

The Impact of Urban Expansion on the Conurbation of Cities, Planning and Management Strategies for Un Urban Agglomeration Project: Case of Batna City-Algeria

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Abstract

Modern cities are going through a period of profound changes due to the accumulation of many contradictory dynamics and various events that led to the crisis of large urban agglomerations, the crisis even arises as a direct reflection of the pace of urban growth. The phenomenon of growth and urbanization, which has spawned many urban forms and expansions, such as suburban urbanization, rural urbanization, in order to achieve the phenomenon of interspersed cities between them, is a phenomenon that we are studying, we take as an example: the city of Batna and Tazoult.

Although the phenomenon is a present state, and the features of the modern instance, in particular, are in the process of formation, and the characteristic "blind" is spontaneous and chaotic, the space reserved for the non-component version of the two cities with identification does not highlight any new meaning of the function. In his opinion, this is due to a reluctance to take this phenomenon seriously and its non-application as a principle in the process of initiating common production with building tools and reconstruction used in urban politics, which is limited to expansionist content, not urbanism. This situation prompted us to seek a new strategy to ensure the sustainability of the space connected with the two cities on the one hand, and the sharing of future urban connectivity on the other hand, creating a shared destiny for the communities.

Key words: Developing cities, urban growth, sustainable development, urban cohesion, sustainable urban project, Batna

INTRODUCTION

The cities of the world know a radical transformation in the nature and forms of urban growth, where they gradually moved from the phenomenon of urbanization in urban centers (cherif rahmani 1982), to the phenomenon of polarization that produced the city Metropolis, or as some in the city called the region, and the expansion of its sphere of influence. The urbanization phenomenon has been the most important political, economic and social current concerns of the cities, as it reflects the triangular relationship between the growth of cities by increasing their size on the one hand and increasing their functions on the other. Third, the outcome of this relationship varies from one city to another in terms of size.

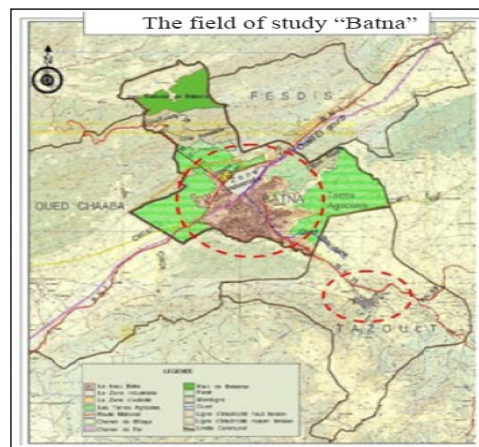
This relationship in Algerian cities is considered as a product in the process of urbanization with its political objectives, its economic dimensions, its social consequences, and its geographical requirements. Urbanization, "resulting in the creation of cities that grow and expand without the limit of irrational consumption of urban space, in the absence or absence of a regulatory policy that imposes coordination among urban jobs and determines and adjusts consumption rates, Controlled and managed. Represent the spatial status of the cities of Batna-Tazoult, which bears the same characteristics of the previous urbanization, but with quantitative values due to the functional and economic importance and administrative privileges enjoyed by the city of Batna for the city of Tazoult, and in the presence of Continuous urban dynamics over time, based on the capacity of the location and the qualifications of the site, which imposed on the city specific directions for the expansion of its advantage the main hubs. In the context of this expansion and its extension along the main axes there has been an overlap between The urban tissues of Batna and Tazoult, which are adjacent to it, are located along the axis of the national road No. 03, where this overlap reflects the phenomenon of urban cohesion, especially under the saturation of the urban environment of the city of Batna, Administrative and reconstruction efforts

within the administrative boundaries of the municipality of Tazoult, as an imposed reality necessitated by the need to continue and respond to the demands of the population in light of population growth and high rates of urban growth, and the slow reconstruction movement on the part of the city of Tazoult versus Tameer On the other side of the city of Batna, led to the formation of an urban fabric extending along National Route No. 03 from the administrative border between the two cities.

This section also witnessed the reconstruction of random and accelerated, which is difficult to monitor and control, because of the lack of comprehensive schemes The rehabilitation and reconstruction of the area and its lack of seriousness, where the reconstruction process continues especially at the level of the part belonging to the municipality of Tazoult, and this in response to the needs of the population of the city of Batna and Tazoult to a lesser extent, which reflects the impact of the mother city on the neighboring city, To its real estate potential in light of the saturation of its urban environment. The importance of the study in this subject lies in the importance of the phenomenon in itself, as it is an urban phenomenon resulting from the spatial movement accompanying the level of urban growth on the one hand, and the production of forms of gatherings Which necessitates the diagnosis and treatment of all aspects of the spatial projections of the urban variables that necessitated the phenomenon, as well as placing them within a framework that allows the perception of its meanings in its general and private sense to reach the answer to the following central question : What are the spatial repercussions of the phenomenon of urban cohesion on a city that seeks to strengthen its regional and regional position, and another that fears subordination and functional domination?

Presentation of Study Area

The towns of Batna and Tazoult in the northeast of the state lie between the mountain ranges of the Atlas Tali and Sahrawi. The city is also the headquarters of the two municipalities and the two districts. This is in accordance with the administrative division of 1984, which made the municipality of Batna the seat of the state and the department, after it was separated from the municipality of Tazoult, which was promoted under this division to the circle . The knowledge of the location of the city allows it to determine the shape of its growth and expansion directions, the various uses of the earth and the urban forms that represent its general structure. The cities of Batna and Tazoult are situated on a coastal plain, within a semi- At an altitude of 1040 m from the sea surface for Batna and at an altitude of 1240 m for Tazoult, where the location of the towns surrounded by mountains, supported by the network of national and state roads gave them two basic characteristics:



- A contiguous location with a single, limited location.
- Boxed position geographically by mountains, which are an impediment to the expansion and destination of the two cities.

The two cities have the same natural framework: in terms of their geographical affiliation to the Upper Plains of Constantine, and Extending its scope within the Atlas and Thalasso mountain ranges, thus giving shape and direction to their expansion, thus strengthening their connection to their adjacent location and the possibility of connecting and moving between them, which was directly supported by National Route No. 31, as well as the previous administrative link Indirectly.

Based on the heterogeneous relationship, which shows that the growth of cities in the region is parallel to population growth, and considering the phenomenon of urban cohesion resulting from the growth and expansion of cities, and

through our review of the most important stages of growth and development of the two cities (as illustrated Table 1) shows the continuous increase in the population of the two cities. As for the population index, the approach here takes the importance of volume. According to the last census of housing and population (in 2008), the city of Batna contains more than 25% (4/1) of the total population, while the city of Tazoult does not exceed the total population of 2.5% of the population of the state, and thus shows clearly the importance of the size of the city of Batna compared with the city of Tazoult and what can reflect this importance in the field, On the domain The ocean or nearby.

Table 1. Population development of the Batna and Tazult townships: 1954-2017

	years	1954	1966	1977	1987	1998	2008	2017
B A T N A	Population (Inhabitants)	22400	55751	108700	184069	247520	298893	332397
	Annual Increase (Person / Year)	2279	5295	7537	3314	5507	3945	
	Growth Rate %	7.89	6.44	5.15	2.67	1.90	1.24	
	% of Total Population%	/	36.91	21.17	24.45	25.71	26.22	26.51
T A Z O U L T	Population (Inhabitants)	2266	5654	10700	18990	22114	27493	36450
	Annual Increase (Person / Year)	282	505	829	284	538	995	
	Growth Rate %	7.92	6.17	5.85	1.38	2.20	3.13	
	% of Total Population%	/	1.51	1.60	2.13	1.97	2.40	2.90
The state	Population (Inhabitants)	/	151025	513500	752617	962623	1139877	1293500
	Growth Rate %	/	10.91	3.78	2.23	1.70	1.40	

Source: General population statistics for the years: 1966-1977-1978-1998 - 2008 + 2017

This population growth directly reflects the large-scale consumption of the two cities, which has exhausted almost all of their expansionist potential, given the existence of natural and artificial obstacles that have identified their growth: the urban fabric of the town of Batna has become surrounded by mountains from the north And the industrial and military zones of the north-west and east, which are integrated into it, and exploiting an important area of its area and a problem hindering its expansion from this side. As for the urban fabric of the city of Tazoult, and due to the same position with the location The city of Batna: The same natural obstacles surround its fabric from the south, west and east. Artificial barriers are in the archaeological area of the north, which are integrated into their urban fabric without any clear importance to achieve this. Integration, but on the contrary it is an obstacle to their growth. All of this contributed to the current expansion of the two cities, which has been extended along the hubs, so that the two cities can join in the expansion along the Batna - Tazoult road (National Road No. 31) Individuality, thus giving the spatial overlap of the fabric of the two cities, which indicates the occurrence of the conurbation between them. The numerical approach of the area of the two cities (Table No. 02) shows the value of the total consumption of the city of Batna estimated at 3399 hectares, In addition to their relative volume and population, as compared to Tazoult. However, the annual consumption rate of the field does not reflect this importance. It is in constant decline for Batna compared with Tazoult, thus explaining the depletion of its absorptive capacity. That is what he explains the built-in urban development strategies, which were the new urban pole of a three-part campaign. The urban pole occupies an area of 400 hectares, which embodied the residential program that benefited from the city of Batna. The city-level property, prompting the local authorities to choose the current location for the settlement of the urban pole belonging administratively to the Municipality of the Division by 100%, aimed at containing the housing crisis experienced by the city of Batna by 95%.

As reflected in the review study The outline plan for the preparation and reconstruction of the total municipalities formed for the urban complex "Batna", an attempt to find an answer to this problem and relieve the pressure on the city of Batna, which is in a state of saturation, prompted to search For an outlet for urban pressure, which is witnessing especially as it arrived This situation necessitates the reorganization of areas suitable for and responsive to the status occupied by Batna Civilization, following a policy of growth and expansion beyond its administrative borders to the neighboring municipalities, to play the role of supporting and strengthening, Batna in a regional framework, (addressing the problematic expansion of the city within the regional framework).

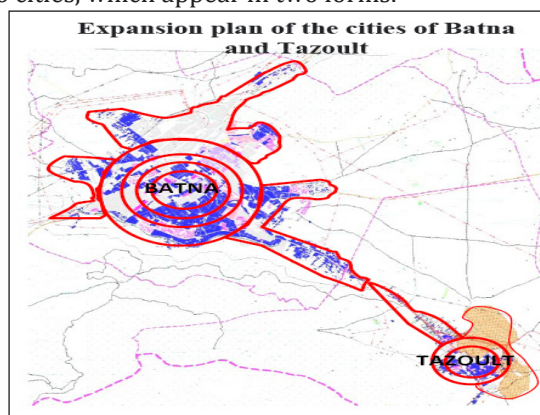
Table 2. Evolution of the consumption of the field Batna and Tazult: 1963-2008

	Periods	1963-1973	1974-1983	1984-1995	1996-2008
BATNA	Area (ha)	1227	2431	3383	3399
	Increase in Each Stage (Ha)	1018	1204	952	16
	Annual Consumption Rate	101.8	134	86.5	02
Tazoult	Area (ha)	44	134	240	466
	Increase in Each Stage (ha)	16	90	106	226
	Annual Consumption Rate	1.6	10	9.6	20.62

Source: Review of the PDAU guideline for the total of seven Batna municipalities-2008

This spatial expansion is defined by the city plan, which is a fundamental document for its growth and development over time, which can be linked to the axes of urban growth, its geographical and economic controls, Policy, where each plan depends on several Standards and standards (land price, transportation, roads, etc.).

In developing countries, however, "cities often grow without a plan (Santos 1971), but it is possible to find some common lines in them"(Jacquelline Y 1983). In this context, and by dropping theories of urban growth on the succession of urbanization phases, Plan of the two cities, which appear in two forms.



* First form (ring growth): The two cities took this form of urban growth during the early stages of their development, which began from the central nucleus and then spread in all sides in rings around the nucleus, and that For the ease of reconstruction, the availability of land, and lower prices in the suburbs compared to the center, in light of the rapid demographic growth rates.

* Second form (linear growth): This type of growth in its spread depends on the movement, breadth, and extension of each city Major cities and other urban centers, along the roads that connect them, making up small urban centers that appear along the longitudinal lines near the main transport network.

In this regard, the cities of Batna and Tazoult have taken this The shape of the urban growth, especially after the rapid consumption of easy-to-reconstructed lands, and the collision of their evolution by factors, including what is natural (topography), artificial (industrial and military area for Batna, and the archaeological area for Tazoult), directed Their growth along the routes of heavy traffic, which resulted in the cohesion of their fabric along the national road No (31), Giving the linear form of cohesion between the two cities. The direct projection of the map of the legal nature of land, on the map of the nature of consumption The signature of the various voluntary programs (facilities, equipment, housing) was the adoption of public ownership of land (state property, municipal property), and private ownership encouraged the sovereignty of horizontal expansion In its form The singles are chaotic. In the same context, the projection of the map of the legal nature of the land, on the map of the stages of urban expansion, shows that the current expansion trends of the two cities characteristic of private land ownership in the form of expansion is left to individuals, Control and control, which was the result of overlapping the urban fabric of the two cities, thus canceling the administrative border.

The general evaluation of the proposed programs is presented by the Guiding Principles of Planning and Reconstruction, and the land occupancy plans included in it, which is the same The foregoing forms, the lack of implementation of the

various programs proposed, and the inability to control and control the adoption of a development strategy to reflect on the ground. Most of the voluntary programs included in the guidelines for rehabilitation and reconstruction, as well as schemes for the short and medium term, the planned land occupancy rate has not been implemented except in a small percentage, which was limited to housing programs Social housing, and individual housing and some accompanying equipment, but the space consumed exceeds the percentage of completion of these programs of the total area. To find a logical and fundamental answer was the role of the legal nature of land of special character, and its role in Obstructing voluntary programs, thus creating a barrier to the spatial regulation of urban fabric, which has resulted directly and indirectly for the following reasons:

- The automatic perception of the development of urban clusters that are the succession of many urban forms, models And there is no way to imagine the future without looking at the past and taking into account the present.
- The current policy that adopted the policy of reconstruction is not urbanization, has produced compartmentalized areas of urban and marginalized system, which have become sources of complex social and urban problems.
- Absence of exercise Organizational function, and use to achieve a community project in the long run, that is to say, a more precise dual planning and urban action in time and space. Assessing the current status of Batna urban assembly, and the important role it must play in the future, is imperative for us now The urban polarization of Batna grows and develops by a small city each year, resulting in the saturation of its urban fabric, characterized by the spontaneous consumption of the field, encouraged by the private ownership of the land, in addition to the city's location besieged by natural obstacles (mountains) (The military zone to the east and the industrial zone to the west), determining the direction of its expansion, and directing it along the axes, which led to the time inevitability of the phenomenon of urban cohesion with Tazoult, From the problem of urban cohesion - how to benefit from this phenomenon - to solve the problem of the expansion of the city within its administrative boundaries - solve the problem of expansion within its territory.

The results of the general analysis of the field of study provide a direct answer to the problem of expansion Which is reflected in the good urban areas and the areas of productive cohesion, which is indicative of directing the population surplus of the city of Batna towards the suburbs and rural back, which is called the process of unloading the population of the city's crowded neighborhoods, and the capacity Anarchism gives the new area «cohesion area» the following characteristics and problems:

General Characteristics of the Study Area

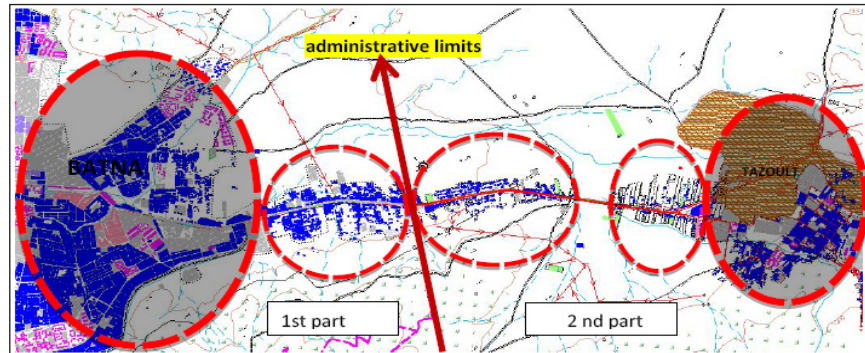
- The linear extension of the field and the direction of the national road N° 31, which is the only axis of his structure.
- Distinguish the field with modernity and the continuous reconstruction movement decreases whenever We headed from Batna to Tazoult.
- The phenomenon is a phenomenon in the process of formation, produced by the spontaneous expansion of the city of Batna and its extension beyond its administrative boundaries at the expense of the agricultural land of the municipality of Tazoult, in response to contain the population surplus, Landmarks and poorly functioning.

General Problems of the Study Area

- A misdirected movement of urbanization imposed by individualism and encouraged by the private ownership of the property
- Lack of seriousness in the planning and control of the production of urban areas, thus giving continuity to the residential function of the city of Batna at the expense of agricultural land in the city of Tazoult.
- The difficulty of controlling the new anarchic extensions, faced with the desire of the population to live better, encouraged by the private ownership of the land and motivated by the axis of the national road N° 31, which gives the phenomenon a character of spontaneity and disorganization. This is what leads us to say that the city of Batna is the main responsibility for the production of the phenomenon and that the characteristics of the continuity of the landscape are a projection of a mode of thought and a demographic desire. This leads us to assess the phenomenon in all its aspects and to manage it without ignoring it. Especially since the signs of the phenomenon are repeated as well as with the rest of the centers adjacent to the city of Batna, which requires solving the problem of the expansion of the city of Batna within the framework of the overall vision of the region.

Urban analysis is the most important element in the diagnosis of the current situation of urban communities, because it is a faithful image of the chapters of evolution. The growth of any group, with its understanding of the relations between the different components of the urban area and the production of these relations of different combinations and productions of a diversified range, reflects the form of the current assembly and draws the future, so the privacy of space imposes study of privacy, which will be based on the principle of spatial reading as a means of analysis and diagnosis. To facilitate this, we decided to divide the land into two sub-divisions defining the administrative boundaries between the towns of Batna and Tazoult in order to show us:

- The first unit: administratively belongs to the municipality of Batna.
- The second unit belongs administratively to the municipality of Tazoult, which is in the form of two parts (first and second parts) separated by agricultural land.



The reconstruction movement in the field is considered relatively recent compared to the date of the appearance of the two cities. Before 1970, the area was agricultural land, with a cluster of rural dwellings, and with the continuous expansion of the two cities. The area of study on both sides of the national road (31) is clearly visible in the form of anarchic buildings, which numbered 877 buildings in 1998, representing the linear expansion of the two cities. On the other hand, depending on the figure (a), which illustrates this development in a field we notice a variation in the movement of reconstruction and its non-time direction at the level of constituent units, we find that:

- In the first unit: the pace of reconstruction is fast and proportional to the direction of expansion of the city of Batna and this by virtue of belonging to it administratively and spatially and being affected directly by it through widespread consumption of its area.
- In the second unit: it shows a significant difference in its pace of reconstruction on the one hand and its direction on the other, on the level of its parts Where we distinguish:
- In the first part: a pace of reconstruction in the same direction as its counterpart in the first unit, despite belonging administratively to the city of Tazoult
- In the second part: a slow reconstruction movement towards the appropriate direction of the expansion of the city of Tazoult and therefore the direction of expansion of the area of study is governed by the direction of the expansion of the city of Batna at the expense of the city of Tazoult, giving the reading described in the following figure:

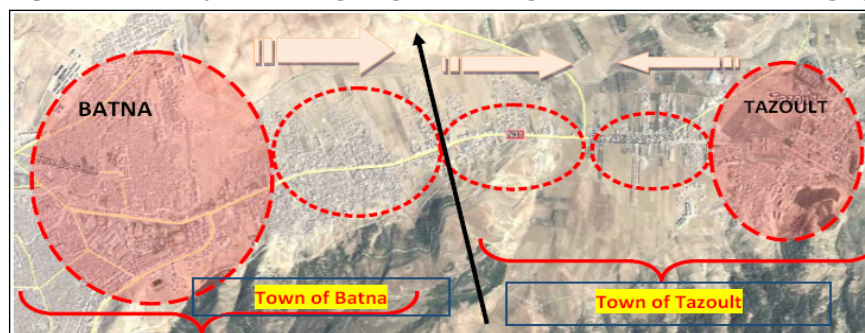
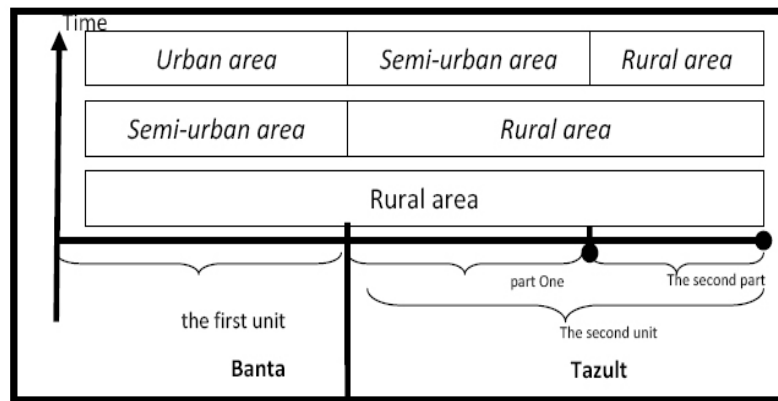


Figure a. The direction and frequency of expansion of the field of study. Source: Extracted from an aerial image of a satellite from the google earth engin 2020

The analysis of the various elements of the urban structure of the field shows that it was based on the agricultural shredding network that followed the logic of private property and personal freedom to manage it, which in turn gave an urban division distinguished by the random placement of buildings, the absence of a structured road networks and the almost total lack of public areas. All in area not yet fully urbanized. These characteristics are more pronounced as we move away from the national road N° 31, which is the only structured element of the field, which reflects the lack of harmony between the constituent units of the field as well as the lack of spatial harmony in all and the dissociation of its structure.

This enables us to conceptualize the temporal evolution of the urban phenomenon of the field as expressed in the following reading:



The fictionalization of the two cities in their general structure shows a non-integrated structure with a single centrality, characterized by the functional dominance of the city of Batna, which is reflected in the expansion of the region, which is the main cause of the phenomenon. Therefore, the cohesion between the two cities did not produce a new urban structure of the gathering at the functional level, but came as a response to the population's desire in an urban life, embodied by chaotic reconstruction, that gave it an undefined form at the spatial level.

This prompted us to study the planning and urban planning policies used, and to determine how the city of Batna is dealing with the phenomenon, and the reaction of the city of Tazoult, and this according to the objectives and programs of the development and planning tools put in place, namely PDAU and POS, which can say that these are simple processes of fusion of the field in the urban fabric to which it belongs, thus reinforced by the control of random urbanization, and the way of approaching the phenomenon by the tools of preparation and reconstruction shows the absence of a clear, frank and direct treatment of the phenomenon as we advance in the levels of planning, and The fact that the phenomenon is broader and more comprehensive than being dealt with by a master plan for each municipality separately, and deeper and more precise than dealing with an implicit and separate land use plan or group of plans with integrated and coherent objectives. Thus, the revision of the planning and development master plan of a set of municipalities (Batna, Tazoult, Fadis, Ayoun al-Asafir, Wadi al-Shaabah, Djarma, Seriana) was carried out in accordance with the orientations of the master plan of the wilaya, with the aim of giving development opportunities to neighboring municipalities and finding solutions to the urban and town-planning problem of the city of Batna within its regional perimeter.

The revision of the master plan for all the communes of Batna did not bring anything new, but continued to keep pace with the housing crisis without the effective management of the growth of the city, which reflects the continuation of the planning and urban planning tools through the cumulative reflection of urban problems, and the absence of evocation of the obsession and the prediction of the real estate crisis.

Through the main axes of urbanization specific to the growth of the city (Batna - Tazoult in the type of individual housing and real estate cooperatives, Batna - Oued Al Shaaba as a residential area with thousands of hectares), which contributes to deepen the problem by losing more real estate allocated to the urban future, but that does not prevent to say that this plan has found a solution to the urban problem of the mother city, in a broader framework by sharing it with neighboring urban centers, and directing the expansion of the city to the areas of these communes, but he did not share the problems of these communes with the mother city, nor its urban destiny, but made it a container to empty the mother city.

RESULTS AND DISCUSSION

- The attempt to identify the urban problems of the two cities through a process The field survey, which included the large dimensions of the urban space “spatial, social, economic and urbanistic”, revealed that the problem of the city of Batna is determined to reflect the accumulation of poor planning options given the complex legal nature of the property, spontaneous and inefficient urban expansion reinforced by a spontaneous urban economy exacerbated by a spontaneous and slow planning policy that only reacts to crisis. On the other hand, the city of Tazoult is witnessing a bilateral response aimed at containing chaotic urbanization, the protection of the designated archaeological zone and the first pillar of its urban economy.
- The two cities need to adopt a more serious and effective planning policy given the duplication between the provision of urban properties and the control of accelerated urbanization.
- The spatial reality of the area of the urban conurbation studied constitutes a direct reflection of the results of the urban and urban problems witnessed by the debtors, according to two scenarios:
- Ignore it: which will inevitably lead to a state of collision instead of a planned conurbation, given the limited and narrow vision, the failure of the current planning policy and the lack of seriousness of its tools .
- Frame and strengthen the phenomenon: It is an option derived from the results of the field survey, adopting an urban project policy aimed at ensuring spatial continuity, access to urban feasibility and competitiveness of the region, by defining the nature of the overall urban project, future urbanization project.
- For this, it was necessary to define the issues corresponding to the economic, social, urban planning and spatial issues of the city, so the right option of renting spaces was like a preliminary solution to the spatial bet, followed by a restoration of the relationship between the vacant space and buildings, as for the social bet, with the implication of all the actors of ground, and the equitable distribution of the equipment, which contributes more to the elimination of the accumulated widening of the social segregation.
- The realization of the economic bet is linked to the extent to which define the economic identity of the city, and transform it into a productive city, abandoning the principle of following the social desire based on private and narrow interest, and not not pursuing the current town planning policy, whether it responds to the crisis alone or to its spontaneity, which would waste real estate land, the city needs it the most.
- In principle, the urban project can be presented as an alternative to the current tools of urbanization and development, because of its conformity with the general ideology adopted, and as close as possible to the realization of urban feasibility, by involving the actors in the production of the urban sphere, but it poses a corresponding problem for small urban centers, since urban ideas are not formed on the one hand, and The domination of large cities over neighboring areas, and their uniqueness in the political decision to direct the reconstruction, and to respond to political crises, that is to say to follow the rhythm of the field without directing it.

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