

ANALYTICAL CONCEPTION OF SLUMS OF JEDDAH, SAUDI ARABIA

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Abstract - For the last few decades, the urban and social fabric of the city of Jeddah, a major and one of the most populated cities in Saudi Arabia, has been dominated by slums. It is estimated that the city consists of more than fifty slums scattered throughout the city. While many local urban planners and designers find it hard to comprehend the presence and continuous growth of these districts in the light of the various efforts made by the government to improve the urban and social quality in Saudi Arabia, these slums seem far away from being controlled or at least redeveloped. This paper analyses the history of Jeddah's slums, their emergence, scale and urban and social characteristics. This is verified by a discussion of al-Sabeel, which is a main slum in Jeddah, and an examination of measures taken by Jeddah Municipality to deal with these physically and socially deteriorated areas. The paper also gives some insight on solutions implemented in international cases to improve slum conditions in Asia and South America. It culminates a list of recommendations to consider in dealing with Jeddah slums. These recommendations vary from provision of flexible means of affordable housing and empowerment and participation of slum dwellers, to legalization of the residency of non-Saudi dwellers, setting up long term strategies to prevent the appearance of new slums and establishing vocational programs to improve the economic and social conditions of dwellers.

Keywords - Slums, urban upgrade, Jeddah, urban redevelopment, al-Sabeel, Guarapiranga

I. INTRODUCTION

Slums or squatter settlements are a major socio-urban feature of many cities around the world, especially developing countries. Saudi Arabia is not an exception. The Saudi city of Jeddah has been suffering from presence of slums for decades. The existence and excessive speed of the growth of these slums have become beyond the control of the relevant urban planning authority, namely the Municipality of Jeddah.

This paper primarily aims to investigate the extent of the slum problem in Jeddah both from social and urban planning points of view. It also aims to evaluate possible planning solutions of these slums. In order to achieve these aims, the research has implemented a methodology of integrated phases, which are as following: **First.** A discussion of literature review on the world status of slums and urban poor: This discussion gives a notion that the presence of slums is not limited or exclusive to Jeddah. Various parts of the world are struggling with slum areas and their social, urban, economic and environmental problems. It is hoped that the facts revealed in this section from international leading organizations such as the World Bank and the United Nations on the seriousness of slum problems around the world would assist local decision makers in pursuing solutions for Jeddah's slums. **Second.** An analysis of Jeddah's slums from socio-economic and urban planning perspectives: The deteriorated urban conditions of Jeddah's or any slums are a reflection of the poor socio-economic circumstances of dwellers. None of these conditions or circumstances can be analyzed separately or without refereeing one to the other. Accordingly, this lengthy analysis of

Jeddah's slums uses al-Sabeel District as an example or case study. The author has selected al-Sabeel as it is oldest and a major slum area of Jeddah. It is also the first slum area that the Municipality of Jeddah has practically tackled to improve its physical conditions. Yet, several factors obstructed the completion of this development, hence, discouraging the Municipality from intervening in other slum areas. These obstacles are also discussed along with different efforts by the Municipality to improve the urban and social conditions of slums. For the analysis of the case study of al-Sabeel, the author relied on documents, mostly technical reports carried out by the Municipality of Jeddah on existing social and urban aspects of this district. This was also associated with a site survey the author made to photographically record these conditions. **Third.** Testing the possibility of improving social and urban conditions of Jeddah's slums by evaluating two options pursued in India and Brazil: The author recognizes that each city or slum has its particular circumstances. However, cleaning and upgrading, the techniques implemented in some Indian and Brazilian slums, are considered by several intentional agencies such as the World Bank and UN Habitat International to be the last if not the only resort for overcoming slum matters. Based on this evaluation, the author culminates this research by a framework of recommendations the Municipality of Jeddah could consider in solving or at least minimizing the social and physical problems of slums.

It is worth mentioning here that during the preparation of this research, the author had an opportunity to spend several days in three large favelas (pl. of favela in Portuguese, meaning slum area or shanty town) in Sao Paulo and Rio de Janeiro,

Brazil in 2006 and 2007. Although it is beyond the scope of this study to discuss these districts in detail, the upgrading option implemented in these and other favelas by the Brazilian authority and technically and financially supported by European non-profit organizations (NGOs) represents an excellent example to learn from in improving the physical and social environment of Jeddah's slums.

II. SLUMS: A WORLD CRISIS

Since the 1950s cities particularly in developing countries have faced an unexpected rate of urbanization and increasing poverty. The result has been rampant proliferation of under-served neighborhoods settled by squatters without legal recognition of rights. In these slums, residents lack most basic municipal services such as water supply, sanitation, and waste collection. They also lack decent housing, schools, clinics, dependable way of

getting to work, as well as political voice. They are exposed to disease, crime and natural disasters.

A UN report says that the world's slums are growing, with the number of people living in such dire conditions now at the 1 billion mark, making up 32% of the global urban population [1]. Unless the world changes course, 1.5 billion urban residents in 2020 will be slum dwellers, most of them in developing countries [2] (Fig. 1). Slum dwellers constitute 43% of the population in the developing regions. The highest number is in Asia (550 million) followed by Africa (187 million), and Latin America and the Caribbean (128 million) [3]. While in the more developed regions, slums make up only about 6% of the population (Fig. 2), in Southeast Asia, they constitute 28% of total population. Indeed, the situation is worsening in Asia, where slum households have jumped by 36% during the 1990s. According to UN Habitat, if the present trends continue, this figure is likely to double by 2030 [4].



Rio de Janeiro, Brazil



Manila, The Philippines



Harar, Ethiopia

Fig. 1. Slums in various cities of developing countries
(Source: pictures taken by the author)



Macon, Alabama



Americus, Georgia



Orlando, Florida

Fig. 2. Slums of underclass America
(Source: Draut, 2002)

In definition, the term "slum" connotes highly dense squatter/informal settlements, lacking in basic services with squalid environments and without legal recognition or rights, even though some may have been in existence for a long time [8]. A World Bank report says that slums are highly congested urban areas marked by deteriorated, unsanitary buildings, poverty, and social disorganization. It clarifies that Life in slum generally entails enduring some of the most intolerable housing conditions, including sharing toilets with hundreds of people, living in overcrowded and insecure neighborhoods, constantly facing the threat of eviction, diseases and enormous social and psychological burdens and social exclusion

[3]. According to M. Sampaio, a Brazilian urban planning researcher, a slum is, from its inception, a place subjected to prejudice and discrimination, and a symbol of segregation [9].

In many Asian, African and South American countries, slum dwellers are suffering from high rates of infant mortality and disease because of the dense conditions and lack hygiene. They are excluded from the city's services because they are living in illegal or unrecognized settlements with no concern for urban legislation or any building code. Physically, slums feature impermanent or semi-permanent housing. Edging city drains, railway tracks, garbage dumps, low lying flood prone areas, main roads etc. the

communities of slums only vary in their degree of 'slumminess' [10]. As for the reasons of their emergence, slums are the result of dysfunctional land and housing markets. They are often the first stopping points for poor migrants that provide low-cost affordable housing in the absence of concentrated effort by government agencies to create housing for the poor. Slum formation is also closely linked to national economic cycles, trends in national income distribution, and national economic development policies.

III. SLUMS OF JEDDAH

The global picture given above on slums could be applied to Jeddah, the largest seaport of Saudi Arabia on the Red Sea and main gate to the holiest places of millions of Muslims around the world. The well-known oil boom of the 1970s in Saudi Arabia was associated with tremendous rapid urban development and population increase in Jeddah. The speed of this urban growth was unexpected and faster than that of the planning process that began during that time. It was difficult for the local planning authority of Jeddah to control it. As a result, the city continued expanding haphazardly giving chances to informal settlements to emerge. Local urban planners assure that growth of Jeddah has often accompanied by a number of serious problems notable the spread of urban poverty, the growth of slums and environmental degradation, all of which affect the quality of life at both local and national scale [11].

The urbanization pattern of Jeddah is characterized by a steady rise in slums which local municipal authority prefers to call "informal" districts. During the last five years, Jeddah has been adding two slum areas every year. According to 2006 Municipal records, Jeddah has 102 districts, 52 of them are slums distributed throughout the city [12 & 13] (Fig. 3). These slums are populated by more than one million people, more than 43% of city population, living under precarious environmental and urban conditions [14]. They consist of more than 200,000 houses with a density of 407 person/hectare while the agreeable density is 120 [15].

Jeddah's slums represent pernicious spots to the city, which is supposed to be of a vital importance to the government, society and Muslims around the world, being a major entrance to the holy cities of Mecca and Medina. They are no longer confined to specific areas such as southern Jeddah but have encroached even into the fashionable northern areas of the city. Just behind some of the main thoroughfares like Tahliya, Hera and others are found slums that Prince Abdul Amjeed, the late governor of Mecca Region, described as a scar on the face of the beautiful city. Such places now serve as hideouts for outlaws [16].

In order to comprehend the seriousness of Jeddah's slums, below analyses these districts in terms of the reasons and mechanism of their evolution, characteristics and measures taken by local authority to eliminate them.

3.1. Reasons for Emergence

There are various reasons for the emergence of Jeddah's slums. They are as following:

1. The city's wall

The presence of the wall around Jeddah in the past restricted the city growth (Fig. 4). This has led to creation of districts, such as al-Sabeel, al-Hindaweyah, and al-Sahaifah, randomly grew immediately outside the wall. After the demolishing of the wall in the middle of the last century, these districts have become an extension of old Jeddah and at the same time slums since they were built with poor construction materials and techniques and without any planning.

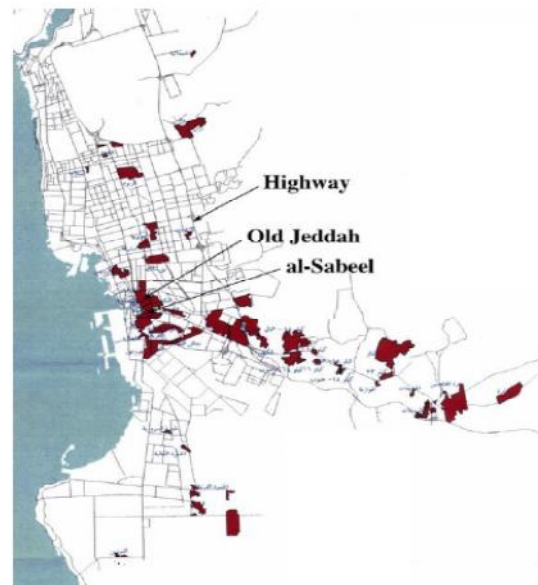


Fig. 3. Distribution of slums in Jeddah, 2004
(Source: Adopted and developed from Fayez, 2004)



Fig. 4. The historic wall of Jeddah before being demolished in 1947
(Source: Buchan, 1980)

2. Large scale immigration

During the last 40 years, the city population has tremendously increased due to migration. The oil boom of the 1970s was coupled with mega-scale projects in major Saudi cities, including Jeddah. As a result, workers from all over the world came to Jeddah to participate in the development process of that time. In 1978 the city population reached one million inhabitants, 47% of them were Saudis and 53% non-Saudis [18]. Locally, residents of surrounding villages and Saudi small cities immigrated to Jeddah in an immense scale for better life and economic reasons. This has increased the population number and in turns the demand for low-cost housing. This has also led to more growth and appearance of new slums.

A scenario of the appearance or growth of a slum in Jeddah starts when new immigrants leave their villages, head toward the city, lay hand on the first barren piece of land on their way, build a shack and then settle in with their families. Some hand on large swaths of empty land around the city and claim this to be theirs. The indolence of municipal and other authorities in enforcing the law and the twisted means of obtaining construction permits have helped the slum phenomenon to develop further.

Slums in Jeddah usually develop on the periphery of the city, but with more development and the need for additional residential units, construction takes a place in areas lying beyond the slums with these absorbed into the city. Within a few years a new slum area would develop on the outskirts of the expanding city only to be swallowed by further construction.

3. Previous lifestyle

Saudi rural families who migrated to Jeddah used to live in large lands instead of small apartments. The new and different lifestyle these families experienced in Jeddah has driven them to unlawfully acquire properties in desert areas east of the city, which they use as a second home during the weekend or holidays. This norm has induced gradual appearance of new slums in the desert and mountain areas where land is cheap or with no value and naturally beautiful and healthy.

4. Poor urban planning

The growth of Jeddah has been associated with a long history of failing urban planning [16]. Before 1963, when the first master plan was set up for Jeddah, the city expanded toward north and unexpectedly east. This has generated some slums along the growth paths. The period from 1963 and 1978, when the second master plan was developed, was large enough to allow the city to expand without any building ordinances or/and planning policies [19]. Again, more slums emanated in various parts of the city. In 2004, when a newer master plan was laid down, the Municipality failed to implement it due to some miss-calculated building regulations. The master

plan came up with a proposal to transfer Jeddah into a city of apartments [20]. It did not take into consideration that the city had tens of neighborhoods previously regulated for villa housing type. Consequently, the Municipality decided to halt this master plan that comprised development suggestions relevant to slums.

5. Absence of fund

The first master plan set up for Jeddah in 1963 included urban development proposals that demanded funds to execute. Nonetheless, the absence of such fund worsened the physical conditions of the city by allowing more slum growth and appearance [18]. Also due to fund shortage, Jeddah Municipality had to concentrate its efforts on maintaining new suburbs in the north on the account of the rest of the city where districts started to physically deteriorate and become slums.

The absence or restriction of fund has always been a major obstacle for the improvement or solving urban and environmental problems of Jeddah. In 2006, the Mayor of Jeddah announced that solving urban and environmental problems of Jeddah's slums by redeveloping them required 110 billion Saudi Riyals (approx. 29.34 billion USD). However, he claimed that the Municipality had succeeded in allocating only 250 million Riyals (66.67 million USD) to begin dealing with these problems specially those related to slums [13]. Such a financial limitation, faced with the rapid growth of slums and absence of serious solutions from the Municipality part, has turned Jeddah's slums into a permanent problem, whose solution has become out of control.

6. Large increase in property prices vs. income decline:

The high raise of prices or rentals of residential properties in Jeddah has forced Saudi and non-Saudi families to look for cheaper or illegal means to acquire lots. As a result, dwellings in various slums attracted those families. This has also resulted in the emergence of new slums beyond the city urban growth limit.

The recent decline of income of Saudi families, due to increasing rate of unemployment, has also been a major factor for the presence of slums and emergence of new ones. Over the past thirty years, the average per capita annual income of Saudis has plummeted from \$28,000 to under \$10,000 in 2002 [18]. Another statistic says that in the early 1980s Saudi per capita income was \$30,000 a year. In 2003, this average came down to \$7,900 [21]. Current master plan of Jeddah reveals that the monthly income of 2% of Jeddah's population is \$134-266 per family, 50.2% receive \$267-533, and 28% receive \$534-800/month. In general, it is estimated that the monthly salary of 25% of Jeddah population is less than \$1,333 [20]. Another study states that any Saudi family that consists of seven members living in a large city such

as Jeddah and its monthly income is less than \$1,333, is living under poverty line [19]. This means that 25% of Jeddah Saudi population is living in poverty. The other income groups are distributed as follows: 64.8% receive \$1,333-2,660/month and 10.2% receive more than \$2,660/month.

It is worthy to mention here that nowadays 59.6% of Jeddah population is Saudis while 40.39% are non-Saudis. 60% of the Saudis have an income from a job or employment. This means that 40% of the city Saudi inhabitants are unemployed. This high rate also includes retired citizens. As far as the non-Saudi population of Jeddah, 60% of them have a monthly income of less than \$1,067 [19].

7. Absence of police power

The elimination of the growing attitude of illegally acquiring public lands by citizens sometime requires the use of police power. Unfortunately, the Municipality of Jeddah, which is responsible for the protection of such lands and assuring the application of building regulations, lacks such power. This in turn has encouraged the growth of slums throughout the city. Furthermore, the centralization approach followed by the Municipality of Jeddah and other related public agencies has greatly contributed to the existence of slums in Jeddah. Jeddah's planning and development policies should be approved by for example the Ministry of Municipal and Rural Affairs, which is based in Riyadh, before being realized. Such an approval usually takes long bureaucratic procedures, allowing slums to grow and new ones to emerge.

3.2. Characteristics

Although Jeddah's slums vary in location, size, as well as urban and social characteristics, they could be categorized as following:

1. Internal slums

They are the old slums that have developed in the middle of the last century immediately outside the city wall, adjacent to the historic part of Jeddah. They are mostly inhabited by Saudi families, and feature an irregular street pattern with permanent (concrete) buildings that have deteriorated with time.

2. External slums

They are mainly located beyond the highway or ring road on the east side of Jeddah. This highway was supposed to be the border of Jeddah urban growth toward the east in the 1980s. It connects Jeddah international airport with Mecca passing along the city on the east. The slums of this part are scattered between the desert and mountain areas far away from the city center and municipal control. They are also characterized by informal and mostly unpaved road network. The inhabitants are a mixture of Saudis, immigrants from villages and small cities, as well as non-Saudis, mostly Africans and Asians who illegally

remained in the country after performing Hajj or Umra. Some of those foreign residents are also laborers that ran away from their Saudi sponsors. The buildings of these slums vary in quality and construction material. Generally, they are in devastated physical conditions.

3. Slums between the ring road and the city center

These slums are almost similar to the internal ones in terms of urban and building characteristics. Nonetheless, the dwellers ethnically vary. They are Saudis of tribal origin as well as Asians and Africans. Regardless of this diversity of location and size, the slums of Jeddah are overcrowded and inadequately serviced, lacking sanitation, adequate garbage collection, as well as proper transportation, communication, health and education amenities. In early 2007 the Municipality of Jeddah has revealed that five thousands houses of these slums are without electricity due to their illegal status. Some residents rely on illegal wiring to obtain electricity from neighboring dwellings or street light [12]. As far as density, 47.5% of Jeddah's slum dwellers live in 1-3 room houses. 54% of these houses dwell 5-14 persons each on temporary bases.

Economically, more than 50% of the inhabitants of Jeddah's slums such as those in the center have a monthly income of \$300-1,067, which is according to Jeddah standard of cost of living considered below poverty line [20]. Also 15% of slum dwellers have a monthly income of less than \$300 and 35% have no income at all [22]. Education is limited among dwellers of Jeddah's slums. 30% of them are illiterate while 54.5% have some elementary education [22]. Social and moral conditions are also low, especially in slums populated by non-Saudis. Paul Harris of the Observer Newspaper said, "Many of the African women lived in an area of Jeddah known as Karantina, a slum full of poverty, prostitution and disease. A visit to Karantina, a perversion of the term "quarantine", was one of the worst of my life. Thousands of people who had been living in Saudi Arabia for decades without passports, had been deemed illegal by the government" [21].

Slums are the best environment to create criminals, drug dealers and abusers, prostitutes, etc. Local police authority of Jeddah has become unable to maintain security in slums or control them due to their complicated and some time dangerous social and urban atmosphere. These slums have become a crime generator that is threatening the rest of the city. A study conducted by Dr. A'bla Hasaneen of Jeddah Office of Drug Prevention warned that 76.4% of crimes in Jeddah were committed in slum districts. According to this study, 20% of slums crimes were committed in eastern slums, representing 4.7% of the total crimes in Jeddah while 8.6% took a place in southern slums, around 2% of city crimes. 59.8% of slum crimes were dedicated in the inner slums around

the city center. The study claimed that 31.8% of crimes in slums took a place in Gohlail, a southern slum, mostly inhabited by illegal immigrants from Africa. In addition, 100% of prostitution activities in Jeddah were committed in the slums. This is followed by illegal alcohol consumption and/or dealing (93.3%) and drug abuse (88/9%). Crimes inside the slums vary from adultery, drug dealing, and theft by force to documents falsifying and gambling [22].

3.3. Example: al-Sabeel District

One of the largest, oldest and most populated slums in Jeddah is al-Sabeel. Its location in the heart of the city makes al-Sabeel as important as the historic area of Jeddah (see Fig. 3). The author has selected al-Sabeel because of its potentials for urban and social improvement. Below explores these potentials as it analyses the urban and social aspects of this district.

3.3.1. Urban Conditions

Al-Sabeel is located in the center of the city of Jeddah. Though it is a slum, al-Sabeel is one of the most important areas of the city due to the commercial activities that surround and penetrate its boundaries.

It is contained within roads that form a ring around the area. Some of these roads, such as King Khalid in the southeast, are considered major traffic spines of Jeddah. It should be noted here that while these roads benefit the city as they link different parts with each other, they have no impact on traffic circulation inside the district, where streets have emerged as needed and without any planning standards (Fig. 5). The streets vary in width and volume of traffic, and with a total length of 36.5 km. 67% of them are not paved or covered with asphalt. And, of course, they lack sidewalks, illumination and parking spaces (Fig. 6). In his site investigation, the author has noticed that the current street network of al-Sabeel is incapable of handling the district need of traffic circulation and totally unsafe. The major roads are extremely congested during the day.



Fig. 5. The compact irregular urban fabric of al-Sabeel (Source: Prince Abdullah, 2004)



Fig. 6. Unpaved streets of various configurations in al-Sabeel (Source: pictures taken by the author)

The population density rate of al-Sabeel is considered the highest in Jeddah. The total population is 5,0715 inhabitants with a density of 669 person/hectare. This exceptionally high degree of density is reflected in the number of dwelling occupants. It is estimated that the average occupancy per house is 5,63 persons. As far as land uses, the gross area of al-Sabeel is 75,8 hectares, 31.44% of which is used for commercial activities, and 17.91% for residential mixed with commercial (Table 1). Commercial buildings concentrate on the major roads of the district. Regardless of the compact urban form of al-Sabeel, which is the most built up area in Jeddah, there are a few vacant lands scattered throughout the district. They represent 2.38% of al-Sabeel.

Use	Area m ²	Percentage
Residential	238348	31.44
Commercial	34363	4.53
Commercial/Residential	135745	17.91
Storages	6460	0.85
Industrial	354	0.05
Public facilities	14878	1.96
Public Utilities	836	0.11
*Roads and parking	309006	40.77
Vacant lands	18010	2.38
Total	758000	100%

Table 1. Land use distribution in al-Sabeel

* This also includes the area of King Khalid Road (80 meter wide) around the southeast edge of the district (Source, Fayeze, 2004)

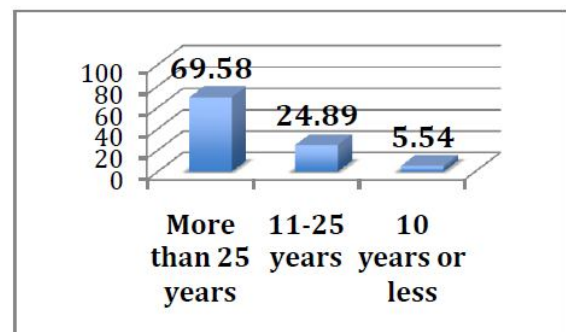


Fig. 7. Building age in al-Sabeel (%) (Source, Fayeze, 2004)

The buildings of this district are old and physically in poor conditions. They differ according to their age. 69.5% of them were built more than 25 years ago; therefore, they are in extreme deteriorating

conditions. Only 5.83% of al-Sabeel buildings are in a reasonable state [11] (Figs. 7-9).

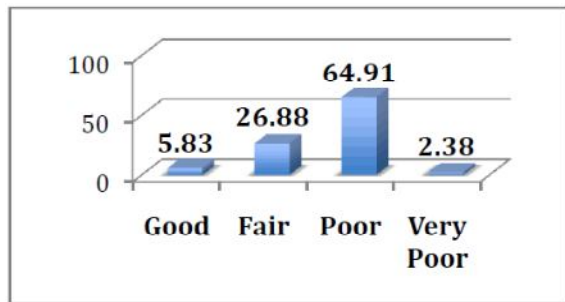


Fig. 8. Building conditions in al-Sabeel (%)



Fig. 9. Views of two of several old and physically deteriorated dwellings of al-Sabeel (Source: pictures taken by the author)

The majority (45.81%) of the buildings are one floor high while 30.88% are two (Table 2 and Fig. 10). As far as construction materials, 68.54% of the buildings are built from cement bricks and 29.94% from reinforced concrete (Table 3 and Fig. 11). The author has observed the use of coral stones in some of old dwellings of al-Sabeel, exactly similar to traditional houses of old Jeddah.

As far as facilities, al-Sabeel seriously suffers from shortage of facilities such as education, health, administration/municipal and recreation. At present, the facilities provided cover only 1.96% of the district. This shortage is faced with the high rate of population (5,0715 inhabitants) that is serviced by only one primary school and another elementary for male students. The case of females is almost the same. There is only one primary school and another for religious studies for females [18]. The rate of

schools in al-Sabeel, either for male or female students, is way below planning standards. Health wise, the population of al-Sabeel is provided with a small clinic. Nonetheless, religious services, such as mosques, are considered in proportion with the population number although they are not well distributed according to planning principles to evenly cover the entire district (Fig. 12).

Height	No. of Buildings	Percentage
One floor	1423	45.81
Two floors	959	30.88
Three floors	490	15.78
Four floors	152	4.89
More than four floors	82	2.64
Total	3106	100%

Table 2. Building heights in al-Sabeel (Source, Fayez, 2004)

Material	No. of Buildings	Percentage
Reinforced concrete	930	29.94
Cement block	2129	68.54
Stone	13	0.42
Metal	19	0.61
Other	15	0.48
Total	3106	100

Table 3. Building materials in al-Sabeel (Source, Fayez, 2004)



Fig. 10. Various qualities and heights of al-Sabeel dwellings (Source: pictures taken by the author)



Fig. 11. Cement bricks and steel used in the construction of al-Sabeel dwellings (Source: pictures taken by the author)

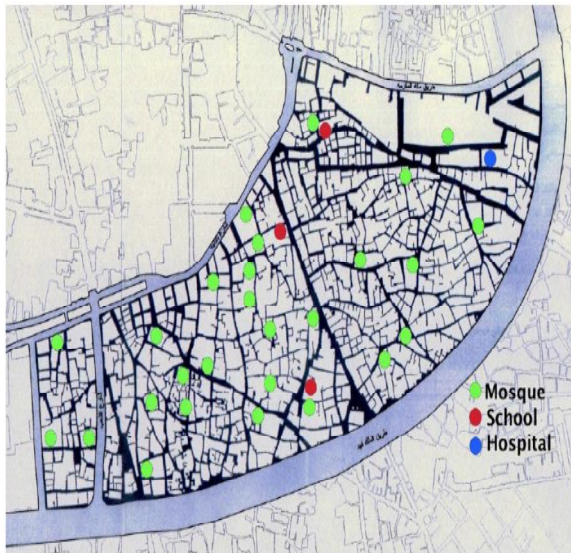


Fig. 12. Distribution of public services in al-Sabeel
(Source: Adopted and developed from Prince Abdullah, 2004 and Fayez, 2004)

3.3.2. Social Conditions

The social conditions of al-Sabeel might be considered unique when compared with those of other slums. The district is mostly populated by Saudi families, some of which are originally from Jeddah. As a result, there are strong family ties and social integration among them. Crime rate is relatively low.

A socio-economic study, also conducted by the Municipality, explores that only 36.5% of al-Sabeel residents are employed. The rest are either retired or unemployed. The number of Saudi householders there is 68% and non-Saudis is 32%. The average monthly income of residents of a dwelling is \$754 [18].

3.4. Authoritarian Measures to Address Slum Problems

Despite the Municipality negligence and slowness in addressing the rapid emergence and growth of slums, there have been some efforts to tackle slum issues. These efforts are as following:

1. Preparation of action plans

Detailed action plans of some slums were prepared by the Municipality of Jeddah in 1993. These plans were set up in spite of the shortage of technical manpower and experience the Municipality has been suffering from for years. They proposed some minor physical modifications in street width, function and direction of the slums in order to integrate them with the rest of the city and disclose their compact form.

2. Establishing an administration for slum affairs

In 2002 the Municipality of Jeddah has set up an administration responsible for dealing with slum matters on daily bases. The major task of this new administration, which is called "Administration of

Informal Settlement Affairs", is to set up strategic proposals for slums problems. Recently, this administration decided to install an advanced intense lighting system in neighboring districts to illuminate dark streets and allies of three dangerous slums for more security [15].

3. Assigning private consultants

Attempting to deal with various planning issues of Jeddah slums, the Municipality has assigned local private consultant firms to set up detail maps of the existing urban and socio-economic conditions of some slums. Two slum areas have been dealt with in this regard so far [19]. However, these maps are merely urban, social and economic statistics of the slums. They do not provide any recommendations or solutions.

4. Requesting public fund

A few years ago the Municipality of Jeddah has proposed to higher authorities (Ministry of Rural and Municipal Affairs and Emirate of Mecca Region) budget needed to deal with the deteriorating urban situation of some slums. Such an attempt was a result of pressure from local media (i.e. newspapers), which extensively reported on the deteriorated physical and social conditions of Jeddah's slums and accusing the Municipality for not taking any action to eliminate or solve these problems. Furthermore, many social, economic and political figures of Jeddah called for the Municipality to clear up the slums and utilize their lands in investment projects or at least in the construction of new service buildings such as mosques, schools, and parks [12]. Some suggested setting up small satellite towns around Jeddah to relocate all slum dwellers [23]. Under such stress the Municipality succeeded in assigning a budget to widen up major roads and create large open spaces in al-Sabeel (Fig. 13). After demolishing several buildings in various parts of al-Sabeel and compensating residents for their removed houses, the project was not completed. According to Jeddah Municipality, there have been many factors that made any socio-urban development of al-Sabeel difficult:

- The high population density of the district.
- The presence of around 70% of district buildings that are in very poor physical conditions.
- The existence of high-rise buildings (around 23%) mostly built with reinforced concrete.
- The urban compactness of the district [18].

5. Approaching the private sector

For the last few years, the Municipality has been trying to persuade the private sector to invest in slum areas as an attempt to solve their problems. Several committees have been formed between the Municipality and Jeddah Chamber of Commerce for that purpose. This has so far led to nowhere as local businessmen were uncertain of the solutions they or

the Municipality could provide to the inhabitants of these slums.

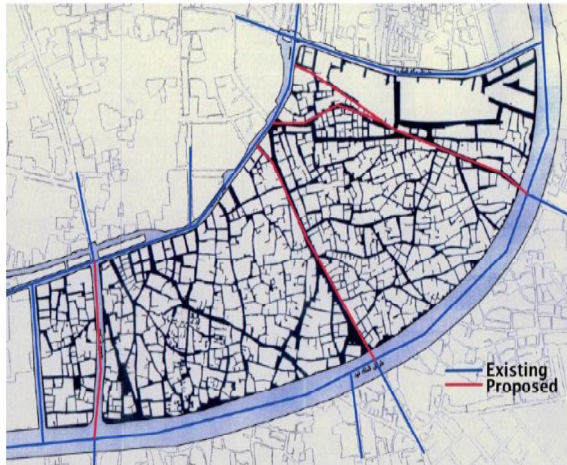


Fig. 13. Proposed and existing roads of al-Sabeel.
Due to budget limitation, only a few sections of the proposed streets have been widened up. Their purpose was to link the internal network of and integrate al-Sabeel with the surrounding districts.
 (Source: Adopted and developed from Prince Abdullah, 2004)

6. Seeking professional assistance from international consultants:

In 2006 the Municipality of Jeddah hired the UK based firm Happold Consulting International to assist in solving the slum crisis. As a key part of the implementation of the Jeddah master plan, the Municipality has tasked Happold to develop an urban renewal strategy targeted at the city's slums. Happold was supposed to develop an urban regeneration program called "Jeddah Without Slums" (JWS) outlining a methodology and actions to be taken to address slum issues. This should cover both the structure and role of the organization as well as setting out surveys to conduct in slum areas and possible approaches to intervention. Further to this, a draft of local action plan and delivery mechanisms have been required to develop together with a prioritization matrix intended to help selecting the first settlements to be targeted [24]. Nonetheless, Happold hasn't been able to determine any concrete solution as the nine months, the period of the project, were not enough to even get acquainted with the city.

7. Establishing Jeddah Company for Urban Development (JCUD)

Also in 2006, the Royal Court has approved the establishment of Jeddah Company for Urban Development. Jeddah's Mayor clarified that JCUD, which is a public sharing company entirely owned by the government, will develop municipal lands and those of slums. He emphasized that this development will be carried out through the participation of the private sector which will be offered special privileges to construct profitable projects in these lands for

commercial, cultural, recreational and educational activities [13]. As of this date, nothing has been realized.

8. Legalizing dwelling ownership

Early 2007 the Municipality decided to implement a Royal Decree numbered 115 and dated in 2004 that offered titles of property ownership to slum dwellers for the houses they lived in. The ultimate aim of this decree was to solve the slum problems within five years. Accordingly, the Municipality surveyed 150,000 houses in 50 slums in preparation for necessary procedures of the initiation of the titles. Yet, it asked dwellers difficult requirements such as the submission of a copy of the Saudi national ID card of each dweller. This requirement was impossible to meet by a large percentage of slum dwellers as they were not Saudis.

The Municipality scheduled to finish this process of registration within the next six months. However, there hasn't been any achievement so far as most residents, being non-Saudis, were afraid to expose themselves by approaching the Municipality to register. In the other hand, Saudi dwellers were also reluctant to register as they feared that this project was an attempt to evacuate them from their houses [14]. For some reason the Municipality later claimed that the project aimed to establish a database of property ownership/residency of slums. It made it clear that it was not the agency that was authorized to issue titles to residents of slum. Its role was limited to coordination between various relevant governmental agencies. The Municipality stressed that urban planning of these slums would follow the set up of the database. Later on, it has added more complicated requirements from dwellers that wanted to register their residences. It has asked for hard and digital photographs of two elevations of each house. Due to the limited response from slum dwellers, the Municipality extended the registration period for more months [15].

As for the participation of the private sector in this project, the Municipality used the term "PPP" (Public Private Partnership). Nonetheless, as the Municipality didn't indicate how the private sector would invest or involve in these slums, thus, no private company has expressed interest in the project yet [14]. This project, which was intensively propagated in the local media by the Municipality, didn't also reveal the role of Jeddah Company for Urban Development (JCUD) in the project. As mentioned earlier, the Company has ultimately been established by the Municipality to develop public and slum sites through the private sector.

IV. SOLUTIONS AND RECOMMENDATIONS

Despite the obstacles the Municipality of Jeddah has been facing in the urban development of al-Sabeel and other slums of the city, there are two major

alternatives the Municipality could consider to solve the slum problems. These alternatives, which have been implemented in various parts of Asia and South America, are: a) clearance and redevelopment, and b) upgrading.

4.1. Clearance and redevelopment

This solution means temporarily or permanently moving the slum residents, clearing the land and building new housing for dwellers on the same or outside the site. In general, this solution embodies various economic, social and environmental disadvantages. When relocating dwellers on the same site, high-rise buildings are often proposed in order to house more people. However, experiences of the World Bank and/or charities in Asia have shown that the residential density of a high-rise development is much greater than that of a central city slum community. In addition to this, high-rise developments do not provide much ground-level space for low-income families to operate small businesses, which these families need to supplement their income. Also the economic cost of this solution is unaffordable. This cost is at least 10-15 times the cost of physical upgrading of the slum [25], which will be discussed latter.

As far as resettling dwellers outside the site, there have been several unsuccessful cases in India, where slum dwellers were eradicated and relocated to sites outside the city [25]. This solution is not viable because the poor need to be close to city center where there are more informal income opportunities, and often the cost of transportation is unaffordable to the poor. Relocation distances people from their livelihoods triggering economic shocks that push households into poverty. Previous cases in India revealed suffering of relocated dwellers outside the site or city from shortage and limited access to public services such as schools and hospitals. In this relocation solution, authorities not only have to spend resources cleaning slums and resettling dwellers, but also later have to finance public transportation to facilitate access to employment in the central city. In a relocation project in Delhi, India, it has been noted that dwellers' income has declined and employment for female workers has been lost. Full time employment among earning members has dropped significantly. It has also involved additional costs for households with regard to payment for plot and shifting. Consequently, this has led to depletion in household savings.

The major and maybe the only benefit of resettlement slum dwellers to the local authority and city economy is the economic value of evacuated land. Evacuated land can be used for development projects such as hospitals, industrial units, etc. which in turn generate employment and value addition to the city economy. Even if these lands are maintained for parks, the economic value could be high since the environmental services in terms of clean air and

recreational facilities push the property rates upwards and also provide increased earnings to the commercial activities. The benefits of resettled households are largely in terms of tenure status. According to the World Bank, three major benefits have been estimated and incorporated to the benefit cost analysis of resettlement with relocation of households into far away places. These are: a) land value of evacuated site for commercial /developmental use; b) revenue flow in terms of net taxes and charges to city managers, and c) employment generation from the development projects in the evacuated sites [3].

4.2. Upgrading

The alternative to moving people or replacing their homes is upgrading. Upgrading rejuvenates the existing community with minimum disruption and loss of physical and social assets. It combines the use of labor and resources of slum dwellers in ways that seek to involve communities with slum improvement [3]. Typically, slum upgrading provides security from eviction (regularization of land tenure/rights) and improves existing infrastructure, e.g., water reticulation, sanitation, limited sewerage, garbage collection, storm drainage, lighting, street paving, up to an appropriate basic standard. Usually upgrading excludes home construction, since residents can do this themselves, but instead sometimes, offers optional loans for home improvements. However, upgrading policy could include assistance of building new housing on the same site, which while not increasing housing stock in real terms, it reduces ground-level space for low-income families to operate their small businesses.

In order to succeed, slum-upgrading projects must be incorporated into the national policy of urban development and can be developed in four fundamental stages:

- a) Preliminary survey: a fundamental stage to make decisions regarding the technical, physical and legal feasibility of the upgrading project in the selected area; this step also involves an initial contact with the residents in the area.
- b) Registering: Once the implementation of the upgrading project in the selected area is found possible, the residents must be registered in order to avoid any increase in the population of the area to be improved under the upgrading scheme. It is recommended that the local residents help in the registering process, defining the families to be benefited. It is also vital to have a community leader representing the dwellers to work with the authority.
- c) Design: The chosen area will be divided into plots so as to accommodate the largest possible number of registered families, each of which is to receive a plot equipped with water supply, power supply, internal pathways, and phone

and sewage networks, as well as to provide the space needed by utilities to implement those systems; to that end, the project must be designed so as to fulfill all needs in the most effective way.

- d) **Implementation:** The time schedule for project implementation will vary according to for instance topographical conditions, availability of financial resources and level of community participation. In cases where the terrain is flat, implementation can be quicker than projects with difficult accessibility conditions. The time schedule, thus, might vary from a few months to years [26].

The upgrading process of slum areas promotes environmental regeneration, contributing to improving the quality of life and making possible for dwellers to remain in their original location without compromising the environment or public health. It is not only an affordable alternative to clearance and relocation, but it minimizes the disturbance to the social and economic life of dwellers. The results are highly visible, immediate and make a significant difference in the quality of life of the community. Above all, upgrading is more than infrastructure, it creates citizens. Economically, upgrading costs ten times less than relocation besides minimizing the disturbance to the economic life of communities. Experiences of the World Bank reveal willingness of residents to spend on the improvement of their houses. In an upgrading project in for example Mumbai, India, every dollar of infrastructure invested in upgrading, about seven dollars have been invested by residents in home improvement, employment and small business expansions.

In upgraded sites in Mumbai, communities have witnessed remarkable change in housing conditions with all households having permanent structures with basic amenities. Upgrading has resulted in increasing the income of dwellers. Average household income of upgraded sites was 10.61% higher than average household in case of non-upgraded sites. In these upgraded slums of Mumbai, the number of earning members rose by 1-2%. Also, all upgraded households showed increased ownership of assets when compared with none-upgraded areas [25].

4.2.1 Upgrading Example: The Guarapiranga Waterbasin, Sao Paulo, Brazil

Since the 1970s, urban Sao Paulo has grown rapidly with favelas (in Portuguese, meaning low-income slums) dominating the urban and social fabric of the city. In 1991, there were more than nine million people living in the slums of Sao Paulo, around 11.3% of the city's population. In 1993, the number has tremendously increased to hit 10 million, almost 20% of the city's inhabitants [27]. The most environmentally and deteriorated slums of Sao Paulo were those in the Guarapiranga Waterbasin, which

covered an area of 639 km². They are on the reservoir, the second largest water yield of Sao Paulo metropolitan region, supplying three million inhabitants with water, around 20% of the total water supply for the region.

Around 18% (approximately 100,000 individuals) of this area's population lived in slums located at the basin's edge. On the portion of land owned by the city of Sao Paulo government, there were 180+ slum concentrations [28]. These slums were without basic sanitation and infrastructure, and expanded into the solid and contaminated waste that blocked the natural drainage system. At the same time, liquid wastes drained into and polluted the reservoir. The water quality problems became extremely serious that forced the city of Sao Paulo, with the support of the World Bank, to initiate a cleanup program. The program started in 1993 and ended in 2000, and was expected to improve the life of inhabitants. It consisted of construction of an on-site sewage network that connected all housing units, paving of main pathways to allow movement of garbage collection trucks, soil consolidation works to reduce geo-technical risks, etc. [3]. By keeping people within the same neighborhood, the project upheld the social capital of the slum community with impressive results as discussed below.

The program had as specific goals the development of technical, financial and organizational capacity to manage the Guarapiranga Basin, within sustainable standards. In other words, it aimed at a balance among the several governmental, private and community interests and improving the quality of life for the population living in the area. In order to achieve these goals, a set of five sub-programs was defined: I. Water and sewage services; II. Garbage collection and disposal; III. Urban recovery; IV. Environmental protection; and V. Guarapiranga Basin management. Sub-program III involved slum upgrading, road infrastructure and drainage for low-income settlements located next to the slums themselves. With respect to slum upgrading, it was necessary to relocate nine families in well-built housing in areas that were adequately served by transportation and facilities. These housing units were close to the original site.

The project cost was \$323,000 and took 14 months to finish. It constituted sewage collection system of 885m, water distribution system of 808m, paved roads of 1195m², and supporting walls of 190m². The project has succeeded in providing 52 slums in the Guarapiranga water basin with basic infrastructure and recreation areas and houses that were improved by the dwellers. Nowadays, a total of almost 7000 families are benefiting from the upgrading project. In these upgraded slums, a program of public information and environmental education has been developed for the tenants. Through this education program, they learn how to

reserve the investments made in the area and to protect the reservoir.

A few years after the completion of the project, Post-Occupancy Evaluation (POE) exhibited residents' satisfaction with the upgrading results of the project, and emphasized as positive aspects the absence of open-air sewers running next to their houses, the elimination of bad smell formerly prevalent, a reduction in the number of rodents and harmful insects around the area, safer spaces for children to play in the alleyways, improved health conditions for the residents in general and children in particular and the change in slum aesthetics, which is now known as a neighborhood instead of a slum [28] (Fig. 14).



Fig. 14. The upgraded slum of Guarapiranga, Sao Paulo, Brazil (Source: Affordable, 2013)

4.3. Recommendations

Based on the previous discussion of solutions, particularly upgrading, that could be implemented in Jeddah to solve the social and urban problems of slums, below is a list of recommendations that local authorities (i.e. Jeddah Municipality) should consider.

1. Setting up detailed plans of the physical, social, economic and environmental conditions of each of the 52 slums of Jeddah is essential to decide on the appropriate solution (cleaning or upgrading) of the slum. As previously discussed, each of Jeddah's slums has its unique social and urban circumstances and implementing the upgrading option on all slums might be infeasible. Nonetheless, the upgrading option could be an excellent approach for the slums that are mostly inhabited by Saudi families. Unlike illegal immigrants who predominantly reside in slums south of Jeddah, Saudi dwellers of central and northern slums would cooperate with any upgrading program established by the Municipality of Jeddah specially if they are offered incentives such as free-interest loans to repair their dwellings or legalization of their property ownership.
2. Special attention needs to be given to policies and means for the provision of adequate and affordable housing and for improving quality and safety of the urban environment particularly in lower income areas. The absence of affordable housing will force limited income or poor Saudi and non-Saudi families to concentrate in or create new slums where renting or building a house of low construction quality is inexpensive.
3. Recognizing that slum dwellers are active agent and not just beneficiaries of development. They should be empowered to collaborate with the authority in upgrading their area.
4. Empowerment of local authorities particularly the Municipality of Jeddah with financial and human resources to deliver services and infrastructure to slum dwellers.
5. Relevant authority should legalize the stay of non-Saudi dwellers of slums, especially those who have been in the country for decades or are third generation of illegal immigrants. It is impossible to send them back to their original country, which they might not recognize. Using police power in tackling such an issue will only lead to the aggravation of the problem.
6. Local authorities should draw up local long-term strategies for improving the lives of slum dwellers.
7. Developing urban and social strategies to prevent the formation new slums. This should include access to affordable land, reasonably priced building materials, employment opportunities, and basic infrastructure and social services.
8. Working closely with the slum dwellers in projects that lead to better housing, water, sanitation, energy and urban services, such as garbage disposal in slums.
9. Considering as a high priority transportation and safety concerns of slum dwellers in planning urban transportation systems, which can expand the choices of people regarding where to live and work.
10. Setting up programs or workshops to teach slum dwellers simple techniques of how to improve the physical conditions of their houses.
11. Building codes and regulations should be realistic, enforceable and reflect the lifestyle and needs of the local community. This means, for example, that they may have to be flexible enough to allow for housing that is built incrementally, out of low-cost materials and on small plots of land.
12. Capitalizing on the free time of unemployed residents of slums by establishing training programs that will enable them to learn simple skills of handicrafts or artwork that would allow them to generate income, thus attain a better life.

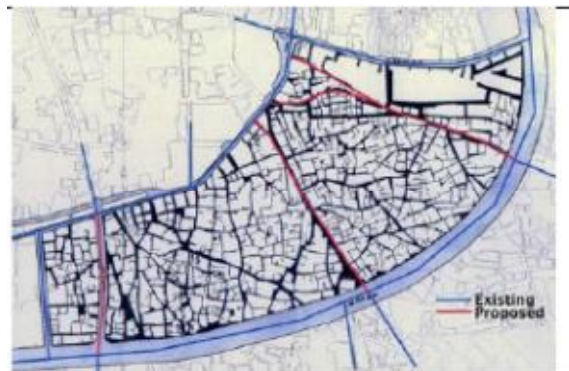
SUMMARY AND CONCLUSIONS

Jeddah's slums are a serious issue that is threatening the urban and social life of the city. They have emerged due to various factors, and with time, they have grown to a scale beyond control. Al-Sabeel, the oldest and a major slum area in Jeddah, experiences poor physical conditions and a high rate of inhabitants who are either living in poverty or unemployed. Despite the efforts Jeddah Municipality has been making to tackle slum issues, they are still far from the actual level of the urban and social crisis of the slums. These efforts are ultimately conceptual master plans that focus on imposing urban planning layouts and building regulations on slums and their dwellers instead of concentrating on the empowerment of dwellers to encourage them to for example upgrade their environment.

As it concentrates on dwellers' contribution and participation, upgrading has been a successful solution of urban and social problems of slums in various parts of the world. Its success is due to the partnership created between authority and dwellers that have both worked together in improving life quality in slums. The Municipality of Jeddah could learn from the upgrading experiences of other cities in South-East Asia and South America. It could use dwellers as a vital agent in upgrading the urban and social conditions of city's slums.

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