

# Analysing the Dynamics of City Morphology with an Overview of Mbeya City in Tanzania

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**City morphologies are changing at unprecedented speed and largely unregulated. The aim of this study is to provide an analysis in terms of descriptions of urban morphologies through earmarked buildings in the Central Business District of Mbeya city in Tanzania before and after the independence. Available theories and concepts were reviewed to address issues of city morphology but also as a methodological paradigm of viewing the present Mbeya city morphology. The research reveals that Mbeya city is developing along new urban forces such as commercial needs, political influences and social cultural needs. The study recommends that current development in formal and informal settlements should be guided and monitored continuously for more effective urban planning and design. Good lessons from colonial city morphology such as holistic planning should be positively considered by urban local authorities. Communities and stakeholders should be involved in the overall city morphological development process. Knowledge on the dynamics of city morphology serves as an important tool to understand and conserve city history.**

**Key words:** Urban morphology, earmarked buildings, development, Mbeya, Tanzania.

## INTRODUCTION

This study explores city morphological dynamics and to understand how city morphologies are changing. City morphology is the external appearance of the city built environment. Morphology describes urban form as it refers to its external built environment of the city mainly referring to buildings. Moshi (2009, p25) explains the concept of city structure as major component of urban morphological planning in governing the development of the city. Religious buildings, palaces, government buildings are the dominant elements of city morphology. City morphology expresses historical values and development of different times (Bacon, 1976, p23). City morphology can be seen in terms of several key elements such as land uses, building structures, plot patterns and street patterns (Carmona 2003, p61). Street patterns are the most enduring elements because of difficulties of organizing and implementing large-scale change, although changes do happen during times of

war, natural disasters or comprehensive urban redevelopment schemes. Caniggia and Maffei (2001) testify that these four elements combine to form patterns with similar characteristics and congruencies referred as urban tissues. Nnamdi (1997) argued that the study of relationships between architecture, urbanism and urbanization is still lacking in Africa. Moreover, African cities like Mbeya are influenced by characteristics of the medieval city, both in function and in structure. This included compact labyrinth dwellings, high population density neighbourhoods; defensive structures; uniformity of building heights; relatively large civic buildings compared to indigenous ones, mosques, churches and palaces. Traditional towns in Africa existed with no formal planning but had their traditional settlements patterns and physical structures largely dictated by traditional land tenure, land use system, kinship and religious believe of a particular village. There were unplanned settlements

but meaningfully ordered physical structured settlements largely respecting traditionally established arrangements and ways of life. Local urban activities had their places such as markets, market squares, religious worshipping places, farms, communal assembly places, playgrounds, access roads and footpath patterns were established without functional conflicts. This research aims to provide an analysis in terms of descriptions of urban morphologies through earmarked buildings using the Central Business District of Mbeya city in Tanzania.

Mbeya city which covers a total area of 222 Sq.km is in the south of Tanzania at latitude  $8^{\circ} 50' - 8^{\circ} 57'$  south of Equator and Longitude  $33^{\circ} 30' - 35^{\circ} 35'$  East of Greenwich. Tanzania is an Africa country which gained her independence in 1961. It is located in Eastern Africa between longitude  $29^{\circ}$  and  $41^{\circ}$  East, latitude  $1^{\circ}$  and  $12^{\circ}$  South, boarded by Kenya and Uganda in the North, Rwanda, Burundi and Democratic Republic of Congo (DRC) in the West; Zambia and Malawi in the South West; Mozambique in the South and Indian Ocean in the East. This is a country endowed with vast savannah plains with rivers, valleys, mountains and lakes. Mount Kilimanjaro which is the highest in Africa with 5895 meters above the sea level, and also the highest stand-alone mountain in the world is in the country. The country covers approximately 1 million square kilometers, with an estimated population of slightly over 44 million out of which 26.7% are urban dwellers (Mosha 2012, p1). When Tanzania gained her independence in 1961 Mbeya was a township with a population of 5,641 (United Republic of Tanzania 'URT' 1963, p16), whereas, at the moment the city population is estimated to be over 500,000 people.

### Theoretical framework

Qualitative research method was employed to explore real life research phenomenon of city morphological dynamics. Thus, case study research strategy was considered to be appropriate in addressing research objectives with a supplement of exploratory, descriptive and explanatory research methods. Mbeya city was selected because it is one of the important cities of Tanzania. Serving as the capital of Mbeya Region, the city is surrounded by splendid natural beauty and exceptional scenic splendor and another reason for its selection is its richness of available information. The research was carried-out through the study of different categories of city spaces and building from colonial period to present time and thorough analysis of similar literatures, retrieval of archival records, direct observation and photographic registrations.

### The Growth of Mbeya City from Historical City Perspective

The main ethnic groups are "Safwa" and "Nyakyusa".

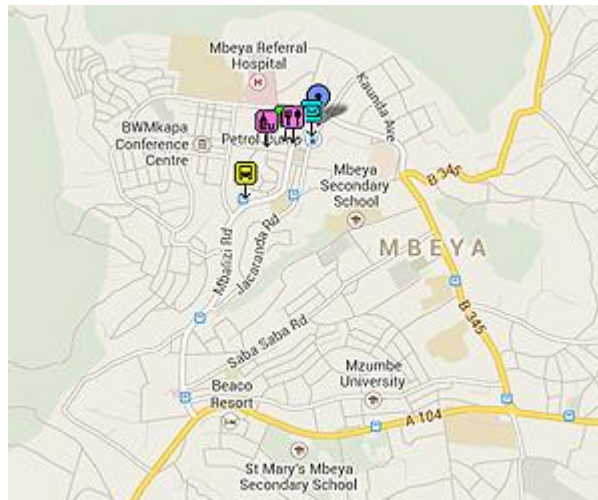
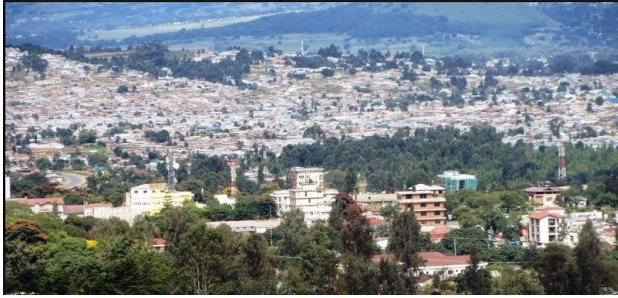


Figure 1. Map of Mbeya city.

According to URT (2006, p16) Mbeya city Council had a total population of 265,586 in the year 2012, out of which 126,153 (47.5%) were men and 139,433 (52.5%) were women having 64,179 households. Mbeya city is built over an elevated land and spreads along the slopes of two mountain ranges, namely Mbeya and Mporoto, at an altitude rising from 1,600 to 2,400 meters above sea level (Figure 1). The colonial British people were instrumental in the establishment of Mbeya city in 1922. The first city layer of buildings started at the current Central Business District (CBD) with the Indian market, residential buildings then followed by administrative buildings and police station during the colonial time. Missionaries settled in the current Mbeya city because of the cool pleasant weather, beautiful sceneries, the traditional trade routes which were passing-by and linkage of the central areas of the country to other countries in the South (URT 1975).

The present city development pattern of Mbeya (see Figures 2 and 3) is partially guided by historical city elements. The growth of Mbeya city is generated from three major stimuli. The first is the colonial setting, the second is the trading interactions and the third is the urban activities such as administrative structure. Furthermore, this study has revealed that Mbeya city is developing along new urban forces such as commercial needs, political influences and social cultural needs. Historical sites and features available in Mbeya city include St. Anthony Roman Catholic Cathedral built in 1950 (Figure 4), Anglican Church, World War II memorial site, independence road, the Japan-Tanzanian friendship monument, cemetery for the colonial European and Indians. These historical elements of the city acts as pivots onto which the city pattern is developed and organized. These features acts as monumental elements but at the same time dictate the way streets and spaces interact. Monuments serve as landmarks. They assist to



**Figure 2.** Co-existence of Planned and Unplanned Mbeya City Morphology.

**Source:** Field Survey 2014.



**Figure 5.** East Africa Railway Bus Station Built in 1945.

**Source:** Field Survey 2014.



**Figure 3.** Mbeya City Morphology- Around Bus Terminal Area Highlighting Building heights and Landscape.

**Source:** Field Survey 2014.



**Figure 4.** St. Anthony Catholic Cathedral Church Built in 1950.

**Source:** Field Survey 2014.

explore ways of seeing and experiencing the past in the present through careful observation of physical features of cities and in particular the various building forms and functions. The juxtapositions of past and present make cities richer places to live and visit. For instance, a visitor in Mbeya city would always admire St. Anthony catholic cathedral church. The architectural morphological impressions of the church is unique with a cross geometrical form from a plan-layout consisting of nave, isle and apse. Facades consisted of arched windows. The building of the cathedral comprises different architectural elements such as windows made of timber frames with glasses and battened timber framed doors. Other architectural element of this cathedral is the tiled roof which is a combination of gable and hipped roof structures. Tiles were used as floor finish materials. Walls were made out of strong pointed burnt bricks. East Africa Railway bus station (Figure 5) is another historical icon of Mbeya city.

### Local knowledge on City Morphology

It has been revealed that there is a great influence of colonial city morphologies that were established by the colonial administration before independence in African countries. Okpala (2009, p10) explains that modern conventional town-planning in Anglophone Africa has colonial origins. However, contemporary city morphologies are changing, as a result of both professional and local knowledge influences which exist in a particular city. Local knowledge is important in creating or formulating different patterns of contemporary city morphology. Local knowledge contributes in solving different problems related to social infrastructural services in the city such as housing typologies, drainage systems, market systems, public recreational spaces, water supply routes, electricity routes, feeder-road networks and others within urban vicinity. Local knowledge helps to incorporate social and traditional values of city dwellers. Rossi (1984, p23) recognize the

scale out the city against its buildings and create city image. Sobocinski *et al.* (2005, p7) explains that we

city as architecture and sees it as a discipline with self-determining autonomy, inseparable from life and society. He considers the city as a unified element of an overall synthesis of its disassociated parts, and is always undergoing changes, be it for natural or man-made phenomenon. A city is viewed as a product of the generative functional systems of its architecture and urban spaces. The city is also considered as a spatial structure, which follows principles of architecture, geography and peoples' ways of life. Furthermore, the city is viewed as human's achievement per excellence, and believe that the whole product of the city is more important than its single parts, and these parts are attached to nature and evolution of the city, and constitutes city's image. A man is therefore a central part of the city morphology. These city parts are observed in Mbeya to include streets, gardens, open spaces, recreational facilities, markets, offices, hospitals, fuel filling stations, bus stations and so forth to collectively make a functional city.

### City Morphological Changes

Ancient buildings and contemporary buildings in Mbeya city can be differentiated in terms of their built form, scale, texture, building technology and materials. Massing pattern of building forms in Mbeya City in Central Business District (CBD) area has been created following street patterns. Spatial pattern of buildings and street network in the CBD area is governed by colonial patterns. Public open spaces have been encroached by new buildings and changed their earlier functions into transitional uses. It is unusually observed in Mbeya city that buildings of different functions have similar building forms. For instance, colonial residential buildings have been changed to institutional office accommodation. Neighbourhoods are changing from spacious to dense. Guiding principles for the building densities and open spaces in different areas of Mbeya city have been neglected because most of the buildings are developed on individual basis and needs.

Dynamics of city morphology in Mbeya include many aspects such as horizontal and vertical development, changing physical pattern, built forms, spatial structures, streets, buildings and open spaces as shown in Figure 6. Recently, Mbeya city has expanded rapidly to especially settlements surrounding Sokoine stadium, Uhindini, Uzunguni, Sokomatola and National Bank of Commerce (NBC) building along Tanzam highway at Mwanjelwa area as shown in Figure 7. However, Chunya highway is unplanned settlement but it has significance in terms of its uniqueness of spontaneous planning but yet conducive for human habitation. It was found from this research that the city planning during the colonial times was more holistic and followed strict administrative and social structures as it is witnessed at Sokomatola, Uhindini, and Uzunguni colonial settlements. Figures 8



**Figure 6.** Contemporary Mbeya city Morphology along Lupa Way and around Post Office Area.  
**Source:** Field Survey 2014.



**Figure 7.** Contemporary Mbeya city Morphology - The National Bank Commercial building along TANZAM Highway built at Mwanjelwa area.  
**Source:** Field Survey 2014.



**Figure 8:** Spatial Layout of Sokomatola (Part of Mbeya city) Settlement.  
**Source:** Mbeya District Land Office.

and 9 shows grid spatial layout and panoramic view of



**Figure 9:** An Overview of Sokomatola Residential Morphology with Colonial Origin.

**Source:** 2014 Field Survey.

Sokomatola city morphology which was planned during colonial times to settle natives who were labourers and officials of colonial administration systems. This is one good example of colonial residential morphology which was planned holistically of which provision of all social services were sufficiently considered. It is expected that in the near future new city morphology will replace the old one due to population increase and technological advancement in the construction industry. The size of the city is likely to expand drastically in the CBD area and urban un-built spaces will diminish, and will result into a congested city if the planning division of Mbeya city and its regulatory authorities fails to act proactively and plan ahead of individual city developers.

### Conclusion and Recommendations

This study has empirically observed that cities are dynamic and their morphologies are changing. The colonial spatial planning was holistic and functional though it was beneficial to limited individuals. Colonial city morphology was defined with grid street patterns but contemporary Mbeya city morphology is insufficiently developing in unguided city morphological development due to overwhelming population increase and limited professional and financial resources. Provision of infrastructural services has proved to be the biggest challenge both in the old and in newly emerging urban settlements. Conventional planning intervention is largely ineffective due to limited number and involvement of urban planning professionals. Consequently, this has resulted into unguided city morphological changes into both vertical and horizontal expansion of the city which is unmanageable both in terms of planning and provision of social services. Local authorities should effectively manage city development and morphology. The history of cities should be preserved for the purpose of historical heritage. Policy makers, architects, urban planners,

engineers, building contractors should not work in isolation but should engage local people and individual key city developers in planning and managing city morphologies.

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