

*New Cities and Environmental Protection in Algeria*Ouafi Meriem^{1,*}¹ University of Algiers 1 (Algeria),m.ouafi@univ-alger.dz

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ملخص:

تعاني المدن بصفة عامة والمدينة الجزائرية بصفة خاصة من مجموعة من المشاكل البيئية، حيث يتم التوسع العمراني على حساب المساحات الفلاحية، إضافة إلى البناء العشوائي. لقد تم إنشاء المدن الجديدة بموجب القانون رقم 02-08 المتعلق بشروط إنشاء المدن الجديدة، الهدف من إنشاءها، هو خلق توازن اقتصادي اجتماعي وبشري، ضمن السياسة الوطنية الرامية إلى تهيئة الإقليم وتنميته المستدامة. الهدف من هذا المقال هو دراسة مدى تأثير بناء المدن الجديدة على البيئة الأولية، من خلال وصف الحالة الأولية للموقع، وتبيان تأثير انجاز المدينة عليه مع عرض المقاييس البيئية التي ينبغي على الإدارة احترامها. الكلمات المفتاحية: تنمية مستدامة؛ تهيئة الإقليم؛ دراسة التأثير؛ مدن جديدة؛ مقاييس بيئية.

Abstract:

Cities, particularly Algerian ones, face significant environmental challenges, including urban sprawl at the expense of agricultural land and the proliferation of informal settlements. In response, new cities have been established under Law No. 02-08, which defines the legal framework for their creation. This initiative aims to achieve socio-economic and demographic balance within Algeria's broader territorial planning and sustainable development policies. This study examines the environmental implications of constructing new cities by assessing the baseline conditions of selected sites, analyzing the impact of urban development, and identifying the environmental standards that must be upheld by authorities.

Keywords: Environmental impact assessment; Environmental standards; New cities; Sustainable development; Territorial planning.

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I. INTRODUCTION

Environmental law is multidimensional, encompassing natural, human, and urban aspects. Its foundational tenets prioritize the safeguarding and regulation of human settlements to harmonize urban expansion with ecological preservation. The phenomenon of urban sprawl—manifested in unchecked city development and accelerated demographic growth—poses significant threats to various environmental aspects. Such expansion frequently encroaches upon agricultural zones and fertile plains, exacerbating environmental degradation. Concurrently, unplanned urbanization and the proliferation of informal settlements (e.g., substandard tin-based housing) engender public health hazards.

Within the Algerian context, urban centers have grappled with systemic pollution, a challenge amplified by post-independence population surges and the nation's inherent environmental vulnerability. To address these issues, the Algerian legislator enacted Law No. 02-08 on May 8, 2002, establishing the legal framework for the creation of new cities, supplemented by subsequent regulatory texts. This legislative initiative seeks to rectify spatial and socio-economic imbalances by fostering equitable access to employment, housing, and infrastructure, while aligning with national territorial planning and sustainable development strategies. Consequently, the creation of new cities serves as an adaptive response to contemporary environmental and urban challenges.

The planning and execution of new cities involve multiple stakeholders, including the state as the principal regulator, local collectivities (municipalities and wilayas), and private-sector actors. A dedicated legal framework governs these cities, notably through the establishment of a New City Authority, responsible for overseeing urban development and spatial planning. Hence, the article poses the following question: To what extent are environmental protection regulations considered in the development of new cities?

To explore this issue, this article draws upon the environmental impact assessment (EIA) of the Sidi Abdellah New City project. Conducted by accredited environmental consulting firms under the supervision of the Ministry of the Environment, this assessment serves as a fundamental tool for assessing the environmental sustainability of urban projects.

II. Conceptual Framework of New Cities in Algeria

Algeria's national policy for establishing new cities is rooted in multifaceted socio-environmental imperatives, positioning these urban projects as instruments of national development and public utility.

1. Rationale for Adopting a New Cities Policy in Algeria

Algeria's ecological fragility has resulted in uneven distribution of economic activities and wealth creation, compounded by high population density in the northern regions. Traditional urban planning methods proved inadequate for remedying these structural imbalances, thus prompting the establishment of a national policy for creating new cities.

1.1. Ecological Fragility in Algeria

This fragility arises from a confluence of climatic, topographical, and human factors, compounded by inequitable access to natural resources.

- **Climate:** Despite its Mediterranean classification, Algeria experiences significant rainfall disparities. Most of the national territory suffers from chronic precipitation deficits, with only the northern region receiving moderate rainfall.
- **Topography:** Algeria's tripartite geomorphology—the Tellian Atlas, High Plateaus, and Sahara—dictates stark regional disparities. The Tellian coastal zone possesses Mediterranean agro-climatic advantages, including fertile alluvial plains. Conversely, the High Plateaus, a transitional zone between the Tell and Sahara, face acute water scarcity despite vast arable expanses. The Sahara, encompassing 87% of Algeria's landmass, is characterized by extreme aridity, hyperthermia, with annual rainfall not exceeding 100 mm (Ministry of Regional Planning and Environment, 2005, pp. 35–37).
- **Unequal Resource Distribution:** Climatic and topographical heterogeneity has engendered spatial inequities in resource allocation. The Tellian region, though agriculturally productive, occupies only 4% of the national land area. The High Plateaus, despite their agricultural potential, lack sustainable water infrastructure, while the Sahara's holds fossil groundwater reserves, yet its potential for large-scale agriculture is severely limited (Ministry of Regional Planning and Environment, 2005, p. 37).

- **Human Factors:** Global population growth—projected to reach 8.2 billion by 2025 (UN estimates)—parallels Algeria's demographic surge. According to a 2001 report by the Ministry of Land Planning and Environment, Algeria's population density tripled over four decades, with most citizens concentrated in the northern Tellian and coastal regions. This hyper-concentration strains urban carrying capacity portending urbanization as the principal challenge of the 21st century (Ministry of Regional Planning and Environment, 2001, pp. 1–3).

III. Concentration of Population Density in the Northern Regions

The high concentration of population in Algeria's northern areas has triggered a range of social and economic issues. These include an urban housing crisis, the spread of unemployment in cities, and the deterioration of infrastructure, facilities, and public services. Other complications include declining potable water supplies for urban centers, as well as increased urban encroachment on agricultural land (Bachir, 2004, p. 235).

IV. Challenges of Outdated Urban Planning Systems in Algeria

In 1995, Algeria convened its first-ever national debate to evaluate the country's urban planning policies. This dialogue was initiated through a preliminary report—commonly referred to as the Algeria Tomorrow document—proposed by the Minister of Public Works and Urban Planning. In its critique, the report underscored major shortcomings in the legacy urban planning initiatives, emphasizing that public authorities had become increasingly concerned about extensive urban expansion in major northern cities, notably around the Algiers metropolitan region. The existing urban planning instruments proved inadequate for regulating this rapid growth.

During this period, urban policy choices had also exacerbated disparities between northern and southern areas of the country. In response to these challenges, decision-makers sought to prioritize the containment of urban sprawl, the conservation of ecological systems, and the balanced development of the national territory. The state promoted new cities as a unique solution, viewing them as organized urban hubs designed to channel expansion away from the major northern centers and decentralize housing and economic activities. The ultimate objective was to encourage development from northern regions toward the High Plateaus and the south (Ministry of Regional Planning and Environment, 2001, p. 4).

Despite the government's position that new cities offered a viable remedy for urban problems, many observers argued that this approach alone was insufficient. They maintained that simultaneous interventions, such as rehabilitating older neighborhoods and renewing existing urban frameworks, remained essential (Bastie & Désert, 1991, p. 340). These observers also highlighted the need for additional measures, including controlling unregulated urban growth in large cities and investing in internal regions to curb rural-urban migration.

V. Legal Adaptations for New Urban Developments

The formulation of legal standards results from a complex preparatory process, which translates political aspirations into binding regulations. These regulations are intended to reflect the expectations of society and are articulated through various legal instruments—plans, laws, decrees, or decisions—as dictated by constitutional procedures. This blurs the traditional boundaries between legal mandates and political objectives (Pellet, 1978, p. 41).

Article 5 of Law No. 02-08, concerning the establishment of new cities, categorizes the creation of new urban centers as projects of "national interest" within the prevailing legal framework. Legal scholar Nacer Labed describes "public interest" as actions taken to meet public needs or deliver services to citizens, with the determination of such needs resting in the hands of public authorities. These authorities assess necessary services and are empowered to reallocate private land for public utility (Labed, 2011, pp. 150–151).

Notably, no legislative text explicitly defines public interest projects or provides clear-cut criteria to identify or prioritize them. The only reference is found in Article 13 of Law No. 90-29, concerning development and urban planning, which requires incorporating *projects of national significance* into urban planning tools such as the Master Plan for Development and Urban Planning (PDAU) and Land Occupancy Plans (POS). These projects are ultimately specified by national programs.

France has adopted a comparable approach, refraining from directly defining public interest projects. Nevertheless, Article 49(5) of its Urban Planning Law enumerates certain operations

deemed to fall under this category. Moreover, Decree No. 84-35 stipulates that once classified as public interest, a project proceeds without a public investigation and is merely announced in the press. This legal framework authorizes the state to grant land use permits and designate agreed-upon development zones within the project perimeter (Caillaud & Aubert, 2007, p. 30). In environmental matters, legal jurisprudence generally interprets public interest projects as those safeguarding natural or cultural heritage—such as the creation of nature reserves, the classification of historical sites, mitigating major environmental risks, or optimizing natural resources (Prieur, 2001, p. 710). This examination of the classification of new city developments within "public interest" projects raises questions about the transparency and inclusiveness of the decision-making processes given the fact that the state unilaterally defines these projects, relying primarily on its own vision and specialist consultations.

VI. Planning Instruments for Algeria's New Cities

The enactment of Law No. 02-08 introduced a specialized legal framework distinct from general urban planning regulations, establishing new institutional mechanisms specifically designed for the governance of new cities. These mechanisms include the New City Authority and the New City Master Plan.

1. The New City Authority

The Sidi Abdellah New City Authority was formally established under Executive Decree No. 06-305 (Executive Decree No. 06-305, 2006), which defines its legal status, institutional structure, and operational functions.

1.1. Sidi Abdellah New City Authority: Structure and Legal Nature

Article 2 of decree 06-305 classifies the New City Authority as a public industrial and commercial establishment (EPIC), granting it legal personality and financial autonomy.

Historically, classical liberal states adhered to a minimalist governance model, limiting state intervention to administrative functions and public order maintenance while entrusting economic activities to private enterprise. However, the economic transformations triggered by the Great Depression of 1929 and World War II prompted liberal states to assume a more proactive role in industrial and commercial activities (Mahyou, 1979, p. 452). This shift necessitated the creation of public industrial and commercial establishments (EPICs), a model that integrates state governance with market-oriented management.

In analyzing the evolution of urban governance structures, legal scholar Madani Zitoun Safar contrasts the governance models of former and current urban development authorities.

1.1.1. Former Urban Development Entities

Historically, the governance of new cities was entrusted to public urban planning establishments (*établissements publics d'aménagement*), classified as public industrial and commercial entities. These entities functioned as state-managed collectives of assets and personnel, primarily responsible for executing industrial and commercial activities to meet public needs. Additionally, they served as strategic advisory bodies, influencing urban development decisions.

The governing board of a public urban planning establishment was composed of:

- Sectoral directors from the relevant wilaya (province),
- Elected representatives from municipal councils,
- Presidents of affected municipal councils,
- The wali (governor), who presided over the board.

1.1.2. Current Urban Development Authorities

The contemporary legal framework redesignates these entities as New City Authorities (*autorités de la ville nouvelle*), which remain classified as public industrial and commercial establishments (EPICs). Their scope of responsibilities is more expansive, encompassing:

- Urban planning and land management, overseeing developed and undeveloped properties as well as all real estate assets essential for new city development,
- Real estate and commercial transactions, covering movable and immovable assets and financial operations aligned with the authority's urban planning objectives,
- Land administration and property management,
- Archiving and regulatory documentation, ensuring compliance with legal requirements.

The board of directors of a New City Authority includes:

- A representative from each relevant ministry,

- A representative from the Ministry of the Interior and Local Authorities,
- The wali (governor) of the concerned province,
- The president of the provincial assembly,
- The presidents of affected municipal councils,
- Additional technical experts and consultants, appointed to provide specialized input.

The Minister of Regional Planning (*Ministre de l'Aménagement du Territoire*) serves as chairperson of the board, while the Director General of the authority is appointed by presidential decree based on a recommendation from the Minister (Zitoun Safar, 2011, p. 110).

2. Mandates of the New City Authority

Pursuant to Article 7 of Law No. 02-08, the New City Authority is vested with a set of core responsibilities aimed at ensuring orderly and sustainable urban development. These mandates include:

- Acquisition and Development of Properties: Securing and improving both built and unbuilt land, as well as other necessary real estate assets, to facilitate the systematic expansion of the new city.
- Commercial and Financial Operations: Undertaking commercial, real estate, and financial transactions consistent with the Authority's overarching mission to foster growth and innovation in urban settings.
- Real Estate Management: Administering and regulating property in accordance with the pertinent legislative framework.
- Right of Preemption: Exercising this right, as established under Article 15 of Law No. 02-08, to acquire properties deemed critical to the new city's development.
- Allocation of Land: Transferring or assigning land earmarked for residential, artisanal, or commercial purposes, in line with the procedures outlined in the Book of Easements.
- Data Collection and Dissemination: Gathering, analyzing, and publishing statistical, scientific, technical, and economic information relevant to the Authority's objectives, while preserving archives and studies in accordance with applicable legislative and regulatory provisions.
- Infrastructure Reception and Integration: Overseeing the commissioning and acceptance of essential infrastructure, facilities, and urban development projects within the new city.

VII. The New City Master Plan

The establishment of any new city demands a squarely conceived master plan that aligns with existing urban planning regulations and broader land development strategies. Far from functioning in isolation, the New City Master Plan is designed to dovetail with national policies.

1. Development Process of the New City Master Plan

Under Executive Decree No. 11-76 of February 16, 2011 (Official Gazette No. 11, 2001), the conditions and procedures governing the drafting, preparation, and approval of the New City Master Plan are clearly delineated. The New City Authority bears the primary responsibility for formulating the master plan, while accredited urban planning firms, certified by the Minister of Urban Planning, carry out its technical development in accordance with the Territorial Planning and Sustainable Development Act.

Once a draft plan is completed, it is submitted for review to the relevant local authorities, who issue opinions through formal deliberation. The draft is also examined by provincial executive councils, with an additional requirement—established by Law No. 11-10 of June 22, 2011—that any project likely to impact the environment or public health within a municipality's jurisdiction must obtain the approval of the Municipal People's Assembly, unless the project is classified as serving the public interest (Law No. 11-10, 2011, Art. 114).

Following this stage, an interministerial committee under the auspices of the Minister of Urban Planning evaluates the proposed plan and provides recommendations. In the event of disagreement among committee members, arbitration sessions are convened to resolve outstanding issues. Ultimately, the master plan is validated through an Executive Decree, based on a proposal from the Minister of Urban Planning.

2. Relationship Between the New City Master Plan and Other Urban Planning Instruments

The New City Master Plan is tightly integrated into Algeria's overarching territorial development policy. Article 3 of Law No. 02-08 emphasizes that the creation of new cities

contributes to the national objective of rebalancing urban structures while promoting sustainable territorial growth. In accordance with this provision, the National Territorial Planning Scheme (SNAT) identifies both the potential locations for new cities and the functions they are intended to fulfill.

Further, Article 13 of Law No. 90-29 on Urban Planning and Development stipulates that major projects undertaken by the state, regional authorities, and public entities must be incorporated into the Master Plan for Urban Development (PDAU) and the Land Use Plan (POS). Projects deemed of national interest automatically take precedence within these strategic planning tools.

From these legal provisions, it is evident that the New City Master Plan derives its foundational framework from the National Territorial Planning Scheme, which articulates the state's territorial vision. In this context, Law No. 10-02 of June 29, 2010 (Official Gazette No. 61, 2010) delineates four principal objectives of the SNAT:

1. Fostering Sustainable Development of the national territory,
2. Rebalancing Regional Dynamics,
3. Enhancing Territorial Attractiveness and Competitiveness, and
4. Ensuring Regional Equity in urban and infrastructural expansion.

These objectives are operationalized through twenty regional action programs. For example, the sixth program designates Sidi Abdellah and Bouinan as new cities to curb migration toward coastal regions and reinforce balanced spatial distribution, whereas the eighth program identifies El Ménée and Hassi Messaoud as new urban hubs to bolster the southern urban network.

To translate the SNAT's guidelines into action, Regional Territorial Planning Schemes (SRATs) are employed as implementation mechanisms at the local and regional levels. In turn, the New City Master Plan must be harmonized with the PDAU and POS, ensuring consistency with national and regional urban strategies.

VIII. Environmental Impact Assessment in the Development of New Cities

The establishment of new cities entails profound environmental implications, necessitating a structured evaluation of their potential effects. This section explores the concept of Environmental Impact Assessment (EIA) from both a jurisprudential and legislative perspective.

1. Jurisprudential Definition of Environmental Impact Assessment

Legal scholar William Kennedy defines Environmental Impact Assessment (EIA) as both a science and an art, emphasizing that it extends beyond mere procedural or technical evaluation. Instead, it serves as a strategic planning tool designed to anticipate, assess, and integrate environmental considerations into the development process. From a technical standpoint, Kennedy underscores that environmental analysis plays a critical role in decision-making, ensuring that potential environmental impacts are systematically identified and addressed.

Other definitions similarly emphasize EIA's function as a comprehensive evaluation mechanism that identifies both positive and negative environmental effects—whether tangible or intangible, direct or indirect—arising from large-scale development initiatives. The primary objective is twofold: to mitigate adverse environmental consequences while reinforcing beneficial impacts, thus safeguarding both ecological integrity and the long-term viability of development projects.

Additionally, EIA is defined as a methodological framework for assessing a project's potential impact on natural ecosystems, biological diversity, economic structures, and social conditions. It employs quantitative and qualitative assessments to weigh environmental risks against anticipated benefits, ensuring that environmental considerations serve as a determinative factor in selecting among policy alternatives.

From a regulatory standpoint, EIA is further defined as a mandatory prerequisite for certain public or private construction and land-use projects, ensuring that potential environmental harms and benefits are thoroughly assessed before project implementation (Mokdad, 2012, p. 143).

2. Legislative Definition of Environmental Impact Assessment (EIA)

Algerian environmental legislation offers no explicit legal definition of Environmental Impact Assessment (EIA). Instead, Law No. 03-10 on Environmental Protection within the Framework of Sustainable Development merely lists, in Article 15, the categories of activities subject to EIA requirements, without providing a formal definition.

Further clarification appears in Executive Decree No. 07-145, promulgated to implement Article 15 of Law No. 03-10. Although this decree outlines the objectives of an EIA, it likewise

refrains from giving a precise definition. Article 2 of the decree specifies that an EIA must:

- Assess whether a proposed project is appropriate for its environmental context;
- Evaluate both the direct and indirect environmental impacts of the project;
- Verify that environmental protection measures are duly incorporated into the project's design and implementation.

By contrast, the now repealed Executive Decree No. 90-78 (Official Gazette No. 10, 1990), which previously regulated EIAs, provided a clear, albeit broad, definition. It characterized EIA as a preliminary procedure applicable to all major public works, infrastructure, and land-development projects. The decree underlined that such ventures, by virtue of their scale and potential ramifications, may cause direct or indirect harm to:

- Public health;
- Agriculture and natural areas;
- Wildlife and vegetation;
- Historical landmarks and cultural heritage;
- Community welfare and environmental harmony.

From these legislative provisions, EIA emerges as a multidisciplinary, proactive assessment designed to evaluate the ecological consequences of proposed development projects in a thorough and systematic manner. It functions as a preventive safeguard, ensuring that possible environmental impacts—ranging from planning and design to licensing and execution—are identified, appraised, and effectively mitigated.

IX. Environmental Impact Assessment of the Sidi Abdellah New City Project: A Case Study

The inaugural Environmental Impact Assessment (EIA) for Sidi Abdellah New City was conducted in 2001 by the Canadian firm DESSAU SOPRIN. Subsequently, modifications to the study area and adjustments to key infrastructure projects—including road networks, urban facilities, and wastewater management systems—necessitated an updated EIA. In November 2010, the Algerian Public Utilities Study Company (SAETI) undertook this revision, producing three core documents:

1. A baseline assessment that characterizes the initial environmental conditions of the site,
2. An impact analysis evaluating the project's effects on the original setting,
3. A set of environmental measures the authorities must observe during construction and development.

1. Environmental Impacts of Sidi Abdellah's Development Projects

An effective environmental evaluation of Sidi Abdellah's urban expansion requires identifying the primary infrastructure initiatives and examining their respective impacts on the environment (Établissement de la Ville Nouvelle de Sidi Abdellah, 2010).

1.1. Key Projects in Sidi Abdellah New City

- Road network construction,
- Wastewater treatment development,
- Centers for medical, pharmaceutical, IT, and electronics research and training,
- A large-scale urban park.

1.2. Environmental Impacts of These Initiatives

a. Road Network Construction

Building new roads necessitates vegetation clearance, resulting in a substantial loss of plant cover. The use of heavy machinery alters soil structure and may temporarily disrupt local ecosystems and residential life. As vehicular traffic increases, noise pollution and carbon emissions intensify. Road runoff can degrade surface water quality through contaminants such as oils, grease, and particulate matter. In the long term, expanded road infrastructure affects regional mobility patterns and land use, potentially reshaping local socio-economic dynamics.

b. Wastewater Treatment System

Constructing a wastewater treatment facility may involve expropriating land, thereby displacing current land uses. While expropriation is legally sanctioned, it can impose psychological and social burdens on affected individuals. Wastewater treatment systems also generate solid and liquid waste, with domestic refuse arising from administrative offices and industrial waste from maintaining construction equipment. Despite improving water quality and public health, the facility's high energy consumption contributes to environmental strain, and handling hazardous chemicals—such as chlorine—requires robust safety measures. Additionally,

odor emissions can adversely affect community well-being.

c. Research and Training Centers

Facilities dedicated to medical, pharmaceutical, IT, and electronics research inherently produce liquid and solid waste that, if improperly managed, can pollute surface and groundwater. Accidental leaks pose further risks to water resources. These centers also increase noise levels, dust emissions, and vehicular congestion. Managing hazardous materials demands stringent precautions to prevent ecological damage and health hazards.

d. Large-Scale Urban Park

Establishing the park requires space for storing construction materials, office facilities, and employee accommodations, all of which generate liquid and solid waste. Negligent site management can degrade soil quality and compromise surface and groundwater, particularly if contaminated water is stored inadequately. However, an operational park enhances local biodiversity, absorbing pollutants and reducing noise pollution. It also elevates scenic quality and provides employment opportunities through landscaping and maintenance, thereby contributing to community well-being.

2. Environmental Measures for Sustainable Urban Development

To mitigate the environmental challenges arising from large-scale urban initiatives, authorities must adopt a comprehensive set of preventive strategies (Établissement de la Ville Nouvelle de Sidi Abdellah, 2010), supported by a robust environmental monitoring system and a clearly defined follow-up program.

2.1. Preventive Measures

Preventive measures should be tailored to the specific environmental components at risk, namely the physical, biological, human, and atmospheric environments.

a. Physical Environment

- Restrict work in areas highly susceptible to erosion or landslides.
- Ensure no subsurface instability persists after construction.
- Use machinery suited to the terrain, minimizing disturbance and soil compaction.
- Shorten construction timelines in environmentally sensitive locations.
- Regulate vehicle movement to prevent unnecessary damage.
- Maintain unobstructed water flow, avoiding any alteration of natural drainage patterns.
- Clear construction debris promptly upon project completion.
- Regularly inspect and service all equipment, particularly those containing oils or other potential pollutants, to prevent accidental spills.

b. Biological Environment

- Minimize deforestation when developing infrastructure.
- Schedule vegetation clearing to occur outside critical wildlife nesting and breeding seasons, whenever feasible.
- Burn organic materials from land clearing in designated areas.

c. Human Environment

- Limit vehicular traffic in work zones to reduce disruption and hazards.
- Ensure operators and drivers comply with established safety standards.
- Remediate contaminated sites after construction, paying special attention to areas earmarked for tourism or future development.
- Adhere to comprehensive waste management protocols, disposing of solid waste in compliance with sanitation regulations.
- Supervise the use of oil-based or hazardous materials to prevent leaks.
- Prioritize local labor recruitment.
- Restrict construction activities to 7:00 a.m. – 7:00 p.m. to curb noise pollution and protect public well-being.
- Verify that land expropriation strictly follows public utility expropriation laws and is minimized through alternative land-use solutions.
- Notify affected landowners or farmers before initiating work on their property.

d. Atmospheric Environment

- Apply dust suppressants to limit particulate emissions.
- Keep vehicles and machinery in optimal condition to reduce noise and exhaust pollution.
- Use high-quality fuel and modern engines to lower harmful emissions.
- Implement noise control measures by employing equipment designed to operate with

minimal noise.

- Establish special procedures to protect any archaeological finds discovered during construction.

3. Environmental Monitoring System

An environmental monitoring system ensures that all preventive measures are correctly implemented and that construction activities remain compliant with environmental standards. This system must be active:

- Before construction, requiring the project developer or contractor to verify that all preventive measures have been integrated into the initial design and contractual obligations.
- During construction, ensuring that the developer incorporates environmental considerations into a formal monitoring plan, formulated in coordination with an environmental inspector.
- Prior to groundbreaking, designating an environmental supervisor to oversee compliance with legislative and regulatory requirements. Each team member must understand their roles and responsibilities in upholding these standards.

4. Environmental Follow-Up Program

The environmental follow-up program functions concurrently with project execution, monitoring how environmental conditions evolve in real time. Its core objectives are to:

- Confirm the effectiveness of preventive measures, especially where initial EIA findings noted uncertainty.
- Assess unanticipated impacts, ensuring that alternative mitigation steps can be rapidly deployed if initial measures prove insufficient.
- Focus on environmentally sensitive elements (e.g., threatened habitats or high-value ecosystems) most likely to be affected by construction.

X. Conclusion:

The concept of new cities has been globally embraced as a strategic approach to urban expansion. While these developments are not always designed with environmental sustainability as a primary objective, the improvement of human settlements inherently involves ecological considerations.

The environmental assessment of Sidi Abdellah New City highlights the dual impact of urbanization—facilitating economic and social growth while simultaneously posing environmental risks. The project has brought tangible benefits, including educational institutions, healthcare facilities, employment opportunities, and housing. Additionally, it has contributed to enhancing the fishing industry in Zeralda, preserving historical sites, and restoring the churches in Maalema and Rahmania. Nevertheless, such projects inevitably generate environmental disturbances, including pollution, water contamination, loss of natural habitats, and resource depletion.

While such environmental consequences are intrinsic to large-scale urban projects, certain decisions—such as the selection of Sidi Abdellah’s location—could have been avoided. The new city was constructed on fertile agricultural land within the Mitidja Plains, an area already experiencing rapid urban encroachment. This decision violates the provisions of Law No. 02-08, which explicitly prohibits the establishment of new cities on agricultural land.

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