

Algeria's SNAT 2030: Shaping a Sustainable and Equitable Territorial Future

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ABSTRACT

The study aims to assess how SNAT, its implementation mechanisms, the Territorial Planning Programs (PATs), and SNAT Dashboard, contribute to reducing regional disparities and preparing Algeria's landscape for future environmental and economic challenges. The research methodology includes a qualitative examination of government planning documents and spatial policy frameworks. Results suggest that while SNAT provides a comprehensive structure, its effectiveness in enhancing shadow regions largely relies on improved coordination among sectors and successful implementation at the local level. The study recommends bolstering multi-level governance, establishing strong monitoring and evaluation systems, and incorporating knowledge-driven strategies for sustainable, competitive, and balanced territorial development. Ultimately, revitalizing shadow areas is crucial for SNAT to realize comprehensive national development and integration in Algeria.

Keys words: Balanced development, SNAT Dashboard, Rural revitalization, Spatial equity, Multi-level governance

JEL classification codes : R28 ; R52 ; H5 ; H6.

INTRODUCTION

Algeria, as a densely populated nation, is faced with a diversified set of development issues spanning economic, social, environmental, and geopolitical dimensions (Bergougui et al., 2024, p. 2). Its vast and varied space, spanning from the fertile coastal plains to the Sahara, both poses challenges and offers opportunities for balancing and maintaining development. (Saidi et al., 2023, p. 174) As a response to these multidimensional forces, the Algerian state has developed a worldwide strategic framework entitled the National Territorial Planning Scheme (National regional planning scheme, SNAT) with a vision horizon up to 2030. SNAT is not merely a planning tool; it is a policy guide document that seeks to harmonize territorial development across Algeria's regions (Farid, 2011, p. 165). Through a focus on investment in infrastructure, spatial planning, resource management, and socio-economic balance, SNAT tries to direct the country towards a resilient, inclusive, and sustainable future (Ferdj & Djeflat 2024). The plan was initially conceptualized on a 2025 horizon, reflecting an early recognition of the need for long-term territorial foresight (Azzoug, 2024, p. 73). However, with the rapidly changing environment at the national and global levels, the plan was revamped in 2010, extending its horizon to 2030 and incorporating a broader array of challenges reflecting contemporary times.

Some of the most pressing issues integrated into the revised SNAT include climate change and its impact on vulnerable ecosystems and water, the accelerating digital revolution reshaping economies and society, and the need for energy transition from fossil fuel reliance to renewable energy (Chahtou et al., 2025, p. 121). These dynamic shifts have evoked a nimble and responsive strategy towards territorial planning, one that not only

anticipates future innovations but also addresses present vulnerabilities with effectiveness (Bergougui & Meziane,).

Consequently, SNAT 2030 presents itself as a dynamic and multidisciplinary instrument aimed at finding harmonious equilibrium among contending calls for land use, infrastructure expansion, and nature preservation to tackle chronic regional imbalances and foster inclusive growth. Despite SNAT 2030's ambitious aims to provide balanced, sustainable, and inclusive development across Algeria, there are significant challenges in cascading such national strategic priorities into meaningful action at the local level through the EPT (*Elaboration du Plan de Territoire*). While EPT aims at coordinating public policies at the local level, exploiting regional specificities, reducing territorial inequalities, and improving citizens' quality of life, its implementation is often confronted with institutional, financial, and organizational challenges. They include poor intersectoral coordination, no integration of local needs and capacities, low technical capacity, and insufficient funding. Furthermore, ongoing regional disparities mean that the allocation of investment and infrastructure remains biased in favor of the more developed areas to the detriment of others. The extent to which the EPT aligns with the vision of SNAT and addresses local socio-economic and environmental concerns is uncertain.

Through this analysis, the study will establish the extent to which SNAT enables balanced and sustainable development in Algeria and if it remains a viable framework for navigating the 21st-century complexity has three key objectives: 1. To analyze the integration of emerging global and national challenges into SNAT 2030 framework, 2. To assess the governance structures and implementation mechanisms underlying SNAT 2030 and 3. To investigate the role of SNAT 2030 in stimulating balanced regional development and reducing socio-economic disparities. The significance of this study lies in a set of interconnected dimensions: 1. Policy Relevance and Strategic Guidance, 2. Contribution to Academic Debate on Territorial and 3. Facilitation of Public Participation and Stakeholder. The work is structured as follows: section two examines the fundamental Principles of SNAT 2030. Section three examines the evolution and revision of SNAT. Section four examines the assessment of the Socio-Economic Environment and Systemic Issues. Section five addresses the heart issue in the paper by undertaking a Socio-Economic Analysis of "Shadow Areas" policy; Section six discusses the results and concludes.

Fundamental Principles of SNAT

SNAT 2030 relies on a set of leading principles which guide Algeria's vision for sustainable development and territorial planning (Lacheheb & Madani, 2024, p. 80).

Territorial Equity and Reducing Regional Disparities

The principle of territorial equity is intended to reduce regional disparities by increasing the fair distribution of public services, infrastructure, and economic opportunities across Algeria (Bouchama et al., 2022, p. 635).

Northern regions of Algeria, particularly coastal cities like Algiers, Oran, and Annaba, have been better developed historically than the southern regions and the High Plateaus (Nyrop, 1972, p. 78). SNAT seeks to invest in less-developed regions in a bid to reduce these imbalances (Hamadi et al., 2018, p. 29). This includes improved access to fundamental services like healthcare, education, and shelter as well as stimulating economic opportunities in less developed regions in a bid to provide an integrated national environment of development.

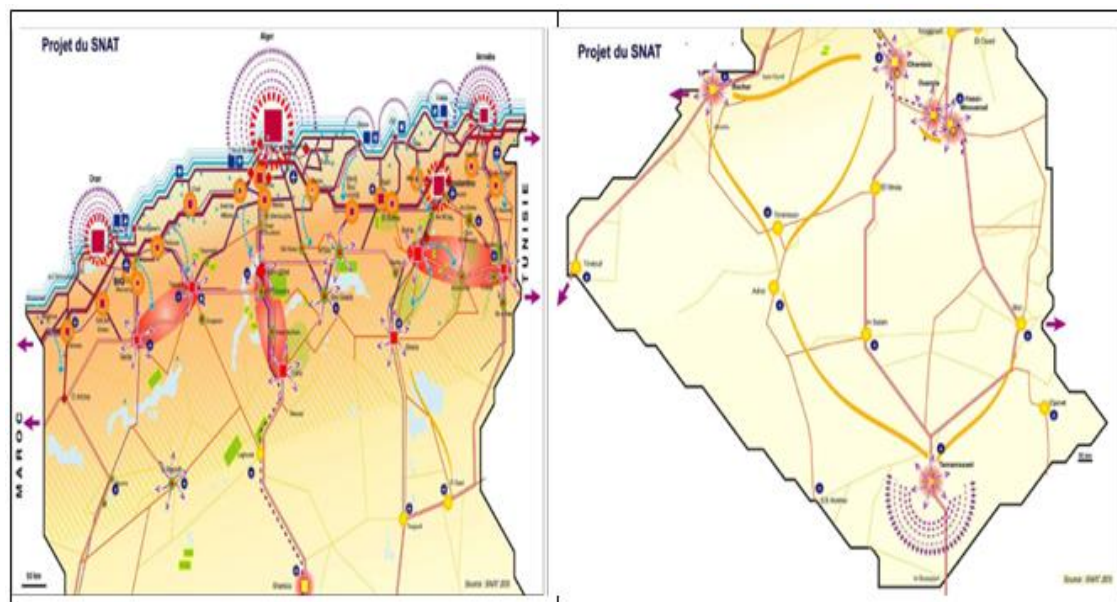
Sustainable Development

Sustainability is the base of SNAT, integrating environmental factors into all territorial planning for long-term ecological and economic sustainability (Aroua, 2018, p. 160). SNAT places high value on sustainable management of natural resources, ecosystem conservation, and reducing Algeria's footprint on the environment (Benameur et al., 2024, p. 200). The policies target preserving biodiversity, establishing protected areas, and taking climate-resilient actions to counteract the effects of climate change such as desertification and water scarcity.

Evolution and Revision of SNAT

SNAT has evolved through successive iterations to reflect Algeria's new socio-economic and environmental context, with the most recent versions aligned with international and national challenges (Rabehi et al., 2019, p. 1920).

Figure N° 1: SNAT project



Source: (Ministry of the Interior, n.d, p32)

The visual image (fig.1) accompanying the plan emphasizes the fundamental need for harmonized territorial development. One half of the image depicts populated urban areas, characterized by roads, commercial centers, and robust connectivity. The other half illustrates rural regions, perhaps showing agricultural cultivation or an underdeveloped landscape. This stark contrast visually represents the socio-economic disparities and environmental challenges prevalent in rural areas, such as depopulation and desertification. A central element in the image could be roads, bridges, or other symbolic connections, signifying integrated development programs designed to link rural and urban regions. These connections underscore the importance of territorial equity, aiming to provide equal opportunities for education, healthcare, employment, and a high quality of life for all inhabitants, regardless of location. For the section on territorial competitiveness, the image likely highlights various forms of connectivity, airports, ports, or virtual networks radiating from strategic centers. Such symbols would reflect the increasing imperative for territories to invest in advanced infrastructure and trade facilities to compete effectively in an increasingly globalized world. Collectively, the image visually reinforces the dual objectives of fostering balanced internal development and promoting outward-looking competitiveness. Both are crucial for the creation of sustainable territorial policies.

SNAT 2025: Foundations of Territorial Planning

The original SNAT, which had a horizon of 2025, constituted the basis for Algeria's territorial development (Fettih & Derdiche, 2025, p. 1327). It focused on decentralization, infrastructure, and regional balance. (Aggoune, 2024, p. 653). Priorities were concerned with reducing disparities between the north and south, promoting sustainable development, and raising the level of living of all citizens. This edition established a framework for long-term planning, addressing economic, social, and ecological challenges (Hamouche, 2023, p. 45).

Table N°1: Real growth rate of sectors 2020-2022

Sections - Algerian Nomenclature of Activities (NAA)	Real growth rate 2020	Real growth rate 2021	Real growth rate 2022
Agriculture, hunting and silviculture	2.8%	-2.3%	5.3%
Fishing, aquaculture	3.6%	1.6%	-0.3%
Fictitious Unit Branch (FUB)	1.2%	-2.6%	1.9%
Extractive industries	-20.9%	19.8%	-5.1%
Manufacturing industries	3.4%	6.4%	12.8%
Production and distribution of electricity, gas	-1.1%	8.3%	5.6%
Construction	-1.3%	5.8%	4.0%
Trade, auto repair and household articles	-4.1%	3.5%	4.4%
Hotels and restaurants	-60.8%	33.4%	55.7%
Transport and communications	-7.2%	3.8%	4.3%
Financial activities	-1.9%	-1.6%	2.2%
Real estate, rental and business services	4.0%	1.5%	3.7%
Public administration	30.0%	0.6%	2.2%
Education	-2.8%	1.2%	1.9%
Health and social action	15.3%	7.4%	1.5%
Social and personal collective services	-3.1%	5.0%	3.1%
Domestic services	-4.7%	-1.7%	2.7%

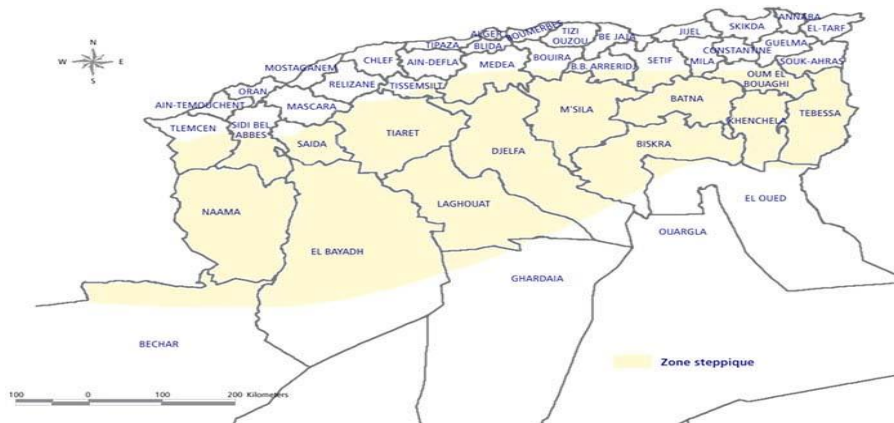
Source:(ONS, 2023)

Table 1 illustrates the differing performances of various Algerian economic sectors during the years (2020-2021), a period heavily influenced by the COVID-19 pandemic and subsequent recovery efforts. The Extractive industries, primarily focused on hydrocarbons, exhibit significant volatility, experiencing a sharp drop in 2020 and a remarkable rebound in 2021, followed by another decline in 2022, highlighting Algeria's ongoing vulnerability to global energy market fluctuations. Conversely, the manufacturing sector demonstrates consistent and upward growth, indicating potential for diversification. The Hotels and restaurants industry, which suffered greatly in 2020, showcases an impressive recovery in both (2021 - 2022), signaling a resurgence in services post-pandemic. The Public Administration sector sustained robust growth, especially in 2020, likely to reflect increased government expenditure and stimulus measures during the crisis, while agriculture remains vulnerable to fluctuations influenced by factors such as weather. Overall, the table depicts a diverse economic landscape, showcasing both resilience and growth in certain areas alongside ongoing exposure to external shocks or internal weaknesses in others.

SNAT 2030: Addressing New Challenges

Enacted in 2010, SNAT 2030 utilized updated socio-economic and environment statistics to address emerging global and domestic issues (Saoudi & Blakenhall, 2018, p. 600). It extended the planning period to enhance projections of such challenges as climate change, population increase, and world economic transformation. The updated SNAT emphasizes: 1/ *Balanced Territorial Development*: by accelerating progress toward reduction of regional disparities through hinterland infrastructure construction and regional poles of growth (Zermane et al., 2021, p. 330). 2/ *Environmental Sustainability through* Enhancing natural resource protection and climate change resilience policies, such as the establishment of protected areas and sustainable resource extraction (Gherbi, 2012, p. 267).

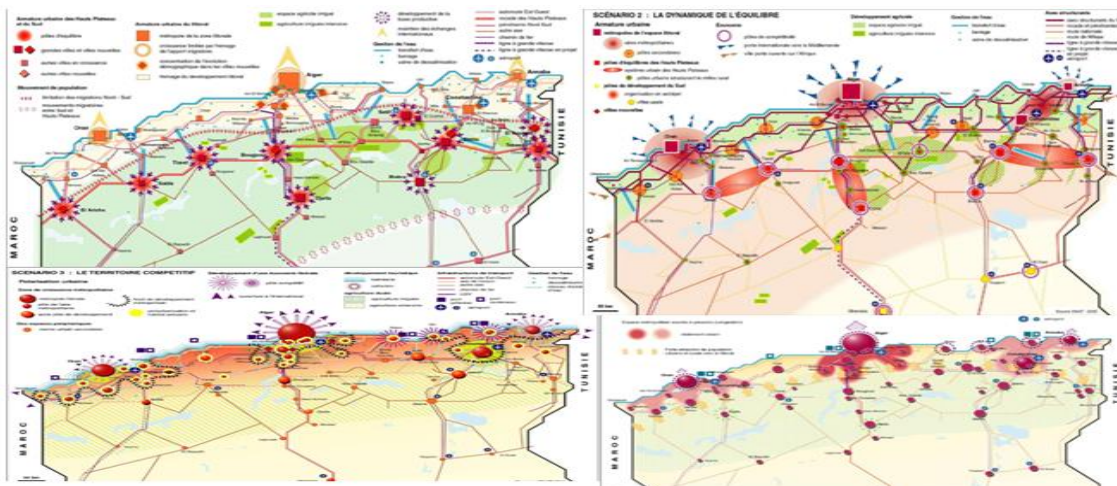
Figure N° 2: Bioclimatic floors



Source:(FAO, n, d)

Figure 2 shows that there is a noticeable asymmetry between the slopes; northern slopes experience greater humidity and receive more rainfall, whereas southern slopes tend to be drier. The different ecological zones are depicted. To the north lies the agricultural region (including coastal areas, sub-coastal plains, interior plains, high plains, etc.), the middle region comprises steppe and rangeland, and to the south is the Sahara Desert with its oases. 3/ *Economic diversification* by establishing industries, agriculture, tourism, and renewable energy to diversify beyond hydrocarbons (Khaled & Kamilia, 2023, p. 396). 4/ *Infrastructure and Connectivity* by establishing transportation and communication infrastructure, including roads, railways, ports, and airports, to enhance regional connectivity (Benameur et al., 2024, p. 200). 5/ *Social Inclusion*: by expanding access to education, health, and housing to enhance quality of life and promote equity (Guerdouh & Naceur, 2024, p. 140) and *Urban-Rural Balance*: by encouraging the development of mid-size cities and rural areas to prevent overconcentration in big cities (Davis, 2023, p. 925).

Figure N° 3: Voluntarist equilibrium (Senario1;2;3;4)



Source: (Ministry of the Interior, n.d, p20)

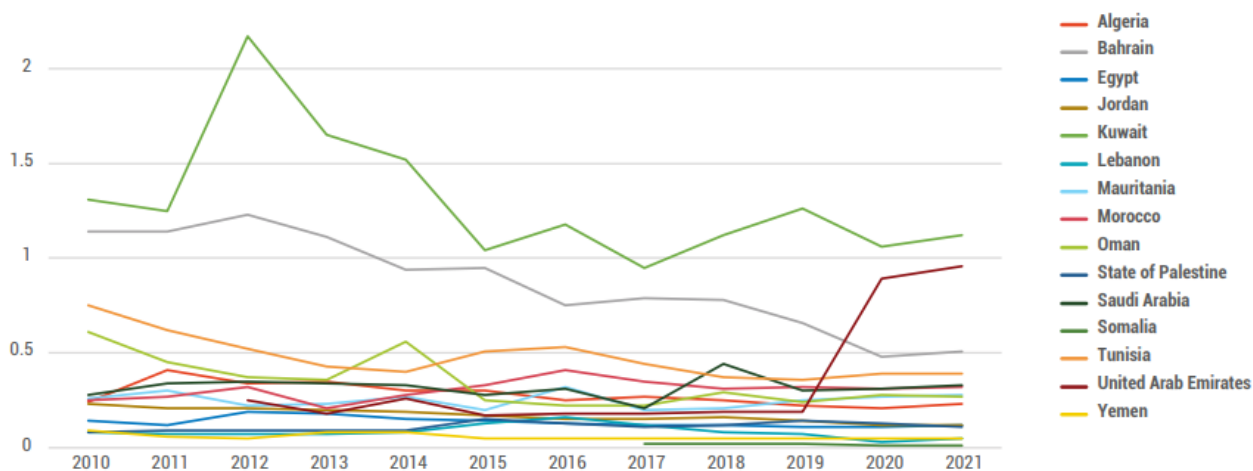
The photos (figure 3) illustrates Algeria's strategy for spatial planning to reduce regional differences. Development priorities are in the High Plateau, where government buildings are being relocated, and new urban spaces are being created through systematic investment in infrastructure. The voluntary population redistribution policy aims to create a twin territory system, but it creates environmental issues due to increasing human pressure and massive water transfers. The Tell region remains the economic pole but without structural reform, and the South explodes in fragmented urban centers with inefficient regional integration. The absence of mediation structures strengthens environmental conflicts, threatening the breakdown of traditional rural practices.

Limitations in Government Expenditure and Resource Management

Among the institutional hurdles in effectively implementing the *Schéma National d'Aménagement du Territoire* (SNAT 2030), a fundamental issue is the allocation of government spending towards key sectors that are essential for fair regional development. The agriculture sector, a cornerstone for growth in rural regions and the High Plateaus, exemplifies these budgetary priorities.

The graph (fig. 4) provided below highlights the difficulties posed by the government's insufficient emphasis on this industry in comparison to its share of Algeria's agricultural GDP, as well as its position relative to prominent regional competitors.

Figure N° 4: Regional Agricultural Spending Priorities (2010–2021)



Source: (ESCWA, 2024)

The preceding graph indicates that the Agricultural Orientation Index (AOI) of government expenditure in Algeria (represented by the red line) was notably low between 2010 and 2021, rarely surpassing 0.3. This figure illustrates that funding allocated to agriculture is disproportionate to the sector's contribution to the national economy.

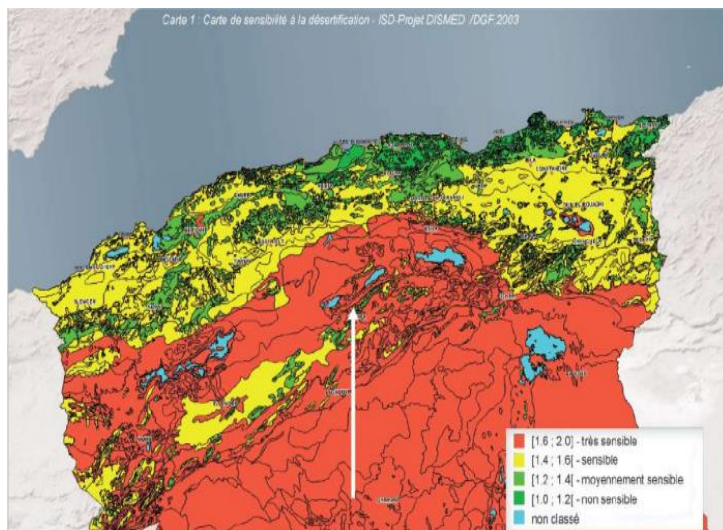
This lack of financial focus represents one of the institutional barriers to achieving the regional development equilibrium envisaged in SNAT 2030, particularly since agricultural and rural development is crucial for diminishing the divides between core urban centers and peripheral regions. A comparison with nations such as Morocco and Mauritania reveals significant disparities in expenditure priorities, illustrating the necessity for Algeria to reconsider its financial framework to encourage more regionally focused investments.

SNAT updates: revisions and current issues.

The ongoing actualization of SNAT includes new issues such as the energy transition, digital revolution, and climate resilience. The most striking revisions are: 1/ *Urban Design*: Facilitating balanced urban system by building new cities, consolidating small and medium towns, and developing backward regions, particularly of

the South and High Plateaus. This relieves pressure from coastal cities and promotes balanced regional development (Hadji & Feloussia, 2025, p. 216).2/ *Urban and Rural Management*: Generating best use of land and ecological conformity in urban planning. Local authorities play a vital role in adapting projects to feasibility and sustainability criteria, while sector policies rationalize public services (Benzerra et al., 2012, p. 50). And 3/ *territorial Programming*: SNAT employs Territorial Programming Spaces (EPT), Attractiveness Poles (PA), Integrated Industrial Development Zones (ZIDI), and new cities to distribute growth across the nation, with the objective of bringing economic and social benefits to all regions (Ferdj, et al., 2023, p. 512).

Figure N° 5: Map of sensitivity to desertification - ESD-DISMED Project / GCF 2003



Source: Ministry of the Interior, n.d, p10)

Figure 5 highlights the richness of Algeria's biodiversity and its varied ecosystems. The country boasts remarkable physiographic diversity, encompassing coastal zones, fertile plains, the Tell Atlas Mountain range, expansive steppe highlands, the Saharan Atlas, vast sandstone formations, extensive Saharan plateaus, and the rugged mountainous regions of the central Sahara. These diverse natural features serve as vital reservoirs of biodiversity and form some of the most striking landscapes in the area. Despite their ecological importance, these ecosystems face growing threats due to the rapid pace of demographic and economic transformations. Urban expansion and developmental activities exert considerable pressure on natural environments, often compounded by the decline of traditional practices that once played a key role in conserving these landscapes.

Assessment of the Socio-Economic Environment and Knowledge Economic requirements

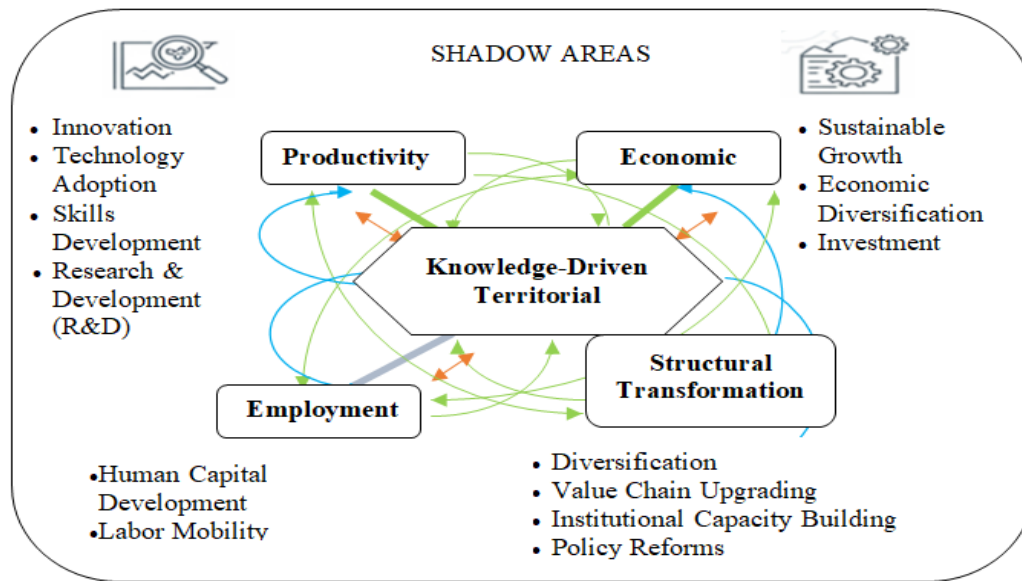
The recent discovery of some 15,000 "shadow zones" across Algeria, which are facing rapid socio-economic shifts, highlights the urgent need for a new development strategy (Tiliouine, 2022, p. 347). A requires a revised approach to effectively tackle the systemic issues that have led to the creation of these marginalized areas. A new strategy is needed to address existing disparities by enhancing productivity, promoting innovation, and fostering equitable growth across all regions. Figure 6 shows the various components of the knowledge-driven territorial development.

Algeria's economy has a history of being heavily dependent on hydrocarbons, a reliance that has masked underlying issues of low productivity and insufficient diversification (Abdellaoui, 2022, p. 80). This dependency on oil and gas revenues has created a vulnerable economic structure, making the country susceptible to fluctuations in global prices (Negm & ElZein, 2024, p. 178).

Structural Barriers to a Knowledge Economy

Knowledge driven territorial development model shows the four pillars which give explanatory ingredients for the shadow areas (Fig. 6).

Figure N° 6: A Knowledge-Driven Territorial Development Model

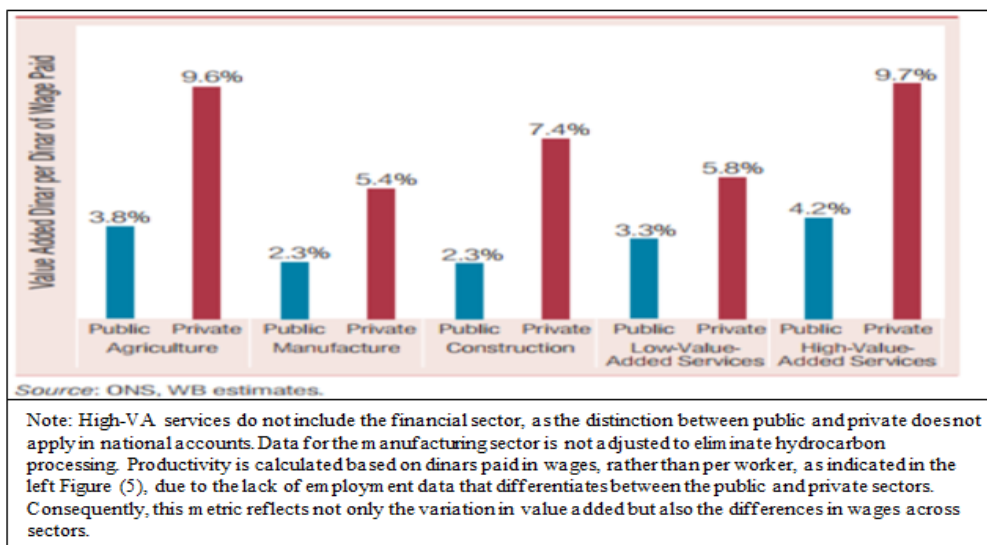


Source: the authors

The analysis points to three main structural barriers hindering a transition to a knowledge-based economy:

Public vs. Private Sector Disparity: Addressing the challenges in Algeria's 'shadow zones', or marginalized areas, requires a deeper understanding of the structural weaknesses within the country's economy, such as high unemployment and over-reliance on oil and gas revenues (Azoui & Chakri, 2024, p. 129). A critical component of this analysis is the comparison of the public and private sectors (Layachi, 2001, p. 35), as their differing productivity levels have a significant impact on job creation, economic vitality, and regional development.

Figure N° 7: Analysis of Public and Private Sector Productivity



Source: (World Bank, 2025, p. 14)

Figure 7 from the World Bank's 2025 Algeria Economic Update offers valuable insight into the productivity gaps between public and private enterprises across key sectors. It illustrates a distinct and consistent trend of higher productivity in Algeria's private sector compared to its public sector. When evaluated as Value Added per Dinar of Wage Paid, the findings indicate that private companies exhibit significantly greater efficiency across all major industries. In particular, the productivity in the private sector is more than twice that of the public sector in Agriculture, Manufacturing, and High-Value-Added Services. This difference is even more striking in the Construction sector, where private sector productivity exceeds public productivity by more than

three times. This prevalent disparity highlights a significant systemic problem: the lack of effectiveness in public enterprises, which often lead key industries and serve as primary employers, particularly in more underdeveloped regions. The stagnation and limited prospects in numerous "shadow zones" can be directly attributed to the subpar performance of these public entities and a weak, underdeveloped private sector lacking the scale and dynamism needed to foster sustainable growth and generate high-value jobs.

Misalignment of Employment and Productivity: To fully grasp the systemic issues in Algeria's "shadow zones," it is essential to analyze the structural shifts in the labor market and their subsequent effect on productivity. (Zerkak, 2024, p. 155). This diagram examines the link between shifts in employment and changes in economic efficiency. Analyzing these dynamics helps explain why some communities and areas might experience limited opportunities and persistent economic stagnation, even amid wider employment changes.

International Performance Gap: To fully appreciate Algeria's socio-economic problems and the challenges of its "shadow areas" (Ferdj, 2024, p. 12), it's crucial to place the country's performance within a global context. Comparing Algeria's employment structure and productivity trends to those of other nations helps to pinpoint vulnerabilities and underscores the urgent need for structural reform (Aghrout & Bougherira, 2004, p. 84). This comparative analysis is instrumental in elucidating the persistent peripheralization of specific regions. The findings indicate a fundamental incongruence between their existing economic models and the imperatives of contemporary, inclusive growth.

Published figures reveal a significant reliance on hydrocarbon exports, which contrast sharply with the more diversified economic models of many developed and developing countries. This lack of diversification makes Algeria's economy particularly vulnerable to fluctuations in global oil and gas prices. While Algeria's agricultural sector saw a record-high annualized productivity growth of 7.5%, its labor productivity still lags other key sectors, such as construction and high-value-added services. This implies a burst of unfinished agricultural modernization, i.e., shed labor but not necessarily absorbed into higher-productivity sectors. The bottom panel emphasizes the structural problem: Algeria's labor employment is heavily concentrated in Domestic Services (47.6%) and Public Services (10.4%), which, as the top panels indicate, are generally low-productivity sectors. Relative to the target distribution of employment in the developed economies, Algeria has a lower share of employment in Manufacturing and a higher share in such low-productivity activities. This structural imbalance, with a large portion of the labor force concentrated in low-value economic activities, is a fundamental cause of the limited opportunities and economic stagnation plaguing Algeria's marginalized regions.

Socio-Economic Analysis of the "Shadow Areas" policy:

The educational Situation

Understanding the social and economic challenges faced by Algeria's 'shadow regions' requires an examination of key development indicators. Among these, education is foundational to human development (Benrouina & Malki, 2023, p. 98), as it is crucial for both poverty reduction and sustained economic growth. Evaluating the level of financial dedication to essential social services is crucial. Table 2 indicates that Algeria, in comparison to its regional counterparts, exhibits a notable and ongoing commitment to financing the education sector, leading to a considerable improvement in its performance metrics.

Table N°2: Educational Expenditure: National Commitment vs. Regional Peers

Country	Percentage of GDP spent on education	Percentage of government expenditure on education
Saudi Arabia	7.8 (2020)	18.8 (2021)
Tunisia	7.3 (2016)	22.7 (2015)
Algeria	7.0 (2020)	15.4 (2022)
Morocco	6.8 (2020)	16.9 (2021)

Kuwait	6.6 (2020)	11.9 (2020)
Oman	5.4 (2019)	12.2 (2020)
State of Palestine	5.3 (2018)	17.7 (2019)
Iraq	4.7 (2016)	14.0 (2016)
United Arab Emirates	3.9 (2020)	11.7 (2020)
Djibouti	3.6 (2018)	14.0 (2018)
Jordan	3.2 (2021)	9.7 (2021)
Qatar	3.2 (2020)	8.9 (2021)
Egypt	2.5 (2020)	12.3 (2020)
Comoros	2.5 (2015)	13.4 (2015)
Bahrain	2.2 (2020)	9.3 (2022)
Mauritania	1.9 (2020)	10.4 (2022)
Lebanon	1.7 (2020)	9.9 (2020)
Somalia	0.3 (2019)	4.4 (2021)
Sudan	NA	12.5 (2021)

Source: (ESCWA, 2024)

It presents a comparative analysis of education expenditure, indicating both its proportion of GDP and the share of overall government spending allocated to education. Algeria demonstrates a strong commitment to financing education, dedicating 7.0% of its GDP in 2020 and 15.4% of its budget in 2022 to this sector. In terms of GDP investment in education, Algeria surpasses Morocco, ranking third behind Saudi Arabia and Tunisia, which reflects its intention to prioritize education within its budgetary framework. This suggests that the issues facing the education sector, crucial for achieving regional fairness, may not predominantly stem from insufficient overall funding. The considerable domestic investments highlighted in the table should align with the objectives of SNAT 2030. The emphasis shifts from 'how much funding is available' to 'how effectively the funds are allocated' among different regions. To mitigate regional inequalities, the considerable financial resources earmarked for education must be effectively distributed to enhance infrastructure and in shadow areas (like the Sahara and High Plateaus), rather than concentrating efforts solely on larger urban centers.

According to Boudjella (2025), a nation's investment in education is a fundamental driver of economic and social advancement. The data consistently demonstrate a robust correlation between a nation's public education spending as a percentage of its GDP and key economic outcomes, including GDP growth, workforce productivity, and economic stability.

Table 3. Government Expenditure on Education in Algeria (2013-2024)

Category	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Percentage of Government Expenditure (%)	17.6	16.5	16.1	16.1	17.6	15.6	16.0	16.5	16.1	13.1	13.3	14.4
Percentage of GDP (%)	6.7	6.5	6.2	6.5	5.7	5.8	5.6	6.2	5.5	4.7	5.6	5.6

Source: (UNESCO Institute for Statistics, 2021, p. 2)

Government spending Between 2013 and 2024, government spending on education in Algeria, as a share of total government expenditure and GDP, fell overall. (table3). While the percentage of government expenditure allocated to education fluctuated at 17.6% in 2013 and 2017, it dropped as low as 13.1% in 2022. As a percentage of GDP, education expenditure dropped from 6.7% in 2013 to as low as 4.7% in 2022 before improving. The overall downward trend of the indices suggests a potential reduction in the financial priority given to the education sector during the last decade. The decline is particularly troubling in the context of addressing socioeconomic disparities in underserved areas, where sufficient funding for educational infrastructure, resources, and staff is essential for improving access and quality. Poor, long-term investment may exacerbate existing imbalances and hinder efforts to provide equal opportunity in education, thereby limiting social mobility and economic prospects in such deprived communities.

Completion rate: A crucial metric for assessing the effectiveness of an educational system is the completion rate, which quantifies the proportion of a student cohort that successfully finishes a given level of education (Elov, 2025). The analysis of these rates reveals the system's capacity to retain students and facilitate their academic progress (Ammam, 2018). Table 4 presents the completion rates for primary, lower secondary, and upper secondary education in Algeria, offering a comprehensive overview of the educational system's performance during the specified period.

Table 4. Completion Rate in Algeria (2013-2024)

Level of Education	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Primary Education (modeled data)	93.7	93.9	94.1	94.3	94.5	94.7	95.0	95.3	95.6	95.9	96.1	96.4
Lower Secondary Education (modeled data)	59.1	60.5	61.9	63.4	64.8	66.0	67.1	68.2	69.4	70.4	71.5	72.6
Upper Secondary Education (modeled data)	34.1	35.4	36.7	38.0	39.2	40.3	41.6	42.9	44.4	46.1	47.8	49.4

Source: (UNESCO Institute for Statistics, 2021, p. 3)

The data on completion rates for primary, lower secondary, and upper secondary education in Algeria from 2013 to 2024 reveals a consistently positive trend across all three levels. The primary education completion rate, based on modeled data, showed a steady increase from 93.7% in 2013 to 96.4% in 2024. This high rate suggests that most students who start primary school in Algeria are completing it. Similarly, the lower secondary completion rate has shown robust growth, rising from 59.1% in 2013 to 72.6% in 2024. The most significant improvement, however, is observed in the upper secondary completion rate, which nearly doubled from 34.1% to 49.4% over the same period. This continuous upward trend indicates that the Algerian education system has been increasingly effective at retaining students and helping them progress through different levels of education. While these figures point to a strong national effort, it is critical to consider how these averages translate into shadow areas. The high national completion rates might mask significant disparities, as students in marginalized regions may face greater challenges, such as inadequate infrastructure, a shortage of qualified teachers, and higher dropout rates, which could be masked by more robust performance in urban centers.

Out-of-School Rates: The out-of-school rate is a potent metric for gauging the inclusivity and fairness of an educational system, as noted by Delprato and Frola (2022). By revealing the percentage of school-age children who are not enrolled, this indicator exposes systemic challenges such as poverty, limited access to schools, and other social obstacles to attendance (Kearney et al., 2023). This statistic helps pinpoint disparities and identify the unique barriers vulnerable communities face (table 5).

Table 5. Out-of-School Rate in Algeria (2013-2024)

Level of Education	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Primary Education (modeled data)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lower Secondary Education (modeled data)	5.0	4.0	4.0	3.0	3.0	3.0	4.0	4.0	4.0	5.0	5.0	5.0
Upper Secondary Education (modeled data)	23.0	23.0	24.0	24.0	23.0	20.0	18.0	17.0	17.0	18.0	18.0	18.0

Source: (UNESCO Institute for Statistics, 2021, p. 3)

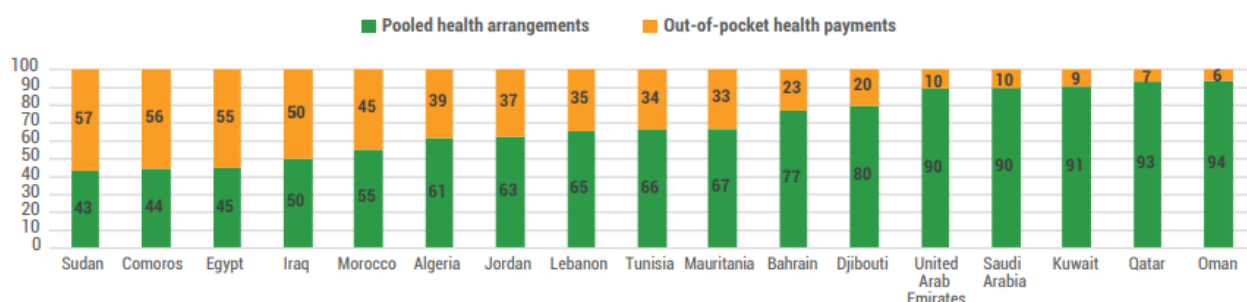
The out-of-school rate data for Algeria from 2013 to 2024 (table 4) show varying trends across different educational levels. The primary education out-of-school rate remained consistently low at 1.0% throughout the entire period, indicating nearly universal enrollment and retention at this level. This success suggests that primary education is highly accessible nationwide. For lower secondary education, the rate fluctuated, initially declining from 5.0% to 3.0% before rising again to 5.0% by 2022. This rebound suggests that while initial progress is made, challenges in retaining students at this level persist. Most notably, the upper secondary out-of-school rate saw a significant and consistent decline from 23.0% in 2013 to 18.0% in 2019, with the rate stabilizing thereafter. This decline indicates improved retention and a greater proportion of students continuing their education. However, despite this positive trend, the rate for upper secondary school remains relatively high, suggesting that a substantial number of adolescents are still not in school. For an analysis of shadow areas, these national figures are crucial. While the low primary out-of-school rate is encouraging, the higher rates at the secondary level may be disproportionately concentrated in marginalized regions where economic factors, geographic isolation, and lack of adequate school facilities contribute to a greater likelihood of students dropping out, thereby widening the educational gap with more developed regions.

Social services challenges

A comprehensive review of institutional challenges should go beyond immediate investment to include financing for essential social services, which are fundamental to achieving equitable regional growth. The lack of adequate public financing for healthcare, for instance, highlights ongoing systemic issues in the allocation of resources. High out-of-pocket health expenses in less developed regions disproportionately affect their residents, thereby reinforcing the very disparities that SNAT 2030 seeks to address.

Figure 8 depicts the financing structure of health expenditures across different countries, offering a visual representation of the budgetary commitment to pooled public spending compared to direct citizen payments:

Figure N° 8: Health Expenditures by Financing Scheme, 2021



Source: (ESCWA, 2024)

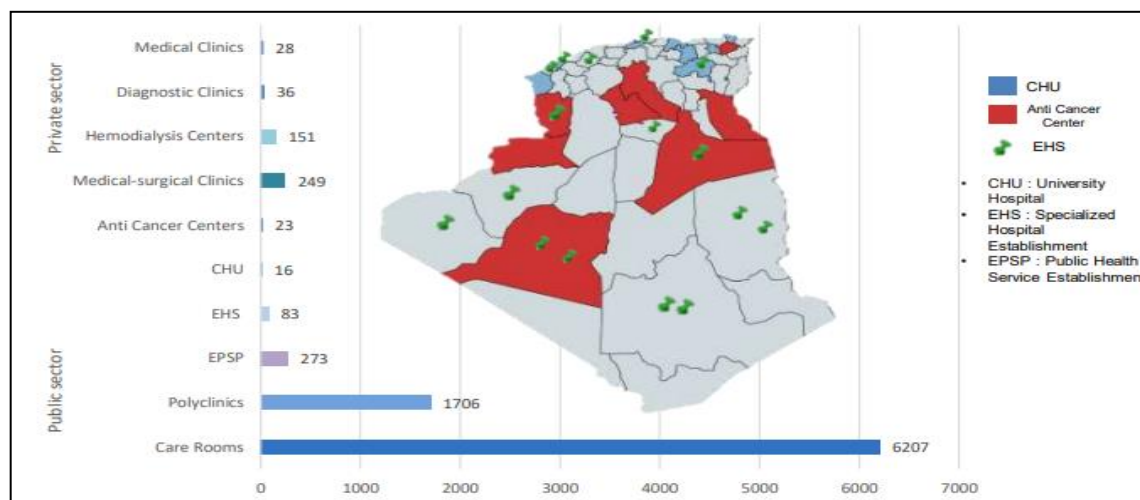
The bar chart above displays health spending by financing scheme in 2021, distinguishing between Pooled Health Arrangements (green) and Out-of-pocket (OOP) Health Payments (orange). According to data from Algeria, 39% of overall health expenditures are financed through out-of-pocket payments, while 61% is funded through pooled arrangements. This figure is significantly higher than that of many neighboring countries, such as the UAE, Saudi Arabia, Kuwait, and Qatar, where OOP payments account for 10% or less of the total.

Algeria's considerable reliance on OOP payments highlights a significant financing constraint within the public service framework. Although pooled financing systems are effective in promoting equity and universal coverage, nearly 40% dependence on direct payments from citizens places a substantial financial burden on households. This issue is particularly acute in the High Plateaus and remote regions, where income levels are generally lower and access to specialized care is already limited by geography. As a result, the current health financing model undermines efforts to reduce territorial disparities, making essential social services less accessible and less secure for populations in impoverished areas. To effectively implement SNAT 2030, it is crucial to strategically shift towards improving pooled financing to ensure health security and foster genuinely inclusive regional development.

Healthcare Infrastructure

A comprehensive examination of Algeria's healthcare sector, including both public and private facilities, is essential for understanding the distribution of healthcare infrastructure and its impact on regional disparities (Abdelhamid & Lifa, 2025). This is particularly important for addressing the challenges faced by marginalized communities, often referred to as "shadow areas" (Oukil, 2024). The accompanying figure provides a detailed view of Algeria's healthcare infrastructure, highlighting significant regional and sectoral disparities and serving as a key tool for socio-economic evaluation.

Figure N° 9: Algerian healthcare infrastructure



Source: (Kherri & Mahi, 2025, p. 1)

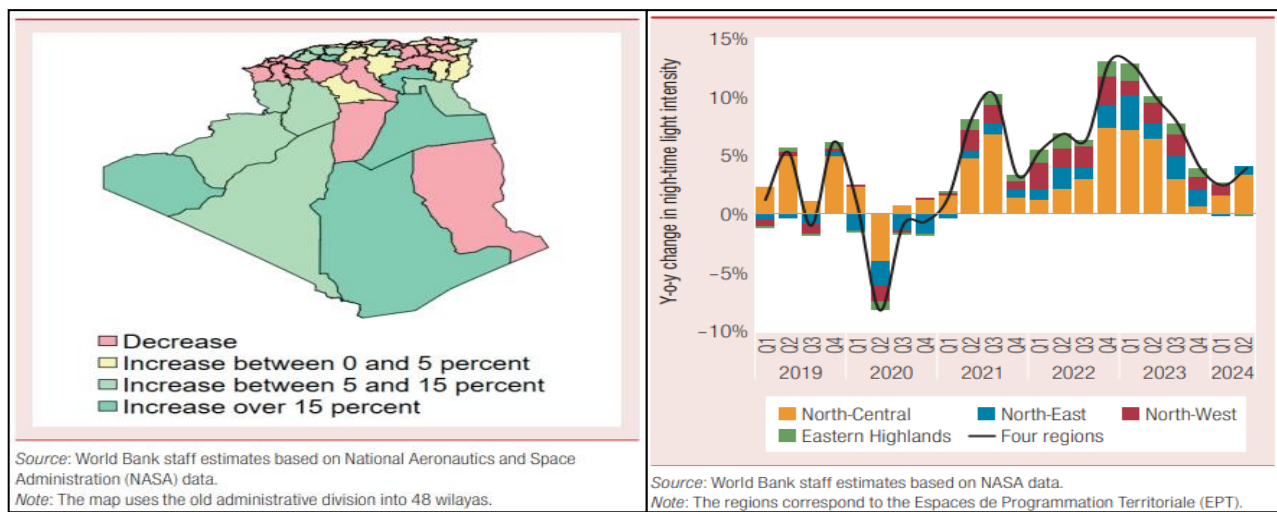
Figure 9 highlights the striking inequality of Algeria's healthcare infrastructure, revealing a major imbalance between the public and private sectors, as well as uneven distribution across regions. Most of the country's healthcare system is comprised of the public sector, which has more than 1,700 polyclinics and 6,200 care rooms that provide widespread, though basic, medical services. The purpose of this widespread network is to help people in "shadow areas" and other underserved communities. The map shows a remarkable concentration of highly specialized facilities in the center. University Hospitals (CHU) and Anti-Cancer Centers are largely located in the northern, more urban provinces. For example, while the north is dotted with a high proportion of specialist centers, the vast southern regions only boast a limited number of EHS centers and an acute deficit of CHU and Anti-Cancer Centers. Patients in rural or low-income areas must travel long distances and incur significant costs to access specialized medical care. However, there is a high prevalence of Medical-surgical

Clinics and Hemodialysis Centers in the private sector, which reflects market-driven priorities towards more profitable services rather than an all-inclusive, equitable distribution. Even when basic healthcare is available, specialized medical care is often out of reach for many people, particularly undocumented or marginalized populations. The lack of investment in these areas increases health inequality.

Empirical Evidence of Territorial Imbalances and Uneven Growth

Achieving the ultimate objective of equitable regional development, as planned in SNAT 2030, necessitates the direct empirical investigation of existing territorial disparities. The following analysis uses proxy indicators of economic activity to reveal the heterogeneous nature of non-hydrocarbon growth across Algerian territories, highlighting the practical challenge of concentrated economic activity.

Figure N° 10: Diversity and Regional Impact on Economic Expansion



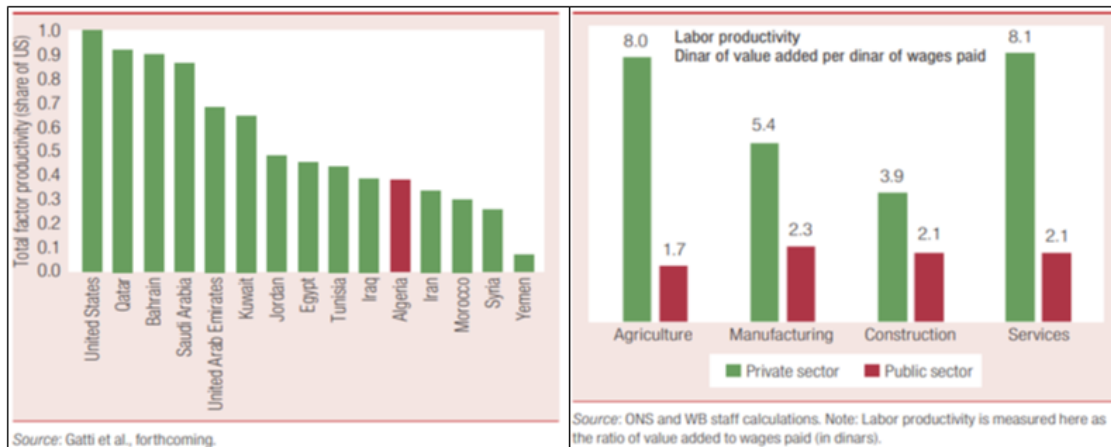
Source : (World Bank Group, 2024)

Figure 10 provides strong empirical evidence of heterogeneous growth within the country's economy, which illustrates the annual variation in nighttime lights intensity (a commonly recognized indicator of economic activity and infrastructure progress), clearly shows that growth is inconsistent. The most significant increases in activity are found in certain geographic areas, whereas large parts of the country, especially in the South, experienced little to no growth or even shrinkage. Such geographic polarization is a precise illustration of the long-standing territorial disparities that SNAT 2030 seeks to rectify. On the other hand, the map portion of Figure 9 places this regional divergence into context by segmenting the regional contribution to non-hydrocarbon growth. The figures clearly show that the North-Central region is the main, and often sole, reliable driver of this expansion. This concentration reflects a systemic failure in the effective implementation of even spatially equitable planning. The relative underperformance of other areas, such as the Eastern Highlands, provides concrete evidence of how the centralized economic model still distorts the national objective of driving development in periphery regions. The lack of empowerment in this area indicates that the existing institutional frameworks concerning decentralization are insufficient to effectively promote local economic development.

Institutional Bottlenecks: Productivity and Structural Inefficiencies

Apart from financial strategic setting and geographical imbalance, effective national planning execution requires a high degree of institutional and economic effectiveness. The productivity figures enlightened us concerning the structural inadequacies that hinder the effective application of resources to equitable development outcomes.

Figure N° 11: Low Productivity and Sectoral Inefficiency



Source : (World Bank Group, 2024)

Figure 11 indicates a structural flaw; Algeria's Total Factor Productivity (TFP) is significantly lower than that of its regional counterparts. As an indicator of economic efficiency and innovation, TFP indicates that the Algerian economy struggles to achieve optimal output from its inputs. This weakness suggests system-level institutional shortcomings, including second-best regulatory regimes and inefficient bureaucratic processes, that impair the country's capacity to achieve efficient long-run growth. On the other hand, the portion of Figure 11 decomposes this inefficiency further by comparing public and private sector labor productivity in major non-hydrocarbon industries. In all four sectors with available measurements (Agriculture, Manufacturing, Construction, and Services), the productivity of public firms is significantly lower than that of private firms. For instance, the private agriculture sector creates 8.0 dinars in value added for each dinar spent on wages, while the public sector produces only 1.7 dinars.

Future Scenario Analysis for SNAT 2030

The current regional inequalities, structural obstacles, and financial priorities position the fulfillment of SNAT 2030 goals at a crucial juncture. Considering the current development path and the potential for decisive policy action, three distinct scenarios for the future of balanced territorial development in Algeria are projected (table 6).

Table 6. Prospective Paths for Equitable Regional Growth

The analysis projects three distinct Dimension	Scenario 1: Optimistic (Integrated and Resilient Development)	Scenario 2: Realistic (Muddling Through with Sectoral Gains)	Scenario 3: Pessimistic (Structural Stagnation and Deepening Polarization)
Governance & Efficiency	Successful implementation of fiscal and administrative decentralization. Institutional constraints are resolved, leading to significant improvement in public sector's productivity and service quality.	Moderate, inconsistent reforms. Decentralization is progressive but constrained by persistent centralization pressures and a substantial public/private sector productivity gap.	Complete failure of reforms and stagnation of decentralization efforts. Low public sector productivity exacerbates fiscal strain and institutional limitations.
Territorial Equity	National goal of balanced development achieved. "Shadow areas" are effectively revitalized. Economic	Disparities are only marginally reduced through selective large-scale projects. The North-Center	Regional polarization intensifies. Economic and social segregation accelerates, leading to

	dynamism successfully diversifies beyond the North-Center, resulting in equitable infrastructure and improved social cohesion.	retains structural dominance, and "shadow regions" experience stagnant and unequal growth.	social and political unrest. Growth is strictly concentrated in coastal areas.
Policy Application	Instruments of SNAT and PATs are fully coordinated and uniformly applied across all nine programming regions, driven by strong political commitment.	Application of SNAT framework is inconsistent and often influenced by short-term political cycles, hindering comprehensive integration.	Sectoral planning methodology fails to align national objectives with local realities, rendering SNAT ineffective.
Resource Management	A resilient, knowledge-based economy emerges. Proactive environmental strategies effectively address water scarcity and energy challenges, ensuring long-term sustainability and competitiveness.	Water and energy challenges are addressed reactively , focusing on immediate expenditures. The economy remains highly vulnerable to global energy market fluctuations.	Environmental and resource challenges (water shortages, energy volatility) remain unchecked , leading to ecological crises that overwhelm the state's capacity for intervention.

Source: Developed by the authors

DISCUSSION AND ELEMENTS OF CONCLUSION

The results emphasize the pivotal function of SNAT, the National Land Use Plan, in influencing spatial development across Algeria's nine territorial programming zones. These zones serve as the practical framework for executing territorial policies, while the PATs (Territorial Planning Programs) function as essential tools for converting strategic goals into localized initiatives. The incorporation of SNAT Dashboard as a technical monitoring instrument further enhances the governance and assessment mechanisms tied to spatial planning.

Algeria's territorial composition, located at the intersection of various geographical and cultural influences, has historically developed through periods of both advancement and disruption. This intricate historical context highlights the importance of spatial planning as a tool for development and a method for fostering national unity. The analysis indicates that spatial planning has not only mirrored but has also played a role in shaping the course of territorial development, often steering it along distinct and at times divergent routes.

Currently, Algeria is at a crucial crossroads, confronting multifaceted challenges that require a coordinated and forward-thinking planning strategy. The findings reveal that a sectoral approach is inadequate. Rather, there is a distinct necessity for an integrated strategy that can promote equitable, sustainable and competitive growth across all regions. SNAT, in its present form, establishes itself as a strategic benchmark that crosses sectoral limits, facilitating alignment between national aims and territorial realities.

Additionally, the research underscores the rise of significant environmental and resource-related challenges, particularly regarding water scarcity and energy management, which could lead to tensions or ecological crises shortly. These issues are exacerbated by increasing global interdependence and the unpredictable nature of long-term energy markets, calling for adaptive governance and strategic foresight. Considering these findings, Algeria's shift towards a knowledge-based economy appears to be a vital avenue for enhancing its international position. The capability to foresee global developments and internal challenges through effective spatial planning will be essential in bolstering the country's resilience and competitiveness on the global stage.

To conclude, this study emphasizes the crucial importance of integrated spatial planning in fostering equitable and sustainable development throughout Algeria. Although considerable advancements have been made in

establishing strategic territorial priorities through frameworks such as SNAT and PATs, the ongoing disparities between well-developed urban areas and neglected rural or peripheral zones, often called shadow regions, continue to be a significant issue. These shadow regions, marked by insufficient infrastructure, limited access to essential services, and economic exclusion, underscore the urgent necessity for inclusive planning policies that ensure every territory is supported. The effectiveness of national development relies not only on bolstering competitive urban centers but also on rejuvenating these disregarded areas by improving connectivity, enhancing local capabilities, and guaranteeing fair access to resources and opportunities.

As Algeria progresses, prioritizing the vulnerabilities of shadow regions must be a key focus in the execution of SNAT. Closing the divide between central and peripheral areas is vital not just for social cohesion but also for unlocking the full potential of the national territory. An effective, balanced, and resilient territorial development strategy will acknowledge and elevate all regions, especially those in the shadows. In this respect few promising paths can be considered: 1/ *Reinforce Integrated Territorial Governance*: Improve collaboration between national strategies (SNAT) and local action initiatives (PATs) to enhance consistent application across all nine territorial programming zones. 2/ *Prioritize Inclusive Development in Underdeveloped Areas*: Create targeted programs to address disparities between urban hubs and underserved rural or remote regions through infrastructure improvements, service delivery, and economic development. 3/ *Embrace a Cross-Sectoral and Flexible Approach*: Move beyond sector-based planning by creating cross-sectoral teams that integrate economic, social, cultural, and environmental priorities within spatial planning frameworks. 4/ *Enhance Environmental and Resource Management Institutions*: Build resilience in water and energy sectors by utilizing advanced technologies and regional collaboration, embedding sustainability principles in all levels of planning. 5/ *Create a Knowledge-Driven Territorial Development Model*: Encourage investments in research, education, and innovation clusters throughout all regions, ensuring even underdeveloped areas can engage in and benefit from a knowledge-based economy and finally *Adopt Inclusive and Resilient Development Metrics*: Broaden SNAT Dashboard to monitor economic results and aspects of social cohesion, resource sustainability, and territorial fairness.

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