattle for their livelihoods. According to Madulu (1998), their agriculture is land-intensive in nature and the household is the basic unit of labour. In this regard, the larger the household size, the more labour to employ and possibly the higher the production as concerned. Because of that belief, majority of peri-urban residents in Mwanza City have large sizes of family members (Kaganga, 2019).

The main crops cultivated in the area include rice, sorghum, maize, sweet potatoes and vegetables. The residents also keep animals like cattle, sheep, goats and donkeys (Izuma, 2017). They practise this kind of mixed farming to achieve stable self-sustenance by producing food sufficient to meet their own needs and surplus by drawing directly from nature-based resources through self-provisioning (Kaganga, 2019). However, with rapid urbanisation the challenge has been to maintain their traditional production system and to have a stable self-sustenance economy in a very dynamic setting.

These livelihood changes among the peri-urban local residents need policy interventions which will promote the shared opportunities and benefits that enable all inhabitants to have dignified, decent and rewarding lives that enable them to achieve full human potential (UN-Habitat, 2017). Unfortunately, many livelihood studies have focused on either rural or urban settings, neglecting the peri-urban setting. For example, Loison (2015) views that the livelihood issue as a rural problem with limited attention to peri-urban settings.

Similarly, many studies about Tanzanians' livelihood have been mainly centred on rural settings (Makacha et al., 2022). Besides, Meikle et al. (2001) used sustainable urban livelihoods approach to conceptualise the understanding of poverty in the urban settings. If there are any studies centred in peri-urban settings, they tend to be overwhelmed by the sheer size of opportunities offered by urbanisation, neglecting to assess the negative effects on the livelihoods of a segment of population of local residents. Hence, little is known about it.

This study, therefore, attempted to: 1) examine the magnitude of change of livelihood assets used by local residents, and 2) analyse the effects of the transformation of assets on the livelihoods of local residents in peri-urban Mwanza City, Tanzania. The aim of the paper is to suggest what decision makers could adopt in guiding the local residents' livelihoods transition from rural to urban with little destruction of their livelihoods by increasing the ability and capacity to take the emerging opportunities during the change.

2. Theoretical Framework

This study is contextualised within the Sustainable Livelihood Approach (SLA) of the British Department for International Development (DFID) of 1999 in the peri-urban setting under the framework of sustainable livelihoods (SLF) (Figure 1). The SLF guided the understanding and analysis of the changes of livelihood assets which were brought about by the rapid urbanisation processes in peri-urban areas. According to Meikle et al. (2001) sustainable livelihood is a means of living which is resilient to stresses and shocks. In this study, the DFID Sustainable Livelihoods framework is contextualised in the analysis of the changes of livelihood assets of local peri-urban residents (Figure 1).

Figure 1 presents three components which affect the livelihoods of people: vulnerability context; amount of capital assets one possesses and ability to change them into productive use; and policies, institutions and processes that influence and shape livelihood strategies for desired livelihood outcomes. The framework shows people as living in an environment of shocks brought by rapid urbanisation which has affected livelihoods of local peri-urban residents. Under this condition, rapid urbanisation is viewed as the vulnerability state which changed the status of their capital assets traditionally used for drawing livelihood through self-provisioning from nature-based resources.

Vulnerability means feeling insecure of one's well-being resulting from environmental change (Moser, 1998). This includes trends like population growth,

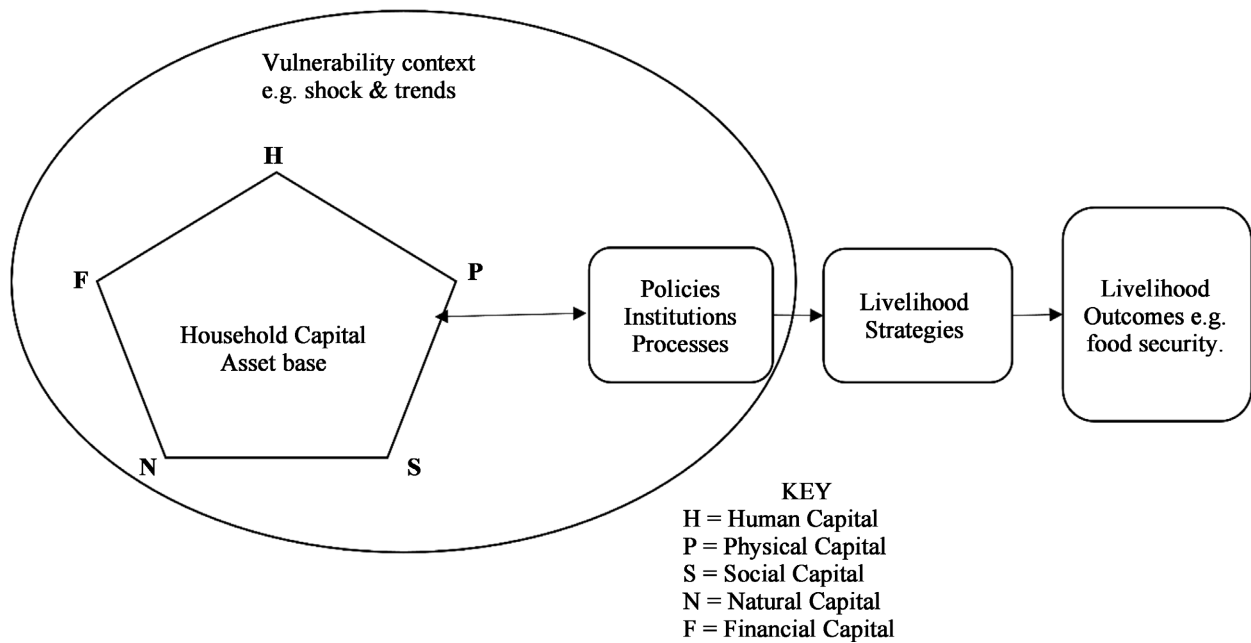


Figure 1. Framework for analysing impact of urbanisation on local residents' livelihoods.

urban expansion, depletion of resources and income change which directly or indirectly affect the livelihood assets and strategies. Therefore, for purpose of analysing the changes of livelihood assets and the effects brought to local peri-urban residents, this study focuses on four livelihood capitals: natural, physical, social and human capital on which peri-urban livelihoods are built.

3. Materials and Methods

3.1. Profile of the Study Site

This study was conducted in Buswelu Ward, Ilemela District in Mwanza City (**Figure 2**). The ward is 17 km from the Central Business District (CBD) and is located on the southern shores of Lake Victoria in Northwest Tanzania. Furthermore, the ward is situated between latitude 2°28'S to 2°34'S and longitude 32°55'E to 33°05'E and comprises 11 sub-wards (called *mitaa* in Swahili) with a total population of 22,897 (MCCR, 2017). Before experiencing serious urbanisation, the ward was principally rural, made up of farming settlements.

Mwanza City (including Buswelu Ward) has experienced urban expansion at different periods in different geographical locations. The economic growth from fishery industries, mineral exploration activities and trade and commerce in years between 2000 and 2010 attracted migrants in the city which subsequently raised the demand of lands for urban use in the city's peri-urban areas including the Buswelu Ward (MCCR, 2017).

Figure 2 shows the ward of Buswelu found in Ilemela District in Mwanza City. The ward was selected for this study because, firstly, both rural and urban livelihoods co-existed in the area. The existence of agricultural and non-agricultural activities was apparently the major feature in the identification and delineation of

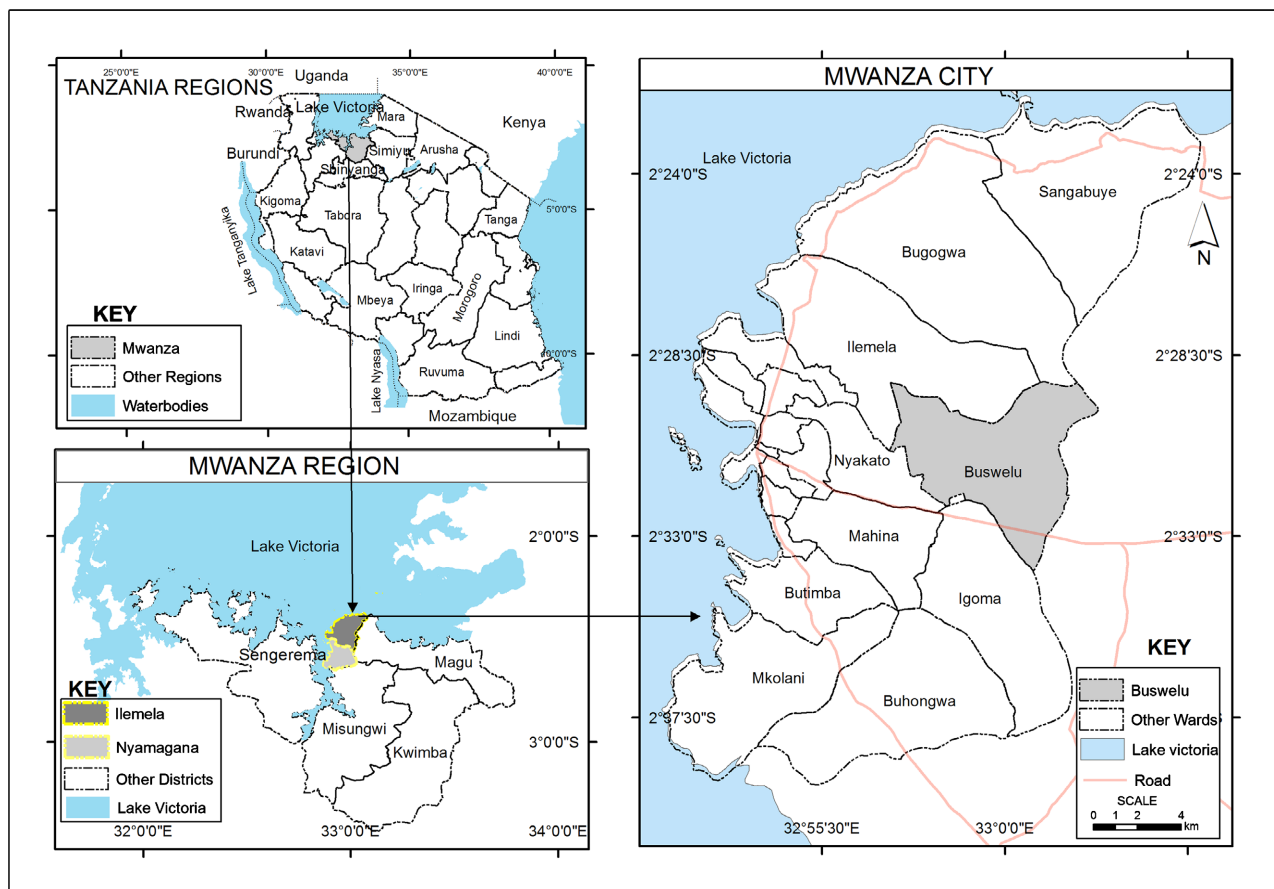


Figure 2. Map of Mwanza City showing Buswelu Ward.

peri-urban areas (Woltjer, 2014).

Secondly, Buswelu Ward experienced different urbanisation processes. One of the processes was the relocation of Ilemela District headquarters in the ward from the city centre in 2012 which attracted tremendous growth of population and developments in the ward. The resulting effect was the change of land use from agricultural to urban use of which transformed the local residents' livelihoods (Kaganga, 2019). Not only those, but also local residents were introduced to urban fabrics which had tremendous implications on their livelihoods.

3.2. Sample Size and Sampling Procedures

The study on which this paper is based employed purposeful sampling to select the peri-urban ward of Buswelu in Mwanza City and the key informant (district urban planning officer). The heads of households, entailing local residents/individuals who had stayed in the ward for more than twenty years, were taken as sample elements from all 11 sub-wards as they were considered had experienced changes of livelihoods triggered by urbanisation processes.

The local residents' households represented the unit of analysis. The ward had 1235 total number of local residents' households whereby 302 people was the sample size in the ward. The calculation of the sample size was done using the

formula (Israel, 1992);

$$n = \frac{N}{1 + N(e)^2} \quad (1)$$

whereby, n is the sample size, N is the total number of local residents' households in the study ward, 1 is the desired confidence level (95%) and e is the level of precision. Therefore, inserting these data into the formula

$$302 = \frac{1235}{1 + 1235(0.05)^2}$$

To ensure representation, the proportional sample of local residents' households was determined in each sub-ward. The following proportionate formula was used;

$$n_i = \frac{N_i}{N} n \quad (2)$$

whereby, n_i is the proportional sample of each sub-ward, N_i is the total number of local residents' households in each sub-ward, N is the total local residents' households in the study ward, n is the sample size of the study population in the ward.

This was followed by employing simple random sampling technique to select households' heads of local residents from each sub-ward.

3.3. Data Collection

This study was carried out between June and October 2022 in Buswelu Ward. Both quantitative and qualitative research designs were used to collect data. The quantitative research design was employed to collect quantitative data and the qualitative research design engaged to collect qualitative data. Employing mixed research design helped to increase study credibility and to check the accuracy (validity) of other databases (Creswell, 2014).

The study, therefore, utilised the Landsat 7 (ETM+) images of 2000 and 2010 and the Landsat 8 (OLI) for 2020 to detect land use/cover change in order to evaluate temporal and spatial dynamics and the associated effects on the livelihoods of local residents. Also, it made use of local residents' households' survey, documentary review, in-depth interviews and field observation in the collection of data.

By conducting face-to-face interviews based on semi-structured questions helped to gather data from heads of local residents' households. The documents reviewed comprised the Mwanza city socio-economic profile, National Bureau of Statistics' census reports and various peri-urban study reports. The semi-structured interview guides were used to conduct interviews with district urban planning officers and other participants (i.e., farmers). Field observation involved direct observation of the livelihood related events and features which generated field notes and a photograph.

3.4. Data Analysis

ArcGIS software version 10.3 was used to undertake supervised classification of land use/cover and the temporal and spatial analysis of the satellite images. The classes produced included built-up areas, the cultivated land, grasslands and woodlands. The aim of the analysis was to detect land use/land cover change and the direction of change from 2000 to 2020. In order to achieve that, cross-classification (qualitative) and cross-tabulation (quantitative) analyses were carried out. Also, the magnitude of quantities of land use/cover change in hectares and the rate of change in percentage over the period of ten-year intervals were calculated. The calculation of the rate of change in percentage was done using the formula

$$\% \Delta = 100 \times \left(\frac{\text{final} - \text{initial}}{\text{initial}} \right) \quad (3)$$

whereby, $\% \Delta$ is the percentage of change, *final* is the final year, and *initial* is the initial year.

On top of that, the quantitative data collected by using structured interviews were analysed by using the International Business Machines Statistical Products and Service Solutions (IBM SPSS) software version 23 to get frequencies and percentages. Also, IBM SPSS was used to run the Pearson's *r* coefficient correlation to determine the relationship between food production and local residents' household landholding size at p-value 0.01. Microsoft Excel software was used to draw graphs while content analysis was employed to analyse the qualitative data. The figures and tables were used to present quantitative data and explanations and a photograph were used to present qualitative data.

4. Results and Discussion

4.1. Characteristics of Respondents

4.1.1. Sex and Age of Respondents

Sex and age of heads of households are key parameters because they influence the capacity of households to exercise choice and access to opportunities aimed at building asset-base and livelihood strategies. **Table 1** presents the sex and age of respondents in the study ward.

Table 1 indicates that the gender of heads of households comprised 64% males and 36% females in the study ward. Similarly, the Tanzania Mainland Urban

Table 1. Distribution of sex and age of respondents.

| Gender | Age Group (Years) | | | Total % |
|--------|-------------------|---------|-----|---------|
| | 0 - 30 | 31 - 60 | 61+ | |
| Male | 8 | 144 | 40 | 64 |
| Female | 5 | 81 | 24 | 36 |
| Total | 13 | 225 | 64 | 100 |
| % | 4 | 75 | 21 | 100 |

census report of 2022 shows closely the same sex ratio of 65% and 35% for males and females headed house households, respectively (URT, 2022). These findings reflect the typical reality of most Tanzania communities where many households are headed by males.

Age is another crucial aspect in household livelihood strategy. The studied population shows that the age of majority of the heads of households fell between 31 and 60 (75%) years. This group can be termed as the working age group. This was followed by respondents (heads of households) who were aged 61 years and above (21%). Four per cent (4%) comprised respondents who were aged between 0 and 30 years (Table 1). The age of respondents in the study ward ranged from 29 to 78 years while the mean age of respondents was 47 years. The average farming experience of respondents was 20 years. These findings imply that most of the respondents were mature enough to understand the questions asked and they had also witnessed socio-economic transformations resulting from urbanisation processes.

4.1.2. Household Size of Respondents

Household size is one among the indicators of socio-economic status of a population. In this study, the household size explained the extent of vulnerability to the impact of urbanisation processes a household experienced. This is because there is greater association between family size and the way of living (Moore, 1997). Figure 3 shows the household size of the respondents in the study ward.

Figure 3 indicates that 62% of the surveyed households had the household size of 6 to 10 persons and 21% of the households had 11 to 15 persons per household. Whereas, 12% of the households had household size of 16 to 20 persons and the least of the households had household size of 1 to 5 persons (5%). The ward had a mean local residents' household size of 10 persons which was above the regional and national one of 6 and 5 persons, respectively (URT, 2014).

4.1.3. Education Level of Respondents

Education is a crucial asset which reduces vulnerability of the people indirectly. This is because education increases the households' opportunities and their well-beings. Table 2 shows the education level of the household in the study ward.

Table 2 indicates the education level of respondents in the study ward, whereby majority of the households had primary education (79%), followed by non-formal

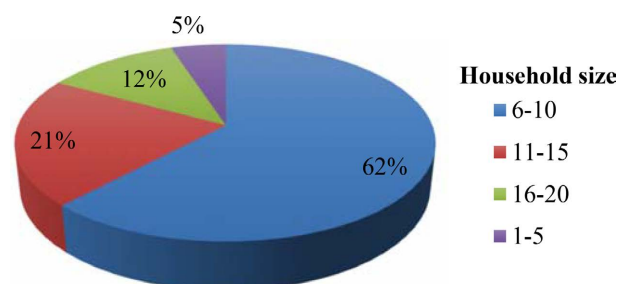


Figure 3. Households size of the respondents.

education (14%). A few of the households had secondary education (6%) and the rest of the households had tertiary education level (2%). Education is an important aspect in the pursuance of different livelihood strategies so as to attain positive livelihood outcomes.

4.1.4. Occupation of Respondents

The processes of urbanisation produce a blended kind of livelihoods in the peri-urban areas where both urban and rural livelihood activities dominate. However, the local residents' household vulnerability is determined by the nature and type of livelihood economic activities carried out. The occupation of the respondents in the study ward are present in **Figure 4**.

Figure 4 indicates the occupation of respondents in the study ward whereby majority of the local residents' households were engaged in agricultural activities (crop farming) and animal keeping (68%). A few of them were in the non-farm economic activities including; business activities (15), wage labour (12%), civil service (3%) and the jobless (2%). The findings imply that land is still an important livelihood asset to the vast majority of the local peri-urban residents (Ayele & Tarekegn, 2020; Lasisi et al., 2017).

4.2. Magnitude of Change of Livelihood Assets

4.2.1. The Natural Capital

The natural capital is the natural resource stock from which resources flow and

Table 2. Respondents' level of education.

| Respondents | Respondents Level of Education | | | | Total |
|-------------|--------------------------------|---------------------|-------------------|----------------------|-------|
| | Tertiary education | Secondary education | Primary education | Non-formal education | |
| Frequency | 6 | 17 | 237 | 42 | 302 |
| Percentage | 2 | 6 | 79 | 14 | 100 |

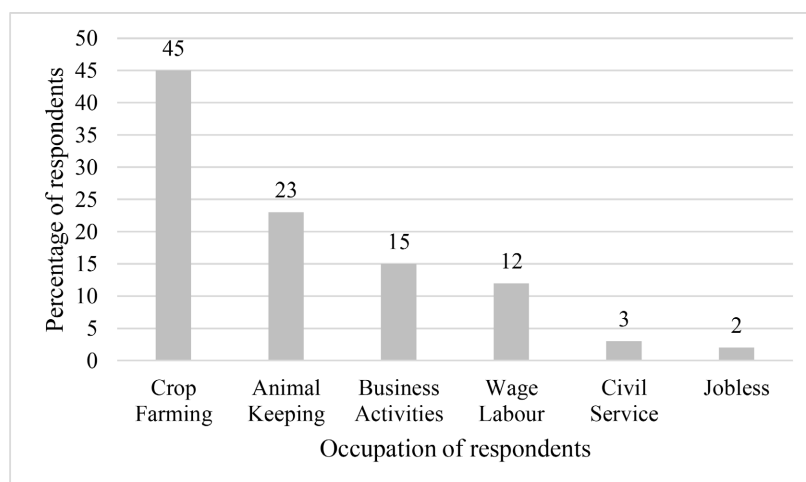
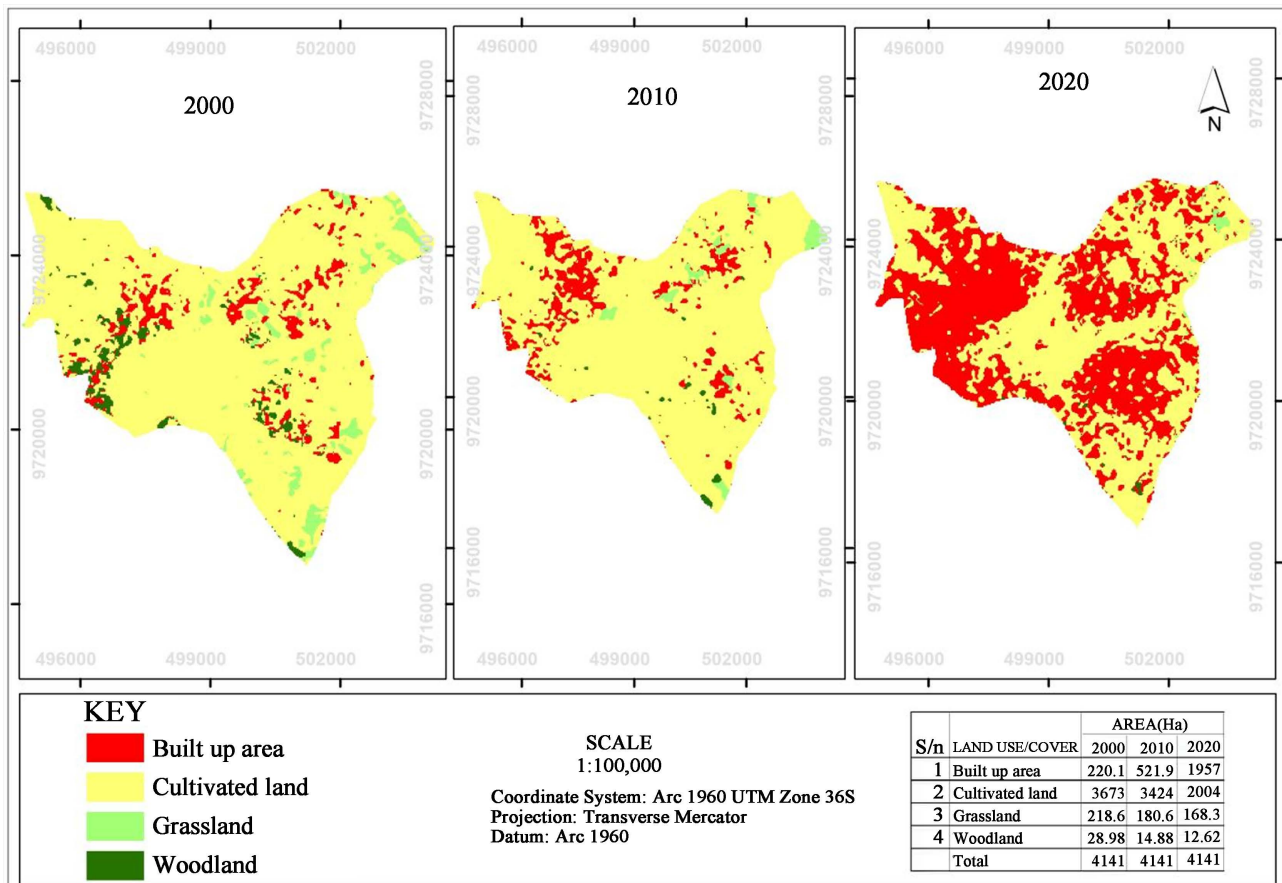


Figure 4. Occupation of respondents.

the services useful for livelihoods are derived (DFID, 1999). In this study, land was among the natural capital which was a key livelihood asset to peri-urban residents in the ward. Through trend analysis of Landsat images of 2000, 2010 and 2020, the urban-rural land use dynamics were mapped. This was done by discriminating between the urban land use (the built-up areas) and rural uses (woodland/forest) of the cultivated land and pastureland (grassland)).

The findings indicate that almost all land use/cover changed between the year 2000, 2010 and 2020 as shown by land use/cover maps in Figure 5 and the subsequent statistics in Table 3. Visual interpretation was used to communicate the nature of changes that took place. The land use/cover maps show the red colour (built-up area) that increases against the cultivated land, grassland and woodland. The red colour (the built-up area) covered a very small area in 2000 and started to expand in the subsequent years while other land use/cover types were shrinking (Figure 5). For instance, when computed, the statistics show that the period between 2000 and 2010, the cultivated land, grassland and woodland decreased by 249 hectares (7%), 38 hectares (17%) and 14 hectares (48%) respectively while in the period between 2010 and 2020, the cultivated land, grassland and woodland decreased by 1,420 hectares (41%), 12.6 hectares (7%) and 2 hectares



Source: Spatial Data Analysis, 2022.

Figure 5. Buswelu Ward Land Use/Cover Maps between 2000, 2010 & 2020.

Table 3. Land Use/Cover Change in Buswelu Ward in Hectares (ha) and Percentages

| Land use/ cover category | 2000 | | 2000-2010 | | 2010 | | 2010-2020 | | 2020 | | 2000-2020 | |
|-----------------------------|-----------------|-------------|-----------------------|-----------------|-------------|-----------------------|-----------------|-------------|-----------------------|-----------------|-------------|-----------------------|
| | Area (in ha) | Area (%) | Rate of change (%) | Area (in ha) | Area (%) | Rate of change (%) | Area (in ha) | Area (%) | Rate of change (%) | Area (in ha) | Area (%) | Rate of change (%) |
| Woodland | 28.98 | 0.7 | -48 | 14.88 | 0.4 | -15 | 12.6 | 0.3 | -56 | | | |
| Grassland | 218.6 | 5.3 | -17 | 180.6 | 4.4 | -7 | 168 | 4 | -23 | | | |
| Cultivated land | 3673 | 88.7 | -7 | 3424 | 82.6 | -41 | 2004 | 48.4 | -45 | | | |
| Built-up area | 220.1 | 5.3 | 137 | 521.9 | 12.6 | 275 | 1957 | 47.3 | 789 | | | |
| Total | 4141 | 100 | - | 4141 | 100 | - | 4141 | 100 | - | | | |

(15%), respectively (**Table 3**). In the period between 2000 and 2010, the built-up portion (area) increased by 302 hectares (137%) whereby between 2010 and 2020, it expanded by 1435 hectares (275%) (**Table 3**).

Figure 6 & Figure 7 shows the cross-classification analysis maps which supplement the information provided in **Table 4**. The maps indicate the direction of change of different land use/cover categories in the study ward. Again, visual interpretation was used to communicate the nature of changes that took place. The colours presented in the keys denote the location of changes. In that case, each individual land use/cover type changed from one type to another. The results indicate that all land use/cover types have their portions transformed from one type to another in all periods, i.e., 2000-2010 (**Figure 6**) and 2010-2020 (**Figure 7**). For instance, through cross-tabulation analysis the results show that in 2000, the total built-up area was 220 hectares, and it increased to 521.93 hectares in 2010. This increase of the land covered by built-up areas was contributed by acquiring 198.5 hectares, 103.78 hectares and 0.72 hectare from cultivated land, grassland and woodland, respectively. Similarly, between 2000 and 2020, the cultivated land lost a total of 1706.82 hectares of land to built-up area (**Table 4**).

Also, based on household landholding size trend analysis shows that majority of the households had small size agricultural household land (**Figure 8**). This analysis was done by comparing the land size owned by households in years between 2000 and 2020. The findings indicate that majority of the households had agricultural land size between 0 and 1 acres (61%). About 21.9% of respondents owned land plot sizes ranging 1.1 to 2 acres while 11.5% of the households owned the land plot sizes between 2.1 and 3 acres. A small proportion of the population owned land plots with sizes between 3.1 and above acres (5.6%) (**Figure 8**). Moreover, the findings show that similar trends were recorded in grazing fields for livestock.

Figure 8 shows that the majority of households (49%) had large household landholding sizes before 2000 (3.1 acres and above). In contrast, the statistics show that in 2020, the majority of households had small landholding size. Conversion of agricultural fields to urban usage as the city grew was one of the explanations given for the lowered household land size.

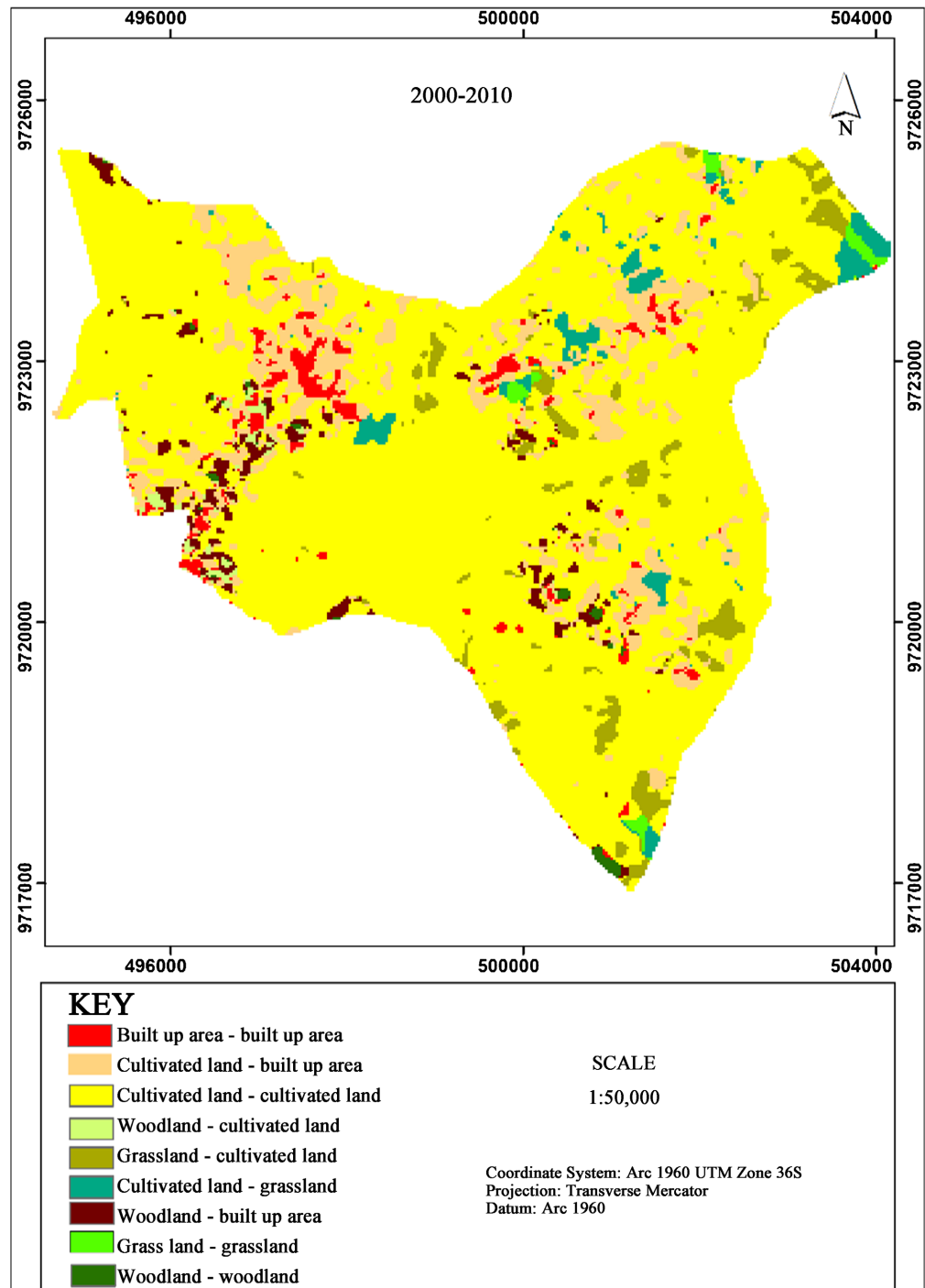


Figure 6. Cross-Classification between 2000 and 2010.

Based on the findings, this study has shown that urbanisation processes resulted in the change of livelihood assets of local residents in Mwanza City peri-urban area. The trend analysis of Landsat images of 2000, 2010 and 2020 and the household landholding size revealed the fact that agricultural land (cropland and pastureland) changed to built-up areas. The reduction of agricultural land put the local residents' livelihoods at risk. The findings concur with those of

Coulibaly et al. (2020) who established that urbanisation processes resulted in loss of large farmlands to urban use in peri-urban Sebougou, Mali. Similarly, Oduro et al. (2015) reported about the peri-urban residents (long-term settlers) who lost their farm-based livelihoods to urban use in the fringes of Accra, Ghana due to urbanisation processes. The increase of built-up area against crop, forest and grassland resulting from urbanisation of peri-urban environment and livelihoods

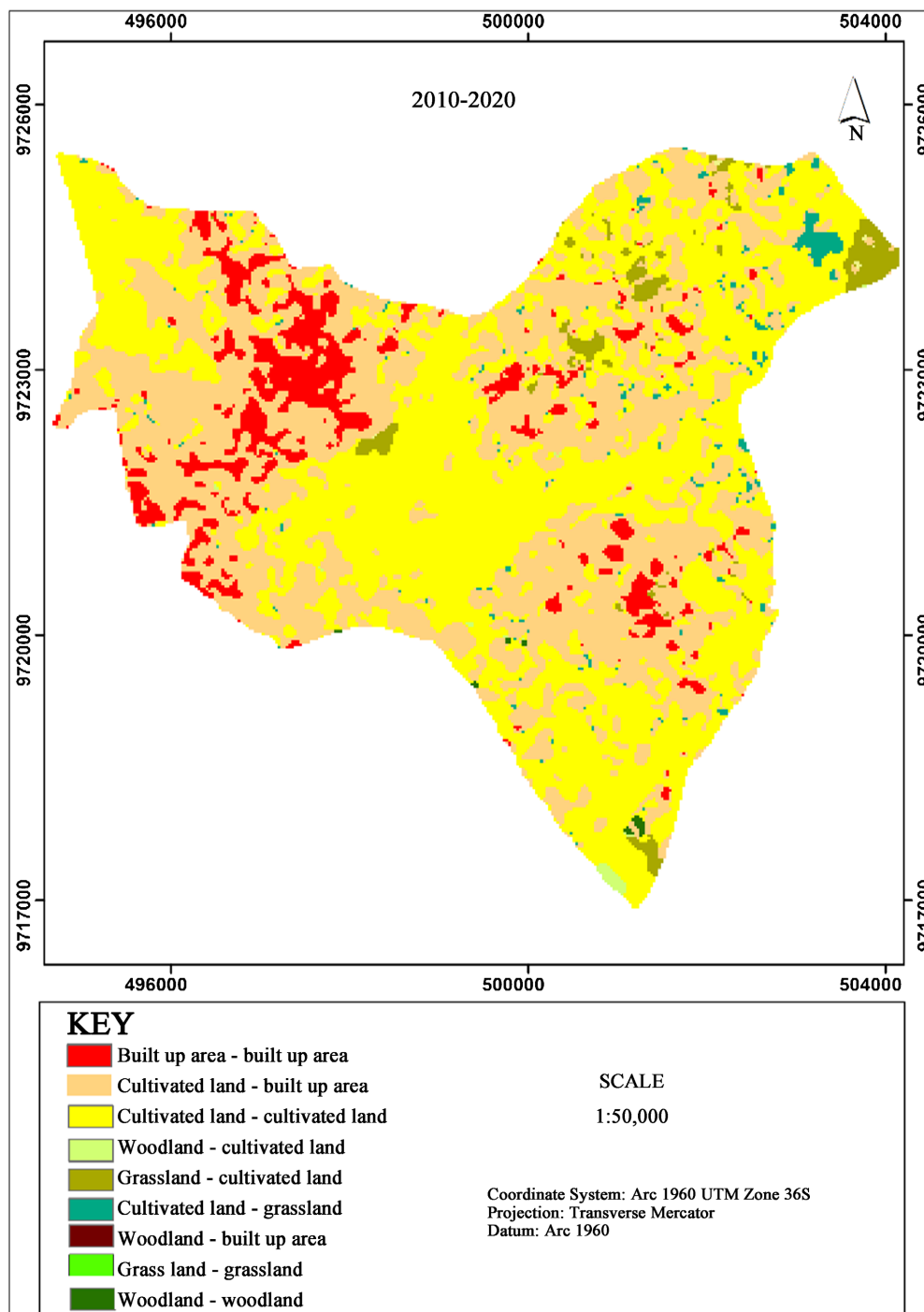
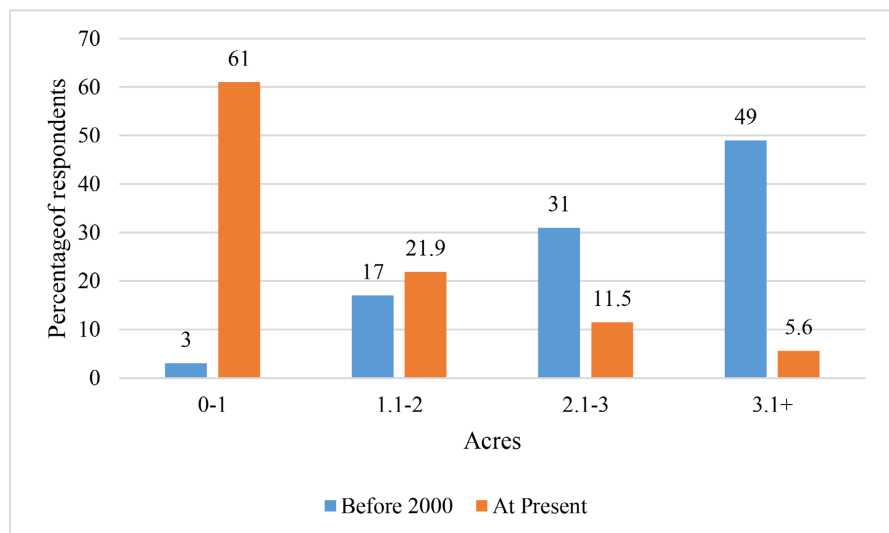


Figure 7. Cross-Classification between 2010 and 2020.

Table 4. Land Use/Cover Transition Matrix for 2000-2020 (ha).

| | | 2020 | | | | |
|------|-----------------|---------------|-----------------|-----------|----------|---------|
| | | Built-up area | Cultivated land | Grassland | Woodland | TOTAL |
| 2010 | Built-up area | 398.54 | 40.2 | 39.58 | 41.92 | 521.9 |
| | Cultivated land | 1508.32 | 1924.83 | 84.33 | 7.56 | 3424 |
| | Grassland | 49.71 | 67.97 | 76.62 | 0 | 180.6 |
| | Woodland | 0 | 10.57 | 6.81 | 4.14 | 14.88 |
| | TOTAL | 1956.57 | 2003.57 | 168.34 | 12.62 | 4141.1 |
| | | 2010 | | | | |
| | | Built-up area | Cultivated land | Grassland | Woodland | TOTAL |
| 2000 | Built-up area | 218.93 | 0.24 | 0.2 | 0.69 | 220.06 |
| | Cultivated land | 198.5 | 3320.71 | 153.99 | 0.24 | 3673.44 |
| | Grassland | 103.78 | 91.44 | 23.04 | 0.36 | 218.62 |
| | Woodland | 0.72 | 11.34 | 3.33 | 13.59 | 28.98 |
| | TOTAL | 521.93 | 3423.73 | 180.56 | 14.88 | 4141.1 |

Source: Spatial Data Analysis, 2022.

**Figure 8.** Trend analysis of household landholding size.

in the Addis Ababa City was also identified by [Kasa et al. \(2011\)](#). These findings inform policy makers on the need for building up alternative livelihood asset base in the non-farm activities for the local peri-urban residents in the urban settings.

4.2.2. The Physical Capital

The physical capital encompasses the basic producer goods needed to support livelihoods (productive physical capital). In this study, livestock were an impor-

tant physical capital among local residents' households. Based on the trend analysis of households' livestock ownership, this study established that animal keeping households had smaller herds of cattle, goats and sheep when compared with the past.

Before the 2000, about 26.5%, 22.8% and 16.9% of the households owned more than 100 cattle, goats and sheep, respectively as seen in **Figure 9**. Subsequently, in 2020, the majority of the households owned fewer numbers of animals. About 79%, 9% and 5% of the households owned between 0 and 50 cattle, goats and sheep, respectively (**Figure 9**). Through interview accounts, it was shown that conversion of pasture land (grassland) into residential areas reduced areas that were used for grazing animals, through free range system. Equally, cutting down trees (woodland) deprived residents the woods that were previously used by the residents as source of materials for constructing traditional kraals.

The urbanisation process has significant impact on local residents' livelihoods (Sati et al., 2017; Coulibaly et al., 2020). The findings indicate that reduction of grassland (grazing land) have also resulted in the decrease of livestock herds. This happens because urbanisation processes impede grazing land and limit the mobility of animals. These findings inform the local government authority on the need to identify strategies that can improve livestock productivity by enhancing output (Roessler et al., 2016).

4.3. Effects of the Transformation of Assets on the Livelihoods

4.3.1. The Natural Capital

Since land was a crucial resource for peri-urban people in the study ward. The conversion of agricultural land to urban usage as demonstrated in **Figures 5-8** and **Table 3** & **Table 4** suggests that local residents' lives were changed from directly relying on natural resources to relying on urban resources. Land is an

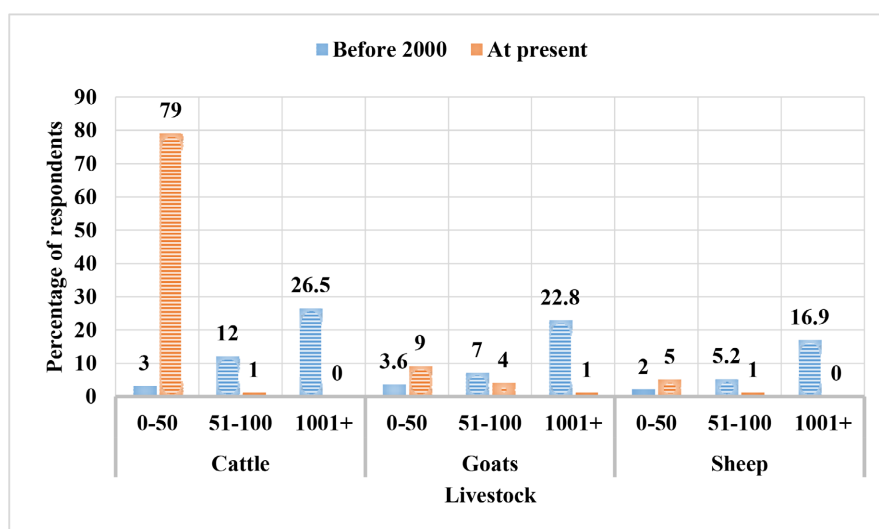


Figure 9. Trend analysis of households' livestock ownership.

important component of prosperity and survival of peri-urban local residents (Lasisi et al., 2017).

Loss of nature-based resources (cropland, grassland and woodland) deprived the residents of important resources for crop cultivation, grazing land, construction materials, firewood and other forest products. Interview accounts indicate that the drastic reduction of agricultural land was associated with the relocation of Ilemela District headquarters to the ward from the city centre in 2012.

Furthermore, the small agricultural landholding size as depicted in **Figure 8** was associated with food insecurity in the study ward in the context of the Current Population Survey (CPS), Food Security Supplement (FSS) measurement of 2000 (Bickel et al., 2000). According to CPS, FSS measurement, food insecurity means having limited availability of nutritionally adequate and safe foods (Bickel et al., 2000). Now, the findings show that only 11.9% of the households reported to produce sufficient food for 12 months with a surplus for sale in a year (**Table 5**). This implies that the majority of households were experiencing food insecurity.

Moreover, the relationship between household landholding size and food production was established, whereby the statistical test of $r = 0.425$ (Pearson's r coefficient correlation) at p -value 0.01 revealed that there was a positive correlation between household landholding size and food production (**Table 6**). Here,

Table 5. Food security status.

| Food Security Status Category | Frequency | Percent | Cumulative Percent |
|--|-----------|---------|--------------------|
| Sufficient food production for 12 months and surplus for sale. | 36 | 11.9 | 11.9 |
| Food production for 6 months and above. | 54 | 17.9 | 29.8 |
| Food production for 3 to 6 months. | 90 | 29.8 | 59.6 |
| Little or no food from own production. | 122 | 40.4 | 100.0 |
| Total | 302 | 100.0 | |

Source: Food Security Status categories modified from the Guide to Measuring Household Food Security, Revised 2000 by Bickel et al. (2000).

Table 6. Relationship between household land size and food production (correlation).

| | | Food production | Household land size ownership |
|-------------------------------|---------------------|-----------------|-------------------------------|
| Food production | Person Correlation | 1 | 0.425** |
| | Sig. (2-tailed) | | 0.000 |
| | N | 302 | 302 |
| Household land size ownership | Pearson Correlation | 1 | |
| | Sig. (2-tailed) | 0.425** | 1 |
| | N | 302 | 302 |

**Correlation is significant at the 0.01 level (as it is 2-tailed).

the larger the household landholding size, the more likely that household could produce more food.

Correspondingly, the situation was as well explained by one respondent in the Buhyila Sub-ward who had to say the following: *“We formerly had several acres of farmland where we could grow enough food to supply our entire community for a year. Several “maluli” or “magoloto” (barns in the Sukuma language) full of cereal-type of food could be owned by a family. On the contrary, because of the scarcity of farmland, we produce a relatively small amount of food today, not enough to last through the following harvest.”*

The findings revealed that many households were food insecure becoming vulnerable to food shortage (Ayele & Tarekegn, 2020). Essentially, the findings inform the local government authorities to improve adaptive capacity of local residents by enhancing livelihood activities in non-farm sectors (Ngcamu, 2022).

This study also found that local residents lost their traditional agricultural land when the government acquired land compulsorily in 2012. The local residents, land owners from the sub-wards of Buswelu A, Kigala, Majengo Mapya and Buswelu B surrendered their land statutorily to the Mwanza City Authority for urban expansion and development purposes. This was in line with the Tanzania Urban Planning Act of 2007 and Land Acquisition Act of 1967 whereby the government has the mandate to acquire land for public use (Kombe, 2010).

The respondents viewed that the land acquisition exercise lacked openness and transparency. They accused some government officials of being dishonest such that whole process resulted in making them lose part of their land or receiving inadequate compensations. For instance, one respondent from the Kigala sub-ward had the following to say:

“I was not made aware that some land surveyors could be visiting my property. I was surprised to see a group of people wandering in the area. When I approached them, they introduced themselves as a team of surveyors from the land and planning office of Mwanza City. They hurriedly handed me compensation claim forms, telling me to fill them out and give them to the Mwanza City authority for processing before I could be paid for my land. After the survey was finished, right before they left, they informed me that my farm had resulted in five land plots, and they asked me to choose three of the five that I could legally possess. I was informed that the two additional plots were not legally mine because the government had taken them. It was regrettable to learn, a few months later, that one of the three plots that belonged to me had been sold to another person. It was the same authority that had already granted that person the right to occupy the plot”.

The above excerpt shows that government institutions increased vulnerability to local residents during land acquisition. Notably, the institutions did not support the households to build up secure assets for alternative livelihoods in the urban settings. These findings suggest that there were some weaknesses in some local government authority organs. At the same time, the findings of another

study reveal a similar situation in Morogoro Municipality peripheral, Tanzania where land acquisition had negative impact on the indigenous communities' livelihoods (Kusiluka et al., 2011).

4.3.2. The Physical Capital

Reduction of pasturelands (grassland) that had been traditionally used for grazing animals through free range system forced local residents to reduce the size of the herd by selling some of their animals and remained with small sizes as presented in **Figure 8**. This suggests that local peri-urban dwellers' livelihoods were significantly impacted because a sizable portion of rural/peri-urban households in developing nations depend entirely or largely on livestock for their subsistence (Pica-Ciamara et al., 2011). For the local peri-urban population, keeping livestock serves a variety of purposes, including providing food and money, building wealth, and acting as a safety net during difficult times. In addition, they offer draught power and hauling services, as well as fuel and building materials, manure, and the use of crop and food wastes. Finally, they build social capital (Pica-Ciamara et al., 2011).

For instance, one livestock keeper in Busenga Sub-ward asserted that *“My livelihood has been completely disrupted because I had to sell some animals due to the shortage of grazing lands and disputes with my non-farming neighbours who constantly complained that animals destroy their gardens as they travel to and from pasturelands. When I kept a reasonable number of sheep, goats and cattle, I used to have enough milk and manure. But for now, nothing is left. Since there are no animals to sell, in the event that any family member becomes ill, I must admit that I no longer feel secure”*.

Additionally, it was observed that livestock keepers lived in an environment that was constrained by residential buildings in the area, leaving little room for animals to move around freely (See **Plate 1**). A similar circumstance is reflected for pastoralist groups in the East African Maasai and in Mongolia



Plate 1. A livestock keeper inside his kraal in Busenga Sub-ward.

(Fratkin & Mearns, 2003).

4.3.3. Social Capital

Social capital is the social resource upon which people depend in pursuit of their livelihood objectives (DFID, 1999). This involves growth through affiliation with more formalised groups, which frequently require adherence to rules, norms, and consequences that have been mutually or widely accepted. Based on this study, family ties were an important social capital to many local peri-urban residents demonstrated through the household size. Most of the surveyed households were big (Figure 3). They cherished large family sizes with the view that big family sizes provided vital labour for the family. To them, household size appeared to be an important socio-economic variable in explaining the production system. Having big family sizes to them was a livelihood asset that acted as a buffer against shocks and stresses in rural settings.

The study on which this paper is based revealed that having big family sizes in peri-urban settings was perceived to increase household vulnerability. It turned out to be a burden to most local residents' households as the urban economy favoured nucleated families (Table 7). The urbanisation process disrupted the traditional production system of households drawing livelihood through self-provisioning from nature-based resources which needed huge labour from family members. The majority of households were then pushed to join the cash urban economy in the peri-urban setting where every item was now to be bought with cash. According to the Tanzania Household Budget Survey (HBS) report of 2017-2018 shows that the basic needs poverty increases with increase in the number of household members. Being highest in households with more than seven members (URT, 2019). Equally, Tetteh (2011) mentions households that were food secure in peri-urban Amasaman, Ghana had relatively smaller household size.

Narratives from the respondents show that many families could no longer be able to meet family basic needs. For example, one respondent in Buswelu A Sub-ward said that *“Nowadays money is needed to buy everything. In the past, we accessed freely the common property resources.”* Since, urban poverty is in a multidimensional form, with its manifestation going beyond lack of income (UN DESA, 2022), this analysis has revealed that the livelihoods of most households became insecure and vulnerable to poverty as their social asset base was continually being eroded by urbanisation processes.

The findings suggest that there is a need of making sure that the adaptive

Table 7. Perception of respondents on whether urban way of life favours small family size.

| | Strongly agree | Agree | Undecided | Disagree | Strongly disagree | Total |
|-----------|----------------|-------|-----------|----------|-------------------|-------|
| Frequency | 146 | 131 | 19 | 3 | 3 | 302 |
| Percent | 1 | 1 | 6.3 | 43.4 | 48.3 | 100 |

capacity of local residents is enhanced in order to reduce vulnerability. This can be done by raising awareness on how important it is for households to have small family sizes which are manageable within the urban social and economic settings thus lifting upward their social capital.

4.3.4. The Human Capital

Human capital characterizes knowledge, skills, and ability to work, physical capabilities and good health that enable people to engage themselves in different livelihood strategies and realize their livelihood objectives (DFID, 1999). In the study on which this paper is based, the human capital comprised skills and knowledge, physical capability and good health which were essential for the attainment of positive livelihood outcomes. With regards to knowledge and skills, the findings show that the majority of households failed to move to non-agricultural activities due to lack or low skills and knowledge. This was reflected through the education levels they possessed (Table 2) and the kind of livelihood economic activities they were engaged in (Figure 4).

The majority of households had low level of education such that they had minimal chances of getting employed into well paying off jobs especially in non-farm livelihoods income generating activities. The interview accounts from respondents showed that education and trainings were very important to them to be able to identify and create opportunities in the farm and non-farm livelihood activities. Further analysis suggests that majority of them lacked the needed expertise to take opportunities in the non-farm activities. This is because most of them were equipped with a rural production system that was not realised in urban settings. The study showed a small proportion of the population who were engaged in non-farm activities in the study area (Figure 4). However, having large farming population in the peri-urban setting implicitly indicates that their livelihoods were insecure as far as farming was increasingly becoming less important (Farrington et al., 2002).

These results, therefore, suggest that there is a need for enhancing adaptive capacity of local residents by investing more on human capital. Obviously, adequate human capital allows local residents to recognise the newly created urban opportunities. Specifically, some initiatives could be taken by training people in peri-urban areas on income generating livelihood activities as far as urban economy is concerned (Mandere et al., 2010). This generally suggests that the population should be prepared to be flexible to change according to change in life circumstances.

5. Conclusion

As rapid urbanisation becomes central to most of the developing countries' cities, it is imperative to check its impact on local residents' livelihoods in peri-urban spaces so as to take due initiatives. The paper has assessed the impact of urbanisation on local residents' livelihoods. The paper has shown that the livelihood

assets of the people in peri-urban areas drastically change with urbanisation processes from nature-based resource provisioning to urban economy. That subsequently affects negatively these people's livelihoods. In the study area (Mwanza), since agriculture was increasingly decreasing in significance in urban settings, it had negative impact in the livelihoods of the people involved. It is, therefore, suggesting that some initiatives be taken by the local government in enabling local residents to come with adaptive capacity in income generating livelihood activities in order to lessen their livelihood vulnerability. One way of doing that can be to ensure the residents take part in diversification by taking part in non-agricultural income generating activities. Promoting access to credits can also facilitate sustainability of peri-urban local residents' livelihoods.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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