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SPATIAL ANALYSIS OF THE "ONE MILLION HOUSES" PROGRAM IN THE SETIF URBAN AGGLOMERATION WITHIN MASTER PLAN OF LAND USE AND URBANISM: POLYMORPHISM AND SPATIAL DISTRIBUTION (ALGERIA)

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ABSTRACT

Housing supply is a crucial issue in any country's planning strategies. It represents one of the most sensitive social sectors, which the State strives to develop and make accessible to all segments of society. Guaranteeing decent housing is therefore one of the fundamental priorities that enable every individual to lead a stable life and aspire to start a family in peaceful conditions.

Given the growing importance of the housing sector, this study sets out to provide a detailed picture of the reality of housing supply, in its various forms and at different spatial levels. It uses the urban agglomeration of Sétif, located in the Algeria's Eastern High Plateaus, as the basis for its analysis, in order to identify the types of housing available and assess their spatial distribution.

To achieve the research objectives, we adopted a descriptive-analytical approach to identify the actual mechanisms and planning logics used in the distribution of housing projects and their forms within the framework of the "One million houses" programme across the intervention zone of the Sétif Inter-communal Development Master Plan. The article also used an analytical-comparative approach to highlight the extent of spatial balance in the location of housing projects in the various communes of the urban agglomeration of Sétif.

The study revealed a significant disparity in the distribution of housing projects linked to the one million houses programme in the urban area of Sétif. This disparity is mainly explained by the differences in the size of the beneficiaries of these projects, themselves influenced by the unequal financial capacities of the communes. In addition, the type of housing produced varies according to the formats imposed by the five-year plans adopted by the Algerian government, which have played a decisive role in this distribution.

KEYWORDS

'One Million Houses', Sétif, Master Plan, Urbanization, Spatial Analysis, Spatial Distribution, Housing Types

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Introduction:

Housing is an unavoidable necessity for stability, thanks to which the individual acquires a kind of intimacy that allows him to start practicing all his daily activities (Mezhoud, 1995). Housing also defines the spatial space in which all the spiritual relationships that work towards the solidarity and cohesion of the individuals who occupy it take place, and in this context, housing is one of the most important needs of the individual in his society.

The supply of housing is a key factor in urban and economic growth, as it makes it possible to accommodate large populations and different social groups, due to the strong demographic growth of cities in the world, where statistics show that 54.5% of the world's population lives in cities, and that the increase in the number of urban residents in developing countries will be around 93%, and that migration from the countryside to the city will account for 40% of the increase in the population in the city (Atoui, 2001).

The importance of housing is increasing as it has multiple types and spatial areas that extend over wide ranges of the city's location, with statistics indicating that residential use accounts for 30-40% of the city's built-up area (Alhiti, 2010).

Housing policies (Konyev, Dolgalova, 2024) have played a major role in determining the interrelationship between housing, urban growth and urban forms resulting from the interaction of the first two variables, where the major role of housing in determining various urban forms within a specific urban area and over a specific period of time, through the periodic consumption of the area, its reconfiguration and the sorting of new urban forms, with the emergence of new patterns of land use.

After independence and the decades of industrialisation, Algerian cities saw the installation of many different types of housing to respond to urban growth in its demographic and spatial forms and to keep pace with the increase in population resulting from strong demographic growth and immigration (Bendechou et al., 2024).

Housing in the Algerian city has been built in various forms (collective, semi-collective and individual) through the voluntary intervention of numerous urban players and public, private and economic urban stakeholders within the framework of policies of varying orientation and content, according to successive urban development plans, including the Urban Development Plan (PUD), the Master Plan for Urban Planning and Development (PDAU) and the Land Use Plan (POS), accompanied by legal texts to regulate its spatial organisation, which has resulted in an increase in its surface area and accelerated urban growth. The master plan for urban planning and development and the land use plan (Khalfallah, Ouzir, 2021), accompanied by legal texts to regulate their spatial organisation, have resulted in the Algerian city increasing its built-up area and accelerating its urban growth, characterised by multiple morphological forms imposed by various successive housing policies reflecting the different economic and social conditions prevailing at each stage.

In this context, the 'One million houses' program has numerous spatial and morphological implications for the Algerian city, as it aims to eliminate the housing crisis and provide adequate housing for different social groups within the framework of development and construction plans that control its spatial distribution and master its urban form, which it has given to the Algerian city.

Problematic:

The urban agglomeration of Setif is one of the main urban agglomerations in Algeria, which is experiencing growing urban dynamism and multiple spatial transformations in all economic, social and urban areas, as well as growing demographic growth in the Eastern High Plateaux region of Algeria. The urban area of Setif comprises around 36% of the urban population of the Eastern High Plateaux region, which includes the following Wilayas: Bordj bou arreridj, Batna, Oum El Bouaghi, Khenchela, Tebessa, Setif, thanks to its important position in the urban network of the Eastern High Plateaux region and the presence of a major industrial base, a large infrastructure and significant commercial activity (Benghadbane, Djaadjou, 2017).

A number of housing programs of various types have been carried out in the urban area of Setif to meet the growing demand for housing, where the housing stock has reached an estimated 8,936 housing units in various forms (social rental housing, rural housing, participative social housing, rental housing, public promotional housing, subsidised promotional housing, ...) (Boutabba et al., 2019). The aim of this paper is to present the content of the 'One million housing units' program in the urban agglomeration of Sétif, which has numerous spatial and morphological implications, and its role in eliminating the housing crisis in several forms and at different spatial levels, according to the inter-communal urban planning and development master plan, based on the following main question: What is the role of the master plan for urban planning and development in the spatial distribution of the 'One million housing units' program in the urban agglomeration of Sétif, and what forms does it take?

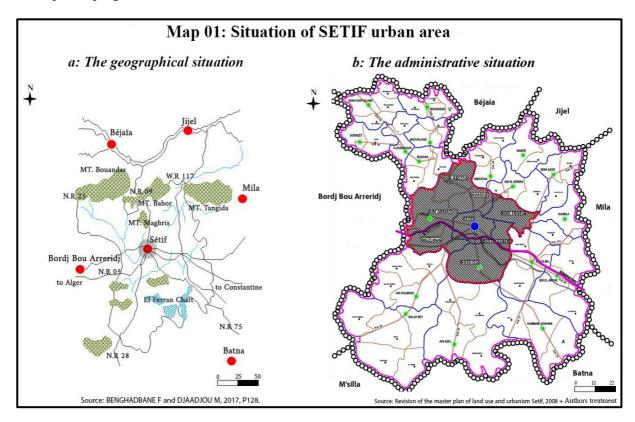
Research methodology:

In order to answer the question posed and to achieve the objective of the research, we adopted the descriptive-analytical approach to understand the urban forms in the urban agglomeration of Sétif resulting from the housing policies included in the 'One million housing' program from 1999 to 2019, in addition to the comparative-analytical approach which enables us to identify the spatial differences across the stages of implementation of the 'One million housing units' program according to the content of the master plan. The study is based on theoretical sources represented by books, articles and scientific references relating to the subject of the research, as well as data and information from the various administrative bodies concerned (the Housing Directorate of the wilaya of Sétif, the Directorate of Construction and Town Planning, and the National Real Estate Promotion Corporation NREPC,...), as well as the use of a range of data processing programs such as Origin Pro, while the data relating to the research theme was drawn from repeated fieldwork in order to further support the work and cover the lack of information and data obtained.

I. The situation of the urban agglomeration of Sétif: An important strategic position in the urban network of the High plateau region

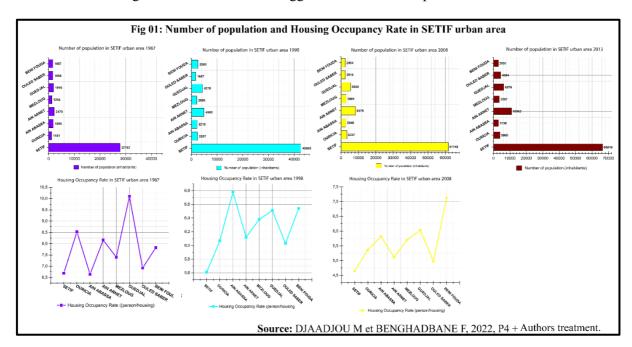
The urban agglomeration of Sétif is geographically located in the high plateau of eastern Algeria and comprises four dairas: Sétif, Ain Arnat, Guidjel and Djemila, including eight communes centred on the wilaya of Sétif: The commune of Sétif, Ain Arnat, El Ouricia, Oulad Saber, Guidjel, Mazloug, Ain Abbassa, and Beni Fouda (Map 1-b) covering an area of 125,608 hectares (19,17% of the total area of the wilaya) and a population of 445,722 inhabitants (30,06% of the total population of the wilaya).

The urban agglomeration of Setif is a regional centre of excellence in the urban network of the wilaya of Setif, surrounded by several major towns: Bejaia and Jijel to the north, Batna and M'ssila to the south, Mila to the east and Bordj Bou arreridj to the west (Map 1-a), It is also link between the north, south, east and west of Algeria, as it is the point of intersection of the most important transport hubs linking east and west, namely the East-West Motorway, National Road 05, the railway line which crosses the Sétif conurbation in three communes (Ain Arnat, Sétif, Oulad Saber), and from north to south by national roads n° 78, 28 and 09, which cross it in five communes Ouricia, Ain Abbassa, Sétif, Mazloug, Guidjel, which makes it the centre of gravity of the Eastern High plateau region, in addition to its demographic and economic weight and the multiplicity of development programs.



II. The housing stock and its evolution in the SETIF urban agglomeration:

According to data contained in the statistical yearbooks of the wilaya of Sétif for the years 1966, 1977 and 2013, as well as the report of the People's Communal Council of Sétif on the revision of the intercommunal master plan of land use and urbanism in 2008, the housing stock in the urban area of Sétif totaled 293869 dwellings at the end of 2013. Housing production has also seen considerable growth between 1987 and 2013, because the number of houses in the urban area of Sétif reached approximately 39408 houses in 1987, and the residential stock restarted in 1998 with the registration of more than 62728 houses, at rate of 2121 houses/year. The number of housing units doubled in 2008, as the housing stock of the Setif urban agglomeration witnessed a significant leap in the number of completed housing units, as the number of housing units reached approximately 89836 units, an increase estimated at 27108 units, and at a rate of 2710,8 units/year, which is a high rate compared to that recorded during the period 1987-1998. The housing occupancy rate in 1987 was estimated at around 6,65 persons/house, improving this rate somewhat in 1998 it decreased to 5,85 persons/house, which translates into an improvement in the residential sector of the Setif urban area, With the increase recorded in the number of completed housing units during this period, the housing occupancy rate also decreased by the end of 2008 to 4,96 persons/house, reflecting the acceleration in the pace of completion of housing programs in Setif Urban Area during this period. While the year 2013 saw a notable increase in the residential area in the Setif urban agglomeration estimated at 101897 houses, and the Fig n⁰ 01 shows the evolution of the housing stock in the Sétif urban agglomeration over the period from 1987 to 2013.



The figure 01 illustrates the disparities in the implementation of the housing units programme among the communes of the urban agglomeration of Sétif. This uneven distribution has led to a spatial imbalance, favouring some communes to the detriment of others. The municipality of Sétif is in first place, with 198620 housing units built, 7,5 times more than the municipality of Ain Arnat, which is in second place with 26448 units. The municipality of Guidjel comes third, with 1028 housing units. The other communes share the last positions with similar values, varying between 9642 and 10835 housing units.

This disparity in the ranking of municipalities is mainly attributable to a number of factors. These include the varying demographic growth between communes, differences in administrative status (wilaya capital, daïra capital, and commune capital) and the distance separating them from the wilaya capital, currently the commune of Sétif. These factors combined explain the significant differences in the allocation of housing between communes.

III- Present and interpret the study results:

The One Million Houses program is an ambitious initiative designed to boost the housing sector in Algeria, with a particular focus on the urban area of Sétif, the program encompasses several types of housing adapted to the

varied needs of citizens: rural housing (RH), public rental housing (PRH), housing for sale (HS), participatory social housing (PSH), public promotional housing (PPH) and assisted promotional housing (APH).

These categories of housing are distinguished by a variety of architectural features. Launched in 1999, this program has been rolled out in four phases according to five-year plans, and the table 1 shows the housing quota allocated to the urban area of Sétif under the various five-year plans from 1999 to 2019, which has been increased to 60390 houses (NREPC, 2019). The 2009-2014 plan saw a significant upturn in housing production compared with previous plans, reaching 26499 units. However, this momentum slowed during the fourth plan (2014-2019), with production down to 18350 homes. It should be noted that the lowest level of production was recorded during the first plan (1999-2004).

Set	1999-2004 (housing)	2004-2009 (housing)	2009-2014 (housing)	2014-2019 (housing)	Total
SETIF	1742	8726	12392	7830	30690
AIN ARNET	550	400	1599	3620	6169
GUIDJEL	315	394	1031	390	8130
OULAD SABER	167	1355	7822	5500	14844
OURICIA	182	300	1649	640	2771
MEZLOUG	170	280	678	115	1243
AIN ABBASSA	175	300	749	135	1359
BENI FOUDA	170	315	579	120	1184
The SETIF urban area	3471	12070	26499	18350	60390

Table 1. The one million houses program in the Sétif urban area, (1999-2019).

Source: Physical status of the progress of housing projects, National Housing Development Agency (NHDA), 2019 + Authors treatment

According to data from the One million houses program covering the period 1999-2019, we have observed significant disparities in the quantitative distribution of housing within the urban agglomeration of Sétif. The commune of Sétif is at the top of the hierarchy, with 30690 homes, representing 50.81% of the total allocated to the conurbation. It is followed by Oulad Saber, which has been allocated 14,844 homes (24.58%). The municipalities of Guidjel and Ain Arnat come third and fourth respectively, with 8130 and 6169 homes. By contrast, the municipalities of Ouricia, Ain Abbassa, Mazloug and Beni Fouda have the lowest shares, with 2771, 1359, 1243 and 1184 homes respectively. These discrepancies mean that there is a marked disparity in the spatial distribution of homes included in the One Million Houses program in the urban area of Sétif.

III-1- The one million houses program in the Setif urban area: signs of the new housing policy and the reconstruction of the rural environment:

The plan has been limited to three types of housing, namely public rental housing for low-income members of the disadvantaged social class living in fragile and insalubrious housing, as this type of housing represents a means of eliminating fragile housing and improving the image of the towns in the urban agglomeration of Setif, While the second type of housing is housing for sale by rent, this type of housing offers the possibility of obtaining freehold housing after the expiry of the rental period under a written contract that includes a set of conditions that must be met by the person benefiting from this formula, as this type of housing has come to cover the existing deficit and achieve a balance between supply and demand. But the third type of housing provided for in the first five-year plan is rural housing, the main aim of which is to develop rural areas and encourage their inhabitants to become homeowners under the self-build policy, subject to certain conditions.

According to the data on the spatial distribution of housing in the Sétif urban area, included in the first five-year plan (1999-2004), the commune of Sétif benefited in this plan from 500 homes for sale by rent, whereas this type of housing was absent in the other communes making up the Sétif urban area, while all the communes benefited from public rental housing with the exception of the commune of El-ouricia, This reflects the lack of spatial balance in the location of the housing projects included in the million housing program in the urban agglomeration of Sétif, and the limitation of the program to just three types of housing, considering that the period 1999 - 2004 was the first signs of the emergence of the one million housing program policy with the tendency of the State to concentrate on rural housing in order to rebuild it and repair the after-effects

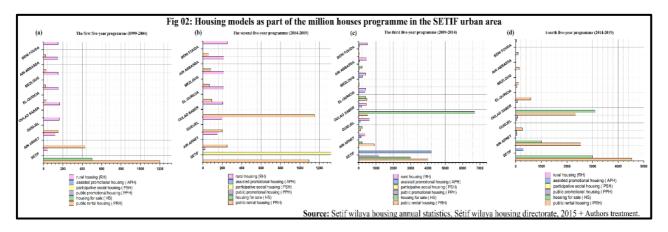
of the black decade that Algeria experienced (Figure 02-a), where there is a clear disparity in the location of housing programs within two major categories as follows:

- The first category \geq 400 homes: This category includes the communes of Sétif and Ain Arnat, with 1,742 and 550 homes respectively.
- Second category ≤ 400 homes: This category includes the following communes Guidjel, Ouricia, Ain Abbassa, Mazloug, Beni Fouda, and Oulad Saber, while the largest share was recorded in Guidjel with 315 homes and the smallest share in Oulad Saber with 167 homes.

III-2- The one million houses program in the Setif urban area: A strategy to balance the housing market and provide quality housing:

In this plan, the agglomeration of Sétif has seen the absence of housing intended for sale through rental, and the emergence of a new form of housing represented by participatory social housing (PSH), from which only the commune of Sétif has benefited, which is housing granted to middle-income families through direct and indirect financial subsidies from the State. The executive decree defines the bodies authorised to provide financial support to families through the National Housing Fund (NHF), and this housing formula (PSH) is a new key to achieving the quality of housing expected through the need to protect the environment and achieve the principles of sustainable development enshrined in the Algerian Constitution.

According to the data on the quantitative distribution of housing under the One million houses program of the second five-year plan (2005 - 2009), there is a total absence of the housing for sale (HS), which had been adopted in the first five-year plan, and there is a clear disparity in the distribution of housing across the communes making up the Setif urban agglomeration, where the commune of Sétif received the largest share with 8726 homes, closely followed by Oulad Saber with 1355 homes, while the other six communes received significant shares ranging from 180 to 400 homes. The result is an imbalance in the distribution of housing projects under the one million houses program between the various communes, which contributes to a spatial imbalance in the urban network of the Sétif conurbation (Fig 02-b).



III-3- The one million houses program in the Setif urban area: the Rehabilitating of urban tissue and cutting back precarious housing:

The third plan has seen a reinforcement in the types of housing programs available in the urban area of Setif, where five different formulas have been registered, with the absence of participatory social housing (PSH) and its replacement by assisted promotional housing (APH) aimed at middle-income families in order to rehabilitate the urban fabric through the integration of this new formula, by involving private property developers in the process of carrying out housing projects included in the assisted promotional housing (APH) through bank loans and a financial part provided by the housing applicant and another part provided by the National Housing Fund has also seen the introduction of a new formula represented by public promotional housing (PPH), which is intended for families whose monthly income exceeds six times the guaranteed national minimum wage, this housing formula has added a new dimension to the urban fabric through new architectural designs, although it has not been successful at a social level because it was aimed solely at the high-income group, creating social inequalities, which is contrary to sustainable development trends. And The data in the figure (02-c) show a clear spatial disparity in the location of the One million homes programme in the communes of Setif urban agglomeration, as follows:

- The first category: total number of communes benefiting from housing programmes exceeds 2000 homes: This category includes the commune of Sétif with 12392 homes, including 4212 assisted promotional housing (APH), 4010 public rental housing (PRH), 3000 housing for sale (HS) and 1170 puplic promotional housing (PPH), followed by the commune of Oulad Saber with 7822 homes, including 6700 housing for sale (HS).
- Second category: all communes that have benefited from housing programmes ranging from **1000 to 2000 homes:** This category includes the following communes Ouricia, Ain Arnat and Guidjel, with 1649, 1599 and 1031 homes respectively.
- Third category: The total number of communes that have benefited from housing programmes not exceeding 1000 homes: This category includes the communes of Ain Abbassa, Mazloug and Beni Fouda, with housing quotas of 749, 678 and 579 respectively.

III-4- The one million houses program in the Setif urban area: unbalanced regional distribution and completion of the remaining housing projects:

The period (2015 to 2019) saw the completion of the housing projects programmed in the third five-year plan, whereas the fourth plan saw a certain decline in the housing stock available to the Setif urban area compared with the third plan, which indicates the local disparity in the settlement of housing projects across the communes of the urban area of Setif during the period (2015 to 2019).

The result amounted to around 18350 housing units, all types of housing combined, but their distribution was markedly different between the communes making up the urban agglomeration of Setif, with the commune of Sétif remaining the largest beneficiary with 7830 housing units, closely followed by the commune of Oulad Saber and the commune of Ain Arnat with 5500 and 3620 housing units respectively, while the rest of the communes recorded small values ranging from 100 to 640 housing units, due to the completion of the remainder of the housing projects programmed in the previous plan (Fig 02-d).

Conclusions:

Our research into the spatial analysis of the One Million Housing Program in the Setif urban agglomeration leads us to conclude that there is a great spatial disparity in the siting of projects under the One Million Housing Program in the eight communes that make up the urban agglomeration of Sétif, as reflected in the figures recorded over time for each five-year plan, due to several considerations such as the administrative rank that distinguishes each commune from the other within the urban network, and the distance between the parent commune (Commune of Setif) and the rest of the other communes, which is an important factor in the disparity in the volume of housing projects carried out in each commune, in addition, the demographic characteristics that distinguish each commune from the others play a key role in attracting housing projects to cope with the demographic increases recorded in these communes.

As for the forms of housing resulting from the One million houses program, the results of the research highlighted the existence of a diversity of urban forms depending on the forms of housing available in each five-year plan, where the forms vary between public rental housing, housing for sale, public promotional housing, participatory social housing, assisted promotional housing and rural housing. This diversity of housing forms has led to the emergence of a wide range of urban forms in the communes of the Setif conurbation, in terms of construction styles, types of facade, number of floors, type of flat, etc. The diversity of urban forms resulting from the 'One million homes' program has also led to a loss of homogeneity in the urban fabric produced in the Setif conurbation due to the different characteristics that distinguish each type of housing from the other.

In addition, there are delays in the completion of the one million housing program in the Setif urban area due to the failure to complete housing projects within the set deadlines and the difficulty in implementing certain housing programs or directing them to remedy certain remnants of previous planning, as shown by the programming of housing projects which were due to be completed in the third five-year plan (2009/2014) and which were completed in the fourth five-year plan (2014/2019), reflecting the failure to keep up with the five-year plans and the demographic developments observed in the Setif urban area.

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