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WHAT THE DESIGN CONCEPTS AND SPACE STANDARDS SAY VERSUS ACTUAL IMPLEMENTATION ON THE GROUND

Implementation of Zoning Concepts and Planning Space Standards for enhancing pedestrian mobility in Planned Residential Neighbourhoods: The case of Sinza Residential Neigourood in Dar es Salaam, Tanzania

¹Author 1 affiliation
e-mail address¹, City, Country.

²Author 2 affiliation,
e-mail address², City, Country

³Author 2 affiliation,
e-mail address³, City, Country

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ABSTRACT

This paper examines how the zoning concepts and urban planning space standards adopted from colonial administration are implemented on the actual ground. Most cities in developing counties apply planning standards and concepts which are inherited from Europe or North America, Tanzania inclusive. Planning and design concepts that segregate residential, commercial and industrial activities and impose low densities that require large areas of urban land, and impose high transport and environmental costs and inhibit opportunities for local economic initiatives which can help lift communities out of poverty. Development control policies are also frequently based on imported or inherited norms, rather than traditional practices and local climatic conditions. Despite the existence of the inherited planning concepts and standards, however, little is known whether such concepts and standards are implemented on the actual ground and achieved.

Goal and Objectives:

The overall objective of this study is to examine whether the planning concepts and space standards inherited from colonial administration are implemented and achieved on the ground and the resulting effects on pedestrian mobility.

Methodology:

The study adopted descriptive research design of which data collection techniques involved case study, interviews, observations and surveys. A combination of methods were used during the fieldwork, including expert interviews to identify areas inside the case study block for in-depth survey, followed by intensive surveys, and use inventory and semi-structured interviews with residents. A total of 25 residents were purposely selected for in-depth interviews.

Results:

Fieldwork results reveal that the concept of zoning density plots according to incomes i.e. high, medium and low density plots to accommodate the low, middle and high income earners respectively is not fully implemented and it is outdated as it does not reflect the post-colonial reality. Likewise, the concepts of designating special land use per area such as pure residential, commercial, residential cum commercial, institutional or industrial areas, where no other uses are allowed are inappropriate today as they don't reflect the urban reality. The existing development in the study area seemed to be a kind of mixed use development. Violations of minimum setbacks and plot coverage in the study area were prevailing. The planned public open spaces or road reserves were mainly used for commercial, office, religious site and parking activities instead of green areas.

Keywords Click or tap here to enter text.

Space Standards, Urban Design concepts, Pedestrians, Mobility, Neighborhoods

2.0 Context and background

Traditional approaches to spatial planning and development control in many developing countries are based on assumptions, interests and methods inherited or imported from Europe or North America (Payne, 2000). Tanzania is one of the countries in Africa using zoning concepts inherited from colonial administration. Physical planning in Tanzania has been operational since the colonial Tanganyika and continues to independent Tanganyika and later on Tanzania based on the planning concepts and standards inherited from the western countries. The most obvious of these is master planning, by which projected requirements are spatially distributed within differentiated zones for residential, commercial, industrial and recreational or institutional uses. The intention of such plans is to secure the planned and efficient use of land consistent with long term policy objectives and provide a lead within which private capital should be directed. Unfortunately, the implementation of such plans within developing countries were originally intended to isolate activities and social groups and benefit the colonial communities. Their implementation since independence has often remained strongly influenced by this colonial legacy and has operated to the clear benefit of the social and political elite and the disadvantage of incoming migrants and the indigenous urban poor who are unable to conform to official norms and standards.

In 1920s, the Germany colonial administration prepared the first Kariakoo *gridiron*¹ *pattern* layout plan (Drg No 1/339/561) to guide the urban development in Kariakoo. By this time, the design concepts were based on the urban residential land use zoning concept, where Dar es Salaam was divided into three zones:

- Zone I was designed for Europeans covering area like the Oyster Bay area, Sea View and the low density areas surrounding the central area. The plot sizes were low density plots measuring 0.4 hectares where only one house per plot was allowed. In addition, abundant services and amenities in these plots were also provided;
- Zone II was designed purposely for Asians with medium plot sizes ranging between 1000-2000 square metres, with 20 to 26 persons per hectare and modest services were provided. This zone covered the central business district (CBD) including areas like Upanga, Kurasini and Upanga; and
- Zone III was designed for Africans with high density plots ranging between 300 -375 square metres and about 40 persons (8-12 families) per 0.4 ha and from 8-12 houses per 0.4 ha (Kombe 1995: 73). The zone for Africans included areas like Kariakoo, Ilala and Magomeni.

These urban residential land use zoning concepts were later adopted by the British colonial administration (i.e. 1921 to 1961). Until the 1940s, the urban land development in Dar es Salaam was still guided by the zoning concepts adopted from the Germany colonial administration. In 1949, a British firm of Consulting Engineers under the leadership of Harry Ford prepared the first Dar es Salaam master plan. This master plan was prepared at a time when Dar es Salaam was experiencing rapid urbanisation and rapid spatial expansion. The population of Dar es Salaam had by 1945 increased to 60, 000, and the fact that the town had reached a status of being a municipality in 1945, the British government decided to prepare the first master plan that could guide the urban development (Lupala, 2002). The 1949 master plan aimed to address mainly two issues: *land ordering* that was considered to be *ad hoc* and provide *a basis for the expenditure of funds* provided under the colonial development plans (*ibid*). The design concept of the 1949 master plan was in line with the zoning concept of the Germany administration except that the zones earmarked for Europeans, Asians and Africans were replaced with low, medium and high density respectively to reflect zones where Europeans, Asians and Africans lived. Likewise, spaces that separated the three race zones (Europeans, Asians and Africans) continued to be reserved as buffer zones as it was during the German administration (Kironde, 1994: Lupala, 2002). This master plan again strengthened the segregation concept that separated the natives from Europeans and Asians. Through this Master Plan, areas for future industrial development along Pugu road and commercial centres within the proposed residential areas were earmarked. Moreover, directions for the preparation of planning schemes, land acquisition and the designation of the type of houses to be erected in certain areas and specifications on the type of building materials were also provided.

The planning standards are defined as norms for land use planning in formal planning system (Wakuru and Majani, 2005). Cities in the world apply planning standards which are governed and regulated by legal and administrative framework. The standards were originated from change in socio-economic and investment aspiration needs in urbanization and industrialization production processes in the 19th century in Europe. Tanzania is one of the countries

¹ The gridiron pattern is a simple system of two sets of parallel streets crossing at right angles to form squares or rectangular blocks

in Africa using urban planning standards and planning concepts inherited from colonial administration. Colonial urban planning was based on modernist ideological rationalities drawing from layout planning, land use zoning and master planning. The British Town and Country Planning of 1947 was adopted in many British colonies and even updated versions of the legislations retained the major features in several countries (Payne, 2000; Scholz et al., 2015). Land use planning standards including land use zoning were based on the model of low density, green city that reflected the ideas of a colonial version of the Garden City combined with ideologies of a city's sanitation and health concerns. In most countries, the state is not in a position to apply a responsive legal framework and to mobilise adequate resources to guide rapid urbanisation. Studies (Ambe, 1999; Scholz et al., 2011) shows that some of the obstacles to match with the post-colonial socio realities is the use of outdated legal framework and the inappropriate planning concepts inherited from colonial governments which often contradict post-colonial policies and which are unsuitable to respond to rapid urban growth. As in many other British colonized countries in Africa such as South Africa and Ghana, Tanzania is still using a British planning system in the current planning legislation and implementation (ibid). Like other many countries in the world, in Tanzania, these standards are negotiable for being adopted in a particular planning area through the local Master Plans.

With the enactment of the Town and Country Planning Act of 1947 in England, the planning system in Tanganyika was influenced by such enactment. The new Ordinance to be applied in Tanganyika was enacted as a law in 1956 commonly known as Town and Country Planning Ordinance Cap 378 of 1956. After independence (that is in 1961) and 1965, the colonial planning standards were modified but with little attention to post-colonial socio-economic realities. In 2007, the Town and Country Planning Ordinance was amended and a new Act known as the Urban Planning Act No.8 of 2007 was enacted to replace the Town and Country Planning Ordinance of 1956. Currently spatial planning in Tanzania is done in accordance to the urban planning and space standards of 1993 amended in 1997, 2011 and now are those of 2018. This document covers space standards for residential plots, health facilities, education, public facilities, recreational facilities and standards for the road network. The inherited planning system (mainly unchanged since the 1950s) and colonial era plot size standards (official minimum plot size is 400-800 m²) is perpetuating urban sprawl, and is a relatively weak instrument for managing rapid urban development (Ambe 1999, Kombe and Kreibich 2007). Space standards for setbacks, plot coverage and plot ratio for detached and multi-storeys buildings, golf course, parking lot space requirements, and space standards for agricultural show grounds are also provided. This implies that these standards should be adhered during plans preparation and implementation. However, despite the adoption of zoning concepts and spaces standards inherited from the colonial administration, little is known whether such zoning concepts and space standards adopted are implemented on the actual ground and achieved. Therefore, this paper examines how the design concepts and space standards adopted in Tanzania are being implemented on the actual ground and achieved. It is through this background this study was conceptualized.

2.0 Methodology

This paper adopted a mixed research methodological approach embodying qualitative and quantitative approaches (Bryman, 2012:35; Cresswell 2009:4). It was rooted in an extensive and "in-depth" description of some social phenomenon, the availability of the contemporary phenomenon in a real-life context, and the possibility of having investigators control and access actual behavioural events (Yin, 2018). The study adopted descriptive research design of which data collection techniques involved case study, interviews, observations, surveys, document review and use inventory and semi-structured interviews with residents. A cross-sectional study was conducted with two stakeholders: 25 self-built house owners and Municipal officials (Town Planning Officers, Road Engineers and local leaders). Systematic and convenience sampling techniques were used to select participants from the groups, respectively. Direct measurements of plot sizes within lots were carried out to determine if they complied with the required building setbacks, plot coverage and plot ratio. Information obtained from the in self-built house owners included their socio-economic characteristics, level of awareness, perceived importance, compliance with standards and factors influencing compliance. The Town Planning Officers also provided information on standards (plot coverage and setback requirements), mechanisms and tactics for regulating open space provision. Primary data collection methods through interviews were employed in the case study. The interview guidelines used were both open and closed-ended questionnaires of which the open-ended questionnaires were used to guide interview with officials such as Town Planner, Civil Engineer, Mtaa and Ward leaders, while closed-ended questionnaires were used to guide the interview with the households and land developers. The data collection includes socio-economic information of the households, including their level of education, income level and economic activities. Open Data Kite (ODK) was a tool used for data collection.

Thereafter, the cross tabulation was done with the help of Statistical Package for the Social Sciences (SPSS) software to assess how these collected data correlate one another.

3.0 Results and Discussion

3.1 Profile of Sinza Settlement

Sinza is an administrative ward in the Kinondoni Municipality, Dar es Salaam City. It is located in the west, about 9 kilometres from the City Centre and about 2 kilometers off Morogoro Road. The local administration at the Ward level is under the Ward Executive Officer (WEO), while at *Mtaa* (Sub-ward) level the leadership is headed by the Mtaa Executive Officer (MEO). The Ward has a total of five sub-wards which are Sinza A, Sinza B, Sinza B, Sinza C, Sinza D, and Sinza E with the total coverage of 3.3 km². According to the 2022 census, the ward has a total population of 31,396 people of which 16,637 are females and 14,759 are males (NBS, 2022). Furthermore, there are 10,874 households in the ward with an average household size of 2.9 persons (ibid).

3.2 Planning concepts adopted Sinza Neighbourhood

Sinza neighbourhood was planned in the early 1970s under "Sites and Services projects"² that were funded by the World Bank programs. In 1974, the Ministry of Lands, Housing and Human Settlements Development (MLHSD), prepared the layout plan (Figure 1), Town Planning drawing No.1/73/174 that got approved by the Director of Urban Planning on 05th of May, 1974 (Mng'ong'o, 2004). Sinza was planned as a residential area for the lower income groups dominated with small plot sizes (high density plots) of 288 square meters (Bhayo 2014; Lupala, 2002), and the plot coverage for this size of plots was restricted to 40% of the plot area (URT, 1997 and 2011). By that time, this was the smallest plot size which was considered affordable by the low income people. Starting from mid-1980, commercial uses started to emerge in Sinza. These included retail shops, guest houses, hotels, small groceries, restaurants, service industries, social halls and boutiques (Lupala, 2002). Kironde (1991) cited in Vedasto and Mrema (2013) argues Sinza was planned to overhaul the congested Manzese informal settlement (nicknamed as "Soweto" by that time because of the level of criminality which could be matched with what was by then happening in South Africa during the apartheid regime) that was very insecure to live in. Selection of Sinza for the World Bank projects was influenced by its location, of being on the outskirts of the city and the scattered population of that time. Thus, planning and laying out the infrastructure would not destroy many physical properties. The Sites and Services projects had typical housing types, similar neighborhood designs with identical street layout patterns and considered infrastructure provision like water, sewer and electricity (Goldie, 1979). However, the plan was not fully implemented by the Kinondoni Municipal Council due to lack of sufficient financial resources which is linked to failure to link the plan with the local budgets (UN Habitat, 2010).

Figure. 1: Sinza sites and services layout plan of 1974.

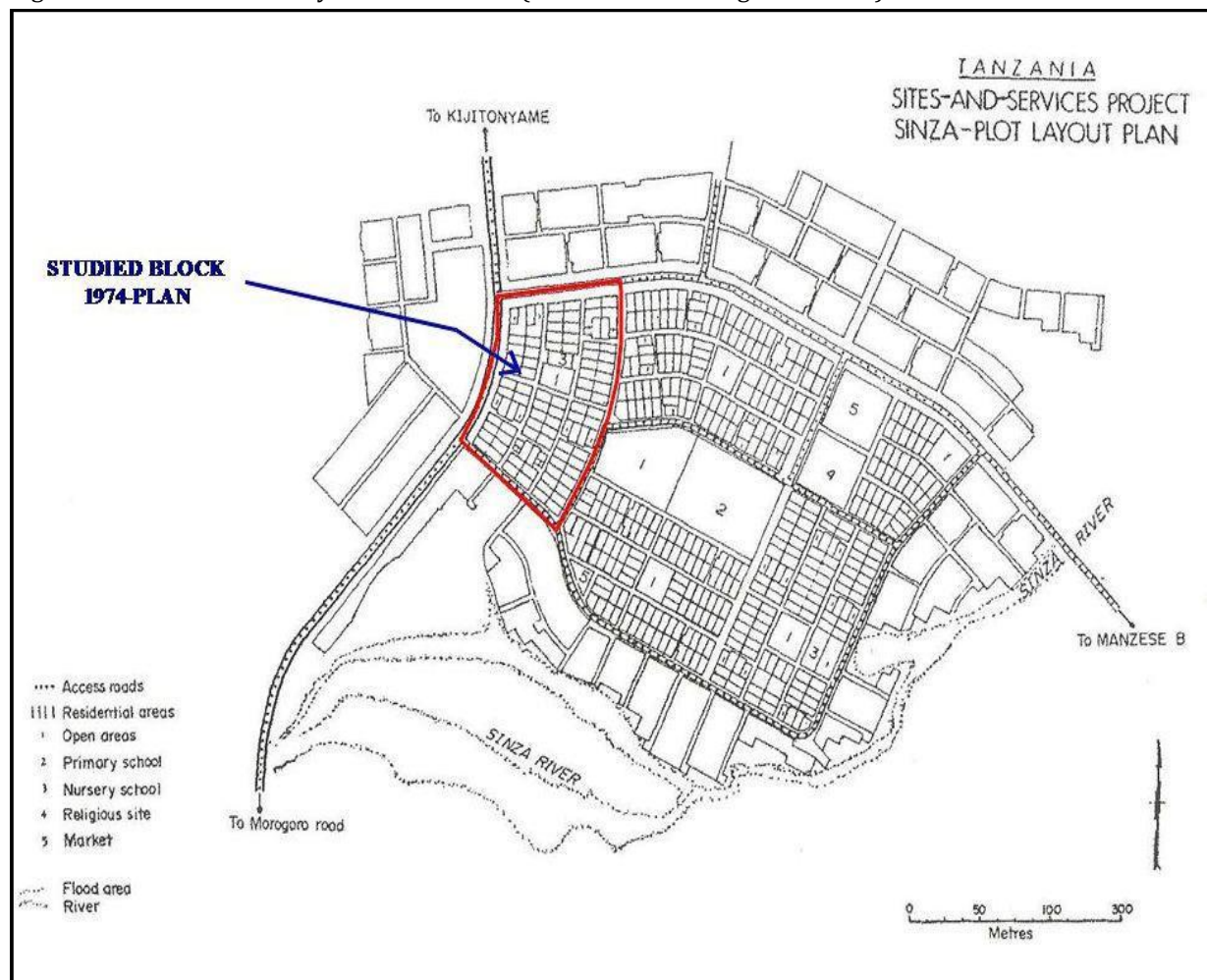
² Sites and Services approach to planning was a system whereby the state provided land, planned it and provided essential infrastructure like roads, water and electricity to beneficiaries (citizens). The plans were typical in terms of design and sizes (Goldie, 1979).



Source: Modified from Lupala,(2002) to suit the study

Figure 1 shows that, the Sinza Sites and Services layout plan of 1974 took into consideration provision of various land uses like residential plots, public facilities like primary schools, market places, religious facilities, open spaces, road circulation and open spaces (in black spots). The design concept adopted in Sinza is more similar to the neighbourhood unit concept proposed by the 1979 Dar es Salaam Master Plan. The planning of Sinza aimed to accommodate the low income class and hence it was a pure residential neighbourhood. However, Implementation of this concept and the planning standards adopted in Sinza is discussed in the next section: The studied block is in Sinza D, which was planned in the beginning of the project as shown by Sinza WB SSP plan 1974 (Figure 2).

Figure 2: Selected case study Block in Sinza D (Part of Sinza D Neighbourhood)



Source: (Vedasto and Mrema, 2013; Siebolds and Steinberg 1982:117)

3.3 Implementation of the concept of zoning residential plots based on income groups

As introduced earlier, planning of Sinza comprised of relatively small plot sizes (288sq. m). It was anticipated that smaller housing units that are self-contained would be built by the low-income people, specifically who were displaced from the congested Manzese informal settlement. According to URT (1997 and 2011), the proposed plot sizes (288 square metres) falls under high density plots which are often anticipated for lower income group. Currently, high density plot sizes vary between 300-600 square metres, and are largely intended for the lower income households (URT, 2018).

Table 1: National Space Standards for residential plots versus actual implementation in Sinza

Type of plot	Plot sizes as per URT, 1997 (in sq. metre)	Plot size as per URT, 2011 (in sq. metre)	Actual plot size in Sinza (in Sq.m)
High density	400-800	300-600	288
Medium density	801-1600	601-1200	-
Low density	1601-4000	1201-1600	-
Super low	-	1601-2500	-

Source: URT, (1997; 2011) and Lupala, (2002)

Table 1 shows that the plot sizes adopted in Sinza (288sq. m) are below the national planning standards for high density plots (i.e. 300-600sq. m). As the plot sizes were relatively small, today, one could expect to find most of these plots owned by the low income class as the middle and higher class prefer for larger plots. To the contrary, higher and middle-income group bought of the low income plots and built larger houses resulting densely built up area and higher plot coverage. The middle and higher income earners had occupied the high density plots and in some cases these plots are used for commercial activities. This shortfall is admitted by the National (Draft) Housing Policy of 2007 that “though Sites and

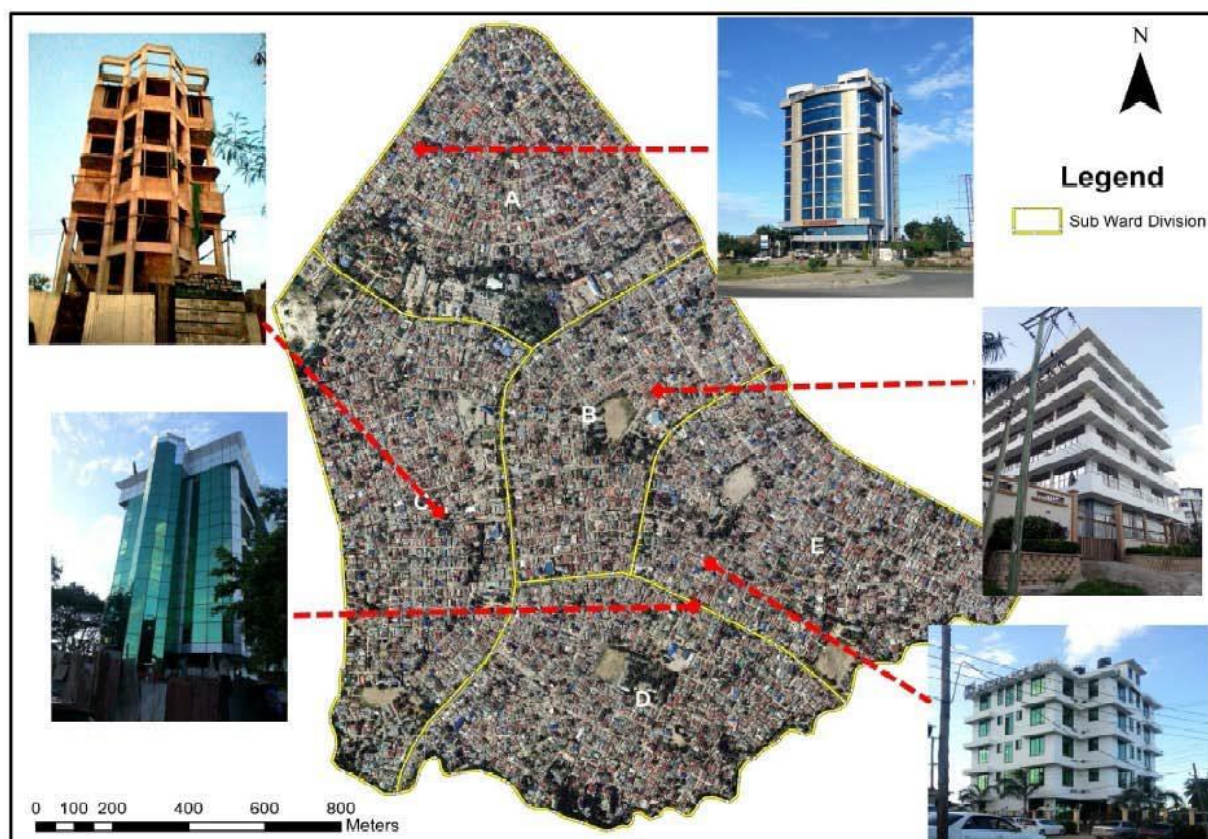
Services project was meant for low income households; it has transpired that most of the land developers are within the middle to high-income brackets". Studies (Kironde, 1991; Vedasto and Mrema (2013) makes it clear that only 30% of the house owners in Sinza belong to the low income group. This implies that the concept of zoning residential areas based on income categories (i.e. high density plots for the lower income groups; medium density plots for the middle income earners; and low density plots for the higher income earners) are inadequately implemented. This is due to the fact that the zoning concepts which are in most cases, inherited from the colonial administration resulting into plot density categories of high, medium and low density plots to be developed by the low, medium and higher income earners respectively do not reflect to the post-colonial reality and thus do not have strong impact on settlement development today. In practice, it is very rare to find any planned residential settlement in Dar es Salaam that has been systematically developed for low-income earners only and implemented. Middle and higher income groups often occupy the high density plots designated for the low income class and some cases these plots are used for commercial activities.

However, with regard to pedestrian movements the study has found out that the design of high density plots in Sinza in a gridiron pattern coupled with the informal land use mix has contributed to the easy access of local shops, public bus stops, cafes, restaurants and bars/grocery. Out of the 25 resident households interviewed, 23 (92.0%) and 15 (60.0%) accessed local shops and public transport respectively within 10 minutes walking time. This finding supports Ewing (1999) though his work refers to the western countries. In his work, Ewing argues that higher density plots increases the willingness to walk instead of driving; they compress enough activities into a small area to allow people to walk to almost everything.

3.4 Implementation of the concept of fixed land use per area

Though the Sinza layout plan (Drawing No. 1/73/174) of 1974 had most of its plots designated for residential use, in reality this concept is no longer upheld. Currently, Sinza is rapidly changing from residential to accommodate other land uses like commercial activities. Several guest houses, hotels, restaurants, shops, small groceries, service industries, social hall, boutiques and multi-story buildings have emerged in the neighbourhood leading to mixed use within the area. Single storey buildings are being transformed into multistory buildings as Figure 3 shows. These land use changes have not only increased densities which have not been compromised due to competition of space but also exposed pedestrians to insecure environments. The emerging vertical development coupled with mixed use development has resulted into encroachments of walkways along the road side and arcades.

Figure 3: Sinza settlement and the emerging high rise buildings



Source: Adopted from Lupala and Bhayo, (2014) and field observation, March 2015

As Figure 3 shows, it is obvious that Sinza neighbourhood is no longer a pure residential neighbourhood, rather a kind of land use mix. In blocks A, D and E, 15 per cent of all buildings had been transformed from residential to residential cum commercial uses. Middle and high income people have been buying off low income people and reconstructing larger high-rise commercial residential buildings (Lupala and Bhayo, 2014). The changing landscape of Sinza is largely attributed to the increase in land value following the establishment of the Mlimani City commercial complex and completion of the Sam Nujoma highway that marks the border with Sinza. The newly emerging buildings in Sinza are multi-storey but are still scattered and isolated to form a continuous skyline. The isolated buildings pose a threat of privacy to the surrounding low rise houses because people in the high-rise houses can have a view of indoor and outdoor activities taking place in the low-rise houses. If this trend will continue unchecked, the challenges of loss of privacy, blocked cross ventilation and sun lighting will be more apparent

Together with the negative effects brought by the ongoing housing transformations and frequent change of use, on the other hand, the new emerging concept (land use mix) has contributed to easy access to local shops, cafes, restaurants and bars due to the mushrooming of home based income generating activities such as small shops/Kiosk, pharmacies, workshops, tailoring shops and leisure activities like bars, restaurants and cafes. The commercial activities were mainly located along the main roads (Shekilango and Uzuri roads) and at the fringe of the settlements. Locational preferences of commercial activities along the main roads are associated with the desire by the operators to ensure accessibility and proximity to customer flow.

The land use changes observed in Sinza have increased densities which have not equivalently been supplied with additional infrastructure. The comfort of a pedestrian has been compromised due to competition of space by these activities which have not only increased densities, but also exposed pedestrians to insecure environments. The increase of activities and motorization without infrastructure has constrained pedestrian safety management in the rapidly growing settlements like Sinza.

To understand whether the emerging land uses are legal or illegal in-depth discussions with Town planners at the Kinondoni Municipal Council were held. The discussion revealed that the change of use that is taking place in Sinza and other planned settlements within Dar es Salaam is done formally by the responsible authority, though in turn does not take into account the increased infrastructure provision in the affected areas. One of the urban planners at the Kinondoni Municipal Council acknowledged this: *"The Municipal Council approves multifamily dwelling houses and commercial uses in Sinza due to the higher demand for such services in the area. However, Sinza neighbourhood is in the Council's plan to re-plan so as to strengthen development control in the settlement³".*

The Town Planner added that though the Municipal Councils are empowered to approve the building plans and endorse land use changes within their area of jurisdiction, scrutiny of building plans and change of use plans does not take pedestrian requirements as a consideration for approval. He said that *"..... Pedestrian needs are not usually a consideration for approving building plans and change of use plans"*.

With these quotes, it seems there are no pedestrian circulation conditions that are put forward prior to the approval of building plans and change of use. Furthermore, it appears there is no clear concept for the distribution and localisation of these emerging commercial and service related activities. This situation had resulted in the new activities being haphazardly spread in the entire settlements without any planning concept. Retail shops and workshops are located in the buildings along the main collector roads like Shekilango and Uzuri roads: This contradicts the official neighbourhood design concept proposed by the 1979 Dar es Salaam Master plan with communal services and commercial uses located at the centre of the neighbourhood.

Newman (1996) recognizes the importance of designs which allow buildings to face streets to guarantee natural surveillance of the streets (keeping eyes on the streets). About 67 percent of the respondents in Sinza felt safe walking in streets faced by multifamily high rise buildings than single detached houses. One pedestrian confirmed this by noting: *"Personally, I feel safe walking in a street faced by high-rise building or where many families are living in it; because I am assured of safety. If I'm attacked, for sure many family members will rescue me and the possibility of catching the thief is high as opposed to a street which is faced by only one family building which limits my safety"*.

³ Interview with a Town Planner at the Kinondoni Municipality on 20th March 2015.

Though the rapidly changing neighbourhood is seen as a constraint to pedestrian safety management, this trend of development can be tapped as a potential. With increased movement within the neighbourhoods, this can be used as a bait to push and advocate for pedestrian safety agenda in the development process.

3.5 Space standards for plot setbacks versus actual implementation in Sinza

To avoid development beyond the plot boundaries, the URT (1997) and URT (2011) provided for minimum building lines and setbacks that are presented in Table 10.2. These building lines were meant to guide the urban development in planned residential areas

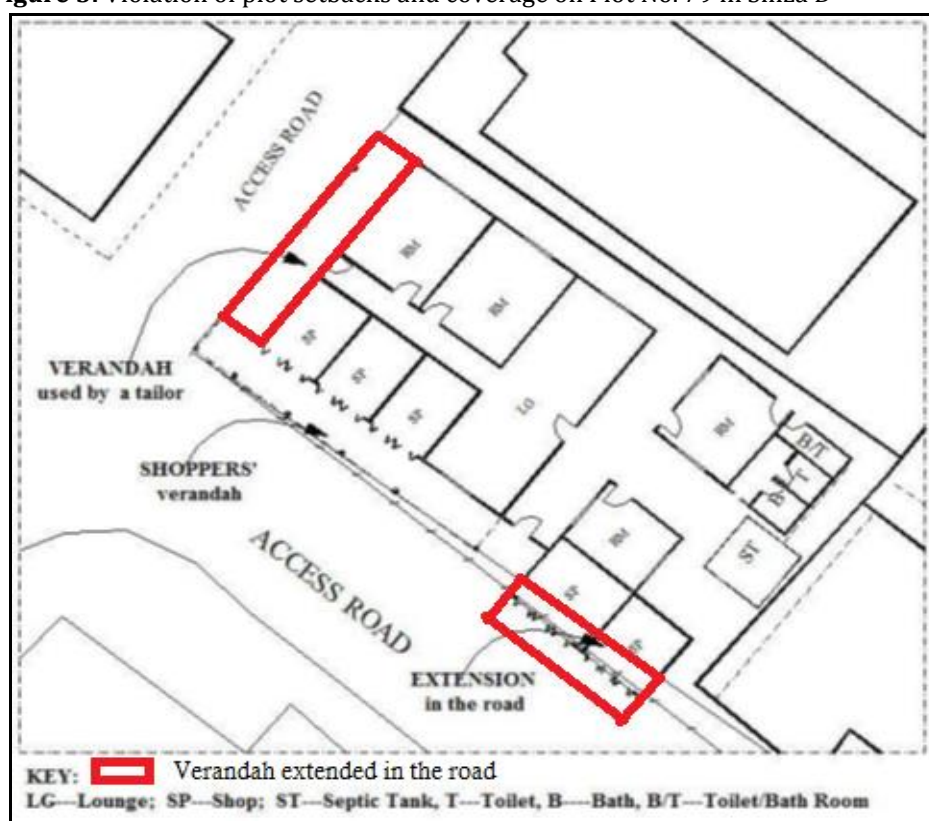
Table 2: Minimum building lines and setbacks adopted in Tanzania

Type of plots	Plot Sizes as per URT, 1997	Plot Sizes as per URT, 2011	Setbacks			Plot coverage
			Front	Side	Rear	
High density	400-800	300-600	3.0	1.5	1.5-2.0	
Medium density	801-1600	601-1200	3.0	3.0	3.0-5.0	
Low density	1601-4000	1201-1600	5.0	4.0	5.0-10.0	
Super low	-	1601-2500	7.0	7.0	7.0	

Source: URT, (2002 and 2011)

Despite the existence for minimum space standards for building lines and setbacks, yet the plot coverage and setbacks have been ignored. The plot coverage in high density plots was limited to 40% according to URT (1997). The field study however observed the resulting plot coverage in most plots in Sinza B and D range between 70% and almost 100% and hence exceeding the building lines and setbacks. This is far above the recommend plot coverage of not more than 40% in high density areas. The observation made on Plot 79 located in Sinza D found out that the landlord had his main and rear house transformed to include shops fronting the two access roads bordering the plot. The shops in the main and the rear building were making good business. As a result, many landlords had introduced verandas on the front and on the sides to provide shade against direct sun and rain. The same observations were noted by Vedasto and Mrema (2013) that most of the land developers in Sinza have exceeded the building lines. As a consequence, the extension went beyond the permitted setbacks of 1.5 and 3.0 meters (Figure 5).

Figure 5: Violation of plot setbacks and coverage on Plot No. 79 in Sinza D



Source: Modified from Vedasto and Mrema, (2013:167) to suit the study

Figure 5 shows that the verandah fronting the two shops in the rear building is extended encroaching upon the right of way. Likewise, the shoppers' verandah that front the main building are also constructed almost up to the edges of the plot meaning no setbacks are provided. This contradicts the proposed frontage as well as blocks the continuity of pedestrian walking paths.

This observations were line with the complaints of the residents of Sinza B that building extensions had blocked the connectivity of the walking paths (Figure 6). Mr. K. D, a 71 elderly and a retired officer complained that: "..... Land developers in Sinza never adhere to setbacks, especially during fence construction and other building extensions. Despite the small plot sizes (12x24meter), still house owners force to erect fence walls surrounding their buildings This practice has resulted in the encroachment of pedestrian space, and therefore we pedestrians end-up mixing-up with the motorists, a situation which is very dangerous tor our lives".

Figure 6: Violations of plot setbacks in Sinza



Source: **Field observations in Sinza, March 2015**

Figure 7: High fencing walls in Sinza settlement



In connection with the building fences, Mng'ong'o (2004) argues that the Sites and Services Plan of 1974 recommended plot fences in Sinza to be made of transparent materials. In the contrary, it was observed that almost all the fencing were built of solid block walls instead of transparent materials (Figure 7). The construction or extensions of fencing walls not only had narrowed the access roads, but had also blocked the 'eyes on the street' (Jacobs, 1961) the concept that could enhance safety and encourage walking in streets. The effects of building extensions were largely felt in the narrow streets which are already under competition from the other motorized and non-motorized means of transport like cars, motorcycles, tricycles (*bajaji*), bicycles, pushcarts and pedestrians.

Due to continued building extensions, sizes of roads in Sinza D are generally too narrow to further accommodate new developments, a situation which has led to densification of the neighbourhood beyond its carrying capacity. Streets in Sinza are narrow (6-10 meters right of way) with neither pedestrian walkways nor parking lots provided. Motorists park on the 6 meters road, thereby reducing the carriage way to 3- 4 meters. These observation results are in line with Mng'ong'o (2004) who reports that almost all the residential access roads in Sinza have been narrowed to 4 to 7 meters wide carriageway. Scholz et al., (20011); Rweyemamu and Mrema (2013) Lupala and Bhayo (2014). Dunge (2014) also make the observations, i.e. housing development in Sinza is done without respecting the plot setbacks and coverage.

3.6 Space standards for public facilities versus actual situation in Sinza neighbourhood.

Regarding implementation of space standards for public facilities in Sinza, the study has noted a deviation between the planning standards and actual implementation of the standards. As discussed earlier, the Urban Planning and Space Standards Regulations of 1993 which were amended in 1997 and 2011 require every residential neighborhood to have

a dispensary/clinic, nursery school, primary school, market, shops, public buildings and service trade site. The 1979 Dar es Salaam Master neighborhood unit concept also suggested a primary school, market, dispensary/clinic, children play area and recreational areas be provided at the neighbourhood centre and within housing clusters to ease access to these public facilities.

The field observation however, observed that these planning standards were not fully implemented in Sinza. As a result, public facilities were inconveniently located and people had to walk a distance to access some of the public facilities. That is why 17 (68.0%) out of 25 residents interviewed in Sinza perceived that the public facilities were inconveniently located, except small shops, bars, cafes and restaurants. Table 10.3 summarizes a comparison between the planning standards and actual implementation.

Table 3: National Space Standards for Public Facilities versus actual situation in Sinza

S / N	Type of Facility	Gross area/1000 persons (sq.m)	Recommended areas at Neighbourhood level	Actual situation in Sinza	Remarks
1	Market	0.4-0.5	1200-2500 sq.m	Only provided in Sinza A. The rest Sinza B, C, D and E lack market places	Most residents cover over 1.0 Kilometer to access Market service
2	Dispensary/ Clinic	0.5 sq.m	3,500-5,000 sq.m	With exception of Sinza C, the other N'hoods (Sinza A, B, D and E) lacked public health facilities	Most residents cover over 1.0Km to reach a health facility
3	Primary school	40	1.50 – 4.5ha	Provided, except in Sinza A	- School children in Sinza 'A' attend primary school at a distance of about 2-14 Kilometer away -Mugabe Primary School is not centrally located
4	Nursery school	30	1,200-1,1800sq.m	Spaces for Nursery schools were provided, but not implemented on the ground. They are encroached upon by other land use activities	Nursery schools are operated within primary schools
5	Shops	0.8-1.0	250 – 500 sq.m	Conveniently located, though most of the shops were not initially planned just emerged informally.	The majority of the residents accessed local shops within 10 minutes.
6	Public Buildings	0.25-0.5	800-2500sqm	Provided, though some are constructed on public recreational open spaces	Encroachment of public open space like CCM office in Sinza D
7	Service trade site	0.4-1.0	2000-5000 sq.m	Not provided	Vendors encroached upon the pedestrian space

Source: URT, 1977 and field observations, April 2015

Table.3 shows that that the planning standards for public facilities proposed by URT (1997) together with the neighbourhood unit concept suggested by the 1979 Master Plan were not fully implemented. These spatial

inconveniences are affecting access to common facilities due to long distances covered as people had to walk a distance to access some services. However, the planning concept adopted in Sinza seems to reflect the neighbourhood unit concept proposed by the 1979 Master Plan.

3.7 Space standards for road networks versus actual implementation in Sinza

Regarding the space standards for road networks, the actual situational situation also was different from the planning standards. Table 10.4 provides for approved space standards for road network versus actual implementation on the ground.

Table. 4: Implementation of Space Standards for road widths in Sinza

S / N	Type of road	Standard width in Meters as per URT (1997)		The actual situation in Sinza		Remarks
		Right of way	Carriage- way	Right of way	Carriage-way	
1	Access roads (in residential areas)	10.0-20.0	6-7	6-12	3-6	Encroached upon by parking and petty traders
2	Access roads (in shopping areas)	20	10	6-15	6-7.5	Encroached upon by small scale business activities encroaching
3	Local distributors	30.0	7.0-7.5	20-25	7	Temporary structures obstructions by building extensions and informal vending activities - Pedestrian space was not organized
4	Pedestrian Access	2-3	2	None	None, except along Sam Nujoma road (1.5m)	Pedestrian walk on the shoulders of the roads and using the same carriageway with motorists

Source: URT, 1997 and field observation in April 2015

The non-implementation of space standards for road networks had led to limited pedestrian space both along the local distributor/collector roads and in residential streets which are usually too narrow and without pedestrian walkways. Most of the access roads (in residential areas) had the right of way ranging between 6 and 7 meters wide instead of 10 to 20 meters spelt on the urban planning and space standards regulations. This road sizes seemed insufficient to accommodate vehicles and pedestrian facilities. To make the matter worse, motorists park on the 6 metres road, thereby reducing the carriage way to 3 metres, which is competed by all means of transport (vehicles, motorcycles, *bajaji* (three wheeled vehicles), cyclists, hand carts and pedestrians).

Moreover, though the distributor/collector roads in Sinza ranged between 20 and 25 metres RoW, still the pedestrian space is not organized and sometimes they are encroached by the informal vending activities. As a result, pedestrians are forced to walk at the road shoulders or share same carriageway with motorists as figure 10.8 shows, a situation which endanger the pedestrian safety. Figure 8 show the actual situation as observed along the local distributor/collector roads.

Figure 8: Pedestrian space encroached by parked cars and Tricycles



Source: Fieldwork in Sinza, March 2015

Figure 8 shows the lack of public parking spaces in Sinza (not considered in the 1974 Sinza layout Plan). This means that parking is done in walkways. When asked to explain why the pedestrian walkways in Sinza were inadequately provided, the Acting Municipal Engineer at the Kinondoni Municipality noted that the non-provision of pedestrian walkways is due to financial constraints facing their day to day operations (Table 5). He noted: *“Every year we budget wisely for infrastructure provision, but, the allocation is usually half the amount budgeted. How can we then effectively provide for pedestrian infrastructure?”*. For instance, in the financial year 2013/2014, Kinondoni Municipality was budgeted for 5.2 billion TZS (US\$ 2, 749, 868) for road improvements. Out of this, 980,000,000 TZS (US\$ 518,244) was budgeted for Sinza Ward. The municipal however, received a total amount of 618, 333, 333 TZS (US\$ 326, 987) for road improvement in Sinza Ward, which was 361, 666,667 TZS (US\$ 191, 257) less than the budgeted amount. The source of fund is the central government, municipal revenues and Local government Capital Development Grant.

Table 5: Financial statement of Sinza road improvement programme 2013/2014 financial year

Financiers	Amount Budgeted (in TZS9)	Amount Received (in TZS)	Difference
Local Government Capital Development Grant		-	
Municipal revenues		595,000,000	
Central government		23, 333,333	
Total	980,000,000	618, 333, 333	-361, 666,667

Source: Kinondoni Municipal Council, March 2015

Also, no specific budgets are made for pedestrians. This affects the manner in which priorities are set for development with pedestrians not been given first attention. According to the Municipal roads engineer, the inadequate fund provided for road improvements in Sinza neighbourhoods and the Kinondoni Municipality as a whole has led to the failure to implement all components of the road cross-sections, pedestrian walkways being inclusive. When asked whether pedestrian walkways were considered in the 2013/2014 financial year, the Municipal engineer added that: *“Despite we take time to prepare road cross-sections with all necessary components (i.e. carriage way, road shoulder, drainage systems and walkways), but often never achieved. Owing to financial constraints, we normally pay much attention on implementing carriage way, road shoulders and drainage system to facilitate vehicular movements. Remember, the priority of Dar es Salaam City is to reduce traffic congestion. So when we present our departmental budgets to the Municipal Councillors, the most likely component to be eliminated is walkways, and this is what you can observe along Shekilango and Tandare-Uzuri roads in Sinza ward”*.

Apart from financial constraint, pedestrian concerns are not a priority in neighbourhoods design and approval of plans. This situation has contributed to the inadequate of pedestrian infrastructure in Sinza settlement and the Kinondoni Municipality as a whole. The urban planner in-charge of Sinza neighbourhoods attested to this: *“Frankly speaking, while*

⁴ Interview with the Acting Municipal Engineer at the Kinondoni Municipal Council on 10th March 2015

preparing residential neighbourhood plans, we do not have pedestrians in mind. Very little consideration is made when doing detailed plans in the busy commercial areas⁵

The interview with the road engineers at TANROADS revealed that the exclusion of pedestrian infrastructure in urban roads is in most cases associated with the fact that pedestrian infrastructure does not generate any revenues to the government and hence it is given low priority. This means that private investors and international lending agencies are not very keen to provide funding for such project, which will not have financial returns. UN (2013) notes that the space to accommodate different modes of transport in developing countries is inadequately considered compared to developed countries where streets are designed to accommodate various modes of transport including walking, cycling and driving. Likewise, the empirical findings concur with Dimitriou and Banjo (1990) who found out that the needs of pedestrians in developing countries are inadequately addressed due to lack of prioritization in urban design.

3.7 Space standards for recreational facilities versus actual implementation in Sinza

The study has revealed that there is mismatch between the public open spaces proposed in the Sinza layout plan of 1974 and the actual implementation on the ground. Although public recreational open spaces were provided in the Sinza Sites and Services layout (See black spots on Figure 10.1), most of them are already converted into other land uses. As a result pedestrians have limited access to the public recreational areas. The weaker groups like pedestrians have been pushed out of the public recreational areas implying that public space in Sinza is contested. This results are in line with Vedasto and Mrema (2013) and Mngong'o (2004) studies who noted similar observations.

The encroachment of public recreational open spaces was evidenced by one of the elderly residents Mr M. B, a 76 aged and resident in Sinza D observed: *".....Look here, we had many open spaces in 1970s scattered all over our settlements. These were places where the public water tapes were installed. They also served as play areas for our children and gathering of people the time we had something to discuss. Surprisingly, by 1994 already seven open spaces were invaded and transformed into other uses. Infarct, by this time (1994) we had our houses connected with water tapes in such a way that the daily access to these public spaces started to vanish. From that time onwards the communal value of these public spaces disappeared and they were unprotected. It was indeed very easy to invade and develop anything on these public open spaces"*

The inability of the Kinondoni Municipal Council to sustain these green spaces proposed by Sites and Services implies weak development control by the responsible authority. It was reported by the expert professionals that the open spaces provided in Sinza were legally and politically converted to other uses. This was evidenced by one of the Urban Planners at the Kinondoni Municipality as he said: *"Open spaces in Sinza, Mikochei and Kijitonzama which had earlier been planned for residential areas were politically and legally converted to other uses. As a result, these neighbourhoods lack recreational places as space for these the facilities are lacking which is an outcome of these malpractices"*.

The author observed two recreational open spaces being transformed to religious institution (social groups) where a mosque has been developed, and also to political party office. According to the resident households who had their plots close to these public recreational open spaces, the encroachment was facilitated by "politicians⁶ and social groups⁷".

An area that borders with plots number 63 and 99 in Sinza, Block D, which was earmarked as one of the biggest public recreational open spaces in Sinza D does no longer exist. Presently this space is occupied permanent and temporary structures were observed. This open space is transformed to a permanent office building of the ruling party, Chama Cha Mapinduzi (CCM). The ruling party claimed to own the plot simply because the area was planned during the single party supremacy despite of the fact that Tanzania is now under a multiparty political system and the open spaces are claimed by the community. Apart from office use, some spaces in the office building had been rented to individuals.

⁵ Interview with the urban planner (in-charge of Sinza neighbourhoods) at the Kinondoni Municipal Council on 20th February 2015

⁶ Politicians in this context refers to an open space which owned by a son of a councillor

⁷ Social groups refers to one open space was changed to accommodate a mosque, some believe that they constructed the mosque forcibly under religious umbrella

Figure 9: Temporary and permanent structures erected on the public open space in Sinza D



Source: Fieldwork in Sinza, April 2015

Figure 9 shows the office building and other temporary structures developed on a public recreational open space in Sinza D. However, the individuals who had their temporary structures developed in this open space believed that their structures cannot be demolished by the government, and in-case it reaches such a point the government is supposed to start demolishing the buildings owned by the ruling part Chama Cha Mapinduzi (CCM). Planned open spaces, which had not been developed as such, have now become used for commercial activities such as repair workshops and canteens for the workers. This is evidence that not enough space was originally designated for commercial activities. The fieldwork revealed that in many instances neither the residents, nor the operators, nor the local authorities, were aware of existing regulations.

With regard to pedestrian concerns, most resident in Sinza and other settlements within the City do not have adequate access to public recreational open spaces within their neighbourhoods. In Sinza for example it was only the District playground popularly known as TP grounds, and those within primary schools. As a result, most resident walked a distance to access the same. Children play areas were also inadequate thought were provided by Sinza Sites and Services layout plan. This means there is non-conformity between the planning standards and the actual situation.

4.0 Discussion.

The study has revealed that the concept of zoning density plots according to incomes (i.e. high, medium and low density) to accommodate the low, middle and high income earners respectively) is not fully implemented and it is outdated as it doesn't reflect the post-colonial reality. The concept had just remained on the papers only, but not reflecting the reality. The experience shows that it is very rare to find any planned residential settlement in Dar es Salaam that has been systematically developed for low-income earners only and implemented. Although most of the layout plans in Dar es Salaam were planned and designed to accommodate the urban poor in the high density plots, often such targeted group is not reached. The middle and high income class occupy high density plots either because the urban poor could not afford the prices of land the time plots were allocated or they were overseen in the official allocation procedures. Sometimes, the rising land prices and speculation force lower income earners to sell their plots (high density plots) and move to the other unplanned settlements where land is somehow cheap and with flexible developmental conditions. In this case, town planners out to re-think about the land use planning standards adopted in order revitalise coherent to urban land development and support the urban poor to access affordable buildable land and to release financial assets for the urban economy.

Likewise, the concepts of designating special land use per area such as pure residential, commercial, residential cum commercial, institutional or industrial areas, where no other uses are allowed are inappropriate today as they don't reflect the urban reality. The urbanisation taking place in cities of developing countries like Dar es Salaam is in most cases referred to as 'urbanisation under poverty' characterized by rural-urban migration and limited capacity of the government to guide the urban development. This kind of urbanisation requires planning standards and design concepts that reflect the livelihood strategies of poor settlers such as home-based income generating activities. The zoning concepts adopted in most neighbourhoods in the City cannot respond to the livelihood strategy of the urban poor residents rather a kind of mixed land use development is likely to suit the needs of the poor settlers. Hence it can be concluded that rigid concepts like those of zoning based on fixed land use categories per area are outdated as they do not reflect the contemporary urban reality. Worse concepts do not address the pedestrian requirements and other needs, including flexible livelihoods options commensurate with changing employment and income generating activities. The

former planned residential area has become more of a mixed use area. Location preferences of the operators of commercial activities along the main roads are associated with the desire to ensure accessibility and proximity to the major consumer flow channels. However, the resulting functional structure of the settlement is a clear contradiction of the official neighbourhood design concept in Tanzania inspired by Clarence Perry (1929), which designates land for communal services and commercial uses at the centre and not at the periphery of the neighbourhood.

The results from finding have revealed violations of minimum setbacks and plot coverage in Sinza. The violation of planning standards observed in Sinza is a result of the weak development control by the responsible authorities. The violations of fencing material (i.e. from transparent materials to solid block) have resulted into the narrowness of access roads, blockage of pedestrian access, blocked ventilation and fear of crime by pedestrians. Though mugging was reported to be very rare during daytime, the majority of the resident households interviewed (16 out of 25) felt unsafe and uncomfortable to walk in poorly lit and isolated streets. Tall and solid fencing posed fear to pedestrians of being mugged especially at night hours since they are potential hiding places for muggers. A woman interviewed in Sinza 'B' expressed fear of them: *"Walking past some disused buildings like those ones there creates fear to us pedestrians, especially at night because a thief may be hiding there to attack you"*

The violation of planning standards like building lines and plot coverage in is contributed by a kind of piecemeal plot-by-plot housing transformation which is coupled with poor development control by the local authorities, who seemed to depend mostly on the out-dated rules and regulations. The non-enforcement of rule and regulations had provided much freedom to the housing developers to maximize plot space at the expense of pedestrian movements and other public requirements. Although minimum standards for building setbacks are defined, clear specification on how these spaces would be designed were not provided. It seems developers are left free to decide the specifications at a plot level in isolation, a situation that has resulted into chaotic and uncoordinated emerging frontages of shopping arcades and entrances like stairs. There are no mechanisms for implementing these strategies in terms of space allocation, financial resources, time to meet the desired goals were not realized. In addition, mechanisms to control violations of building setbacks are not stated, a situation that may end into blockage of the pedestrian walkways. This situation had hindered the continuity of the pedestrian routes along shopping streets. Additionally, despite the transformation of single storey building to high-rise buildings taking place in Sinza, planning standards showing the building height-street width relationships were lacking. If this ratio is not taken into consideration, it may result into narrow streets that limit provision of pedestrian space and also it may lead into blocked air ventilation, blocked view/visitors and blocked sunlight.

All in all, the violation of building lines, especially along the main road reserves increases congestion in the public space within the area. Planned open spaces or road reserves are mainly used for commercial activities instead of green areas. The operators of workshops who have encroached upon communal open space in Sinza have started informal negotiations and agreements for a co-existence with the surrounding residents. Some land uses and urban development activities tend to dominate over other uses. When the public space become contested, normally the weaker groups like pedestrians are often pushed out of their right of way by the dominant land uses, a situation that forced pedestrians to share the same carriage way with motorised traffic. Therefore, planners need to pay more attention to protect the rights of pedestrians, especially in a situation of increased motorized transport and urban activity functions.

5.0 Conclusion and Recommendations

5.1 Conclusion

The study has revealed that there is a mismatch between the proposed urban design concepts, planning standards and actual implementation of plans. The urban design concepts and planning standards proposed to improve the walking environment are inadequately implemented. The driving factors were mentioned to include: limited financial resources, poor coordination among actors, low priority given to the pedestrian concerns and lack of political support. Furthermore, exclusion of pedestrian infrastructure during plan implementation was highly pointed out. Most of the existing walkways were converted into car parking and informal vending activities, and in some cases the building extensions had encroached upon the walking space. The public space seem to be contested in such a way that pedestrians are pushed out of their walking spaces. The existing public recreational open spaces were also converted into residential, religious, office and commercial activities. The main issues emerging are attributed to the use of inappropriate and out dated urban design concepts, lack of mechanisms for implementing plans, lack of planning standards for parking lots and religious facilities at a neighbourhood level, weak development control, Lack of urban design and planning provisions to address the pedestrian needs and limited awareness on planning regulations and standards. The road networks in the planned

settlements are not in line with the recommended planning standards. There is neglect of pedestrian needs (i.e. safety, security and accessibility needs).

5.2 Recommendations

Promote mixed land use and compact development

To address the issue of out-dated urban design concepts, particularly those related to zoning of single land use category per area (such as purely residential, commercial, and residential cum commercial) where other land uses are not allowed, *the mixed land use and compact development concepts* are highly wanting. Urban designers/spatial planners out to change their mind-set from zoning residential areas based on fixed land use categories to the *mixed land use and compact city* concepts with planned integration of some combination of residential, retail, office, hotel, multi-story building, home based income generation activities, recreational areas and many other functions while taking care of compatibility of land uses to avoid disturbing land use conflicts. There is a need to adjust the urban design concepts towards more practical and implementable design concepts that allow more rich and mixed land uses including incorporation of small scale income generation activities and meet the pedestrian accessibility needs. Implementing mixed land use and compact city will engender sustainable human settlements and reduce the distance covered to access public facilities. In addition, the mixed use and compact city development may minimize the frequent requests for change of use, need for redevelopment, and also minimize urban sprawl. Therefore, there is a need to review the urban design concepts and the planning system in general towards suitable practical and implementable regulations which accommodate design and planning needs associated with the livelihood strategy needs of the residents.

Effective development control

The study has revealed the violation of plot setbacks, plot coverage and building heights in the case study area. As a result, the recent redevelopment schemes have destroyed arcades, and also the existing walkways are encroached by parked cars/motorcycles and vending activities. The violations of plot setbacks had not only limited the continuity of walking routes along the shopping arcades, but also had narrowed down the walking space which is already under competition from the parked cars and street vendors. To ensure effective development control, the study recommends the following:

- The Ministry of Lands, Housing and Human Settlements Development (MLHSD) in collaboration with local authorities and professional boards in urban planning and the building industry should come forward with precise and responsive policies result rules to regulate, monitor and implement coherent and coordinated urban transformation cityscapes.
- On enforcement of development control, the study observes little coordination of actors, particularly, the composition of the site-inspection team. It is not clear who is responsible to ensure walkways are not encroached by parked cars, and street vendors. This space is in most cases left under the security guards who operate under the municipal legal officers. The study recommends that the professionals responsible for road constructions, planning for public space and those who form the team to approve technical drawings and for issuing building permits to form the site inspection team. The team should ensure that the building setbacks are adhered by land developers, and pedestrian walkways not encroached any more.
- Road engineers and urban planners need to closely collaborate to develop specifications to guide the development of shopping arcades, and utilization of setbacks spaces.
- The business operators in the commercial street need to provide bollards in front of shops to prevent vehicles from parking on the paved walkway (footpath). If implemented, the installation of the bollards can create convenient for the shoppers to enter the shops, while preventing motor vehicles from interfering with pedestrian access to the businesses.
- The private and civil society sectors, local leaders (i. e. Mtaa and Ward level leaders), including individuals should be empowered and encouraged by law to report on encroachment of public spaces, and building standards malpractices to the urban development control team or to the respective planning authority

Review of the National planning standards

The study has revealed that the existing space standards do not adequately cover some of the emerging commercial investments, parking lots, Street vendors' space and religious facilities, particularly the neighbourhood level planning standards. They provide limited space for the residential access roads resulting in exclusion of pedestrian infrastructure and other non-motorized facilities. As a result, the informal vending activities and car parking activities had encroached upon the pedestrian walkways/space and public spaces including some open spaces. Similarly, the non-consideration of

religious facilities at neighbourhood level also had resulted into residential plots, and public open spaces being converted into religious facilities. The study has also revealed that the size of the access roads (residential areas) is too small to accommodate all the road/street users including pedestrian infrastructure. The road engineers could only provide a 5.5 metre carriageway, two shoulders of the road (2.0 metres) and storm water drains (1.2 metres on each side). As a result, the pedestrian walkways along the local distributor access roads (in residential and commercial areas) were lacking. Therefore, there is a need to review the minimum space standards for access roads (residential areas) from 10.0-20.0 metres ROW at least to 15.0-20.0 metres ROW and review the space standards to capture the pedestrian requirements, especially at the neighbourhood level.

Implement redevelopment schemes

The study has revealed the mismatch between the proposed design concepts and the urban reality in the formally planned residential neighbourhoods like Sinza. Informality in the planned neighbourhoods was increasing. To address the informalities and improve the pedestrian mobility, accessibility and safety needs in areas where housing transformations and change of use are common, the study recommends for introduction of redevelopment schemes in the case study area and other planned settlements with similar characteristics. The redevelopment schemes need to consider the mixed use development and segregation of pedestrian lanes from motorised transport. This implies that when implementing the redevelopment schemes, all land use functions required should be considered within (mixed land use and compact development). Encouraging mixed land use development will help create destinations within short walking distances, and hence reduce the burden of crossing in busy roads and intersections. This will also promote walking as opposed to motorised trips which are expensive and sometimes time consuming due to traffic jams.

Promote corporate social responsibility initiatives

The study found out that the provision of pedestrian facilities is challenged by financial and technical constraints. It was reported that due to financial constraints, the infrastructure for non-motorized means of transport are always eliminated from the main budgets. In order to overcome some of these impediments, corporate social responsibility should be promoted whereby by the Municipal Councils can partner with the private sector actors to provide pedestrian facilities in neighbourhoods. This is one way of giving back to community by private companies who benefit from selling their goods and services to the community. Additionally, the City Council needs to cooperate with international agencies like JICA, DFID and World Bank; which are currently more focusing on improving the public transport and strategies for reducing traffic congestion within the city to realize the need for improving the pedestrian mobility, especially in the current situation of increased motorized means of transport.

Formulation of action plans for implementation of legal and planning documents

In order to facilitate the implementation of the policy and planning document objectives regarding pedestrian needs, the author recommends action plans for implementing and achieving the targeted objectives. The Action Plan needs to include: strategic objectives, targets, activities, time frame, budget and responsible persons for implementing activities in the key result areas related to improvements of pedestrian requirements in urban areas. The action plans have to be approved by the by the responsible authorities as well. (e.g. Action plans regarding the implementation of land related policy/master plan/redevelopment/ upgrading schemes have to be approved by the responsible ministry). After the action plan has been approved, it can be cascaded to the implementing authorities at lower levels. The action plan can as well be cascaded to the proposed steering committee or Dar es Salaam Urban Transport Authority (DUTA) for regular monitoring and evaluation.

Establishment of a steering committee for effective implementation of plans & coordination

In order to monitor implementation of pedestrian concern in neighbourhoods, in the short time, it is recommended that a steering committee be formed that will be composed of both community members and the government. The steering committee will bring together actors who are responsible for pedestrian requirements within the City such as DCC, municipalities, Police Force, TAMESA, DART, TANROADS), and hence overcome the poor of coordination. The committee will also advocate for implementation of road safety rules and regulations in neighbourhoods. Public awareness and education concerns will also be addressed through this committee. Additionally, the committee will monitor implementation of the action plans prepared to implement the objectives regarding improvements of pedestrian requirements. The researcher recommends that the steering committee should be coordinated by the Dar es Salaam City Council (DDC). To make the committee more effective operation of the committee at the lower levels, similar committee be formed also at Municipal but directly linked to the City level committee.

6. Acknowledgement

The author thanks the residents, famous elders, walkers, and local leaders in Sinza Ward), profession experts of Dar es Salaam City Council (DCC), Kinondoni Municipality, Ministry of Lands, Housing and Human Settlements Development (MLHSD) and TANROADS for their assistance and cooperation during data collection.

7. Funding

No finding

8. Author Contribution

The author developed the idea of the study, reviewed literature, collected and analysed data on the implementation of planning concepts and space standards in residential neighbourhoods and wrote a report as part of his PhD thesis under the supervision of Prof. Dr.-Ing. Sabine Baumgart of TU Dortmund University, who raised comments, revised and proof read the draft.

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