



Original scientific paper

Peri-Urban Pressures: The Interplay of Land Strategies and Urbanization in Algeria’s Oran Metropolis

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ARTICLE INFO:

Article History:

Received: 15 June 2023
Revised: 15 September 2023
Accepted: 25 September 2023
Available online: 10 October 2023

Keywords:

Urban Sprawl;
Land Strategies;
Peri-urban Development,
Urbanization in Algeria,
Land Use Planning,
Spatial Governance,
Socioeconomic Impacts of Urban
Sprawl.

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ABSTRACT

In contemporary times, the worldwide trend of urban expansion has become an inexorable force. This article engages in a comprehensive examination of the intricate dynamics surrounding urban sprawl and land utilization within the peri-urban regions of significant Algerian municipalities, with a specific focus on the city of Oran. Employing a methodology rooted in social geography, this study deploys a trio of investigative approaches: documentary analysis, spatio-temporal scrutiny of peri-urban domains, and in-situ field investigations to shed light on the intricate intricacies of land ownership dynamics in the context of urban sprawl. The swift development of the Oran metropolis, along with its manifold ramifications, underscores a profound disconnection between the aspirations of political stakeholders and the unfolding urban milieu. This article accentuates the pivotal role of land as a coveted resource profoundly influencing the contours of emerging urban regions. In response to these emerging challenges, Algeria must adopt integrated land and urban planning strategies that foster harmonious and sustainable urban development. This necessitates a comprehensive vision for metropolitan regions, a departure from sectoral planning that subordinates agriculture to industrial and urban considerations, and the formulation of efficient and coordinated urban planning instruments. Within this intricate nexus of urban and rural development, the urban sprawl's encroachment upon rural landscapes mandates a strategic approach to attain equilibrium and coherence within the urban fabric.

JOURNAL OF CONTEMPORARY URBAN AFFAIRS (2023), 7(2), 1-19.

<https://doi.org/10.25034/ijcua.2023.v7n2-1>

www.ijcua.com

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Highlights

- This study will make the understanding of urban transformations in Algeria through the land question
- The state must abandon the sectoral vision that always positions agriculture behind the city and the industry
- It is important to integrate the land issue into the definition and strategic development of urban projects
- There is an urgent need to move away from emergency urban planning to a more considered form of this latter as part of a genuine territorial project

Contribution to the field statement

This study is relevant and original in the sense that it allows us to understand, through an approach of social geography, urban transformations in Algeria according to the land question and at the scale of the plot. It is a research method rarely used in the Algerian context because, it reveals concretely, the stakes and the social, economic and spatial consequences of the change of use of periurban land in favour of urbanization.

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How to cite this article:

Nemouchi, H. (2023). Peri-Urban Pressures: The Interplay of Land Strategies and Urbanization in Algeria’s Oran Metropolis. *Journal of Contemporary Urban Affairs*, 7(2), 1-19. <https://doi.org/10.25034/ijcua.2023.v7n2-1>



1. Introduction

The shifting demographic balance toward urban areas is an established phenomenon, with forecasts predicting that by the midpoint of the 21st century, 70% of humanity will reside in cities (Damon, 2011). This projection, highlighted by the United Nations and echoed in scholarly discourse, underscores the significance of urban dynamics. The physical growth of urban areas is expressed through the extensive footprint of their built environments (Monnet, 1997). Urban expansion often spreads out uniformly, resulting in a pervasive spread known as urban sprawl (Antoni & Youssoufi, 2007, p. 2). The body of research on urban sprawl is extensive and diverse, noted with a hint of irony by some scholars (Hasse & Lathrop, 2003, p. 160). Urban sprawl is often characterized by a particular type of urban growth featuring low-density and dispersed development with significant environmental and societal impacts (Hasse & Lathrop, 2003, p. 160). While some research has highlighted the detrimental consequences of urban sprawl (Kahn, 2000; Freeman, 2001), others have pointed to its potential advantages (Damon, 2011).

The phenomenon of urban sprawl is an integral aspect of urbanization, influenced by factors including population increase, industrial advancement, and the decline of rural areas over the last hundred years. Cities evolve in disparate ways and at varying speeds. For instance, urban centres in the Global South are experiencing rapid expansion and economic investment, while European and North American cities often exhibit sprawling decentralization alongside slowing population growth. Eastern Europe has seen a reverse trend, with cities experiencing a decline (Denis, 2009, p. 33).

In contemporary discourse, the narrative surrounding urban transformation and change is gaining renewed interest, especially concerning urban production and its systems (Arab & Dang Vu, 2019). The definitions of the city are evolving in terms of scale and function, with the emergence of new mega-urban areas that integrate their surroundings and redefine the relationships between city centres and their outskirts (Zeybekoğlu Sadri, 2020).

Amidst these transformations, the issue of housing in sprawling urban landscapes gained prominence. However, other emerging urban concerns are also shaping the development of new urban spaces. These include transitions in energy, environmental stewardship, ecology, digital advancements, demographic shifts like migration and ageing populations, and the interplay between health and urban living (Arab & Dang Vu, 2019). Given these changes, it is crucial to revisit and refine the visions and methodologies for addressing urban development. In this context, the eighth issue of the *International Journal of Urban Planning* (2019) insightfully addresses the role of actor-system approaches in analyzing urban production shifts.

The contemplation of city production methodologies is crucial, highlighting "the approach to urban production issues," "the urban phenomena posed," and "the production framework itself" (Arab & Dang Vu, 2019). While we align with this perspective, we also adopt a specific viewpoint that emphasizes urban space production modes as essential for analyzing and forecasting urban phenomena. Our research is centred on examining and understanding the actions of the entities responsible for city planning and construction in Algeria, focusing particularly on land in the suburban zones of Algeria's primary cities. It's imperative to pinpoint who these actors are, comprehend their operational framework, and identify the instruments they employ in their undertakings.

Our investigative lens is particularly trained on land as a key catalyst for urban sprawl, which serves as both the foundation and a point of contention among different stakeholders and land users. Land represents a strategic initiative, meticulously conceived by the stakeholders in urban development, and is subject to various limitations such as physical attributes, availability, soil contamination, and access restrictions.

In the context of escalating demand for buildable land, crucial for executing regional planning and development initiatives, especially in suburban localities, land remains a central urban and territorial issue. The quest for its efficient management and governance echoes through political rhetoric, drives land reform agendas, and remains a priority for environmental conservationists and advocates of non-renewable resource preservation. Given that land is a pivotal factor in urban sprawl, the interplay of



land, urban, and planning policies sits at the crux of urban discourse (Nemouchi, 2008, p. 88), and land is seen as a finite commodity.

The availability and mobilization of land for territorial projects—ranging from housing developments to economic zones, communication networks, and agricultural ventures—often present challenges. Thus, addressing land issues at the onset of urban expansion projects and during their development is vital. This approach ensures that the tools and methods used for interventions by stakeholders are meaningful and strategic.

Our analysis is shaped around two principal questions to elucidate the connection between land matters and urban development strategies:

1. How does the accessibility of land influence the trajectory of urban dynamics?
2. What do land appropriation and reallocation strategies reveal about the types of cities being developed?

In our study, land, especially in peri-urban zones, emerges as a rich subject of inquiry. It's in these intermediary spaces, at the crossroads of rural and urban domains, where the push for urbanization brings actor interactions to the forefront, unfolding in localized deeds such as acquisitions, sales, exchanges, and donations. Here, the swift pace of urbanization ignites particular strains around, notably agricultural, land.

In Algeria, the dynamic urban landscape and the utilization of farmland involve a myriad of stakeholders ranging from the government, and decentralized state services (such as the Directorates of Agriculture, Cadastre, Domain, and Urbanism), to local elected bodies, farmers, development advocates (both public and private), recipients of housing programs, and civic groups. Each party formulates strategies around the land to further their specific interests.

This article aims to deconstruct the conversion of agricultural land into urbanized zones in the suburban stretches of Algerian municipalities. Focusing on Oran, which ranks as Algeria's second-largest city following Algiers, we intend to shed light on the methods of agricultural land repurposing for urban use. The significance of this investigation lies in three areas: enhancing comprehension of urban transformation in Algeria as it relates to land issues, delineating the challenges and socio-economic impacts of what can be seen as hasty urbanization, and offering an academic perspective on the pressing concerns of regional planning within the nation.

The decision to examine the situation in Algeria was primarily due to the ready availability of data, as my proximity to the study area facilitates access, and the recognition that “urban land management in Algeria is a complicated arena, influenced by an array of regulations and a diversity of players” (Sahraoui & Bada, 2021). Algerian urban centres are currently experiencing ongoing changes, a direct result of the development strategies post-independence. Industrialization has been a catalyst for regional growth and migrations from rural to coastal cities, resulting in a geographical imbalance which prompted the government to intervene through centralized planning. This approach inadvertently expanded the regional disparities by favouring smaller and mid-sized towns with new infrastructures. In 1974, the government introduced urban planning tools and rolled out land use and housing policies.

Urban policy and its expansion issues have historically been disconnected from broader spatial planning, often being reduced to political agendas within housing and adjustment programs. On the periphery of this government-centric urban framework, the issue of land, particularly agricultural land—predominantly state-owned—has been tangled in various reforms and restructuring efforts aimed at two primary goals: maximizing the agricultural use of land to bolster food security, and shielding this land from being overrun by urban development.

However, the ground realities diverge. Yearly, notable portions of Algeria's prime farmland are converted for urban and economic ventures. The available agricultural land per person decreased from 0.63 hectares in 1967 to just 0.22 hectares in 2008 and further to 0.19 hectares in 2018, a trend that poses a risk to the nation's agricultural capacity and food self-sufficiency. As reported by the Algerian National Office of Statistics (ONS, 2008), the population stood at 42.4 million at the start of 2018, with projections reaching 51.2 million by 2050 (Kateb, 2010). The distribution of this burgeoning

populace is starkly uneven, with the 12 southern wilayas, which make up 89% of the national territory, accommodating only 13% of the population. Contrastingly, the 36 northern wilayas, constituting a mere 11% of the land area, are home to 87% of the population (Omar BESSAOUD, 2019).

Minimizing the conversion of fertile land for urban purposes is a critical objective for Algeria's land use policy, yet every day realities often contradict this aim. It is imperative to note that with a high birth rate, Algeria is considered a youthful nation. The urbanization rate has increased from 31.4% in 1966 (ONS, 1966) to 70.7% in 2015 (United Nations, 2015), with both urban and rural developments heavily relying on land as a fundamental resource.

Following the introduction of our study area and research method, we will initially offer a detailed account of the significant events that have shaped Oran's socio-spatial structure. A historical analysis of the expansion of urban areas in the city's outskirts will provide a retrospective look at Oran's urban growth, allowing us to explore the spatial dynamics of how agricultural lands are conscripted for urban purposes. Subsequently, our investigation will delineate the strategies devised by the government to integrate these agricultural lands into Oran's urban framework, based on empirical data. Our study aims to delve into how land use is factored into the creation of planning documentation and the emergence of new urban functions.

2. Study area and methodology

Oran is a city located in the southwestern part of the Mediterranean basin, more precisely 450 km from the capital Algiers (Figure 1). It is half an hour's flight from the Spanish port of Alicante and one hour from Barcelona and Marseille. Oran remains the metropolis of the whole western region of Algeria, surrounded by medium-sized cities: Tlemcen at 140 km, SidiBel-Abbes at 80 km, Mascara at 100 km, Mostaganem at 90 km and Relizane at 130 km. The influence of the city of Oran extends as far as Béchar and Adrar in the south of Algeria. Since 1972, the spatial expansion of this second-largest city in Algeria has resulted in the artificialisation of an average of 110 ha per year (Trache, 2010).

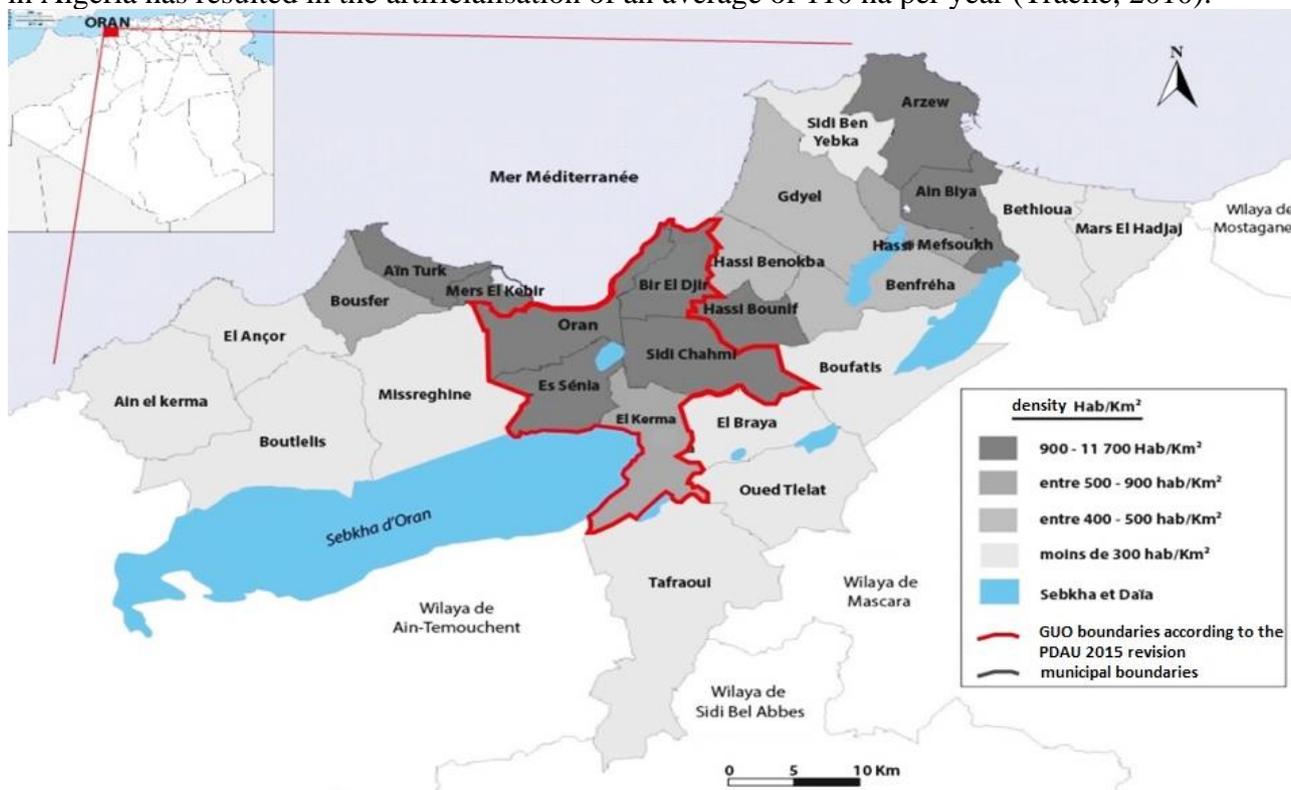


Figure 1. Location and administrative structure of the Urban Grouping of Oran.

Source: (Nemouchi & Zeghiche, 2021)

In this article, the analysis of land stakes for the extension of the Oranese agglomeration is based on a social geography approach. Like the other human and social sciences, this discipline mobilises a



variety of survey and data processing techniques (photography, archives, cartographic documents, academic works, recorded interviews, press articles, statistics, etc.) which provide both qualitative and quantitative information (Blanchard, Estebanez, & Ripoll, 2021).

For our research, we envisaged a combination of three analysis tools:

- The first tool is based on the exploration of works carried out on Oran in different supports (dissertations, doctoral theses, scientific articles, journalistic articles, reports of research offices, final reports of the different development plans, press clippings, etc.). Our documentary research was focused on themes that are inseparable from land tenure such as urban sprawl, peri-urbanisation, agriculture in rural areas, land tenure changes in independent Algeria, the town/country relationship, and peri-urban agriculture, among others. From these readings, it was clear that the land question remains an underlying factor of analysis. However, this has not prevented the scientific community from noting the shortcomings in land management, particularly in the peri-urban areas. All the studies draw up an assessment exacerbated by the failure of urban planning tools and the sectoral conception of planning and development of territories in Algeria.
- The second tool uses a spatio-temporal analysis of the agricultural and urban areas of the Oran metropolis. Mapping has enabled us to identify the evolution of urbanised land and land use in the peri-urban areas of Oran. This situation was drawn up based on graphic documents made, essentially, by design offices (within the framework of the realisation of the PDAU¹ and the POS²), university works (doctoral thesis, dissertation, etc.) and satellite images. To map the current urban sprawl in our study area, we used remote sensing data available in the USGS GOV (Earth Explorer) archives. To do this, we used the Land Sat 8 images (LDCM with a spatial resolution of 15 m). The images were selected in such a way that their quality, in terms of the time of year and the presence of clouds, was as good as possible for identifying and distinguishing urban development in the Oran region. We used the functions offered by QGIS 3.22 (SCP: Semi-Automatic Classification Plugin) to recalibrate and improve the resolution of the images. A supervised 'maximum likelihood' classification of the coloured composition (4-3-2) was carried out to identify the land cover classes representing the built environment.
- The third and final tool was the field survey in the Urban Grouping of Oran (GUO), which was made up of 4 communes: Oran, Bir el-Djir, SidiChahmi and Es-Sénia. For our article, we have chosen to conduct our investigations in the municipality of Bir El-Djir. This choice is justified by the land pressure experienced in this municipality due to its proximity to the city of Oran, as well as the speed this territory has been built since the 1990s. We conducted twenty semi-structured interviews with actors whose role was decisive, either in the process of producing urban soils or in the application of policies for the preservation of agricultural land. Our interviews were conducted with the assistance of key informants, working in public institutions concerned with urban planning and land governance. These include the state studies office specialising in urban and territory planning studies as well as, several administrative services of the wilaya of Oran such as the Directorate of Urban Planning and Construction (DUC), the Directorate of Agricultural Services (DSA), the Regional Directorate of the Cadastre and the department of agricultural land of the Directorate of Domains.

The key informants held particular positions in the administrations (head of department, director, design engineer, technician, etc.). Their skills and their ability to intervene directly in the

¹ Master Plan for Development and Urbanism

² Land Use Plan



conception and realisation of urban projects gave them the status of experts and key actors in the process of urban sprawl in Oran in general and Bir El-Djir in particular. The choice of these informants helped us to document and better understand the urban problems and land issues in our study area. By using open-ended questions, our interviews addressed several issues related to the city and land governance to understand the mechanism for integrating agricultural land into urban development areas during the urban planning process. In other words, how is the question of peri-urban agricultural land posed by practitioners during the creation of the various urban planning documents (POS and PDAU)? In this perspective, an analysis was undertaken at the plot or block level of the POS. At this level of scale, the land strategies (modes of appropriation, allocation/reallocation and exploitation of the land resource) have been identified and exposed with the help of photography.

3. Oran: urban expansion fuelled by peri-urban agricultural land

In Algeria, both on the coast and inland, urbanisation is gaining ground: the number of cities has increased fourfold in a century (Maachou, 2008). This invading urban phenomenon is gaining agricultural land almost without any resistance, creating, therefore, some pressure on the farms located on the outskirts of large and medium-sized towns.

In 1830, the city of Oran had only 4000 inhabitants. During the colonisation period, the city became the capital of the West thanks to the port activity and the economic development partly based on wine production and also, became a popular destination for the immigration of the population of the French metropolis. At the independence from Europeans, Oran inherited a large housing stock estimated at nearly 40,000 dwellings. “This makes it a privileged city in terms of housing” (Maachou, 2008). However, since its independence, the Oranese metropolis has been, like all large Algerian cities, the scene of numerous urban and agricultural policies which have had an impact on the evolution of its spatial dynamics.

3.1. Three stages of urban sprawl, three logics for urbanising agricultural land

Based on the breakdown of the map: “The expansion of the Oranese conurbation” from the work of Bendjelid, Hadeid, Mssahel, &Trache (2004), the history of the expansion of the Oranese conurbation can be summarised in three important periods (Figure 2):

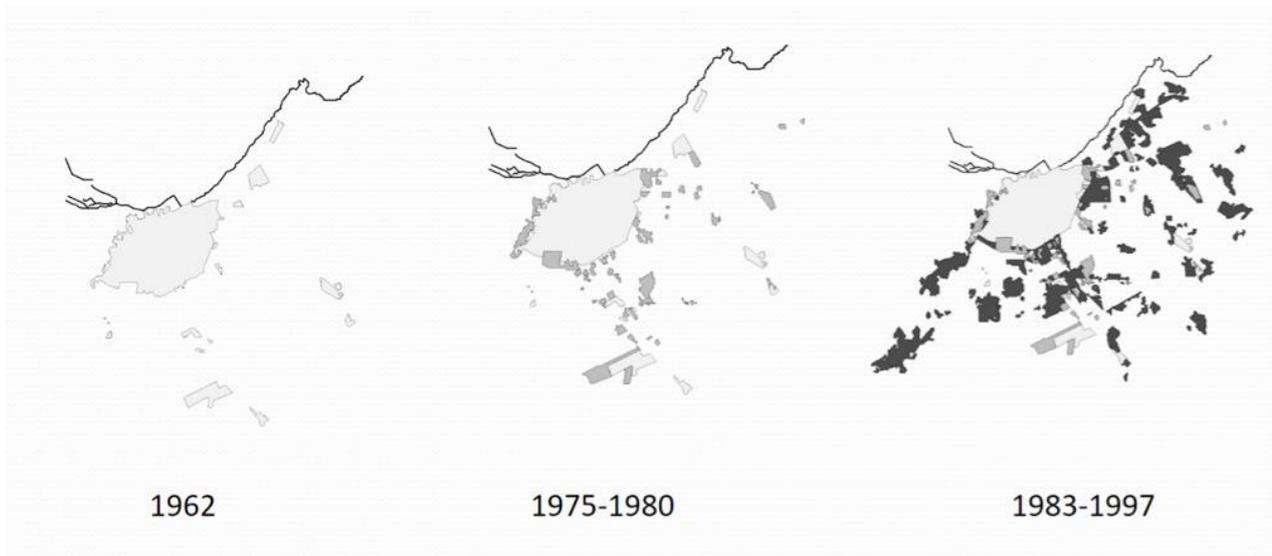


Figure 2. Expansion phases of the Oran conurbation.

- Between 1962 and 1975, the pace of housing construction slowed down thanks to the property vacuum created by the departure of Europeans after 1962. At that time, to quickly launch the country's economic machine, the young independent state opted for a policy of industrialisation of the large and medium-sized Algerian cities (Algiers, Oran, Constantine, Annaba, Skikda). In this context, Oran had to cope with this new territorial reconfiguration and thus became the host territory of several waves of migrants from smaller towns and neighbouring villages.
- Until the end of the 1970s, the urban development of Oran was limited to the third peripheral ring (the old Spanish and French centre and the suburbs of the colonial period) surrounded by orchards and agricultural lands. From 1975 until the end of the 1980s, the State had to cope with a strong demand for housing and therefore decided to launch some urbanisation projects. This planned peri-urbanisation began with the construction of ZHUNs (New Urban Housing Zone) validated by the PUD (Urban Master Plan), which various specialists in urban issues consider to be the origin of the main extensions to the outskirts of the current large Algerian cities. In the Oranese agglomeration, six (06) ZHUNs have been created on a total surface of 1 401 ha.

Table 1. Oran: the different ZHUNs built since 1975.

New Urban Housing Zone	Surface (ha)	Number of habitats
Seddikia	35	1240
Dar El-Baïda	150	1440
USTO	150	1000
Maraval	254	3350
Fellaoucen	700	1000
Khmisti	112	6000

Source: PDAU Oran (1997)

From the 1980s onwards, the State began to implement new individual housing programmes within the framework of housing cooperatives and housing estates. The Urban Master Plan (PUD) drawn up and approved in 1977, mapped out the broad outlines of Oran's urban development, choosing the eastern and north-eastern zones of the city to host the urban expansion. This choice

of land was contested by the agricultural services, which denounced an urban development to the detriment of agricultural land generally considered of good quality. This did not prevent the realisation of major housing and equipment projects, including the University of Science and Technology of Oran (USTO) on 89 ha, designed by the Japanese architect Kenzo Tang and inaugurated in September 1986. The location of the University generated a “considerable impetus to the processes of peri-urbanisation that have reconfigured the Oranese agglomeration in-depth” (Kadri & Madani, 2015). During this period “the urbanised area grew by 1254 ha, two-thirds of which were located in the peripheral areas” (Kadri & Madani, 2015). Following a logic of urgency and catching up, the State began some huge construction programmes that went beyond the PUD and its initial ambition (the spatial planning of urban development in the Oranese agglomeration).

➤ From the 1990s onwards, there was an acceleration of the urbanisation process in the Oranese agglomeration for two main reasons: the first is the so-called black decade. The security problems that Algeria experienced at that time led to a strong rural exodus which was the origin of an important spatial dynamic. The second reason resides in the creation of new urban planning instruments (PDAU, POS) which set up a new urbanisation process based on a zoning system. In this context, the mother city being saturated, the urbanisation of Oran was transferred to the east of the agglomeration to the peripheral municipalities (Figure 3), materialising in the nibbling of vast surfaces presenting the least constraints according to the availability of land and leading to its overflow (Benkada, 2001).

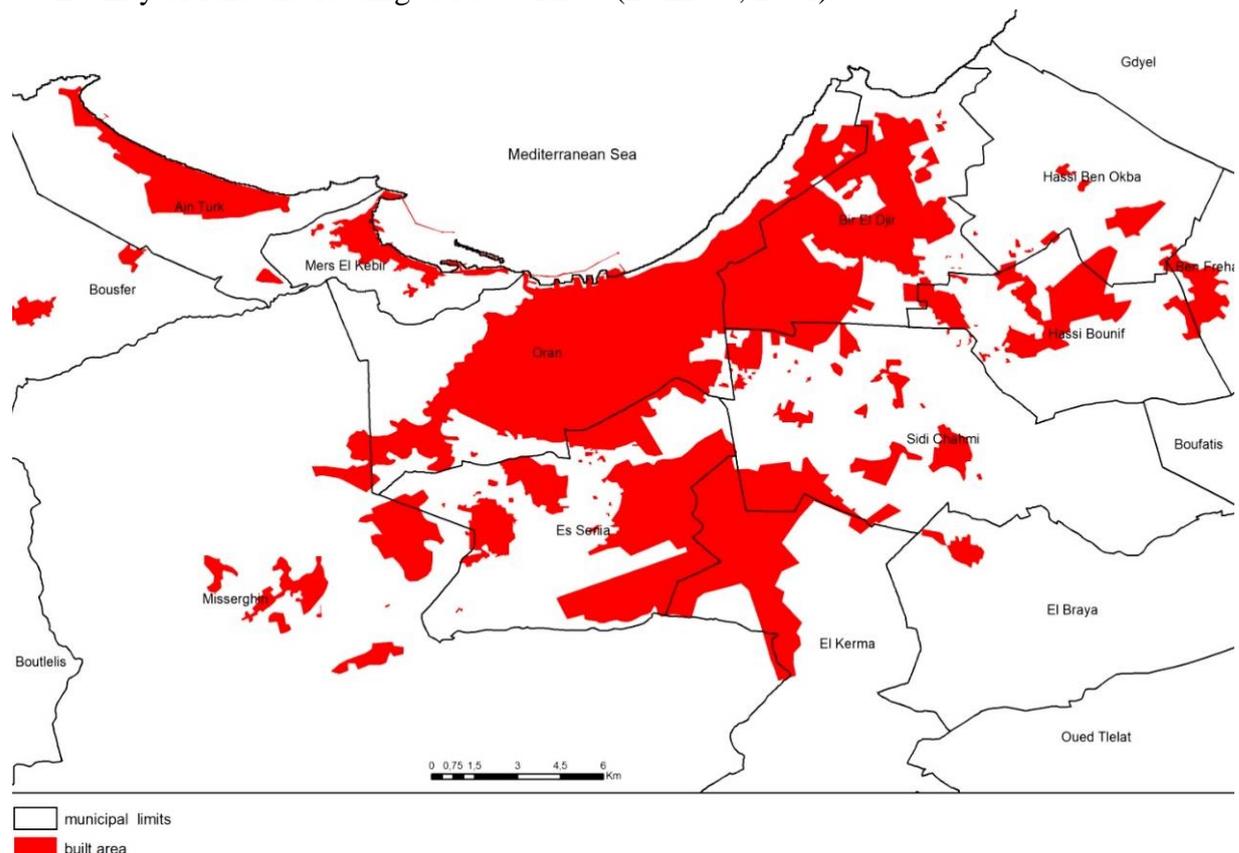


Figure 3. Distribution of the built area in the Oranes agglomeration (2021).

What was then the scope of these new urban planning instruments? And what was their role in the creation and management of new urbanised areas?



3.2. Urban planning instruments and spatial management of the Oranese agglomeration

At that time, in the 1990s, Algeria reviewed the previous dogmas of its land use policy and urban planning. Law n° 90-29 of 1 December 1990 on urban planning provided a new legal framework for spatial planning in terms of functional rules and land use standards. Two urban planning and development instruments were put in place, namely: the Master Plan for Urban Development and Planning (PDAU) at the level of urban areas and the Land Use Plan (POS), as a detailed instrument.

3.2.1. The Master Plan for Urban Development and Planning (PDAU)

The first function of the PDAU, drawn up in the 1990s, delimits the territory of the urban grouping of Oran (GUO) (Figure 1). The GUO comprises four municipalities (Oran, Bir el-Djir, SidiChahmi and EsSenia) and covers an area of 25,057 ha. The urbanised area of the GUO covers more than 8,800 ha or 35% of its total surface area. The remaining 65% of this area is divided between farmlands, forests and uncultivated lands (PDAU, 1997). The PDAU advocates spatial planning based on the zoning method: it divides the urbanisation areas into sectors. The sectors are continuous fractions of the communal territory and are each distinguished by one of the four vocations fixed by Law 90-29 (Article 19): the urbanised sector (SU), the sector to be urbanised (SAU), the future urbanisation sector (SUF) and the non-urbanisable sector (SNU). In the case of Oran, the guidelines of the 1997 PDAU (revised in 2005) project the surface area of the SAU and SUF combined at 1664 ha, located mainly in the eastern zone of the GUO.

3.2.2. Land use plan (POS)

The POS is a regulatory instrument that sets out building rights. According to Article 31 of Law 90-29, the POS sets out in detail the rights of land use and construction, but always within the framework of the provisions set out in the PDAU. This instrument is of two types: the first, 'development or extension', which aims to identify and regulate new urbanisable lands, favours virgin lands on the outskirts; the second, called 'restructuring POS', intervenes within the urban area. In the case of the PDAU of Oran, 66 POSs have emerged and are still in force today (Kadri & Madani, 2015). According to the various research works consulted (articles and doctoral thesis), the extent of the sprawl of the city of Oran has been such that the sectors to be urbanised (SAU) have been rapidly consumed and the sectors of future urbanisation (SUF) have already been urbanised.

In Oran, the spatial expansion of the built-up area has accelerated, as according to satellite image processing, the urbanised surface of the Oranese agglomeration was estimated at 6013 ha in 2008 and 7104 ha in 2017 (Missoumi, Hadeid, & Desponds, 2019). This increase in urbanised space is concentrated in the peripheral areas, previously known as agricultural par excellence. This former agricultural territory, which contains good and very good quality land (the plains of Bir El-Djir, Sidi Chahmi and Es Senia), was used as a basis for the expansion of the Oranese agglomeration. By being located between the city centre and the ring of agglomerations on its periphery, a large part of this agricultural land has become the object of covetousness despite the existence of a body of regulations intended to preserve the rural space and to control the urban evolution of Oran. What is then the process of transformation of agricultural land into urbanisable land within the framework of the urbanisation of Oran? What land strategies were used?

4. Diversion and reallocation of the use of urban sable land in the peripheral zone of Oran

Within the framework of this research, our interviews in Oran (2022-2023) with public actors responsible for urban planning and agricultural land management enabled us to trace and understand the process of allocation/reallocation of peri-urban agricultural land. Two main stages are worth noting:



4.1. The downgrading of state-owned agricultural land by urban planning instruments in favour of urbanisation

In 2011, following the creation of the National Office for Agricultural Land (ONTA) and under the social pressure on housing rights, Algeria promulgated regulations on the declassification of medium and low-yield agricultural land. The declassified plots were recovered and transformed into land for urbanisation.

In the Oranese agglomeration, the declassification of peri-urban agricultural land was carried out with the approval of the wilaya's agricultural services department (DSA). More than 600 hectares of agricultural land have been downgraded in this second Algerian metropolis, mainly in the municipality of Bethioua for the benefit of a large industrial zone where many industrial companies are located. But how can a piece of land of high agricultural value be downgraded to uncultivated land or land with little potential? Our question was left unanswered by a mute administration that avoided answering by stating that all the downgraded agricultural plots were justified without giving any details on the procedure in question.

“The consultation of the DSA regarding the agricultural usefulness or otherwise of certain plots of land remains an administrative formality. When it comes to public and even private state land, the opinion of the DSA is not decisive the land in question is the property of the state and it is free to do what it wants with it...all the strategies employed by the state are within a legal framework and the DSA can do nothing about it ” (agricultural engineer, DSA of Oran)

At the national level, this issue of declassification of agricultural land has generated much debate. In an interview granted to the national newspaper *Le Soir d'Algérie* in December 2018, the central director of the Land Organization and Protection of Patrimony at the Ministry of Agriculture and Rural Development (Hamid Hamdani) said that across the country, the equivalent of 40,000 ha of agricultural land had been declassified. Today, the central government is forced to review its agricultural land management policy.

4.2. The reallocation of land use already planned at the level of the blocks of the Land Use Plan (POS)

When the PDAU sets up its zoning, essentially the urbanisation zones and the sectors for future urbanisation (SUF), the perimeter is divided into Land Use Plans (POS), and it is at this level of the allocation of the POS blocks that the various diversions and illicit practices on agricultural land that has become urbanisable take place. Several cases around the city of Oran constitute a concrete example of these land practices that are inconsistent with the development plans for the expansion of the metropolis. Our case studies are concentrated on the territory of the urban area of Bir El-Djir in the east of the Oranese agglomeration.

According to the PDAU of Oran, the municipality of Bir El-Djir was chosen to support, essentially, the eastern extension of the Urban Grouping of Oran (Figure 4). Its communal territory is divided into 18 land use plans (POS). Of the 18 POS, 4 are approved, 12 are being drawn up and 2 have not yet been drawn up. Whether on the ground or from satellite images, the observation is the same: the land of Bir El-Djir is almost totally consumed by urbanisation, despite the non-approval of certain POS or the non-completion of their studies.

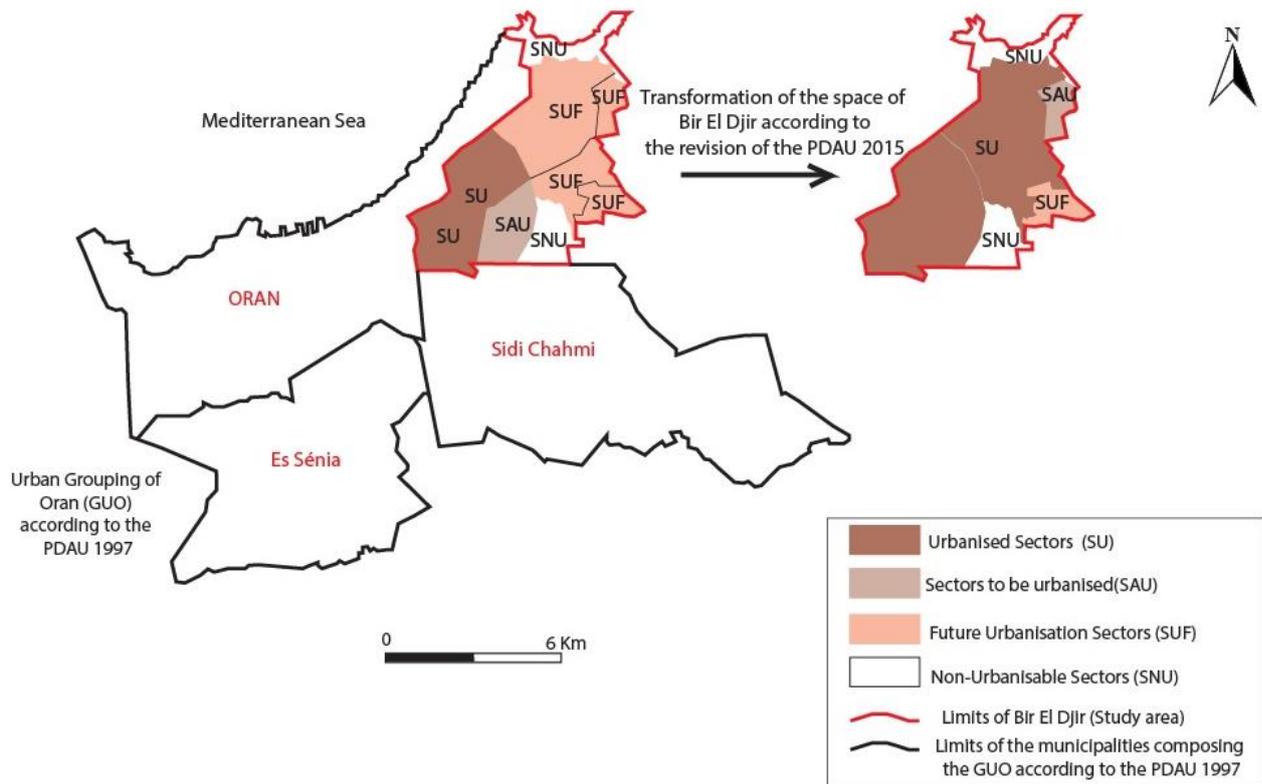


Figure 4. Evolution of urbanisation sectors in the municipality of Bir El-Djir (1997-2015).
Source: reconfigured by the author basis of (Nemouchi & Zeghiche, 2021).

According to our interviews with the technical and urban planning services at the Bir El Djir town hall, the territory of three POS (21, 25, 49) and the SUF (future urbanisation area) were entirely consumed before the POS was even drawn up. The urbanisation of these territories was without official planning or any thoughtful development (Figure 4). This situation confirms the inability of urban planning instruments to deal with land predators in general and peri-urban agricultural land in particular. This administrative dysfunction can be the source of all forms of misappropriation and trafficking in land, as construction programmes are sometimes injected and carried out in a hurry with a simple report from a land selection commission, either at the level of the Daïra (Daïra commission) or at the level of the wilaya (wilaya commission) (Zouani, 2016).

This emergency character in the management and allocation of peri-urban land use means that the State is often obliged to raise technical, financial or even urbanistic challenges. This can be illustrated by the case of the 5000 public rental housing units (LPL) in SUF2, where the OPGI (Public Office of Property Management) was surprised to learn, during the development of the land chosen for the housing estate, that the area is subject to flooding and the project might be abandoned. The solution was very costly for the State because it was necessary to build a 12 m deep gallery with a diameter of 3 m for the drainage network, which was not initially foreseen in the development plan.

The diversion of land in these POSs is also carried out by changing the use of the blocks that make up the POS. It is quite common to plan blocks for individual housing, but in practice, housing estates are built with collective housing, as is the case with the 800 housing estates in the POS.52 (Figure 5).



Figure 5. Collective housing instead of individual housing (plot in POS 52; municipality of Bir El Djir). *Source: Photos taken by the author, April 2023.*

This program is implemented in a space already inhabited and serviced with a predefined capacity. The flow rate of the sewerage system is calculated based on the former individual housing project but, today, the same sewerage system bears the burden of 800 dwellings. Thus when we change the early space occupation from the individual to the collective we can expect future damages. It is obvious that in this process of land misappropriation, the main actor is the real estate developer. The latter manages to acquire land bases belonging to the State at a low price to realize housing sold subsequently at exorbitant prices.

Through these examples of land misappropriation in the suburbs of Oran, we can see that the modes of management and allocation of land resources influence the form and functioning of the city produced. The arrangement of the collective and individual dwelling is anarchic thus creating aesthetically and functionally heterogeneous spaces (concentration of habitat in a reduced space with various heights) (Figure 6).

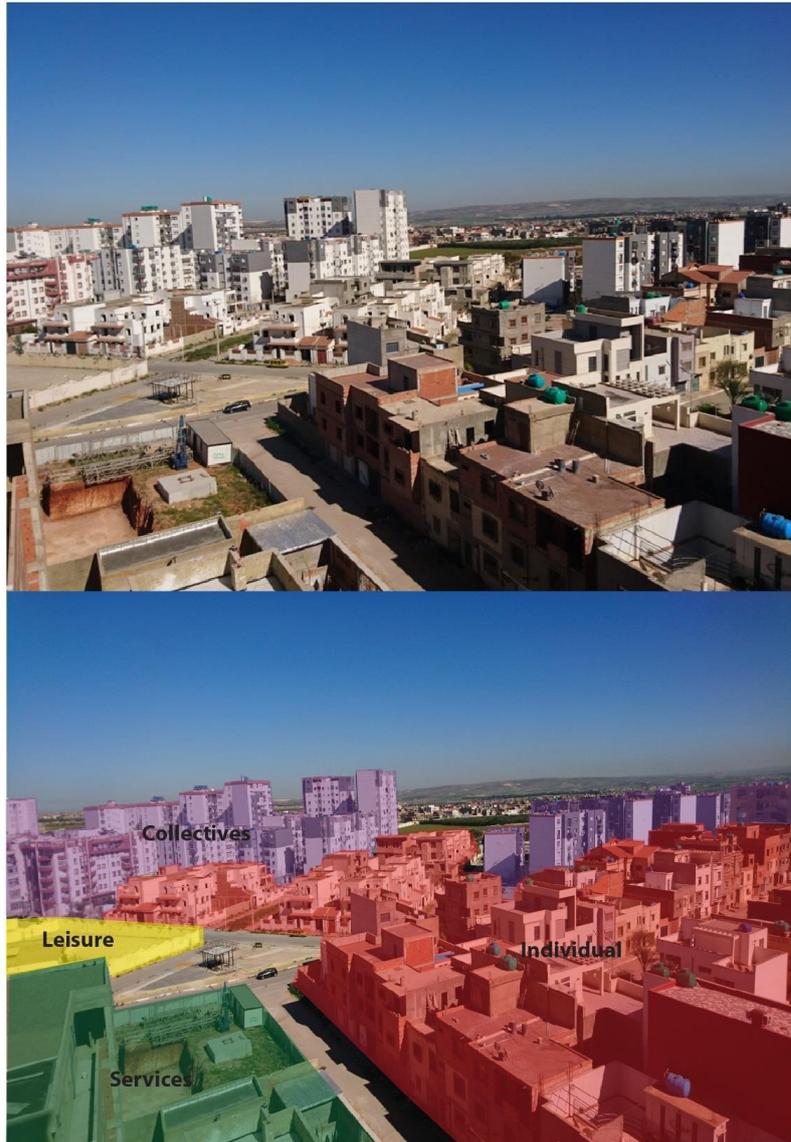


Figure 6. Heterogeneity of the spaces produced in the periphery of Oran (municipality of Bir El Djir). *Source: Photos taken by the author, April 2023.*

The extension of Oran is disproportionate. The newly built spaces are heterogeneous and result from planning made quickly and without reflections. Urban practitioners (design offices and the urban planning department) are losing control over urban planning, which "*is becoming a simple process of housing production and regularisation of illicit spaces*" (according to an interview with an official at the urban planning and construction department of the wilaya of Oran). In Oran, there is a proliferation of property developments that produce collective housing estates (Figure 7).



Figure 7. Various real estate developments are under construction in the municipality of Bir El Djir.
Source: Photos taken by the author, September 2023.

The urban density has increased in the peripheral zone, having a huge impact on urban management and the quality of life in the new spaces of the Oranese metropolis, such as the densification of the rate of land occupation, the congestion of schools, the delay in the realisation of the sewerage and road network, the lack of public transport in the new urban spaces and the problems of urban security among others.

5. Discussion

While developed countries are now looking for more sustainability in urban management and practices, in Algeria these issues are still a challenge (Berezowska-Azzag, 2012; Signoles, Cattedra, Legros, Iraki, & Barthel, 2014). The State remains focused on land ownership, trying to contain it despite its historical complexity. From independence to the present day, Algeria has published texts and instruments for managing land resources around large and medium-sized towns without, however, resolving its problem of dilapidation and waste.

Between 1992 and 2005, the National Land Use Planning Agency (A.N.A.T) issued a warning, “highlighting the increasing artificialisation of land, the spread of urbanisation and the endangerment of natural and agricultural areas” (Sahraoui & Bada, 2021). Within the framework of the present contribution, we note that the land strategies developed by the actors of the peri-urban territories largely affirm the insufficiency of the laws and the incapacity of the instruments of town planning to control the anarchic urban sprawl and the consumption mass of rare and non-renewable land. The case of the Oran agglomeration shows that this situation is mainly due to:

5.1. The absence of a solid agricultural project

In Oran, the second Algerian metropolis, the peri-urban space, formerly dominated by the vineyards of the colonial farms, offers today a landscape contrasted by the interweaving of several spaces whose functions differ between agriculture, housing and industry. This functional decomposition and recomposition of this peri-urban space is essentially due to mutations in the agricultural sector in post-independent Algeria. Indeed, agricultural land has often been the subject of political reforms and restructuring, reflecting political and economic visions and ideologies (from socialism to the liberation of markets) that are far removed from the aspirations and prerogatives of the rural world. This situation has created a distance between the farmers and the legal status of the farm (the state remains the owner



of the best agricultural land in the country) generating, thus, pseudo farmers “*state officials*”³ lacking in initiatives and a determined agricultural project. Farmers’ feeling of land insecurity and of not belonging to the land, pushes them to try other non-agricultural functions and sometimes to sublet the land that the State has rented to them. Agriculture then suffers from a lack of human investment and the agricultural land adjacent to the large agglomerations becomes a reservoir for urban demands such as the spread of buildings, the establishment of industrial zones and the development of communication networks (roads, railways, etc.). In the case of Oran, the Department of Agricultural Services (DSA) is primarily responsible for this failure to manage and preserve peri-urban agricultural land. The DSA shows an unprecedented fragility when it comes to validating the PDAU's choice of future land for urban development. In our opinion, this weakness of the DSA can only be explained by the absence of a real agricultural project specific to peri-urban areas, such as peri-urban agriculture. In Algeria, this type of agriculture is still in the stage of being researched by academics (Semmoud & Ladhem, 2015; Maachou & Otmane, 2016; Bousmaha & Boulkaibet, 2019). Peri-urban agriculture does not feature at all in the political proposals of elected representatives or in the wilayat's action plans. This type of agriculture is not even identified in the future projects of the various farmers still living in the peri-urban areas of major cities such as Oran. Also, the lack of agricultural production on the fertile land that makes up the peri-urban area (despite the recognition of the agricultural potential of this land) puts the DSA in a weak position compared to other actors such as real estate developers who build instead of the state, or the wilaya, which, under pressure from ministries and civil society, must respond to the housing and infrastructure needs of its territory.

5.2. The massive state ownership of agricultural land and its repercussions on the management of peri-urban areas

It has to be said that the “*state*” legal status of the agricultural land surrounding Algeria's major cities, particularly Oran, has made it easier to use this land for urban development. This state control of agricultural land dates back to the period of independence, when the rebirth of the Algerian national state was expressed through the recovery and management of colonial landholdings, which were characterised by the most fertile land in the country. Colonisation was based on land and decolonisation was also based on land (Nemouchi, 2009). This municipalization of land (1962-1990) resulted in a significant waste of peri-urban land resources, with chaotic forms of urbanization. Added to this is a “monopoly of land management by an administration overwhelmed by the phenomenon of urbanisation” (Saidouni, 2003, p. 141). In a bid to resolve this disastrous land management situation, the state decided to put an end to sole management of land and to open up the market after 1990. This new concept of decentralised, multi-actor land use planning has not solved the problem of land squandering. In the case of the Oran conurbation, this situation has given rise to new actors and new strategies for managing land resources. The most important of these actors are the private land and property development agencies. These agencies are becoming a key factor in the urban sprawl process, as they can acquire land from the state, develop it, build on it and market it. Private land acquisition remains low due to, for example, the absence of an official land market, the incompleteness of the urban CADASTRE⁴ in some places, the unknown origin of some properties, unresolved land disputes, and illegal occupations, among others. This is a reality that does not allow for the State's definitive and complete withdrawal from the land sector.

5.3. The ineffectiveness of the planning instruments used

This spatial organisation, which takes place around the large Algerian metropolises, remains the domain of territorial planning carried out by urban planning instruments. These instruments officially project a balanced vision of space, using a zoning system established and protected by law. However,

³ Whether at the time of the Socialist Agricultural Domains (DAS) in the early 1980s or after the land restructuring of 1990 (the creation of the EACs and EALs), farmers were still considered to be simple operators or allottees working on State land.

⁴ The term “CADASTRE” is borrowed from the French. It is the descriptive and evaluative inventory of plots of land and built buildings.



the conditions and methods for mobilising the land that makes up this zoning, particularly the urban development zones, are not clearly defined, or even non-operational. These include the “*right of pre-emption*”, which is difficult to apply in Algerian land legislation and, “*expropriation for public use*”, which urban planning instruments do not even manage to take advantage of (Azzouzi & Harkat, 2019). There is a dissociation here between land policy and planning and urban development instruments. This creates a loophole for all forms of urban overruns and blockages. In the case of our study area, the urban planning instruments have not made it possible to ensure the control and management of space, given the initially anarchic (after the expiry of the 1977 PUD) and then poorly planned sprawl of the city (PDAU 1997). The PDAU and POS have become instruments geared towards the immediate regulation of the use of available land without having a global and coherent vision of urban development. They lack coordination and complementarity in their actions (Louafi, 2019).

In short, the rapid sprawl of the Oran metropolis and the multiple effects it produces confirm the extent of the gap between the discourse and ambitions of political actors and the reality of the city that is being built. The growing gap between the planned city and the reality produced on the ground is indicative of the limitations of urban planning instruments within a dynamic demographic, social and economic context (Boumaza, 2006).

It seems that the technostructure in charge of urban management is trying, with difficulty, to take up the challenges of an urban evolution which are not considered by decision-makers. The example of the Oranese agglomeration has once again confirmed the failure of the administration responsible for land governance. This situation of confusion has encouraged the proliferation of all kinds of illicit practices and unimaginable excesses, by both private and public actors, on peri-urban land.

6. Conclusion

Today, Algeria's population is growing rapidly and is concentrated in large and medium-sized towns. In most cases, there is a real and urgent need for housing and infrastructure. Land and real estate are therefore key issues, and various actors in the field are competing with each other.

Following this study, it is clear that land is the determining factor in the production of the city. It is the object of all kinds of covetousness and has a very strong influence on the configuration of new urban areas. In the case of the Oran conurbation, the uncoordinated intervention of state actors in the mobilisation of land resources for the benefit of the urban project has led to anarchic urban sprawl and functional inconsistencies in the spaces produced.

It is therefore vital for Algeria to take on board several practical recommendations that will prevent wastage of land and improve urban functionality and life, starting by adopting a broader and more global vision of metropolitan areas. As a central actor in executive power, the state must abandon the sectoral vision that always positions agriculture behind the city and industry. There is no point in releasing colossal financial envelopes to assist Algerian agriculture if land security is non-existent and the main production factor, land, is frequently cut back to meet the needs of the city and economic prospects outside agriculture. This easy access to peri-urban land resources opens the way to all forms of diversion and speculation around the land. Cities are spreading out in all directions, thus creating an irreversible territorial imbalance. For the State as a planner, it is important to integrate the land issue into the definition and strategic development of urban projects. By correlating land policies with urban policies, the various land-related actions can be controlled. Appropriation strategies will be anticipated and urban sprawl on agricultural land will be optimised. In Algeria, there is an urgent need to move away from emergency urban planning to a more considered form of urban planning as part of a genuine territorial project. This is the only way to control urban growth and produce coherent urban areas.

It is also necessary to put in place effective and operational urban planning instruments because, there is a lack of complementarity between the various planning instruments, which is reflected in a lack of coordination and control. Today, the PDAU and the POS are obsolete in the management of peri-urban space. They are seen as a means of legalising different modes of inappropriate reallocation of peri-urban land. Given that urban and rural development are both subject to the mobilisation of land



resources, the sprawl of the city onto the countryside cannot be resolved overnight. This comes back to the particularity of land, which remains a complex equation with multiple variables.

Acknowledgements

- I would like to thank all the people who agreed to take part in my interviews during my fieldwork.
- I would especially like to thank LamiaFardeheb and ÉliseLepy for their advice and language aids.

Conflict of Interests

The author declared that there was no conflict of interest relating to the conduct, outcome, and publication of this study.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Data availability statement

The authors confirm that the data supporting the findings of this study are available within the article [and/or] its supplementary materials.

Credit author statement

Conceptualization: HayetteNemouchi. Data curation: HayetteNemouchi Formal analysis: HayetteNemouchi Funding acquisition: No funding Investigation Methodology: HayetteNemouchi Project administration: HayetteNemouchi. Writing—original draft: HayetteNemouchi, Writing—review and editing: HayetteNemouchi.

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How to cite this article:

Nemouchi, H. (2023). Peri-Urban Pressures: The Interplay of Land Strategies and Urbanization in Algeria's Oran Metropolis. *Journal of Contemporary Urban Affairs*, 7(2), 1-19. <https://doi.org/10.25034/ijcua.2023.v7n2-1>