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Un-Habitat Perspectives On Urban Sustainability: The Case Of Saidawa Neighborhood In Erbil City

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Abstract: The increasing significance of neighborhoods in many urban planning situations focus on the social aspect of creating sustainable communities and societies, underlines the necessity of developing socially sustainable neighborhoods. The neighborhood serves as a fundamental unit of society and plays a crucial role in developing the sustainability of the various urban areas. Undoubtedly, with sustainable neighborhoods the achievement of sustainable cities is possible. The focus of this research is the city of Erbil, located in the northern part of Iraq. This study aims to analyze the different characteristics related to the sustainability of the Saidawa neighborhood in the city of Erbil. Erbil is considered one of the city's attractive parts due to the diversity of residential, commercial, and other activities. The research presents the current state of the Saidawa neighborhood and compared to the five sustainable neighborhood principles established by UN-Habitat. The results showed that Saidawa neighborhood has a great potential for sustainability and the recommended approach is to manage potential development through urban planning. and building codes that accommodate transformations and offer innovative solutions that contribute to sustainable growth within the neighborhood.

Keywords: *Urban from; Sustainable Development; UN-HABITAT Residential Area; Neighborhood; Saidawa.*

1. Introduction

The achievement of Sustainable development has become a significant challenge in the contemporary era. Globalization introduced major cultural, economic and social transformations in urban areas [1]. However, a city includes more than just its physical environment, it is more than a space where individuals live. Neighborhood planning plays a crucial role in supporting sustainable development at the local level. Cities can only be deemed sustainable when their key elements, especially neighborhoods and the built environment, align with sustainability standards [2] [3]. The Sustainable development process has affected the environmental quality, economic equality, and social values, which increase the risk of human health. Sustainable development was widely accepted by people in the community, regional, national, and global levels to provide a suitable future for human beings [4].

In the discourse of city planning and urban design, the goal is to improve the urban condition of the cities and the quality of life for urban residents, residential neighborhoods are the most significant part of the city, affecting the quality of human life. The sustainable development of modern cities focuses on creating a healthy, eco-friendly, and aesthetically pleasing urban environment that meets the needs of all residents. Achieving this goal requires collaboration between citizens and city officials across the nation to improve the quality of life for both people and the urban environment [5].

A neighborhood functions as an ecosystem, serving as the primary local environment for humans and shaping its microclimate. Therefore, urban residential neighborhood planning and design must be thorough to address residents' needs and incorporate future developments with the next generation in mind [6].

UN-Habitat presents a framework that enhances existing sustainable urban planning theories, aiming to help build a sustainable connection between people and their urban environment while increasing land value. This model is built on five principles that support the three core attributes of sustainable neighborhoods and cities [7]. The research aims to examines the standards and features of sustainable residential neighborhoods and applies UN-Habitat five principles in the Saidawa neighborhood. The finding offers useful insights for improving urban planning, the importance of diverse land use, well-organized street networks, and appropriate population density to support sustainable urban communities in Saidawa neighborhood.

2. Literature Review

2.1 Sustainable Urban Dvelopment:

Over the past few years, the world has changed dramatically, with a substantial amount of peoples moving from rural to the cities and moving from a country to another based on rapid economic growth related to the intensification of the commercial and industrial regions around the world [8]. The lack of housing conditions is combined with rapid economic growth and social immigration, excessive material, and energy resource usages, increasing social separation and instability in culture and social values. As a result, the development process has affected the environmental quality, economic equality, and social values, which increase the risk of human health. Sustainable development was widely accepted by people in the community, regional, national, and global levels to provide a suitable future for human beings [4].

Sustainability refers to the natural environmental capacity for human activity conditions, and it identified a group of activities for a long period of economic development. The British government describes sustainable development as a means of securing a high quality of life for both current and future populations [3]. A more commonly understood definition is that sustainable development addresses the needs of the present without jeopardizing the ability of future generations to fulfill their own needs. In this regard, the definition of sustainable development contains three keywords and ideas that include development, needs, and the next generation. This statement has been approved by the "United Nations General Assembly" and is published in many countries as a political approaches [9].

Sustainability is characterized by economic development, social value, and the usage of natural resources. It can be said that the sustainability concept covers the fairness of feature generations. The concept of sustainable development includes improvements in the quality of social, economic, and natural resources, which direct people to reconstruct their life for achieving the sustainability task [10]. Sustainable development cities have their standards and indicators; it changes according to the native and environmental conditions. In another world, sustainable dimensions in every city were studied in the development of the city. The city is titled as a sustainably developed while it achieves all multi-dimension concepts of sustainability [11][12].

Based on the sustainability concepts, peoples have a responsibility to care about the earth and take it to a good dimension for future generations. Consequently, not all developments just about economic achievement, also there are different dimensions affected by developments such as quality of life, health care, social life, and environmental conditions [2].

2.2 Sustainable Neighborhoods

Each aspect of the sustainable urban neighborhood reflects essential guidelines. Sustainability includes the capacity to maintain the area and more significant urban frameworks from a longer-term perspective and to reduce the ecological impact [11]. Urban characterizes the area by its location and physical aspects, while a neighborhood is associated with socio-economic sustainability. These two

aspects link a community and the surrounding area. A sustainable community may be understood as a group that facilitates a long-term provision for natural resources considering environmental health, financial progress-driven towards essential needs, and social value [13].

There are different approaches to applying sustainability concepts to neighborhoods that consider ecological and social aspects differently but are integrated from an individual perspective [14]. Barton (2000) provideswil an alternative approach from an ecological perspective. His assertion is, “One approach to sustainable design is to view each development as an independent organism or a small ecosystem.” [11]. Considering this point of view, a neighborhood may be understood as an ecosystem that provides vital dwelling to the local population, has its micro-climactic aspects, and offers sustenance and comfort to the inhabitants. Though the methods employed in sustainable communities may be used in urban, rural, and suburban communities to provide a safe and healthy walkable neighborhood, these methods may produce different results and perspectives depending on the neighborhood context, attributes, and requirements [8].

Neighborhoods provide for the development of work, socio-economic and environmental structure, facilitate planning, create ecological solutions and regulations, and facilitate the application of national or sub-national ecological policy. Neighborhoods play a crucial role in education and generating citizen response to create sustainable growth. Sustainability is a process, not an end-state [11]. In the context of urban intensification and its role in promoting sustainability, Williams [15] has identified two significant issues. The first is the effective management of development to support objectives of sustainability. The Second point is Strategies for optimizing the advantages of intensification and mitigating its adverse effects in development. The urban form characterized by a high population density supports the development of compact networks and social interactions contacts among people compared to low density areas where residents have diverse social networks and restricted activities and relationships. [16] [17].

UN-Habitat has established five principles for sustainable neighborhood planning [16]. These principles are:

1. Mixed land use: At least 40% of the floor area in any neighborhood should be for economic usage.
2. Limited land-use specialization: The percentage of a neighborhood dedicated to a single function block shouldn't go above 10% of a neighborhood
3. Adequate space for streets and an efficient street network: The street should have a at least a minimum length of 18 km of road per km2 and occupy at least 30% of the land area.
4. Social mix: Affordable housing for those with low incomes should make up 20% to 50% of the residential area. Houses in different price ranges should be available to accommodate people of differed income levels.
5. High density: A neighbourhood density should have at least 15,000 people per km², that is 150 people/ha or 61 people/acre.

The planning and designing of neighborhoods are considered the main problem of Erbil city; this is due to the high population density, uncontrolled urban sprawl, open space depletion, and various other issues attributed to many circumstances. Erbil city was chosen for evaluation due to its recent rapid changes, and the impact of urbanization is measured through the lens of sustainability dimensions.

3. Methodology

The research methodology employed in this study included descriptive and interpretive methods [18]. A detailed study was conducted to examine the existing development patterns across the whole area

of Saidawa neighborhood. The survey of the area focused primarily on the analysis of street networks, building typology, density of the area and the land use, the data related to the built and social environment of the area. The neighborhood's sustainability was evaluated by analyzing the empirical data gathered during fieldwork and then comparing these findings with the principles outlined by UN Habitat for a sustainable neighborhood. The research centered on the changes in the Saidawa neighborhood, examining the structural characteristics of residential, commercial, and service buildings, as well as the infrastructure.

4. Data Collection

4.1 Description of Neighborhood

Erbil city, which located in the north part of Iraq, it is one of the oldest cities in the world where life goes on. Saidawa Neighborhood is situated in the south-east of Erbil citadel [14]. It joins 60-m street to 30-m street. The neighborhood has nearly (1770) residential units and buildings, mainly detached houses with two stores high, and most of them are made of reinforced concrete and block [19]. Saidawa neighborhood covers a residential dwelling with one or two stores, it includes single-family or multi-family, detached, or semi-detached housing. Also, it contains some historical aspects like Erbil heritage museum, a mosque, public baths, and old houses (Figure 1), (Figure 2) and (Figure 3). Furthermore, the neighborhood has several different landmarks that attract many people like Brusk Park, Chwar Chra Hotel, Erbil Civilization Museum, Bakir Zakarya Mosque, etc.

Figure 1: The mosque as a historical aspects in Saidawa neighborhood (Resource; The researcher)

Figure 2: The public bath as a historical aspects in Saidawa neighborhood (Resource; The researcher)

Figure 3: Old Houses in Saidawa neighborhood (Resource; The researcher)

Iskan Street considered the main focal point of the neighborhood, which attracts people by the existing commercial activities like markets, restaurants, cafes, and other activities. Brusk park considered to be the main gathering place of activity in which is located to the north part of the Iskan street in saidawa neighborhood. The park was the Erbil city's first major open area after Glkand park.

4.1 Mixed land-use analysis

Mixed land-use has a significant role in the achievement of sustainable urban planning since it provides several functions such as commercial, industrial, residential, and cultural.. Saidawa neighborhood is characterized by mixed land-use and offers the residents and visitors a variety of choices. The neighborhood is surrounded by commercial areas which include business offices, grocery shops as well as retail shops within a short distance.The residential part of the neighborhood represents 66.4%. The economic use (Government, Education, Hotels and Motels, Banks, Museums, Mosques, and Non-building structures) represent 28.8% of the area of Saidawa neighborhood (Figure 4).

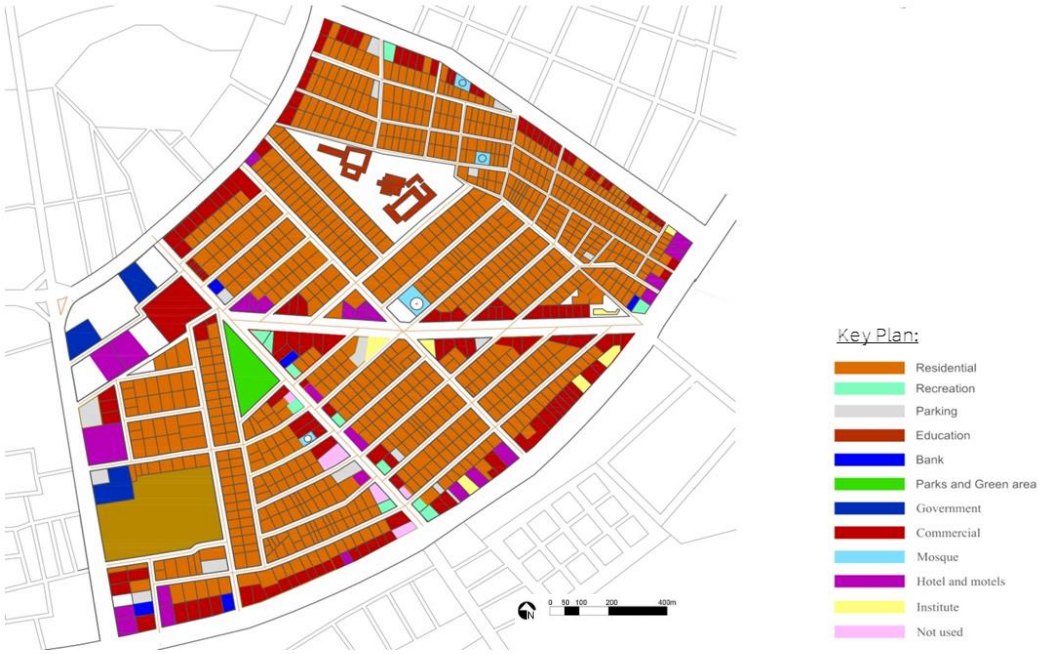

Figure 4: Land-use analysis of Saidawa neighborhood (Resource; The researcher)

UN-Habitat recommends that no more than 10% of a neighborhood's area be designated for single function blocks. This serves as an urban planning strategy to ensure the effective implementation of mixed land-use practices, leading to economic diversity. While the main streets inside the Saidawa neighborhood show a variety of land-use patterns, it is worth noting that inside the neighborhood, there exist numerous blocks designated for residential use. However, the percentage of single-function blocks inside the area not reaches 10% (Figure 5).

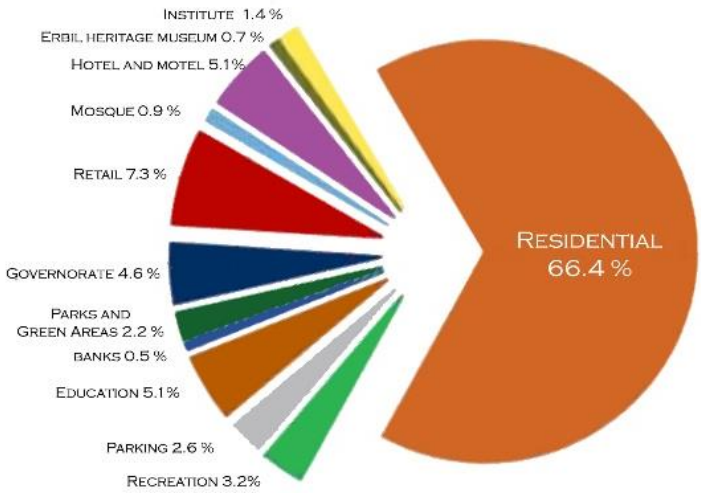

Figure 5: percentage of single-function blocks in Saidawa neighborhood (Resource; The researcher)

4.2 Street network:

Sustainable transportation for most of the people living in society supports the economy and a cost-efficient.. Also, it should be easily accessible, safe, secure, and eco-friendly [20]. The historical growth that has taken place in the areas surrounding the citadel has shaped the spatial organization of Erbil's street system, which is connected by a system of ring streets that start with the street around the citadel

is 30 metric road, 60 metric road, 40 metric road, 100 metric road, 120 metric and 150 metric highways (Figure 6).

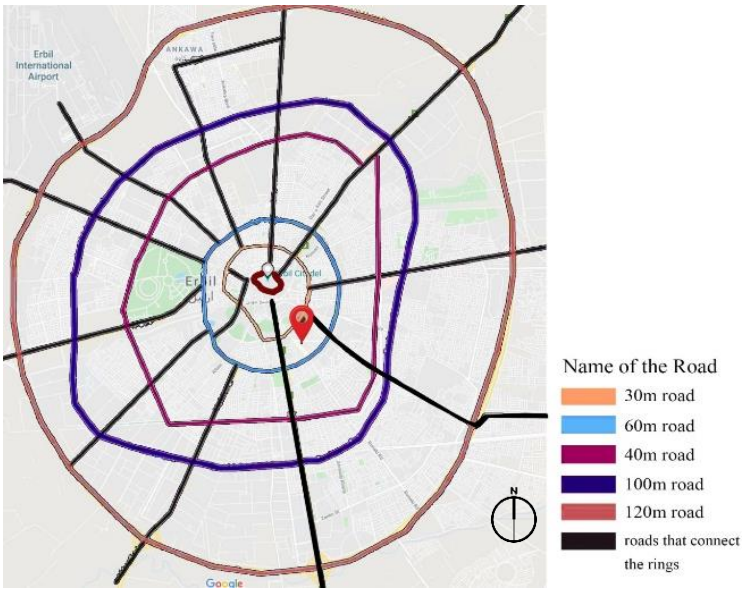

Figure 6: Erbil city with the main roads (Resource; The researcher)

Saidawa neighborhood is surrounded by Barzany Namr Street (30 m Street), Sharawani Street, Iskan Street, Kurdistan Street (60 m Street), Jawaher Bapeer Street, and Mala Afandi Street (Figure 7). According to direct observation of the case study area reveals that except for Brusk park and a small amount of parking, the majority of the neighborhood is made up of buildings.

Another thing to discuss is how suffocating it is to live in a neighborhood where almost every building and dwelling is next to each other without a gap in between, and sidewalks for pedestrians are 1.2–3.5 meters wide on large streets and 1.0–1.5 meters wide in alleyways.The roadway of the Saidawa neighborhood unwell-maintained, the lack of street furnishing along the street, and discontinuity of sidewalks negatively influenced on pedestrians.

(Table 1) highlight the street networks represent 22.18 % for Saidawa neighborhood. In the Saidawa neighborhood, there is discontinuity of sidewalks unwell-maintained, and the lack of street furnishing along the street sidewalks, which negatively affects pedestrians and walkability.

$$\text{Percentage of street} = \left(\frac{\text{Area of the street}}{\text{Total area of Saidawa neighborhood}}\right) x\ 100$$

Table1: The neighborhood area and street network (Resource; The researcher)

	Area (m2)	Street network(m2)	Street network%
Saidawa	673.650	141.465	22.18 %

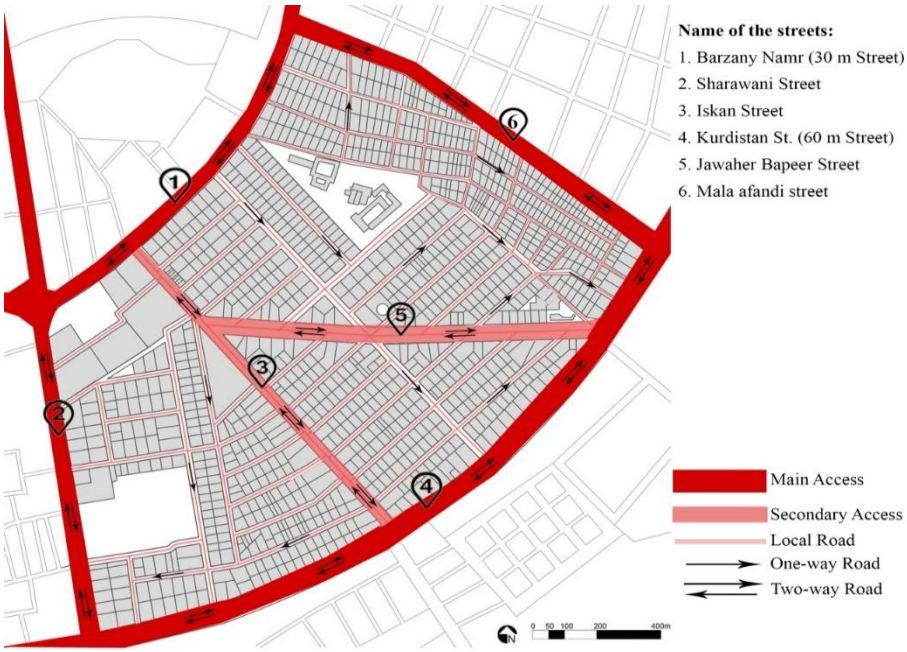

Figure 7: Saidawa neighborhood streets (Resource; The researcher)

4.3 High density:

Density and the type of dwelling affect sustainability through variations in energy consumption, housing land, materials, urban infrastructure, and transportation. Moreover, density is one of the primary aspects that define urban planning. High density allows efficient use of the land, which makes it easier to offer facilities and public services [21]. Moreover, this approach decreases infrastructure expenses, enhances the efficiency of public transportation, and minimizes the distance between daily activity locations [22]. In Erbil, families tend to prefer individual private homes over apartments. These homes typically come with small private gardens, which offer greater family privacy, In contrast, apartment residents must share certain amenities and spaces with other tenants. This preference affects the region's population density because the scarcity of apartments drives urban sprawl. According to the most recent government survey from 2013, the Saidawa neighborhood had approximately 10,400 residents and covered an area of about 673,650 square meters [19]. The neighborhood's gross population density was 154 people per hectare.The gross density of the Saidawa neighborhood was 154 p/ha.

4.4 Social mix:

Besides having commercial and residential use of the land, the region has various traditions for the types and sizes of the houses. However, the substandard state of infrastructure and buildings is not encouraging residents with higher incomes to stay in this area [23].A majority of the Saidawa residents are families having medium and low incomes. Furthermore, the neighborhood has an affordable housing price and a large percentage of the people own their houses [19].

5. Findings and Discussion

In this section, findings of the analysis of sustainable neighborhood characteristics (mixed land-use, Limited land-use specialization, Street network, High density and social mix) for Saidawa neighborhood are discussed.

(Table 2) highlight the positive and negative features of the Saidawa neighborhood in Erbil city according to UN-HABITAT’s principles for the sustainable neighborhood.

Table 2: Positive and negative features of the Saidawa neighborhood (Resource; The researcher)

Characteristics of sustainable neighborhood	Positive points	Negative points	UN-HABITAT's principles
Mixed land-use and	-Existence of (Governmen, Education, Hotels and Motels, Banks, Museums, Mosques).	- Economical use represents 28.8 % of the area of Saidawa neighborhood.	The Economical use doesn't occupy 40% of the floor area.
Limited land-use specializa-tion	- Single function blocks inside the area not reaches 10%	- Lack of some essential needs in Saidawa neighborhood, like (health center, Fire station, etc.)	no more than 10% of a neighbourhood should be dedicated to a single function block.
Street network	Transportation modes as a bus and small cars (taxi, private car).	- The street networks represent 22.18 % for Saidawa neighborhood. - Lack of Transit stop in the Saidawa neighborhood. - Lack opportunities for bicycling and walking.	A minimum of 30% of the land must be committed towards the creation of street networks
Social mix	-Affordable housing price(buying and renting). - The majority of the people own their houses.	- Most of the people are with low and medium incomes.	- 20–50% of the residential floor area has to be devoted to affordable housing. - 50% is allowed to be owners.
High density	- Saidawa neighborhood had a population of 10,400 inhabitants. The gross density of the Saidawa neighborhood is 154 p/ha.		- In the neighborhood, the population density is at least 15,000 people per km2, equivalent to 150 people per hectare.

Considering Saidawa Neighborhood's features, the following discussions could be suggested according to the concept of mixed land-use refers to the integration of several types of land uses within a given area. The proposal involves comprehensively transforming the main zone into a commercial zone. The Saidawa area is experiencing an increase in commercial use to achieve 40% of the floor space. The purpose of separating commercial and residential areas is to benefit from the high land

price for commercial and give the residents a safe, liveable, and comfortable environment to live in. Additionally, it is essential to incorporate basic services such as healthcare facilities into the design.

Social mix refers to the intentional integration of individuals from diverse social backgrounds into a certain community or neighborhood. Encouraging people with high income to live in the neighborhood to increase job opportunities. Furthermore, increasing the interaction among the locals by Designing new green areas, parks, and recreational activities.

Transportation plays a crucial role in facilitating connectivity and accessibility within a region. One effective strategy to enhance transportation infrastructure is by promoting the utilization of public transportation systems, which may effectively link the region with other sections of the city. expanding the existing public transport infrastructure through the addition of more stations.

Developing the Eskan street as a focal point of the neighborhood to a car-free street for achieving high walkability and to encourage cycling and walking. Another point to be discussed is Separating pedestrian and vehicle movement to break the intersection between both movements. Increasing the density of a neighborhood by incorporating apartment buildings.

6. Conclusion

The study's conclusion emphasizes how important it is to include sustainable guidelines and metrics in the planning, and designing a sustainable neighborhood, Adopting sustainable practices and addressing the areas that need improvement will contribute to creating more livable, and environmentally friendly living, and healthful life for resedents. The findings provide valuable weaknesses and strengths of the neighborhood according to the UN-Habitat indicators and principles. Finaly, the paper emphasizing that Saidawa neighborhood form has a great potential for sustainability and the poor management is mostly responsible for their current lack of attraction.

Residents quality of life can be significantly enhanced by sustainable residential complexes that integrate a diversity of housing units and prioritize sustainable standards and UN-Habitat indicators can significantly improve the residents' quality of living. Several indicators and principles were the focus of the UN-Habitat sustainability criteria for the planning Saidawa neighborhood. These included social mix, high density, mixed use of the land, adequate and efficient spaces for streets, as well as, the limited specified use of the land. Based on recognized national standards, Saidawa Neighborhood can be categorized as a high-density urban area. According to the street networks which make up 21% of the Neighborhood, there are few places in the Saidawa neighborhood for walking and bicycling, as well as no transit stops. The ratios of the Affordable housing price are good and The majority of the people own their houses. The proportions of commercial land uses to total land uses are un balanced Economical use represents 28.8 % of the area of Saidawa neighborhood. - Economical use represents 28.8 % of the area of Saidawa neighborhood, there is ack of some required basic needs contributes to commute to city center most of the time by car, like (health center, Fire station, etc.)

7. Author's Contribution:

"I confirm that I have read and approved the manuscript. I also confirm that all work, analysis and wrriting were my contribution"

8. Conflict of Interest:

"*There is no conflict of interest for this paper."*

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