Urban Growth and Sustainability in Tripoli - Libya

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Abstract:

In the last decade, Tripoli, the capital city of Libya, has experienced an unprecedented growth in urban areas and the rapid expansion of suburban residential settlements into the peri-urban fringes. This (largely unplanned and informal) urban growth in Libyan society has been driven by several factors, and the surplus wealth that came from the nation's oil revenues. With a growing economy, Tripoli city has attracted large number of migrants from the rest of Libya, adjacent countries, and sub-Saharan Africans looking for employment opportunities (or using the city as a staging post for migration to Europe). Tripoli has had to rapidly adapt to new connections with the global economy and the resulting changes in the quality of life expected

by its residents. Tripoli's population has increased rapidly, there has been a construction boom, automobile use has increased significantly, and people expect to live in bigger and less crowded homes. This paper charts the complex factors driving urban growth in West Tripoli. Whilst making comparisons with the processes of rapid urbanisation in many other countries of the Global South, this paper highlights some of the drivers of urban growth that are specific to the Libyan context. Finally, it questions the extent to which this expansion is sustainable in a country with very limited land that is suitable for urban expansion and agriculture.

Key words: *sustainability; urban growth; Tripoli, Libya; urban geography; political & economic geography.*

Introduction:

Tripoli is the capital city of Libya which lies on the Mediterranean coast is resident to two million people. Libya, located in North Africa, is deemed to be the continent's fourth largest country with an area of 1,759,540 square kilometres. Since oil production began in the mid-1980s, majority of Libyan cities have experienced significant rapid population growth, residential redevelopment and the reshaping of land. However, urban growth in Tripoli is as a result of an assemblage of many complex processes involving political, economic and socio-cultural changes in Libyan society, including the lifting of sanctions, increased trade with Europe and the rest of the world, and the nation's oil wealth (Ghanem, 1982; Trading Economics, 2015; UNDESA, 2015; USEIA, 2015. Tripoli has been affected by waves of migrants looking for employment opportunities or/and en route Europe using Tripoli as a crossing point. Also, as a result of the availability of services and

employment opportunities most of Libyan population has concentrated in the main urban centers especially in Tripoli, despite the Libyan government trying to follow the decentralization policy to improve the planning of each areas, and then to create new employment opportunities in villages, small towns, and neighboring cities to encourage the reverse migration in order to decrease the population pressure on urban centers. This paper intends to discuss Libyan migration and focuses on assessing the sustainable growth in peri-urban (West) Tripoli as well as to determine the shape and structure of urban growth. Furthermore, the paper evaluates the role of socio-economic, cultural and political factors and their effects on the process of growth.

Urban Growth:

There is no doubt that the global population has grown dramatically, especially during recent decades. Most of this growth has been concentrated on the metropolitan areas around the world. Population density is a major concern in this issue. Cities in developing countries are three times denser than the cities in developed countries (Acioly and Davidson 1996). So, the world's population has risen considerably over the past century, generating a population explosion. From 1995 onwards, people have moved in unprecedented concentrations into urban areas around the globe (Masek, Lindsay and Goward, 2000), therefore, metropolitan areas attract people, according to Dionysia, Bianca and Vicente (2006).

In the Middle East and North African region, the population was mostly rural until 1950s' where the people living in urban areas were only 27% of the population. By 2000 both the size and the spatial distribution of population changed considerably. In 2013, between 60

per cent and 80 per cent of the population of the four countries constituting the Maghreb sub-region was urban. According to WPDS (2014) Libya has the highest percentage of its population (more than 80%) living in cities, while Morocco has the smallest relative urban population (59%) Serageldin, Vigier and Larsen (2015). In 1950 the urban population in Libya did not exceed 191.000 while the number increases to become 3.189.000 people in 1990 Kezeiri (1992). By 2030, 90% of the total Libyan population is expected to be living in urbanized settlements, UN_HABITAT (2010).

There are complex interactions between cities and their inhabitants where the economy spurs the creation and evolution of products, as well as the innovation of new technology. Urban growth is usually rapid, but certainly not random; much of the outward expansion of cities involves competition between urbanizing municipalities vying for residential economic development, the outcome of which has been that cities have grown to a great size and taken over vegetation areas, Leo and Anderson, (2007). However the question is whether cities can expand without destroying the green belt or vegetation areas, for example, exploiting technology by directing urban growth to non-arable areas or/and utilizing technology to facilitate the movement of transport among metropolitan area with bordering villages and towns, also work towards using technology in re-planning the urban area that is already exploited.

Contemporary, urban growth in developing countries particularly in Middle East and North African countries seems to be remarkably similar to the experience of most developed countries in the first quarter of the 20th century, in terms of the rapid and patterns of urban growth,

Cohen (2006). Thus, the urban demographic transformation affects and is affected by globalization that has bound cities forming an international network. In Arabic–Islamic cities, the main reason for developing built-up environments is the inhabitants. Cultural diversities, as well as social and economic factors, play decisive roles in ordering and forming urban areas (Mubarak, 2004). Libyan cities are looking to increase the exchange values of urban land use by promoting and sustaining urban growth. Between 14th century and the beginning of 20th century, Libya was controlled by several civilizations such as Arab-Islamic, Turkish (Ottoman) and Italian and, as a result, the urban planning and form of most Libyan cities is deeply influenced by importations, ideologies and planning methods from foreign countries. The development and proliferation of the modern city belongs to the commercial cultures that form public life; therefore, arcades and department stores are consumer activities that are important evolutions of the modern city and other retail areas.

The demographic characteristics represent the internal and external mobilization of the population towards peri-urban areas, and this helped to increase population growth, thus increasing their needs of services and infrastructure. For example, sanitation, transport, water, land costs and deterioration of the urban environment (Al-Tellawy, 1995). It may not be possible to distinguish between the space of population growth and the space of economic growth. This means that they complement each other. In fact, the economic, social and cultural transformation has taken place under the cover of globalization networks (Graham, 2001).

Methodology:

The selected area of study is the metropolitan area of Tripoli and its surroundings. As a result of unplanned urban growth, the area is now in chaos and in haphazard development, which is affecting green areas. This paper, as no previous study has done, contribute to finding solutions with which to address unplanned development and how to sustain them considering the rising population of these areas.

A number of theories have been chosen from sustainability and urban growth fields to test this study. For example, sustainable development, sustainable urban growth, modernity and decentralization theories have been complimented to define the situation and address future challenges of urban growth in peri-urban areas. The main task of these theories is to incorporate the selected methodology with literature review. Three research methods used in the project that this paper is based on are well established in research (Teddlie and Tashakkori, 2011), and they include:

Questionnaire: It is the most important method used to gather quantitative and qualitative data from local residents in order to answer the questions. A random sample 50 residents participated in the study.

Informal Interview: As a result of the flexible way, semi-structure interview was applied in this study, where the sample was 5 participants of the oldest area residents from different backgrounds. Selection of interviewees was carefully planned. In line with Opdenakker (2006), this method of investigation has offered an understanding of these issues as positions are expressed by informants.

Image classification: This method was used to help in understanding and analyzing the changes and processes that have occurred overtime and to further support and enhance the possibility of success of this paper by mapping the extent of changes that have occurred. To do this, remote sensing images (spot images data) with a 2.50 spatial resolution was acquired in March 2002 and 2010. A series of operations were performed for the classification of land cover features using the Erdas Imagine 10 software package.

The process of Libya's urban growth:

Urban growth refers to the development and expansion of urbanisation beyond its original and previous boundaries. It also involves the conversion of peripheral or adjacent areas that have previously been used for other purposes into urban areas. In Libya, one of the negative effects is the lack of vegetation areas that are centered on the highest quality land. These areas are often very scarce due to the fact that, in total, the percent of arable land in Libya is between one and three percent (Polservice, 1980). This defines the research project, whose focus is the phenomenon that is horizontal and random urban growth. Horizontal urban growth is considered to be the main cause of the degradation of green areas. For example, before 1911, the population of Tripoli living in the ancient city (after the period of city walls) did not exceed 30,000, whereas the population in1973 reached approximately 663,000 (Almabrok, 1990).

In many parts, Tripoli has witnessed unplanned and informal rapid urban growth. For example and according to the analysis of Landsat Image Thematic Mapper (TM), Tripoli's built-up area has increased from 10,536.7 ha in 1976 to 18,064.4 ha in 1989, and once

again to 26, 229.7 ha in 2001. The increase in the settlement area has accelerated and has led to the loss of farming land in the areas surrounding the city (El-Tantawi, 2005). Comparing two digital satellite images of Mashroua Al-Hadhba west of Tripoli, it can be clearly seen in Figures (1, 2, 3 and 4) that there is a considerable change in the period between 2002/2010, where the build up area has increased in Mashroua Al-Hadhba from 14% in 2002 to 61% in 2010, so in less than 10 years, the acceleration of urban growth has put tremendous pressure on agricultural land in study area.

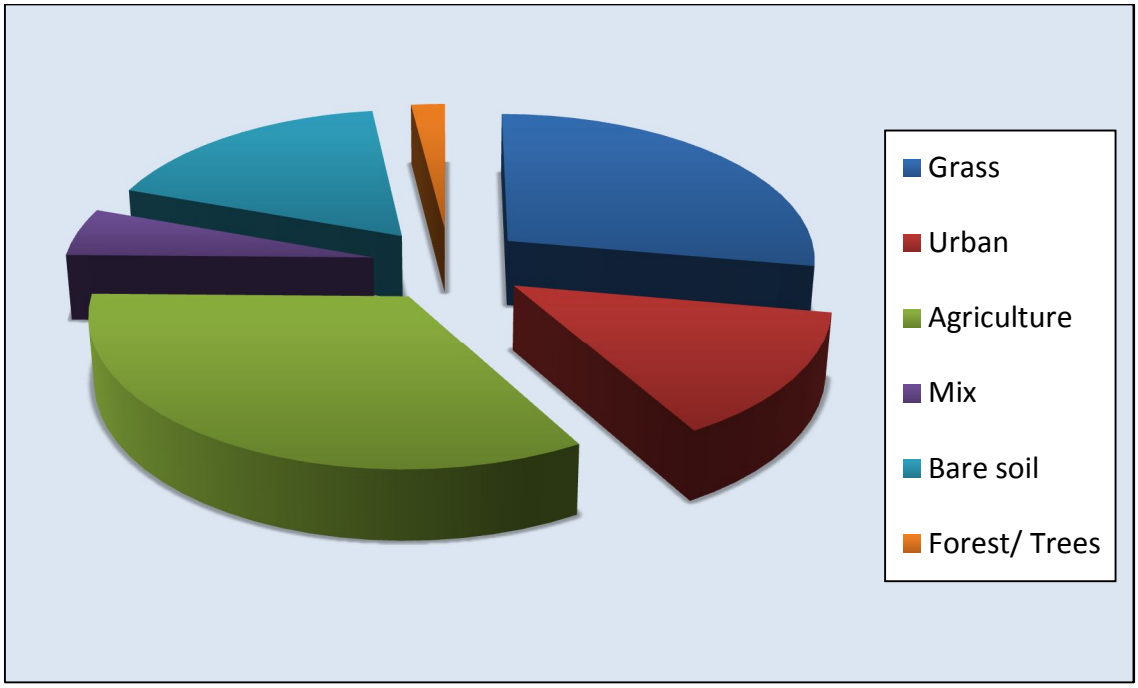

Figure (1) the classification of land use (in hectares) in Mashroua AlHadhba area in 2002.

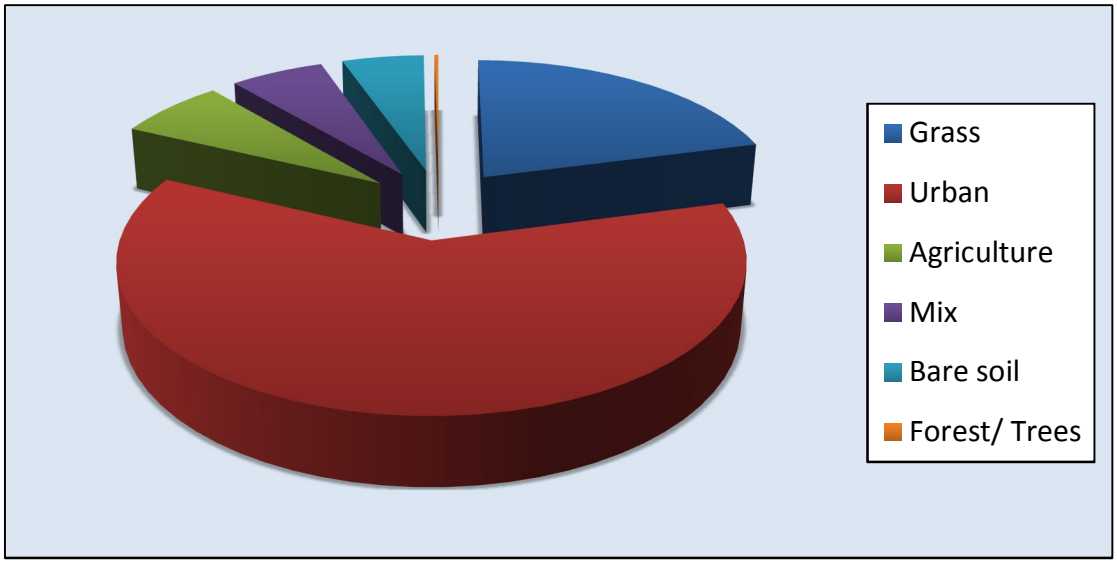

Figure (2) the classification of land use (in hectares) in Mashroua Al-Hadhba area in 2010

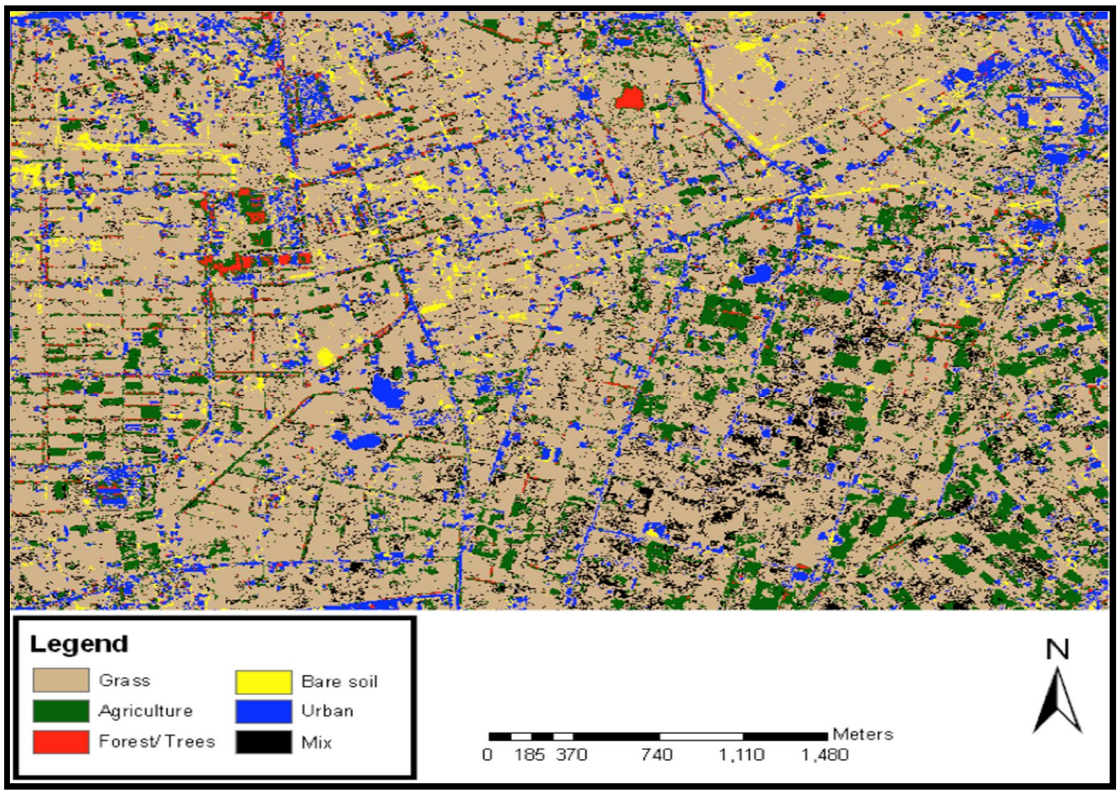

Figure (3) Image classification of Mashroua Al-Hadhba area in 2002

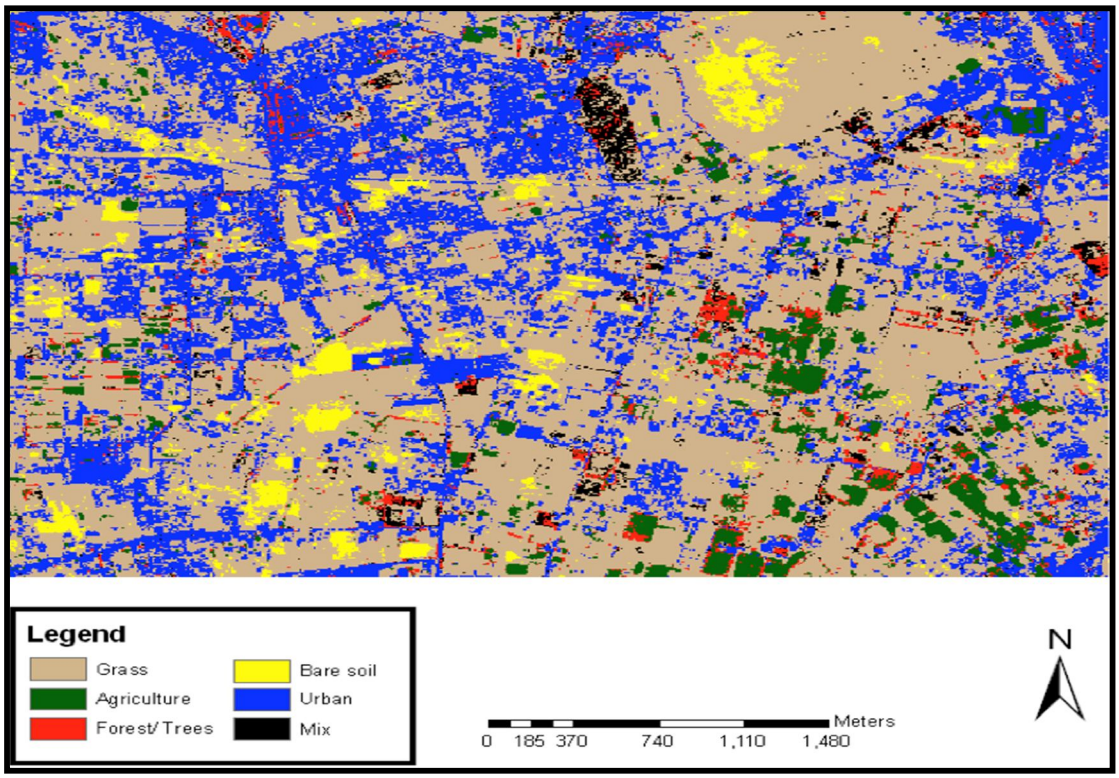

Figure (4) Image classification of Mashroua Al-Hadhba area in 2010

In context, the fieldwork respondents reported that the area has significant change but with different proportion as explains in table (1). In addition, there were unprecedented changes in the period between 2005/2010 as confirmed by five informal interviews. It is important to note the fact that these 5 interviewees are residents of Tripoli randomly selected based on their length of residency.

Table (1) Interprets the change in study area from 2002-2010

Change Percentage	No. Of Sample	Percentage %
Less than 50%	11	22
50% - 74%	17	34
75% - 100%	22	44
Total	**50**	**100**

Source: fieldwork 2013.

The question is whether urban growth is due to a natural increase or/and to migration, which plays an important role in population growth. Many coastal Libyan cities attract internal and external immigration, in Tripoli, migration represents a significant number, where more than 50 percent out of the sample in Mashroua Al-Hadhba, the majority of residents have come from three small cities Zliten, Bani-Waled and Trhunah, (fieldwork 2013) Figure (5).

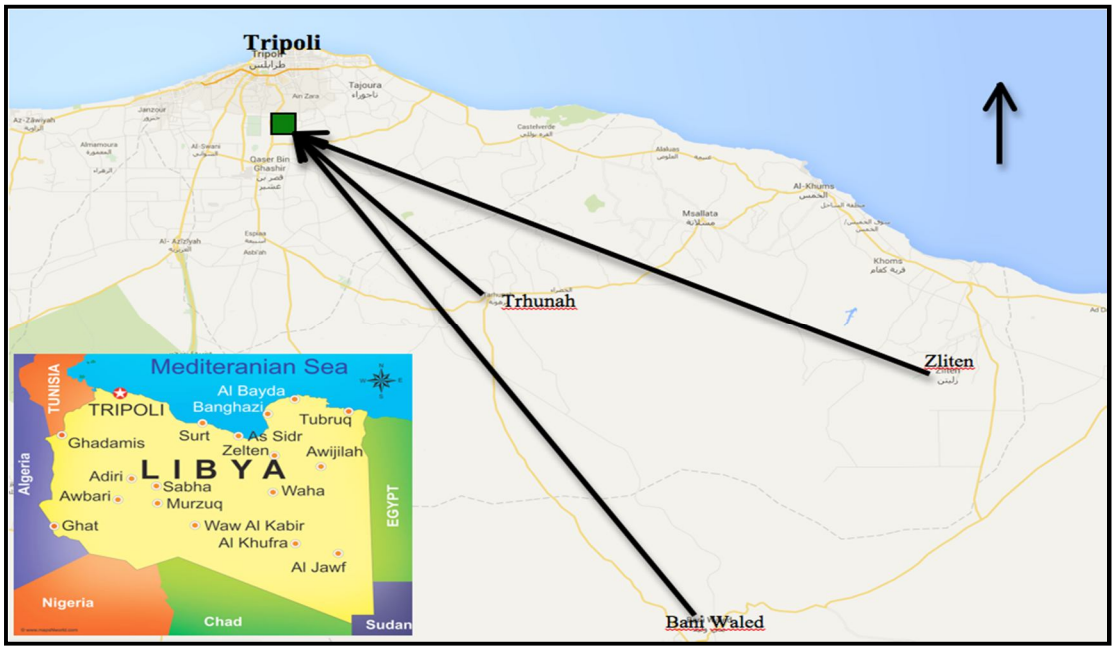

Figure (5) Migration from Zliten, Bani-Waled and Trhunah to Mashroua AlHadhba Compiled by a researcher: www.google.co.uk/maps/@32.3978823

The migration from rural to metropolitan areas has increased in many places, especially in the developing world. This has occurred for many reasons, the most important of which is that the salary of unskilled employees in rural areas is very low compared to the wages of city workers. This in turn persuades many rural workers to move to the city, with its increased labor mobility.

The aggregate number of internal migrants who moved to Tripoli in 1980 was about 344,000; however, transnational migrants from out of Libya who are using the city as a staging post for migration to Europe represented around 30% of this number. In recent years according to different estimates, that more than 75 percent of migrants from sub-Saharan Africans are believed to migrate through Libya to Southern Europe, Haas (2009). Sub- Saharan migrants in the beginning of 2000 have increased to more than 1.5 million migrants. The central Mediterranean route, with departure points in Libya experienced increases in migration pressure in illegal detections in 2013. In 2014, Italian authorities rescued approximately 65,000 migrants attempting dangerous sea crossings, often departing from Libya, Serageldin, Vigier and Larsen (2015). Thus, they migrate due to a general lack of work opportunities, or/and fright of persecution and civil violence. While the country confronted with economic recession, Libya claimed that migrants had become an economic burden, so it has instituted a number of measures to reduce the immigration. For instance, from 2003 to 2005, the Libyan authorities deported roughly 150,000 illegal migrants, mostly to sub-Saharan countries like Niger, Mali and Sudan, Fargues (2009). In terms of the migration from Arabic countries especially migrants who are looking for employment opportunities, However, workers migration into Libya mostly originates from neighboring Arab

nations, Fargues (2009) take for example during the middle of 2000s, more than 1 million Egyptian workers. However, People congregate in order to work together, thus work is a trigger to social life. Hence, a place of congregation which symbolizes a city increases in size and complexity and then spills over into adjacent patches. The challenges increased by the imperative of sustainability will be different for urban planning in poor countries than in the other wealthy countries in the world. Whereby, the main tasks of sustainable urban planning in rich countries are to improve the standard of services, housing, and environmental, Keivani (2009) problems while, poor countries focuses on the basic infrastructure.

Many rural communities were built around main commercial streets and relatively compact, along with valuable infrastructure that served their civic, cultural, and social needs, USDA (2011). Therefore transportation system, represented by the highway road network that crosses the rural area and connects with metropolitan areas, supports the spread-out housing and makes it easy for many businesses to locate themselves in remote office parks far from conventional places of work (Behan, Maoh and Kanaroglou, 2008). For example, many of private projects are located in study district. As a result of this location trend, an improvement of the winding road networks of aged and contemporary neighborhoods was required, whether close to or far from the metropolitan area. These new networks would be the means of unifying the space of the metropolitan area, surmounting the conventional factional social construction, easing the movement of goods and supporting the centralization of dominant organizations, as the primary cities always have done and still do (Madanipour, 2006). Urban expansion occurs as a consequence of population growth, places

are chosen which appear like settlements of autonomous, or so-called 'scattered' forms, which result in people congregating to live together. Urban growth expands parallel to roads to create ribbon patterns, as is the case with most commercial settlements in Tripoli, which are widely spread.

In terms of economy there is no doubt that economic factors are a significant part of the pattern of urbanisation, and rapid growth is an indicator of the success. For instance, the dramatic economic growth and development of some cities in Pacific and Arabic Gulf that have the same features as Libya, i.e., Dubai and Tripoli have both approximately 2.000.000 of population, it reflecting that countries are completely incorporated into the system of global economy, such as Dubai recently has achieved unprecedented rates of growth (Cohen 2004). Thus, economic growth is playing the significant role in urban environmental development in Tripoli and other Middle East capital cities. As it was mentioned, Tripoli's population in 1911 did not exceed 30.000 people, however widespread oil discovery brought the prosperity to the city as it occurs in some southern cities especially in oil countries. With the discovery of vast oil deposits improving Libya's economic circumstances, in context after 2003, Libya recorded favorable growth rates with an estimated 10.6% growth of GDP, which led to increase in exports and imports rate (Table 2 and Table 3). Tripoli has had to adapt modern requirements, particularly due to the emergence of the automobile, the construction boom, a population increase and the decentralization of residences and businesses.

Table (2) Libyan exports (in million American Dollars)

Countries	2000	2003
Tunisia	173.878	368.590
India	12.01923	354.167
Indonesia	362.179	112.176
China	00	96.95513
Egypt	23.23718	81.73077
Italy	1.78285	4.70192
Spain	637.821	1.74599
Germany	315.705	1.74199
Other EU states	491.987	1.35978
Turkey	638.622	0.91667
Total	**2657.2313**	**1024.0853**

Source: the national Authority for Information & Documentation Statistical yearbook 2003 and Secretariat of planning.

These changes have occurred at an alarming rate. Tripoli's urban centers offer a divergent path to urban decentralization which shares more parallels with suburban development. And as a result of the continuity of urbanization, more and more agricultural land has turned into urban areas, without effective environmental management. These challenges of urban sustainability do not only end with environmental concerns but also including socio-economic and political domains. For example, addressing severe levels of poverty makes sustainable policies for local economy a herculean tasks to these countries.

Table (3) Libyan Import (in million American Dollars)

Countries	2000	2003
Spain	181.090	399.840
Germany	71.31410	390.224
UK	88.94231	240.385
France	84.13462	221.955
Tunisia	77.72436	122.596
Egypt	28.04487	114.583
Korea	126.603	108.173
Turkey	15.22436	96.15385
USA	31.2500	88.14103
Other EU states	201.923	1.06090
Italy	292.468	0.82292
Total	**1198.7186**	**1660.2391**

Source: the national Authority for Information & Documentation Statistical yearbook 2003 and Secretariat of planning.

The dynamics that determine peri-urban growth in Libya however are quite complex. Widespread adjacent land and economic conditions are combined with people's strong desire to escape from urban life for a more comfortable life on the outskirts of the city.

The present economic development strategy in Libya seeks to gradually achieve the privatization of commercial services, activities of construction and small and medium size of industry as well as refocus on sectoral development as a first step toward the global economy (United Nations, 2009). Therefore, sustainable development plans should focus on diversifying the economy and finding sources of income other than oil and attaining higher rates of economic growth. Thus to achieve sustainable economic development, there are many options: 1) encourage the private sector to contribute to the economic and developmental activity (Small and Medium-sized Enterprises), this calls for creating an appropriate enabling environment; 2) supporting

decentralized development assigned to the municipalities and activating legislation and simplifying procedures required to encourage foreign investment in order to contribute in financing and implementing a portion of sustainable development projects especially in the fields of tourism, finance and communication; 3) restructure of public service, and the productive projects.

Conclusion:

The interaction between socioeconomic, political and cultural factors has substantial impacts on the operation of sustainable urban growth. This can be seen in the complex interactions between Tripoli and its inhabitants, and technological advances have resulted in the growth of the city to a great size, with both horizontal and haphazard expansion. After the lifting of sanctions the authorities in Tripoli are able to decentralize the cities places of residence in an effort to improve the socio-economic conditions of the residents. These circumstances have generated a complicated interaction between the extension of the city into adjacent areas and the strong desires of people to leave the city looking for a relaxing life. The population increase including in-and out- migration has an important influence on the environment and mostly disturbing the implementation of planning policies. Furthermore, non-compliance to the planning criteria led to the establishment of haphazard and unplanned settlements in the periphery. Finally, the urban expansion pattern in Tripoli does not reflect sustainable growth. Therefore, as Libya undergoes post-conflict reconstruction, sustainability principles must be factored into its development agenda and urban renewal program.

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