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URBAN PRODUCT IN VIEW OF THE COMMERCIAL ACTIVITIES IN ALGIERS

Abstract: In recent decades, Algiers has undergone significant urban transformation, marked by new urban extensions and spatial restructurings. Concurrently, commercial polarization has become widespread, leading to profound changes in urban structures, particularly evident in municipalities in the eastern part. These areas have shifted from primarily residential and agricultural to centres of significant commercial activity. This research aims to examine the influence of commercial activities on Algiers' urban structure, as they are seen as growth poles shaping urban organization. The study also analyses their quantitative and spatial dimensions, shedding light on resulting urban problems. To achieve these objectives, a descriptive approach was used to identify factors driving the concentration of commercial activities in three municipalities. Quantitative analysis utilized data from the National Trade Register Centre. Field surveys of commercial activities in markets were conducted, and geographic information systems were used to demonstrate spatial changes, focusing on residential neighbourhoods with overlapping commercial activities. Findings indicate that commercial activities have contributed to residential growth and, at times, the spread of illegal housing, resulting in a 43.01% loss of agricultural land between 2000 and 2020. Consequently, local authorities are striving to regulate anarchic free trade to preserve designated urban areas outlined in Algiers' urbanization plan for future organized urban uses.

Key words: Algiers, urban product, organized commercial activities, housing function, urban development

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Introduction

Urbanization in general has long been associated with human development and progress (Tošić & Krunić, 2005). For some authors, urbanization is now considered a major driving force for modernization especially in Algeria. The city of Algiers has particularly experienced rapid and unprecedented urban changes since the independence of the country, some sixty years ago, leading to changes in terms of the density of the city's urban fabric, the increase in its population, the multiplicity of its urban functions and the evolution of its dimensions and the extension of its urban space. As a consequence, the city faces great challenges to re-establish its spatial reorganization (Louafi, 2019).

Urbanization in Algeria has been profoundly influenced by its colonial past and the dynamics of its post-independence development (Entelis, 2016). During the French colonial period (1830-1962), urban centres were transformed to serve colonial interests, with cities like Algiers and Oran seeing significant European-style infrastructure development alongside traditional medinas (Nemouchi, 2023). After gaining independence in 1962, Algeria experienced a mass migration from rural areas to cities, driven by the search for better economic opportunities and the devastation of rural regions during the war of independence. The newly independent government adopted socialist policies, leading to large-scale housing projects and centralized urban planning. However, rapid urban growth often outstripped infrastructure and service capacities, leading to challenges such as housing shortages. The 1980s and 1990s brought economic difficulties, slowing urban development and increasing informal settlements. In recent years, economic reforms and modernization efforts have aimed to improve urban infrastructure, housing, and public services. Despite these efforts, Algeria continues to grapple with issues like urban sprawl, environmental concerns, and the need for sustainable urban development (Group, 2016).

Undoubtedly, the city of Algiers represents a clear and distinctive example in highlighting the urban and social transformations, which led to urban extensions and new restructuring. Some are organized and others are set in an unorganized system.

This coincided with the transition process from a controlled economic system to a free one, and the high level of urban expansion; the central part of the city has reached, and the depletion of its real estate reserves the extension of urbanization process has proliferated significantly on the expanse of the main use of land, especially in the periphery, which has changed its function from agricultural periphery to residential and commercial periphery (Bellout et al., 2020).

The Algerian policies of development and reconstruction have experienced several operational phases in which the Algerian department adopted many legislations, which have been applied by successive governments in order to control the rules of construction and urban expansion. This is to achieve a number of goals such as the organization of the city, the completion of residential communities, the development of buildings, and the preservation of the environment (Rabehi et al., 2019).

Despite the implementation of those legislative measures and the availability of political willingness and financial allocations, there are some defects that afflict the cities, which is primarily due to the inadequacy of the legislations, which are also not responding adequately to changes occurring on the ground, especially after liberation of foreign trade by the state (Husseini, 2019). The governmental procedure seems to contribute fundamen-

tally to upgrading the establishment of both the organised and the unorganised commercial activities. The Unorganised trade has become a derogation from the regulations and legislation of urban planning. This is due to the legal excesses of individuals represented in the non-compliance with the organized urbanization plan (Diafat & Madani, 2016).

Indeed, according to the new urban form, there are whole districts in which the first floors of the dwellings were assigned to the exercise of commercial activities, and the upper floors to housing. This issue has become a phenomenon that necessitates a comprehensive study. Therefore, our research focuses on studying the eastern part of the city of Algiers to demonstrate that housing is not only a unit of stability, but it is also a unit of exploitation and production and its evolution is linked to the availability of certain objective conditions such as surface areas and infrastructures.

The question that raises here is: To what extent are commercial activities influencing the transformation of housing and the structuring of urban space?

In this regard, the three neighbouring municipalities of Dar El Beida, Bordj El Kiffan and Bab Ezzouar were taken into consideration, since they represent the areas that experienced a strong establishment of commercial activities and urban expansion, which has changed the structure of the urban form in the eastern part of Algiers.

To achieve the underlined objectives, we relied on the descriptive approach to determine the factors of concentration of commercial activity in the study area, and the quantitative approach to analyse quantitative data, based on figures and statistics obtained by the national center of the trade register. We also exploited geographical systems to show the spatial change in the study area, in addition to making field surveys in two markets: El Djorf in the municipality of Bab Ezzouar and El Hamiz in the municipality of Dar El Beida, to accomplish the surveys we chose a dual-function residential area, i.e. an area with overlapped commercial activities in the residence, which started randomly and unorganized in the mid-nineties to become a reality. Then, we identified the existing complications and limitations to facilitate the development of appropriate suggestions, and to ensure an effectively managed space and a more organized one, as well as to restore the spaces taking into account the unorganized commercial activities, to preserve spaces for future uses.

Materials and Methods

Factors of Commercial Activities Endemicity

The establishment of commercial activities in the eastern part of Algiers was linked to the availability of an important network and a base of important infrastructures, such as the proximity of the Algiers port, the international airport, the railroad and the freeway such as the Road N°05 in addition to the broad surface available in this eastern part of Algiers. These criteria can constitute an attractive zone to receive the population and the structuring activities of the agglomeration.

Description of study area

The study area is located in the province of Algiers at the extreme east of the capital as shown in Fig.1 and is approximately 16 km from the capital city. It is bordered to the north by the municipality of Borj El Bahri, to the south by the municipalities of Eucalyptus and Meftah, to the east by the municipalities of Rouiba and Hammadi, and to the west by the municipalities of Oued Semar and El Mohammedia (Amireche & Marc, 2007). The

targeted region has a total area of 4436.23 hectares. The aspect of the surface is flat because it is a meeting point between the coastal strip and the plain of Mitidja. As a part of the fertile plain of Mitidja, these areas are of high-quality agricultural character.

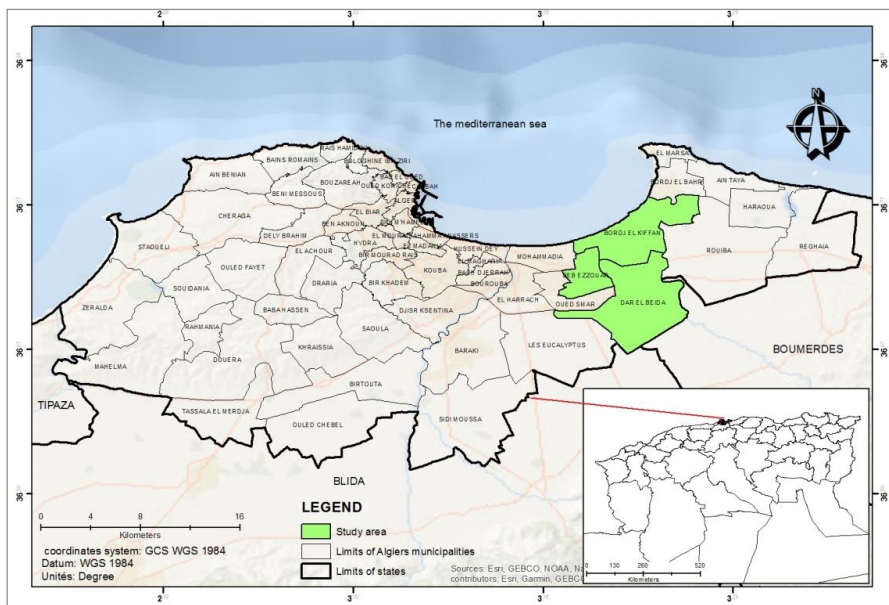


Fig. 1. Location of the Study Area

Infrastructure Availability

The three municipalities have an important road network of national, state and municipal classification, which makes them subject to permanent travel and easy to connect with the other various urban centers surrounding them. The most important roads include: (i) The Eastern highway, which secures the transit movement and ensures the connection between the capital and the East of the country. (ii) The national road N°05, which plays the role of regional connection between the capital and the Eastern part. It also serves a double road connecting Dar El Beida to the airport by the municipalitie of Bordj El Kiffan.

The three municipalities have a network of railroads as follows: a main line of 12 km long which goes from the station of Agha in the center of Agiers to the station of El Harrach, with three secondary lines. Another line connects the eastern suburbs of El Harrach station to that of Reghaia, on a distance of 19 km, knowing that the railroads of the capital serve densely populated areas, in particular the central station from central station to the industrial zone of Reghaia (crossing 7 important stations).

The Algiers port is one of the structuring elements of the city's urban space and an essential element of its activity, given its role as a strategic means of trade and transportation with foreign countries (Kaced, 2019).

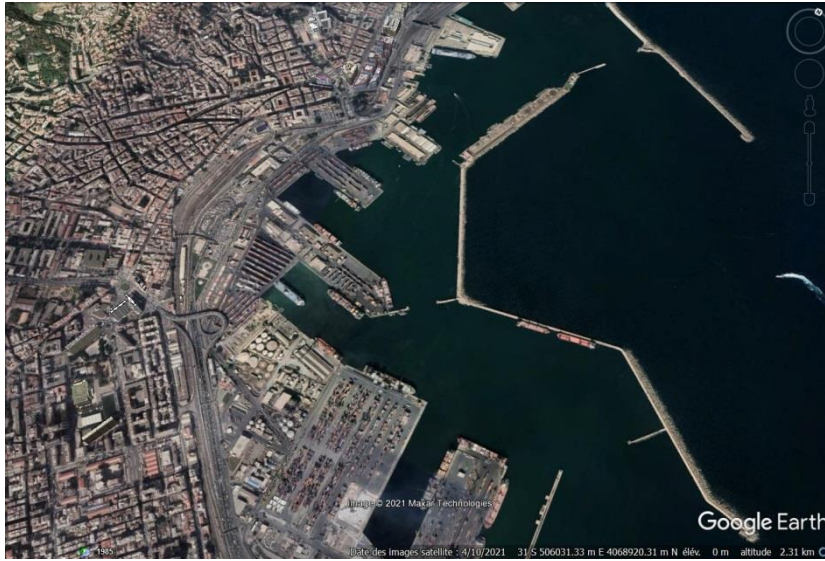


Fig. 2. Satellite Image of Algiers' Port (Google Earth)

The International Airport Houari Boumediene, is located at Dar El Beida the eastern south of Algiers, which was established in 1921 (Mohamed, 2016). After its expansion, its area is 1469 hectares. It is distinguished from the rest of the country's airports by its efficiency in transporting passengers, because it is the largest airport in Algeria, which qualifies the study area to undergo the various transformations; the mid-northern region, in general, and the study area, in particular, are witnessing.

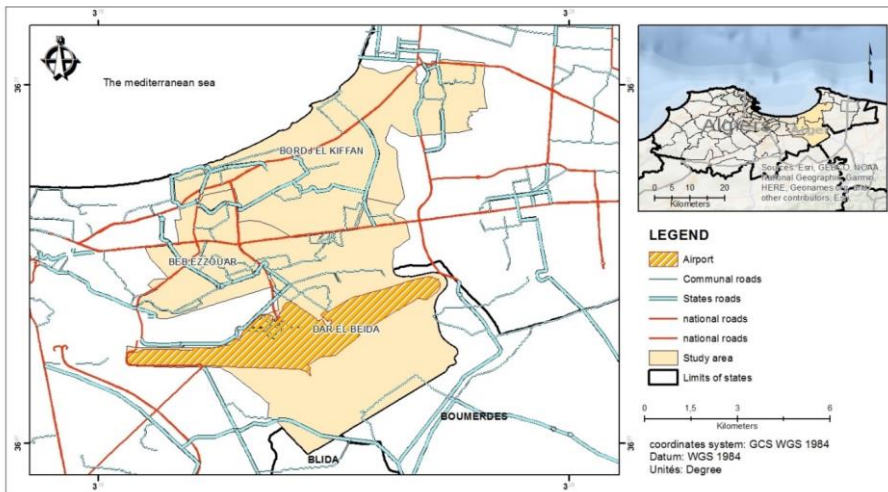


Fig. 3. Road Network in the Study Area

The evolution of commercial activities in the eastern part of Algiers

The urban expansion of Algiers towards its suburbs and its immediate surroundings resulted in a fast expansion and an establishment of the commercial activities in the three

communes (Crane, 2017). Studying the phenomenon of the development of the commercial activities in the province of Algiers, in the three periods indicated in the table n°01, enabled to arrive at a conclusion with two aspects. First, the percentage of the commercial activities has significantly decreased in the centre of the city (Boulassel, 2020). Second, the commercial activities have developed in the peripheries of the city, in particular the Eastern part of it. The development is remarkable in the three municipalities of Dar El Beida, Bordj El Kiffan and Bab Ezzouar.

Table 1. Evolution of Commercial Activities in the Province of Algiers

Periods	Municipalities	Central Municipalities	West Municipalities	South Municipalities	East Municipalities	Total Municipalities
1987	Number	6,822	1,362	1,891	2,546	12,621
	%	52.91	10.56	14.66	19.74	100
2001	Number	14,095	13,900	10,781	18,391	56,941
	%	24.30	23.70	18.40	31.10	100
2020	Number	10,939	12,627	9,983	21,083	54,632
	%	20.02	23.11	18.27	38.59	100

Source: National Center of the Trade Register CNRC (2020)

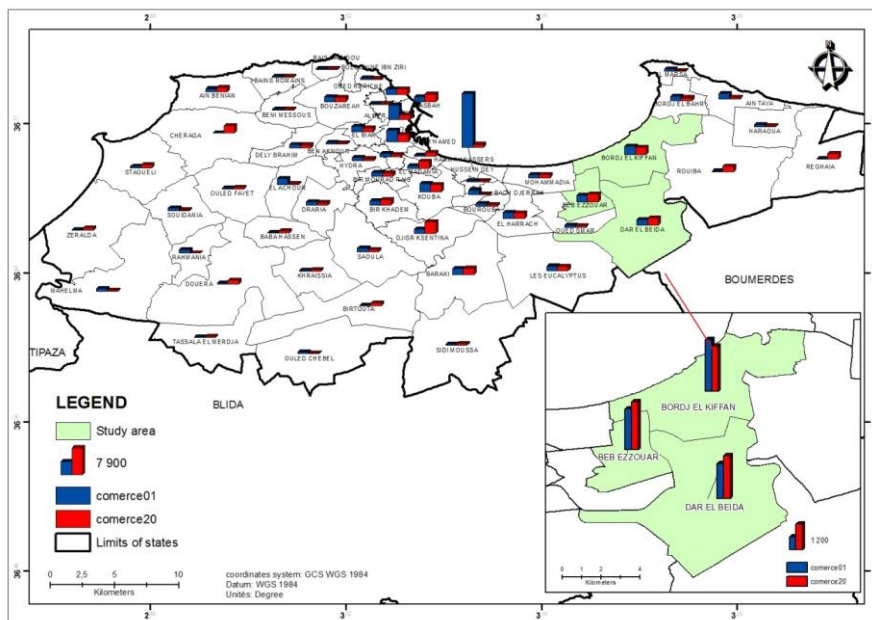


Fig. 4. The Commercial Activity Evolution in Algiers from 2001 to 2020 (CNRC, 2020)

The results of the analysis of the table 1 and the Fig. 4 indicate an interesting phenomenon represented in a significant decrease of the number of commercial activities in the central part of the capital (Algiers Centre, Sidi M'hamed, El Madania, El Hamma, Bab El Oued, Bologhine, Casbah, Oued kureich, El Mouradia and Rais Hamidou).

The decline was very steep, from 52.91% in 1987 to 24.3% in 2001, according to the data of the national center of the trade register. It continued to decrease, reaching 20.02% in 2020.

That is to say that commercial activities which have been discharged from the central communes have been absorbed by the communes of the suburbs, particularly the communes of Dar El Beida, Bordj El Kiffan and Bab Ezzouar. The factor that contributed to facilitating this shift is the availability of real estate that is suitable for commercial activities.

On the contrary, the central region is abandoned due to the noticeable lack of commercial fundamentals, such as adequate infrastructure, accessibility, and market demand. Further, the availability of real estate in the suburb has multiplied the process of reconstruction in the area through the housing constructed by the public authority. The realization was in the frame of the new urban housing areas (ZHUN), and housing projects for the Agency either for the improvement and development of housing (AADL) or as part of the distribution of plots of self-construction. In addition to the relatively open real estate market, which has encouraged families to be able to buy plots in which individual dwellings have spread, especially villas type in the township of Dar El Beida.

The municipalities in the eastern part have contributed heavily to the receiving activities due to the abundance of real estate, ease of transportation, and proximity to places of importing goods such as the port and airport and financial institutions such as banks and insurance offices. Consequently, commercial activities increased from 19.74% in 1987 to reach 38.59% in 2020.

This is equally true for the western municipalities in which the percentage augmented from 10.56% and 14.66% in 1987 respectively. In 2020, commercial activities moved to 23.11% and 18.27% respectively.

This increase in the number of commercial activities has contributed to a rapid increase in population, which has been accompanied by the evolution of the residential complexes, where developments projects have been established by the state under the programs of huge residential units (ZHUN). In this context, it is important to state that the area of Algiers province has expanded according to the amendment of the province of Algiers by Presidential Decree n° 97-292 enacted on August 02, 1997. This amendment concerned the administrative management of the new entity, which included 24 municipalities (Benakezouh, 2002). On this basis, the number of municipalities of the capital has increased from 33 to 57 municipalities organized in 13 administrative districts and departments. The expansion is also accompanied by a rapid increase of activities.

Results and Discussion

Distribution of Commercial Activities within the Study Area

The commercial activity in the area has noticeably increasing, especially in the last two decades. There is a rapid evolution and continuous spread of the establishment of organized and random commercial activities, as it has become strikingly apparent, and the table 2 clearly shows the development of commercial activities in the study area.

Table 2. Evolution of Commercial Activities in the Study Area

	1987		2001		2020	
	Number of trade activities	%	Number of trade activities	%	Number of trade activities	%
Bordj El-Kiffan	365	2.83	2,484	4.30	2,169	10.28
Bab Ezzouar	121	0.93	2,145	3.40	2,305	10.93
Dar El Beida	91	0.70	1,672	2.90	2,038	9.66
Three municipalities	577	4.46	6,301	10.60	6,512	11.92
State municipalities	12,621	100	56,941	100	54,632	100

Source: Data from the National Centre of the Trade Register (CNRC, 2020)

The quantitative data presented in Table 2 indicate that the number of commercial activities increased several times in each of the three municipalities during the period 1987-2020. The analysis of the data shows that the period before 1987 did not experience a great development since the number of commercial activities in the study area reached 577 stores, which is equivalent to 4.46%. The great development occurred in the period 1987-2001, when it increased from 577 to 6,301 stores, which is 10.6%.

The evolution of the region appears in the structuring of urban space, through the sprawl of neighbourhoods and fragmentation of habitat, following the construction program of large residential units in addition to residential programs, which were implemented by the National Agency for housing improvement and benefiting from plots or the divisions under the framework of self-construction. This programme also facilitated the process of granting building permits and building plots for residential purposes. Consequently, this procedure has contributed to forming a disordered and discordant urban landscape. The scene took the form of residential units randomly distributed on the territory, for example, the new residential neighbourhoods in the districts of Dar El Beida and the secondary agglomeration of El Hamiz. Moreover, the field survey demonstrated that most of the businesses of this agglomeration are located on the first floor of the buildings. They are also integrated in individual residences, in which the residential function and the commercial function of the property overlap. Such properties are known as habitat with homogenous utilization.

The spread of such type of buildings resulted in the emergence of the phenomenon of random commercial centralization (Addoun & Hadeid, 2019; Berthelot et al., 2007), as for example, the installation of parallel trade activities for each of the Djorf market in Bab Ezzouar and the El Hamiz market in Dar El Beida, whose commercial influence exceeds the limits of the province and can sometimes reach the national territory.

During the 2001-2020 period, the region knew a rapid spread of businesses. The number of stores reached 6,512, which is equivalent to 11.92% from the total number of stores in the province. Due to the high demand for places of commercial activity and trade and the lack of legal and organised commercial spaces allocated by the public authority,

areas of commercial activities have been randomly established. These businesses developed right behind well-known places of organized activity, such as the commercial and entertainment centre of Bab Ezzouar.

Another factor that contributed to this situation is the freedom to import goods due to the law of the liberalization of foreign trade and the facilities of the National Center of the Trade Register to obtain a trade register. The percentage of activities in the suburbs reached a considerable level in 2020 out of the total commercial activities of the province amounted to 9.66% in the municipality of Dar El Beida, 10.28% in Bordj El-Kiffan and 10.93% in the commune of Bab Ezzouar. Seemingly, the choice of locations of markets in these three municipalities is not by chance, rather several factors effect it. The most influential factors are the availability of real estate (unlike its scarcity in the city centre), the attainability of transport and circulation, the proximity of places to store goods, and import stations of goods as the port and airport, as it has been previously mentioned.

Places of organized exchanges: Algerian International Fair and Bab Ezzouar commercial and Leisure centre)

Undoubtedly, the provision and distribution of organized commercial activities in the urban area is considered a social service, and its absence is considered an urban and social problem. Indeed, the convenient planning requires the establishment of commercial spaces. These spaces must be subject to the guidelines of the commercial reconstruction plan, which aims to reduce chaotic trade. Since the latest decade has been more distinct than the preceding one, the phenomenon of commercial polarization has spread in addition to the frequency of trade and service flows. The phenomenon has increased due to the adoption of a market economy and the liberalization of free initiative by the state. On the ground, the study area includes organized commercial premises, among which the following two examples are the main ones.

The Algiers International Fair. The international fair plays a significant role in the commercial life of Algiers city and in the activity area expected after the completion of the projects. It is also a major step in the organization of commercial activities, which would also become a commercial hub (Boudiaf, 2003). More, Algiers Fair is considered one of the most important economic events the whole country witnesses yearly, since its inception in 1964. Its first name was "Onafex" located east of the capital in Dar El Beida then. Later, it was transferred to the municipality of Mohammedia, which is 10 to 15 minutes from the centre of the capital to the international airport of Algiers. The Algiers International Fair includes several facilities (Fig. 5), providing the best services to the visiting population. These facilities are represented in the public establishments and the service restaurants in the exhibition halls.

Bab Ezzouar commercial centre. Bab Ezzouar is a modern shopping and leisure space. The centre serves as an alternative to traditional spaces that no longer meet the population's evolving lifestyle needs (Fezzai et al., 2020). It was developed by the Algerian-Swiss foundation of shopping centres. It rests on a total area estimated at 450 00 m² and consists of 5 levels. The ground floor is for the parking lot with a capacity of 1700 vehicles, and this is the most important incentive to revitalize commercial activity and business. Also, two floors were dedicated to shops (Benali-Nouani & Berezowska-Azzag, 2014). The first floor is relatively dedicated to processed and artisanal foods, while the second is assigned to clothing, fashion world and costumes as well as cosmetics and perfumes. The third is dedicated to business offices whose area is estimated at 16 thousand m², and the

last floor intended for entertainment including 8 movie theatres with a capacity of 1,400 seats. Work in this floor is still in progress, and its doors are not yet open. More, the fifth floor includes entertainment suites with an area of 31,000 square meters (Lefilef et al., 2018), and other services such as restaurants and entertainment parks that are open every day of the week.



Fig. 5. The Algerian International Maritime Pine Show in Mohammedia



Fig. 6. Bab Ezzouar Commercial Center

Unregulated trading activity places: El Djorf and El Hamiz Markets

The unregulated trading places were developed in violation of urban planning standards, and their development did not comply with the rules of appropriate urban planning. This is a matter that led to the lack of many services, facilities network, and creation of an anarchic distribution, which is not consistent with the image of the modern city (Benyoucef, 2003).

The Al-Hamidiyah Souk, for example, used to be a district of a defined size with sixty shops and experienced daily intense frequencies. Its alleys and narrow roads were often crowded. The famous Hamidiyah market in the old city of Damascus still plays a commercial role, among the unregulated commercial places.

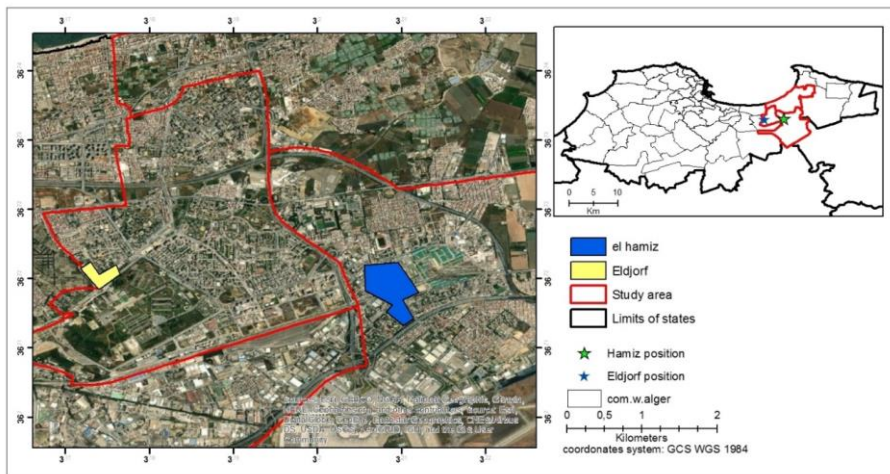


Fig. 7. Location of Souk El-Djorf (Bab Ezzouar) and Souk El Hamiz (Dar El Beida)

The Commercial Market of the El Djorf District. The commercial market of El Djorf district is located west of Bab Ezzouar town. To the north, it is bounded by the collective housing area of Boushaki A, B, D and C, by the district El-Djorf to the east, Oued Smar town to the west, and to the south by the University of science and technology Houari Boumediene (Fig. 7). The market covers an area of 5 hectares, where commercial activities are merged with the residential function. El-Djorf district has been a commercial phenomenon with no established foundations since the early 1990s. Short time later, it turned into an open market for all types of goods. The shops in this place are lined up and adjacent inconsistently and chaotically.

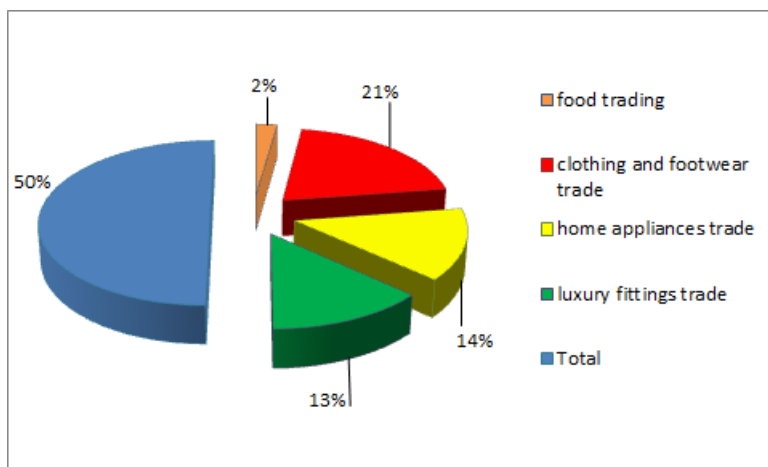


Fig. 8. Commercial Branches in the Daily Market of El-Djorf District

Through the field survey of El Djorf market, we found that the number of stores in the market specializing in commercial activity reached 550, including 25 stores specializing in the trade of food, which is equivalent to 4.54%. Then, 224 stores specializing in the trade of clothing and shoes business, which is equivalent to 40.72%. In addition, 154 stores specializing in the trade of household appliances, that is to say 28%, and 147 stores specializing in the trade of luxury accessories, that is to say the equivalent of 26.36%.

El-Hamiz Market. The El-Hamiz market located in the secondary agglomeration of the municipality of Dar El Beida, covers an area of 600 hectares. It is 5 km away from the east of the municipality center. This market is bounded on the north by the municipality of Bordj El Kiffan and the east by Oued El Hamiz. The district is considered the core of commerce in the municipality because it includes the largest number of commercial shops compared to the other districts in the municipality area. The other reason that demonstrates the importance of El Hamiz street is that it mediates and crosses the national road N°(05). Its strategic location makes it the main artery of commerce, which facilitates the circulation of goods, and gives dynamism and impulse to the commercial activity. Concerning the types of the offered goods, these stores are specialized in the trade of haberdashery and electrical equipment. They are completely different from the stores of the Market of El-Djorf, which are specialized in the trade of clothing and the sale of household equipment such as utensils, fabrics and others.

Table 3. Class Trade by Type of Commercial Activity in the Market El Hamiz

	Wholesale		Sell half wholesale		Hash		Total	
	Number	%	Number	%	Number	%	Number	%
Home electrical tools	16	2.11	50	6.60	168	22.19	234	30.91
Hardware	125	16.51	20	2.64	50	6.60	195	25.75
Home fixtures	47	6.20	10	1.32	16	2.11	73	9.64
Electrical materials	90	11.88	14	1.84	9	1.15	113	14.92
Other materials	65	8.58	8	1.05	18	2.37	91	12.02
Not shown	-	-	-	-	-	-	51	6.73
Total	343	45.31	102	13.47	261	34.47	757	100

Source: National Center of the Trade Register (CNRC, 2020)

The market of El-Hamiz, as shown in Table 3, includes 757 stores. The wholesale trade only is seizing the majority of stores. According to the performed field survey, 343 stores were counted out of the total stores in El-Hamiz, which is equivalent to 45.31%.

Here haberdashery occupies 125 stores that is equivalent to 16.51% of the total wholesale trade, dominating the place. Then come other specialties, namely, the trade of electrical equipment with a total of 90 stores (11.88%), the perfumery of other materials with 65 stores (8.58%), the trade of household appliances with 47, commercial stores representing

6.10%. Finally, there is the trade of electrical household appliances with 16 stores, representing 2.11% of the total wholesale trade in the market.



Fig. 9. The Situation of the Streets of the Market of El Hamiz

A clear observation about the deterioration of the situation in the streets of the market of El Hamiz is noted as Fig. 9 illustrates. This is mainly due to the lack of preparation of roads and the spread of anarchy and dirt. This is in turn a result of building the market illegally by seizing real estates without attaining legal construction permits. Thus, in the absence of the state monitoring of these legal violations, it has become complicated to regulate the status of the commercial district. The legitimate attempts to regulate the commercial activity is still difficult despite the enactment of Law 15-08, which states the necessity of settling the rules for the compliance and the completion of constructions that were built before 2008. Moreover, the process of development requires the issuance of development plans approved by the administrative authorities, such as POS (Land use plan: This document set the general rules and easements of land use, within the framework of the guidelines of the master plans with which it must be compatible) and PDAU (Urban development master plan: This master plan determines urban planning forecasts and management rules. It establishes the fundamental orientations for the development of the territory of one or several municipalities).

Commercial activities impact on the structure of the urban space in the eastern part of Algiers

There is no doubt about a direct relationship between the size of cities and commercial activities: the larger the city, the greater its need for commercial services will be. This leads to an expansion of the area for these uses; therefore, leading to a restructuring of the area. The urban transformations that the city of Algiers has undergone have taken on a significant dimension over the last two decades, leading to some urban extensions and new restructuring; some are organized and others are unorganized, in connection with the transition from a controlled economy to a free economy.

Evolution of residential barn

The evolution of residential barn concerns the progression of the urban fabric over the different periods, and demonstrates the extent of the authorities' interest in this area. In fact, the development of housing is only a reflection of increase in the population number, which leads to a continuous increase in the consumption of the territory's surface.

Table 4. Evolution of the Residential Barn in Relation to the Evolution of the Population

Municipality	Year	Population	Number of dwellings	Housing Occupancy Rate TOL
Bordj el Kiffan	1987	61,035	7,797	7.82
	1998	103,690	17,519	5.91
	2008	148,903	31,190	4.77
	2020	367,168	29,335	5.73
Bab Ezzouar	1987	55,211	8,996	6.13
	1998	92,157	15,370	5.99
	2008	122,791	22,664	5.41
	2020	34,107	22,458	4.76
Dar el Beida	1987	17,768	2,347	7.57
	1998	43,788	7,025	6.23
	2008	79,493	16,855	4.71
	2020	62,088	14,620	6.06

Source: DPAT 2008-2020, ONS RGPH 1987 and 1998

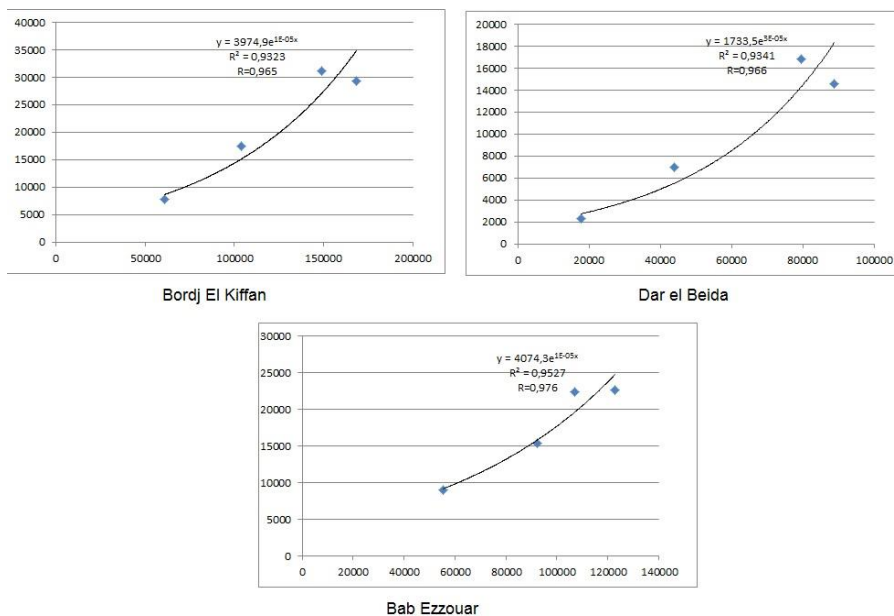


Fig. 11. Correlation between Population and Housing stock Changes in the Study Area from 1987 to 2020

The analysis of data contained in Table 4 and the interpretation of the graphs (Fig. 11), which illustrate the relationship between the development of the residential stock and the population, show that the municipality of Bordj el Kiffan has experienced an amazing urban growth. For instance, the residential stock has gone from 7,797 dwellings in 1987 to 29,335 in 2020. This is observed clearly through the correlation coefficient, which is estimated at 96.5%.

As for the municipality of Bab Ezzouar, the same increase is recognized in population that was accompanied by an increase in the residential stock, which rose from 8996 dwellings in 1987 to 22458, with a correlation coefficient of 97.6%. As for the municipality of Dar El Beida, it has also experienced an evolution of the number of inhabitants and the residential barn between 1987 and 2020, with a correlation coefficient estimated at 96.6%.

The Shrinking of agricultural land

The agricultural sector of the province of Algiers has experienced a significant decline due to urban expansion since the 1980s. The direct consequence of these expansionist urban extension towards all directions. A comparison of data about different periods and different percentages is necessary to comprehend the degree of decline that has affected the sector due to the decline of agricultural land in its total area, particularly in its exploited area (UAA) (Bellili, 2012). The following table shows the extent of the decline in the actual agricultural area of the province of Algiers within its metropolitan area.

Table 5. Decrease in the Effective Agricultural Area of the Province of Algiers Within its Metropolitan Area for the Period 1981-2001

Area (ha)	1981	2001	Agr. Area/Total	Regression rate
Algiers Province	68,000	35,226	92.10	-48.20
Metropolitan Tot.	411,496	220,099	79.05	-46.51

Source: ONS, Agricultural Statistics, 2001 Series

Data in Table 5 indicate a reduction in the agricultural area utilized for farming, which is less than the total decline in agricultural land. This decrease is attributed to urban expansion driven by the housing crisis, leading to the proliferation of informal housing and the abandonment of agricultural production. The data show that the ratio of decline in the actual agricultural area compared to the utilized agricultural area reached 92.1% in 2001 in the province of Algiers. In the metropolitan area of the city, the decline was 79.05%. Additionally, the province of Algiers experienced a decline of -48.20%, which surpasses the metropolitan area's decline rate of -46.51%.

As long as the intense consumption of the agricultural land and the degradation of the agricultural field continue, these energies will remain threatened by progressive erosion due to the construction processes, and the non-compliance with the law on construction that has prohibited the expansion of residential/ commercial areas on these lands. This law additionally prohibits the utilization of these lands for purposes other than agriculture. Despite this regulation, significant portions of fertile land have been converted for non-agricultural uses, driven by the demand for housing, infrastructure, and services.

This conversion amounted to 196.6 hectares per year between 1974 and 1982, and 262.5 hectares between 1982 and 1986, contrary to the directives of the public authority.

The erosion of the whole agricultural land, and particularly the fertile land is considered a national concern. A great deal of the land use has been diverted into housing projects through defrauding. To solve the crisis of housing or limit its severity, the state selected the eastern side to expand the capital including surrounding municipalities (Dar El Beida, Bordj El Kiffan and Bab Ezzouar). The pace of construction was very quick, and led to the consumption of the agricultural land. It is also worth mentioning that the process of real expansion of the study area started in the late eighties, when the urban expansion movement launched on a large scale, which appears obviously through the shrinking of agricultural land in both communes of Dar El Beida and Bab Ezzouar.

Regarding the study area, it is clear from the maps (Fig.12-Fig.14) that the agricultural area has decreased, reaching 68.30 hectares in Bab Ezzouar in 2000 to only 7.18 hectares in 2020, which means that it has lost 89.49% of the area. This is due to the intensive construction operations that the municipality has witnessed in the rehabilitation and restructuring of the city in various institutions and important centres. The agricultural area in the municipality of Bordj El Kiffan has declined sharply, from 1,002.36 hectares in 2000 to 371.12 hectares in 2020. This means it has lost 62.97%, while the municipality of Dar El Beida has lost 30.01%, from an area estimated at 1,782.63 hectares in 2000, reaching 1,247.61 hectares in 2020. The northern region of the municipality was more affected than the southern region due to the rise of residential and commercial stock.

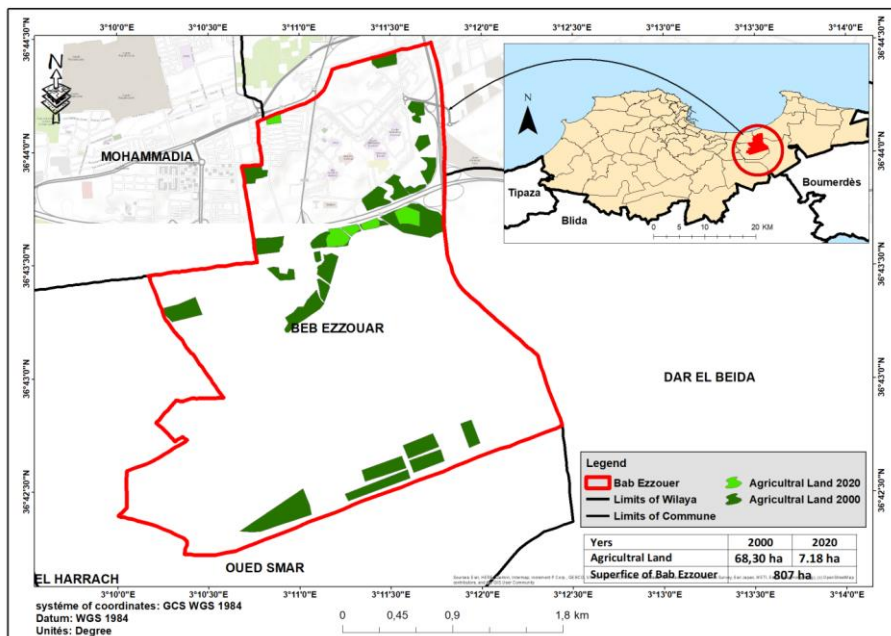


Fig. 12. The Evolution of the Agricultural Area of the Commune of Bab Ezzouar

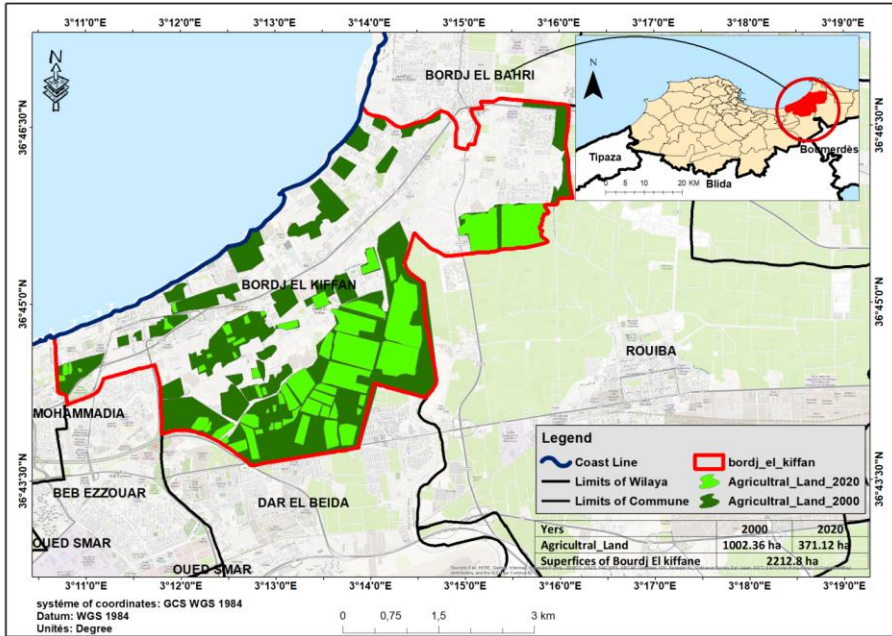


Fig. 13. The Evolution of the Agricultural Area in the Municipality of Bordj el Kiffan

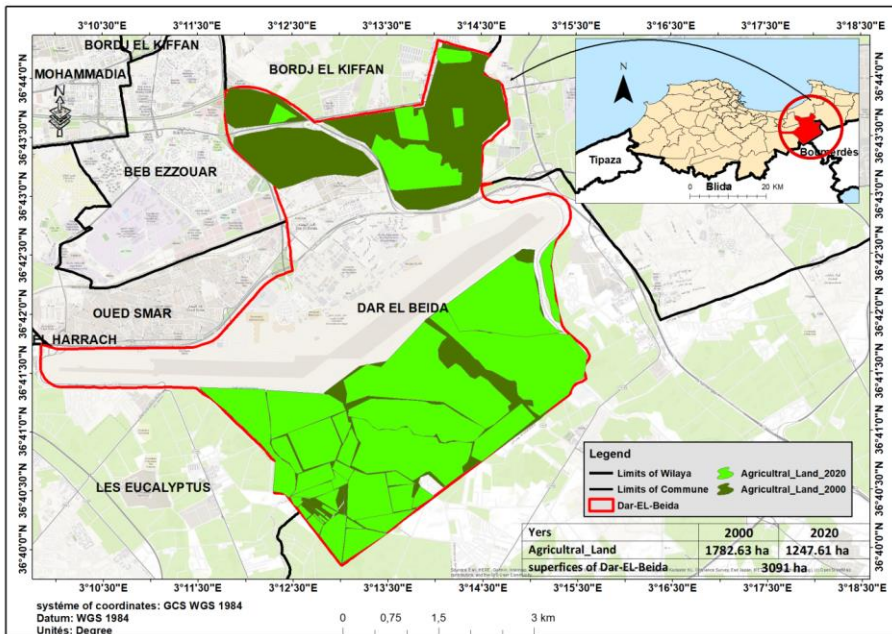


Fig. 14. Agricultural Development in the Commune of Dar El Beida

Organizational prospects of commercial activities in the eastern Algiers

The local authorities have an undeniable role in limiting the overlap of residential and commercial uses. In view of the difficulty to distinguish between areas designated for

residential purposes and commercial uses, which is mostly due to the absence of authorities, rather their absence is the main feature interfering with regulating the sector. This has led to many problems in the wilaya of Médéa for example (Lamri et al., 2020). The future role of regulating commercial activities must be controlled and organized by special entities and through the application of studied techniques, such as the legal framework for the regulation of commercial activities by providing the appropriate ground for the public authority to control the organized settlement of various commercial activities in the eastern suburbs, especially in the three municipalities.

The master plan for commercial reconstruction is itself the production of a legal basis. This is through the necessity of establishing new bodies and interests that both supervise the commercial facilities and aim at developing them, in accordance with the Law on Commercial Urbanization. So, the challenge is directly related to the framework designed to commercial facilities, which requires modernization and suggestion of new forms and patterns to develop the commercial structure of the urban area. At the level of the Ministry of Commerce, a draft law on commercial reconstruction has been prepared.

Its location is part of the planning tools approved between the master plan of development and urban planning (PDAU) and the land use plan (POS), which has been entrusted with the task of practical implementation of the guidelines of the former scheme.

Conclusion

The field of planning and reconstruction in general has been equipped with a significant legal arsenal over the past three decades. During this period, important human skills have also been trained. However, the legal arsenal and the tools that have resulted have not been able to ward off the dangers resulting from rapid and disordered reconstruction. This is evidenced by the focus Population, activities, services and facilities around the city of Algiers by the expansion of new housing blocks in the periphery, which were established in the Mitidja plain and the coastal plains because of local groups' weak control and observation. Furthermore, in connection with the transition from a planned economy to a free economy, market dynamics and competition were created between public and private merchants. Among the results of the economic dynamicity, there is the domination of specialized commercial activities and wholesale trade. This characterized the eastern part of the city of Algiers, and resulted in the production of new forms of growth. The latter differ from the previous pattern of urbanization. Whether institutions established during the period of colonialism or the organized urbanization instituted by the state after independence. The new pattern was constructed with the contribution of the adoption of self-construction policy and inhabitants who were encouraged by the state to build their own houses. Therefore, according to the new urban form, whole districts whose ground floors were devoted to the exercise of commercial activity and the upper floors for housing, i.e. the phenomenon of the habitat with double function. The commercial activities clearly contributed to the structuring of the agglomeration on all the ground of the city of Algiers, in particular in the Eastern part. The emergence of commercial activities in the latter has played a role in the rise of the residential stock and the spread of illegal housing in addition to the loss of the agricultural area between 2000 and 2020, with a percentage estimated at 43.01% of the study area.

To conclude, the future ultimate purpose is a unified vision of a civilized world in which the physical and psychological comfort of the citizens are provided. This purpose will be realized by developing the levels of commercial services in marginal areas away from commercial centres, and achieving the greatest participation in the development and planning of a more efficient and sustainable system commercial apparatus. The following means can contribute to reaching the perceived objectives.

Emphasizing the commercial centralization organized within a global plan on the whole territory of the city of Algiers which will address the marginal and non-organized commercial activities in order not to consume the surface allocated to other non-commercial activities.

Exploitation of the urban expansion plan and services of the tertiary sector in the eastern part of the coast to establish organized trade.

Establishment of organized neighbourhood commercial zones as an alternative to meet the demand for commercial activities, especially by the youth group.

Connecting new commercial areas to the infrastructure and urban transportation plan to ensure safe access.

Alleviating the commercial and fiscal laws imposed on those who wish to exercise the profession on a regular basis, including the removal of the craft, wholesale and storage trade from the residential fabric and directing it through the establishment of a new business and storage area next to the industrial zone.

Combating the indiscriminate importation of unnecessary or low-quality goods that can be produced locally, in order to reduce unregulated trade activities.

Reducing the phenomenon of merging shops on the first floor of housing, whether individual or collective, in order to avoid functional overlap between neighbourhoods, in addition to the final limit of bazaar forms known locally, given the gap between this urban model and the standards adopted in the construction of shopping centres.

Eventually, if these recommendations are taken into account, the state, special entities and decision makers; responsible for observing and regulating the commercial activity and the urban construction will be able to treat the subject of illegal housing and unorganized businesses in a more effective way. Hence, achieve a more civilized and well-organized urban development in agreement with modern life standards.

Conflicts of Interest: The authors declare no conflict of interest.

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