

Contributions of Environmental Governance to Building a Sustainable Developmental Model in Algeria

إسهامات الحوكمة البيئية في بناء عالم تنموي مستدام بالجزائر

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Abstract:

The discourse on the environment has become a self-evident imperative, emerging as an intrinsic value and a fundamental human right. This right entitles individuals to utilize environmental resources within a pollution-free ecosystem, while ensuring transparency and accountability. Amid the irrational and unsustainable depletion of natural wealth and resources, environmental governance has arisen as a strategic imperative adopted by governments and organizations. It advocates for its institutionalization as a contemporary developmental paradigm aimed at preserving the environment, mitigating its degradation, and simultaneously achieving sustainable economic and social development. Algeria is no exception to this trend; it seeks to establish effective mechanisms for environmental protection, maintaining ecological balance and continuity, thereby fostering comprehensive developmental sustainability for future generations. This sustainability is fundamentally rooted in strengthening environmental management and attaining high environmental performance.

Keywords :Environmental governance, sustainable development, environmental protection law, official national actors.

الملخص:

أصبح الحديث عن البيئة من الأمور المسلم بها ، إذ أضحت قيمة في حد ذاتها وحقا من حقوق الإنسان الأساسية التي تمنحه حق استغلال الموارد البيئية وسط نظام بيئي خالي من التلوث و التلويث مع ضمان الشفافية والمساءلة . وفي ظل استنزاف الثروات والموارد البيئية بشكل غير عقلاني وغير رشيد برزت الحوكمة البيئية كخيار استراتيجي تتبناها حكومات ومنظمات تطالب بتكريسها باعتبارها نموذج تنموي معاصر هادف للحفاظ على البيئة والتقليل من تدهورها مع ضمان تحقيق تنمية اقتصادية واجتماعية على نحو مستدام والجزائر ليست بمنأى عن توفير آليات هادفة لحماية البيئة والحفاظ على توازنها واستمرارها مما يخلق استدامة تنموية شاملة للأجيال المستقبلية أساسها تعزيز الإدارة البيئية وتحقيق الأداء البيئي الجيد.

الكلمات المفتاحية: الحوكمة البيئية، التنمية المستدامة، قانون حماية البيئة، الفواعل الوطنية الرسمية .

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Introduction:

The technological and industrial advancements experienced worldwide across various sectors have exerted profound negative impacts on the environment, rendering it a primary concern for all nations, including Algeria, which has accorded it particular attention. These impacts manifest in pollution and the irrational depletion of resources and natural wealth, necessitating the emergence of environmental governance to preserve ecological balance and continuity on one hand, and to secure the rights of future generations through the realization of sustainable development on the other. The latter has evolved into a vital objective and a crucial strategic demand, serving as a creative foundation upon which nations and peoples rely for their economic renaissance.

The core problem of this study revolves around the contributions of environmental governance to constructing and ensuring developmental sustainability in Algeria. This is achieved by highlighting the legal instruments dedicated to this purpose and the role of official actors in Algeria in guaranteeing its realization. The problem is formulated as follows:

How can the contributions of environmental governance be institutionalized as a strategic option for achieving developmental sustainability in Algeria, and what are its primary threats?

To conduct a study that duly considers the aforementioned research problem, the general hypothesis of the study has been formulated as follows: Environmental governance contributes to building a sustainable economic and developmental model in Algeria.

The significance of this research paper is specifically manifested in the following:

- Familiarizing readers with the theoretical framework of the study's variables;
- Elucidating and clarifying the close interrelationships between environmental governance and sustainable development;
- Examining the legal frameworks capable of activating the role of environmental governance in practice to ensure sustainable development, while demonstrating the role of official actors in Algeria in institutionalizing this process.

In alignment with the nature of the topic and to address the posed research problem, the descriptive method has been deemed the most appropriate approach for conducting this study. This method entails describing the subject under investigation through a rigorous scientific methodology and depicting the findings reached. The selection of this method stems from the nature of the study's topic and its capacity to process the data presented within the research.

These comprise a series of studies addressing the same topic or similar research problems. Below is an overview of selected studies that have examined this subject:

1. (Ali Abbas & Boubchich, 2022), in their article titled "Environmental Governance and Its Relationship to Sustainable Development: A Conceptual and Theoretical Study," aimed to demonstrate the importance of governance as an environmental approach to achieving sustainable development, undertaken by the highest state authorities as the primary actor. The study arrived at the following conclusions:
 - Governance provides numerous opportunities for the rational utilization of natural resources to attain sufficient economic, social, and environmental benefits;
 - States, international and regional environmental organizations, and civil society institutions constitute the most significant actors in environmental

governance, playing a pivotal role in concluding agreements and enacting international, national, and regional laws related to the environment and sustainable development.

2. (Bouziyan & Mersli, 2022), in their article titled "The Role of Environmental Governance in Achieving Sustainable Development: The Case of the RAM Sugar Refining Industrial Enterprise in Mostaganem," sought to highlight the fundamentals of environmental governance as a pillar for realizing sustainable development amid the challenges confronting the RAM industrial enterprise in this domain. The study relied on a questionnaire distributed to department heads and concluded that the practice of environmental responsibility within the enterprise remains at a moderate stage due to the inadequate application of effective environmental governance. The study arrived at the following recommendations:

- The necessity of disseminating environmental culture and developing environmental awareness within economic institutions;
- The imperative for industrial enterprises to treat environmental responsibility as a core function among other functions, in light of the requirements for achieving sustainability.

This study is distinguished by its proposal of a scientific and practical guide for Algeria to adopt environmental governance as a strategic option for constructing a sustainable developmental model, through legislative and regulatory frameworks as well as ongoing implementation programs.

- The discussion of environmental governance and its role in achieving sustainable development emerges through the examination of each variable separately, in order to identify the connecting link between the two terms.
- Environmental governance constitutes one of the modern concepts that seek to rationalize the relationship between humans and their environment. To clarify its meaning, it is essential to examine the terms "governance" and "environment" individually, thereby elucidating this composite concept.

1. A Cognitive Approach to the Study's Terminology

The discussion of environmental governance and its role in achieving sustainable development emerges through the examination of each variable separately, in order to identify the connecting link between the two terms.

1.1- Definition of Environmental Governance

Environmental governance constitutes one of the modern concepts that seek to rationalize the relationship between humans and their environment. To clarify its meaning, it is essential to examine the terms "governance" and "environment" individually, thereby elucidating this composite concept.

1.1.1- The Concept of Governance

The term "governance" serves as a concise translation of "corporate governance." The scientifically agreed-upon translation is "the practice of sound administrative authority" (Youssef, 2007, p. 4)

Definitions of this term vary according to the perspectives of those proposing them. Linguistically, governance derives from "government," signifying the process of discipline

and control through regulatory rules to achieve rationality and prudence. It represents a comprehensive and transparent monitoring system that reinforces transparency, objectivity, and responsibility (Salameh, 2012, p. 6). Accordingly, governance is a term encompassing multiple dimensions, denoting (Taleb & Al-Mashhadawi, 2011, p. 24):

- Wisdom, which entails guidance and direction;
- Judgment, imposing control over affairs through establishing controls and restrictions that regulate behavior;
- Adjudication, requiring recourse to ethical and cultural references as well as experiences derived from prior trials;
- Arbitration, seeking justice, particularly when administrative authority deviates or manipulates the interests of stakeholders.

Institutionally, the International Finance Corporation (IFC) has defined governance as: "the system through which companies are directed and controlled" (El-Braoui, 2012, p. 6)

The World Bank defines it as: "the process of institutional development and administrative advancement of the enterprise, achieved through its expertise, proposed programs, implemented projects, and the type of technology employed" (El-Fleiti, 2010, p. 24).

Based on the foregoing, governance can be concluded to be a system of rules, mechanisms, and decisions aimed at managing, directing, and monitoring performance, thereby ensuring its quality and excellence through effective methods to achieve sustainable performance and efficient plans. It also encompasses elements that strengthen the system or institution over the long term.

1.1.2- The Concept of the Environment

The Stockholm Conference of 1972 defined the environment as: "everything that surrounds human beings in terms of phenomena beyond their will and over which they have no control, as well as the framework in which humans live, from which they obtain the essentials of life such as food, medicine, and shelter, and within which they conduct their relationships with their peers" (Hamdi, 2013, p. 83)

It has also been defined as: "everything that surrounds human beings, including living components such as plants and animals, and non-living components such as rocks, water, air, weather, and others" (Saidan, 2008, p. 6).

The Algerian legislator defined the environment in Article 4 of Law No. 03-10, relating to environmental protection within the framework of sustainable development, as consisting of: "non-biotic and biotic natural resources such as air, atmosphere, water, land, subsoil, plants, and animals including genetic heritage as well as the forms of interaction among these elements, in addition to places and natural landscapes" (Algerian Legislator, 2003, p. 10)

Accordingly, it can be stated that the term "environment" is linked in its meaning to the nature of the relationship between it and its user; hence references are made to the industrial environment, the agricultural environment, and so forth. It is a term that denotes nature in all its components including human beings, animal and plant organisms namely everything that surrounds nature, what we perceive around us, and what exists within the Earth's biosphere: air, water, soil, and living organisms, in addition to everything that human intervention has created.

1.1.3- The Concept of Environmental Governance

Given the significant environmental degradation resulting from the interaction between humans and nature whether through exploitation or human creation this has generated various conflicts between the environment and humankind. Consequently, the need arose to regulate this relationship in a manner that allows humans to utilize the environment without violating it. This is what has become known as environmental governance, which refers to the decision-making mechanisms concerned with managing environmental resources and ecological systems in more sustainable ways.

Hempel's research indicates that the emergence of environmental governance is linked to the geographical scope of states, which has proven inadequate for addressing evolving environmental issues. States have found themselves either too small or too large to effectively deal with these changes (Paterson, 1999, p. 795)

Environmental governance can be defined as: "a comprehensive principle that regulates public and private behavior toward greater responsibility and accountability for the environment. It operates at all levels, from the individual to the global, and promotes participatory leadership and shared responsibility to preserve environmental sustainability" (Salami, 2016, p. 5)

It has also been defined as: "a set of political mechanisms and financial rules that regulate efforts to protect the environment through governmental and non-governmental actors" (El-Djassir, 2010, p. 140)

Accordingly, environmental governance can be described as the body of national legislation, international agreements, and regulatory processes through which decision-makers influence environmental actions and outcomes. It enables all stakeholders to manage environmental and ecological resources in a manner that safeguards the rights of future generations to utilize them, while preserving each society's cultural and civilizational specificity.

1.2- The Concept of Sustainable Development

The concept of sustainable development represents an innovative idea in developmental thought. There is no universally agreed-upon definition of this composite term. Therefore, before addressing it, it is necessary to define the two component terms—"development" and "sustainability"—separately, and then clarify the linking relationship between them.

1.2.1- Definition of Development

Linguistically, development is defined as: "the transition from a simple and temporary state to a more complex and stable one" (Leduff, 2004, p. 270)

It is also defined as: "a comprehensive, continuous economic, social, cultural, and political process aimed at achieving ongoing progress in the lives and well-being of individuals through the contribution of all members of society, based on the equitable distribution of its returns among them" (Kacem, 2007, p. 19)

Furthermore, it is described as: "the emergence and full, comprehensive, and balanced growth of all latent potentials and energies within a given entity—whether an individual, group, organization, or government."

Based on the above, development entails increasing production, enhancing human skills to participate in the production process, and thereby advancing economic, social, and even cultural progress.

1.2.2- Definition of Sustainability

Sustainability is defined as: “the manner of achieving growth that takes into account all human dimensions—economic, social, and ethical. This cannot be realized without eliminating all forms of imbalances and disparities, whether within the same society, among its various groups, between the North and the South, or across generations” (Brodhag, 2004, p. 3)

It is also defined as: “the demand for human development through appropriate economic and social policies that render development sustainable without bequeathing economic and social debts to future generations” (El-Abidi, 2012, p. 204)

Thus, sustainability means preserving quality of life through adaptation to the environment by utilizing natural resources for the longest possible period, ensuring their availability for future generations.

1.2.3- The Concept of Sustainable Development

Sustainable development is defined as: “development that utilizes natural resources in a way that preserves them for future generations, maintains ecological integrity, does not cause degradation of environmental system elements and components, and does not disrupt the balance among them” (Dessuqi, 2009, p. 36)

It has also been defined as: “an interactive, dynamic development that undertakes to achieve harmony among its three pillars: people, environmental resources, and economic development” (Medhat & Medhat, 2017, p. 83)

Accordingly, sustainable development is development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. It assumes the conservation of natural assets for future growth and development purposes. It adds two dimensions: a qualitative one encompassing environmental quality and its relationship to quality of life, and a temporal one concerning long-term development for future generations, grounded in a sustainable foundation.

1.3-The Relationship between Environmental Governance and the Achievement of Sustainable Development

The realization of developmental sustainability has long been contingent upon strategies governed and directed by environmental governance. This is particularly true because the environmental dimension constitutes the fundamental pillar in constructing the relationship between the concepts of environmental governance and sustainable development. The achievement of the latter depends on the degree of environmental preservation, which is precisely what environmental governance seeks to accomplish. Environmental governance cannot be effectively activated to realize sustainable development except through an integrative approach among national, regional, and international actors to formulate an effective strategy based on the following (Dessuqi, 2009, p. 40):

- Enacting laws to limit pollutant emissions associated with production and to conserve available resources.
- Adopting environmental protection policies and imposing fines on those causing pollution.
- Utilizing educational and awareness-raising tools to inform the public of the necessity of safeguarding environmental integrity and cleanliness.

- Redirecting public investments and integrating environmental policy into the state's general policy.
- Fostering an environmental culture aimed at developing environmental awareness and establishing basic environmental knowledge in order to shape positive and enduring environmental behavior.

In conclusion, the achievement of development can only occur through environmental governance that advances on two feet: one being the national role played by the authorities, and the other the individual role of every person within the state.

2. Algeria's Contributions to Supporting Environmental Governance

The Algerian experience in the field of governance for achieving sustainable development has imposed upon Algeria the necessity of adopting a set of policies to improve governance indicators and realize developmental sustainability. These policies are primarily associated with the issuance of a series of legal texts for environmental protection, in parallel with activating the role of official national actors in supporting these policies. This will be clarified sequentially below.

2.1- Laws Applied for Environmental Protection in Algeria

The Algerian legislator has enacted a series of laws aimed at protecting and developing the environment to guarantee individuals' right to a clean and healthy environment, thereby supporting the right to life for current and future generations. These include:

2.1.1- The Pivotal Environmental Protection Law

Law No. 03-10 relating to environmental protection within the framework of sustainable development, which repealed the previous Law No. 83-03 on environmental protection, constitutes the cornerstone legislation in the environmental domain in Algeria. It introduced a new dimension to environmental protection by incorporating the dimensions of sustainable development into its objectives. The Algerian legislator adopted a comprehensive concept of the environment, encompassing natural, artificial, and cultural elements (Algerian Legislator, 2003).

a- Characteristics of the Environmental Protection Law: The Algerian environmental protection law is distinguished by several characteristics, summarized as follows:

- **The Scientific Nature of Environmental Rules:** Various subjects addressed by the law are predominantly scientific in character, meaning that the legislation is closely linked to scientific and technological advancements in diverse scientific fields. These advancements enable the detection of emerging harmful substances or elements (Attia, 2009, p. 29). The outcomes of scientific and technological renewal have transformed the legislator's role from that of creator of legal rules to consolidator of scientific rules established through research. Within this context, Law No. 03-10 enshrines the principles of environmental protection and development (Algerian Legislator, 2003).

b- Specificity of the Algerian Environmental Protection Law and Its Principles: The Algerian legislative experience in environmental matters has varied through the use of principles. However, the general principles endowed with legal content akin to behavioral legal rules distinguish the Algerian environmental protection law. In the 2003 environmental law, the legislator incorporated eight legal principles to activate and institutionalize new

legislative standards alongside behavioral rules. These principles are (Algerian Legislator, 2003):

- **Principle of Conservation of Biological Diversity:** Based on the necessity of preserving and protecting biological diversity from any damaging activity.
- **Substitution Principle:** Requiring the replacement of environmentally harmful activities with less hazardous alternatives, even if the cost of environmental protection increases.
- **Integration Principle:** Involving the integration of environmental protection dimensions into sustainable development frameworks when preparing sectoral plans and programs, and ensuring their implementation.
- **Preventive Action Principle:** Entailing the use of the best available techniques at reasonable cost to remedy environmental damage, as well as adopting measures to prevent the risk of serious environmental harm.
- **Precautionary Principle:** Meaning that the adoption of effective and appropriate measures to prevent the risk of serious environmental damage should not be delayed due to a lack of scientific certainty or available techniques.
- **Non-Degradation of Natural Resources Principle:** Avoiding harm to natural resources such as water, air, and subsoil, which form an integral part of the path toward sustainable development.
- **Information and Participation Principle:** Concerning every person's right to access information on the state of the environment and to participate in procedures against decisions harmful to the environment.

It is worth noting that these eight principles were introduced concurrently to address the challenge of updating environmental laws in line with sustainable scientific and technological evolution.

c- Preventive Approaches within the Environmental Law: Law No. 03-10 relating to environmental protection within the framework of sustainable development enshrines several preventive approaches for environmental protection, outlined as follows (Saidan, 2008, pp. 12-15):

- **Licensing Approach:** One of the most effective means, as it ensures prior protection before environmental infringement occurs. This approach is primarily linked to high-risk projects for the environment, particularly industrial projects and urban development works that often deplete natural resources and affect biological diversity.
- **Prohibition Approach:** Comprising two types—absolute prohibition and relative prohibition.
 - **Absolute Prohibition:** A total ban on individuals from engaging in certain activities or works due to their inherently harmful effects on the environment.
 - **Relative Prohibition:** Embodied in prohibiting certain activities that cause environmental harm unless prior authorization is obtained from the competent authorities.
- **Environmental Taxation Approach:** An economic instrument used by the state to address environmental problems, aimed at reducing pollution, encouraging sound environmental behavior, and financing environmental protection and sustainable development projects. In this regard, Algeria has introduced several environmental

fees, such as those related to solid waste and specific industrial waste, in an attempt to curb various forms of pollution and their damages.

2.1.2- Other Subsidiary Laws Related to Environmental Protection in Algeria

To reinforce the protection of environmental domains, the Algerian legislator has dedicated specific laws to each sensitive sector or resource, establishing special legal regimes for the following areas to support environmental protection and sustainable development:

a- Law on the Protection of Green Spaces: This law aims to manage and develop green spaces within the framework of sustainable development to improve the urban living environment. It also promotes the creation of green spaces and mandates their inclusion in all public and private urban and architectural projects (Algerian Legislator, 2007).

b- Law on Environmental Protection in Disaster Situations: This law seeks to prevent major hazards and manage disasters by considering risks in land use and construction, as well as establishing flexible arrangements to address disasters of natural or technological origin (Algerian Legislator, 2004).

c- Law on the Protection of Mountainous Areas: Mountainous areas are among the most fragile environmental regions due to their natural characteristics of elevation and steep slopes, requiring special planning. The legal framework for their protection in Algeria is based on Law No. 04-03 relating to the protection of mountainous areas, which aims to subject projects implemented in mountainous areas to environmental impact studies and to establish preventive measures against erosion and landslides (Algerian Legislator, 2004).

Likewise, Law No. 11-02 relating to protected areas within the framework of developmental sustainability imposes fines for violations affecting mountainous areas and their natural resources to deter transgressions and ensure compliance with legal rules governing their exploitation, including:

- Integration of the environmental dimension into developmental policies and achieving harmony between the protection of natural resources and the living conditions of populations;
- Subjecting projects in mountainous areas to environmental impact studies;
- Establishing preventive measures against erosion and landslides (Algerian Legislator, 2011).

d- Law on Protected Areas This law aims to classify protected areas, define their management and protection modalities. According to Article 4 of the same law, protected areas are classified into seven categories: national parks, natural parks, nature reserves, community reserves, species and natural sites, in addition to natural or biological corridors (Algerian Legislator, 2011).

2.2- Activating the Role of Official National Bodies in Supporting Environmental Governance in Algeria

Official national actors play an essential and interconnected role within the framework of environmental governance. It is a participatory process between central and decentralized official bodies in terms of planning or implementation to support developmental sustainability in Algeria, as clarified below:

2.2.1- Role of Central Official National Bodies

Central official bodies refer to entities responsible for making environmental decisions in the field of environmental policy without requiring delegation from another official authority,

as they are constitutionally empowered at the central level. The most prominent official national actors supporting environmental governance to build a sustainable developmental model in Algeria include:

a- Ministry of Environment and Renewable Energies: Formerly the Ministry of Environment and Environmental Resources, this ministry is headed by the Minister of Environment and Renewable Energies. It prepares supportive programs and establishes projects within its area of competence. It includes several directorates, the most important of which are:

- The General Directorate of Environment and Sustainable Development: Its primary tasks include implementing the national environmental strategy through its preparation, execution, evaluation, and improvement when necessary, in addition to the Directorate of Renewable Energy Development, the Directorate of Legal Affairs and Disputes, among others.

b- Ministries Participating in Environmental Protection A joint ministerial decree concluded between the Minister of Industry and Mines, the Minister of Commerce, and the Minister of Town Planning and Environment aims to ensure partnership among these ministries to guarantee environmental protection and support it within the framework of environmental governance (Algerian Legislator, 2014).

- **Ministry of Town Planning and Environment:** Environmentally, this ministry seeks to prevent the degradation of natural environments, landscapes, and rural civilized areas, and to combat visual pollution resulting from the scattering and spread of used plastic bags in nature.
- **Ministry of Industry:** Industrialization has negative environmental impacts; therefore, legislation has established general rules for industrial safety and environmental protection within quality and industrial protection standards (Algerian Legislator, 2001).

It is certain that these ministerial structures, alongside the ministry responsible for the environment, address sectoral issues related to their competencies for environmental protection. Other ministries are also involved, such as those of Water Resources, Tourism and Handicrafts, in addition to certain active bodies established by Algeria to strengthen environmental governance, as outlined below:

- **National Observatory for the Environment and Sustainable Development (ONEDD):**

Established by Executive Decree No. 02-115 dated 3 April 2002, under the supervision of the Ministry of Environment and Sustainable Development. This initiative arose in the context of Algeria's participation in the Rio de Janeiro Summit and the Barcelona Convention to promote environmental policies.

The Observatory is a public industrial and commercial body managed by a board of directors, an executive director, and a scientific committee. It has established a monitoring network consisting of stations that monitor environmental media, operated by a national network of laboratories and monitoring stations, primarily including: (Balatrash & Qatoush, 2018, p. 75)

- Central regional laboratory (Algiers)
- Western regional laboratory (Oran)

- Eastern regional laboratory (Constantine)
- Southern regional laboratory (Constantine)

The Observatory's core functions include:

- Establishing monitoring networks, measuring pollution, and safeguarding natural environments and managing them;
- Collecting environmental data and information from national institutions and specialized bodies;
- Processing environmental data and information;
- Initiating studies aimed at improving knowledge of environmental media and pressures exerted;
- Participating in conducting these studies, disseminating environmental information, and distributing it.

2.2.2- Role of Official National Bodies at the Local Level:

Discussions of sustainable development within the framework of environmental governance require its effective realization through the involvement of decentralized official bodies in preparing, implementing, and monitoring plans, alongside local communities, which serve as the decentralized base for managing public affairs at the local level.

a- Role of the Wilaya (Province) in Environmental Protection: This refers to all efforts aimed at stimulating and revitalizing the local economic sector and contributing to achieving environmental sustainability through a series of measures, including (Algerian Legislator, 2012):

- Issuing licenses to bodies and individuals to carry out works such as establishing waste treatment facilities;
- Preparing, monitoring, and implementing the national regional planning scheme;
- Taking measures to achieve, purify, and treat water, protect forest properties in the context of combating desertification, soil protection, and rehabilitation;
- Providing technical and financial assistance to municipalities within the wilaya.

b- Role of the Municipality in Environmental Protection: The municipality is a basic territorial community endowed with legal personality and financial autonomy. It contributes to environmental protection through (Algerian Legislator, 2011):

- Territorial planning and fostering economic and social development while ensuring improvement of citizens' living environment;
- Overseeing environmental protection from the irrational exploitation of water resources;
- Treating wastewater, managing waste, and maintaining recreational sectors and beaches.

3. Algeria's Support Programs for Environmental Governance as a Foundation for Building a Sustainable Developmental Model

Since environmental governance is viewed as the foundation for building a sustainable model in Algeria and achieving economic diversification with environmental dimensions, the country has initiated several reforms and initiatives aimed at institutionalizing its principles, beginning with the establishment of a legislative and regulatory framework—as previously

indicated—and extending to supportive programs for developmental sustainability, identified sequentially below.

3.1- Program for the Development of Sustainable Consumption and Production in Coordination with the SwitchMed Program Funded by the European Union

The development of the national action plan falls within the decisions of the United Nations Organization for Sustainable Development, which considered consumption and production as fundamental pillars of sustainable development along three main axes that Algeria has sought to support (Mansouri & Bouassida, 2020, pp. 290-293):

- Governance of sustainable consumption and production patterns through the development of means and mechanisms enabling continuous improvement, while providing diversification tools—including renewable energies in particular—agricultural development, and food security assurance;
- Waste and residue management: Based on reducing waste generation in industrial, agricultural, and service sectors, minimizing household waste sent to landfills, and developing recovery and recycling processes.

3.2- Program for Water Resources Governance and Water Security Algeria has sought to transition from climatically volatile traditional sources toward building sovereign production capacity based on seawater desalination. The government has successfully laid strong foundations for this strategy, becoming capable of supplying 42% of drinking water needs through desalinated water by 2025, with a target of 60% by 2030. This has been achieved through mechanisms such as (Brodhag, 2004, p. 6):

- Developing a comprehensive plan to integrate 100% renewable energy into the operation of desalination plants, including support for research and development to reduce operational costs, of which energy constitutes 30%;
- Accelerating the pace of constructing tertiary treatment plants, ensuring water quality compliance for irrigation purposes, and adapting agricultural irrigation networks to accommodate treated water, aiming to significantly increase reuse rates toward one billion cubic meters;
- Supporting partnerships between research centers, universities, and the National Seawater Desalination Company to ensure local manufacturing of plant components and transform acquired expertise into export capacity.

Conclusion:

Environmental governance constitutes an essential element in formulating and building sustainable developmental mechanisms, particularly through its contribution to achieving economic growth while providing protection mechanisms for the environment and its resources. In this context, Algeria, like other countries, has adopted green programs and policies under supportive legislative frameworks. However, these efforts remain in need of continuous development. The main findings reached are as follows:

- Environmental governance initiatives are fundamentally based on integrating developmental objectives with effective regulatory frameworks centered on environmental protection.
- The irrational use, depletion of natural resources, and decline in biological diversity have imposed on Algeria the necessity of directing its actors toward activating

environmental governance as an effective mechanism for preserving the environment and attaining sustainable development goals.

- The path of environmental governance in Algeria toward developmental sustainability is in its early stages, as the Ministry of Environment in Algeria was established in 2001 and serves as the primary official actor in formulating and implementing national environmental policies.
- The success of national environmental governance depends on providing legal and institutional mechanisms that ensure coordination among various official and non-official actors, with the necessity of clarifying roles and responsibilities.
- The role of official national actors at the local level remains weak compared to the requirements of current challenges in Algeria within the framework of local governance across its political, economic, and environmental dimensions.
- Ensuring developmental sustainability in Algeria can only be achieved through environmental governance that simultaneously takes into account the national role played by the authorities and the individual role of every person in the state.

The most important recommendations are as follows:

- The necessity of a rigorous national policy that re-examines the legal and institutional framework within which central and local official national actors operate.
- The imperative of investing in renewable energy resources, as they are sustainable and environmentally friendly.
- Algeria should not link environmental governance for achieving developmental sustainability to electoral cycles; rather, the state must play a developmental role that imposes developmental formulation in the form of state projects.
- Involving the private sector in the sustainable developmental program would provide strong impetus alongside the public sector.
- The necessity of activating awareness days capable of creating an environmental culture in Algeria aimed at developing environmental awareness, establishing basic environmental knowledge, and shaping positive and enduring environmental behavior.

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