

# THE CHALLENGE OF PROTECTING HUMAN AND ENVIRONMENTAL SECURITY IN LIGHT OF TECHNOLOGICAL DEVELOPMENT IN ALGERIA.

DR. BENAMRANE SOUHILA<sup>1</sup>, DR. DJEBAILI SABRINA<sup>2</sup>

<sup>1</sup>University of Abbes Laghrour khenchela, Faculty of Law and Political Sciences, State Laboratory for Health and Food Community Security (Algeria).

<sup>2</sup>University of Abbes Laghrour khenchela, Faculty of Law and Political Sciences, Laboratory for legal, political and legitimate research (Algeria).

The Author's Email: souhila.benamrane@univ-khenchela.dz<sup>1</sup>, sabrina.djebaili@univ-khenchela.dz<sup>2</sup>

Received: 05/2023

Published: 09/2023

## Abstract:

*This study focuses on the implications of technological development on environmental and human security. When it comes to environmental protection, it is closely related to safeguarding life in general and human security in particular. Providing these protections is considered among the most fundamental values for any society at both the international and national levels. Through the study, it becomes evident that Algeria has adopted a national procedural and legal strategy for the beneficial use of alternative energy sources, especially renewable energies, as an indicator of environmental protection and a shift towards a green economy.*

**Keywords:** environmental pollution, renewable energy, technological development, environmental and human security.

## INTRODUCTION:

The issue of protecting human rights and ensuring their respect for all is one of the most critical matters at both the international and national levels. It encompasses the needs and demands that must be met for all individuals in any society, without discrimination, such as the right to life, health, food, information, and participation. Additionally, it includes the right to access a clean environment. Environmental protection is a contemporary issue that concerns humanity as a whole and all nations. Protecting the environment is a global requirement because the safety of society members and the stability of life anywhere on Earth depend on a clean and balanced environment. It is also one of the most important international and national issues, as emphasized by the constitutional founder through the constitutional amendment of 2020, which states in Article 64: "Every citizen has the right to a healthy environment within the framework of sustainable development."

With humanity entering the era of information technology and new technologies, feeling that these sciences and technologies provide them with the expected peaceful, easy, and clean life, it is not surprising that the development of information technology in our societies poses a real environmental challenge that must be confronted.

What are the consequences of technological advancement on the environment? And how can we overcome this significant environmental impact without giving up on the technology and the many services it offers us?

To address this issue, we have divided the study into several components:

1. The relationship between technological advancement and environmental pollution, as well as the right to physical safety.
2. Environmental risks associated with technological development.
3. Mechanisms for environmental protection in the context of technological advancement.

### **1-The relationship between technological advancement and environmental pollution as well as the right to physical safety:**

Human dignity is the foremost principle in any social system and is the primary goal of legal systems. The concept of human dignity presupposes a certain level of environmental quality. This

extends beyond mere biological survival and includes meeting all fundamental human needs. Therefore, it is essential to shed light on the concept of environmental pollution and highlight the impact of technological advancement on the environment and, consequently, on physical safety.

### **1: The relationship between technological advancement and environmental pollution as well as the right to physical safety:**

Human dignity is the foremost principle in any social system and is the primary goal of legal systems. The concept of human dignity presupposes a certain level of environmental quality. This extends beyond mere biological survival and includes meeting all fundamental human needs. Therefore, it is essential to shed light on the concept of environmental pollution and highlight the impact of technological advancement on the environment and, consequently, on physical safety.

#### **Definition of the environmental pollution:**

The environmental pollution is defined linguistically as the harmful impact on the environment and the living organisms within it, resulting from the entry of pollutant materials, whether solid, liquid, or gaseous, either directly or indirectly. In the lexicon, to pollute the environment means to introduce dirt and contaminants into it. Environmental pollution in language is the degradation of the atmosphere and marine waters due to the presence of chemical and atomic emissions, and it is the pollution of the land from nuclear radiation<sup>1</sup>.

The Algerian constitution has addressed the issue of environmental pollution from the perspective of prohibiting encroachment and physical actions. In Article 64, it states: "Every citizen has the right to a healthy environment within the framework of sustainable development"<sup>2</sup>.

The Algerian legislator defines environmental pollution in Article 04, paragraph 9 of Law No. 03/10 as follows: "Any direct or indirect alteration of the environment caused by any act or situation that poses a risk to the health and safety of humans, plants, animals, air, atmosphere, water, land, collective and individual properties"<sup>3</sup>.

Scientifically, pollution is defined as "a disturbance and alteration in the natural proportions of substances and elements in the environment caused by the introduction of gases, radiation, or nuclear materials such as uranium or other substances like mercury and lead"<sup>4</sup>.

As it is: "Any change, whether in quantity or quality, in the components of the living and non-living environment, cannot be accommodated by ecological systems without disrupting their balance"<sup>5</sup>.

### **2: The meaning of technological evolution**

As for the technological development, it means the transition from one stage to a new stage of growth<sup>6</sup>.

Technology, on the other hand, is considered one of the concepts that have been discussed by many researchers and thinkers. They have differed in their views on it due to the specialization and the evolution of the characteristics of technology itself. Technology has ancient roots in human inventions, as it was considered a means that humans discovered when they harnessed nature in its primitive form. Later, it became a tool used to serve and assist humans in meeting their growing needs. Its use evolved to the point where it became very important in both public and private life. This has led some thinkers to believe that it is responsible for many of the changes occurring within

<sup>1</sup> "The comprehensive meanings dictionary, an Arabic-Arabic dictionary: <https://www.almaany.com/ar/dict/ar-Jar/%D8%A7%D9%84%D8%AA%D9%84%D9%88%D8%AB/>

<sup>2</sup> Constitution of 1996, amended by Presidential Decree No. 20/442 dated 30/12/2020, related to the issuance of the constitutional amendment approved in the referendum on 01/11/2020. The official gazette of the Algerian Republic, issue number 82.

<sup>3</sup> Law No. 03-10, dated July 19, 2003, related to the protection of the environment within the framework of sustainable development. Official gazette, issue number 43, dated July 20, 2003.

<sup>4</sup> Mohammed Nasser Boughzala and others, *Environment and Human Rights (Concepts and Dimensions)*, Sakhri Press, El Oued, Algeria, 2011, page 292".

<sup>5</sup> Imad Hamdi, "The Impact of Technology on Food, Water, and Air: A Juridical Study," *Islamic Sciences and Research Journal*, Issue 20, King Khalid University, 2020, page 47.

<sup>6</sup> Mary Kaldor, "Human Security: A Relevant Concept?" *Foreign Policy*, French Institute of International Relations, 2006/4 (WINTER), pages 901-914.



contemporary society<sup>7</sup>.

According to J.P. Dewhurst, it means "a change in the process of producing material and human skills<sup>8</sup>". It implies human effort and a way of thinking about using available information, skills, experiences, human and non-human elements in a specific field to discover technological means to solve human problems, meet their needs, and enhance their capabilities<sup>9</sup>".

Technological Change: It's Meaning and Process.

Technological development means: "The technical knowledge used in the production of capital and machinery. Various changes in technology lead to increased productivity of labor, capital, and other production factors. Technological progress includes the creation of skills, new means of production, new uses for raw materials, and widespread use of machinery<sup>10</sup>".

### **3: The impact of technological development on the environment and, consequently, on physical safety**

"The fate and development of humanity are positively and negatively linked to the environment. For humans, the environment is the vital space that enables their continuity and stability, given the treasures and diverse natural resources it contains. These resources have allowed humans to develop ways and means to adapt to it, leading to a high degree of progress and well-being. This has positioned the environment at the forefront of countries' concerns for their security and stability, ensuring the continuity of existence. This has made environmental security a necessity dictated by the right of humans to a safe environment for themselves and future generations<sup>11</sup>.

"On the other hand, as human beings have increased in power through the material knowledge they have attained, and as the technological applications of this knowledge have multiplied, human encroachment on the environment and the surrounding nature has also increased. Consequently, environmental problems have intensified, posing a global threat, especially to advanced nations<sup>12</sup>.

"This danger primarily constitutes an assault on physical safety and the right to life, which are considered the most fundamental human rights recognized by law and protected by contemporary international law. The right to physical safety and the right to life are the most susceptible to threats and dangers due to measures that harm the environment<sup>13</sup>.

Therefore, human rights and the environment are interconnected. The life and personal safety of each individual primarily depend on the protection of the environment as the essential resource for all forms of life and an effective domain for human rights. Consequently, its protection necessarily leads to the enjoyment of basic human rights, reflecting the relationship between the environment and the right to physical safety<sup>14</sup>.

This is affirmed by the African Charter on Human and Peoples' Rights, which states: "All peoples shall have the right to a general satisfactory environment favorable to their development," and that "every individual shall have the right to live in an environment free from pollution<sup>15</sup>".

<sup>7</sup>- Nouredine Zemmam, Sabah Slimani, "The Evolution of the Concept of Technology and Its Uses in the Educational Process," *Journal of Humanities and Social Sciences*, Issue 11, University of Mohamed Khider - Biskra, Algeria, June 2013, page 165.

<sup>8</sup>- Technological Change: It's Meaning and Process, Article Shared by Debasish, <https://www.economicdiscussion.net/articles/technological-change-its-meaning-and-process/4447>.

<sup>9</sup>- Nisma Gafsa, "The Concept of Technology," an article published on the website <https://gafsa.jeu.fr/t7927-topic>. Accessed on March 23, 2020, at 16:00.

<sup>10</sup>- Technological Change: It's Meaning and Process, Article Shared by Debasish, <https://www.economicdiscussion.net/articles/technological-change-its-meaning-and-process/4447>.

<sup>11</sup>- Mona Taheri, "Towards a New Approach to Environmental Security in Achieving Sustainable Development in Algeria," *Algerian Journal of Security and Development*, Issue 11, July 2017, page 156.

<sup>12</sup>- Emad Hamdi, reference mentioned earlier, page 56.

<sup>13</sup>- Fares and Kur, "Protection of the Right to a Clean Environment between Legislation and Implementation," *Baghdad Publications*, Algeria, 2015, page 47.

<sup>14</sup>- Mona Taheri, reference mentioned earlier, page 161.

<sup>15</sup>- Article 24 of the African Charter on Human and Peoples' Rights 1981 in Nairobi (Kenya), from the African Unity Organization, the African Charter on Human and Peoples' Rights is an international treaty formulated by



## 2- The environmental risks associated with technological development:

### 1: Radioactive Materials

Nuclear radiation is a physical phenomenon that occurs in the unstable atoms of elements, where the atomic nucleus loses some of its particles, transforming the atom of one element into another. Nuclear radiation refers to the energy and particles released from the atomic nucleus due to the unstable state of the nucleus, leading to an increased rate of radiation that affects elements of nature such as water, air, and soil, and poses a threat to human life<sup>16</sup>.

So, radioactive pollution affects the elements of nature by leaving behind an elevated radiation level, causing life to disappear in these elements and making them a threat to other organisms. The environment, once teeming with plants, animals, and humans, can transform into a radiologically contaminated environment that affects neighboring environments, especially through the transmission of pollution effects to humans through generations<sup>17</sup>.

### 2: Chemical Pollution

Chemical pollution is one of the sources of environmental pollution, especially in the context of industrial and technological advancements and the increasing use of chemicals by humans in all their industrial, agricultural, and service activities. It is one of the most dangerous forms of pollution due to the proliferation of chemicals in our current era, breaking through all barriers. Among the most environmentally polluting chemical compounds influenced by technological development are gases emitted from factories and vehicles, mercury and cadmium compounds, arsenic, cyanide compounds, pesticides, chemical fertilizers, and oil. These constitute a collective waste or byproduct of industrial activity, posing a threat to physical safety not only for humans but for all living organisms<sup>18</sup>.

### 3: Depletion of Natural Resources

Depletion of resources is another negative impact of technology on the environment. Natural resources consist of those that exist without human creation and can either be renewable or non-renewable. There are various forms of resource depletion, and one of the most critical is the depletion of groundwater, deforestation, mining for fuels and minerals, resource pollution, soil erosion, and excessive resource consumption. These primarily occur due to agriculture, mining, water usage, and fossil fuel consumption. Due to advancements in technology, research, and development, mineral exploitation has become easier, leading humans to access more resources, resulting in the depletion of many natural resources<sup>19</sup>.

Due to the increasing global population, the levels of natural resource degradation are also on the rise. This has led to the estimation that the world's ecological footprint is now one and a half times the Earth's capacity to sustainably provide each individual with sufficient resources to meet their consumption levels.

Furthermore, the consequences of deforestation are more severe than ever before. The World Bank reported a net loss of 1.3 million square kilometers of global forests between 1990 and 2015. This loss is primarily due to agricultural reasons but also includes tree removal for fuel and clearing land for residential areas, driven by increasing population pressure. This not only leads to the loss of trees, which are crucial for removing carbon dioxide from the atmosphere but also results in thousands of plants and animals losing their natural habitats and becoming extinct<sup>20</sup>.

---

African countries under the auspices of the Organization of African Unity (currently the African Union) on June 27, 1981, and entered into force on October 21, 1986. You can see the website: <http://hrlibrary.umn.edu/arab/a005.html>. Accessed on June 3, 2023, at 22:00.

<sup>16</sup>- Jalati Ammar, "Modern Objectives of Administrative Control," Doctoral Thesis in Public Law, University of Abi Bakr Belkaid Tlemcen, Algeria, 2015/2016, page 10.

<sup>17</sup>- Jalati Ammar, reference mentioned earlier, page 106.

<sup>18</sup>- Sajid Ahmed Al-Rikabi, "Sustainable Development and Confronting Environmental Pollution and Climate Change," The Arab Democratic Center, First Edition, 2020, page 18.

<sup>19</sup>- B.Effects of technology on the natural word. [https://www.nagb.gov/naep-frameworks/technology-and-engineering-literacy/2014-technology-framework/toc/ch\\_2/society/society2.html](https://www.nagb.gov/naep-frameworks/technology-and-engineering-literacy/2014-technology-framework/toc/ch_2/society/society2.html)

<sup>20</sup>- B.Effects of technology on the natural word. [https://www.nagb.gov/naep-frameworks/technology-and-engineering-literacy/2014-technology-framework/toc/ch\\_2/society/society2.html](https://www.nagb.gov/naep-frameworks/technology-and-engineering-literacy/2014-technology-framework/toc/ch_2/society/society2.html)



## B. Effects Of Technology On The Natural World

### 4: The Global Warming

This phenomenon, known as global warming, is one of the most significant environmental impacts associated with the excessive use of technology. It occurs when heat from the sun is trapped by harmful gases, making it difficult for the reflected radiation from the Earth's surface to escape. This leads to an increase in temperatures beyond what is natural in the Earth's atmosphere due to the greenhouse effect. Global warming results in longer and hotter heatwaves, recurring droughts, heavy rainfall, powerful hurricanes, and other natural phenomena that pose a threat to physical safety<sup>21</sup>.

#### IV- Mechanisms for environmental protection in the era of technological advancement:

Civil society organizations, academics, experts, and international community scientists are called upon to better protect humans and ecosystems by taking significant measures to safeguard the environment and curb the environmental crisis. Within this framework, numerous mandatory environmental standards will be legislated. Despite their diversity, they should be interpreted as constituting a specific general system, the environmental public system. This specific general system is based on two criteria: the necessity of the standard and its original purpose, which is to preserve the environment's interest, especially in light of the repercussions of technological advancements:

#### 1- Algeria's Strategy in Energy Transition towards Renewable Energy and a Green Economy with a Clean Environment

The United Nations Environment Programme defines a green economy as an economy that results in improved human well-being and social equity while significantly reducing environmental risks and ecological scarcities. In simpler terms, a green economy is a low-carbon, resource-efficient, socially inclusive economy. It promotes domestic growth and employment through investments from both the public and private sectors aimed at reducing carbon emissions, pollution, enhancing energy and resource efficiency, preventing biodiversity loss, and maintaining ecosystem services<sup>22</sup>.

The green economy represents an economy of clean energy and consists of four sectors, which are: renewable energy, such as solar energy, wind energy, and geothermal energy; green buildings and energy technology efficiency; infrastructure and energy-efficient transportation; recycling and waste-to-energy conversion. The green economy not only relates to the ability to produce clean energy but also includes technologies that enable cleaner production processes. Additionally, it involves a growing market for products that consume less energy, thereby encompassing products, processes, and services that reduce environmental impact or improve the use of natural resources.

Renewable energy, as defined by Law No. 04-09 in Article 03, includes the following:

- Forms of electrical, mechanical, thermal, or gaseous energy obtained from the conversion of solar radiation, wind power, geothermal energy, organic waste, hydropower, and biomass utilization techniques.
- The set of methods that enable significant energy savings, employing techniques of bio-climatic architecture in the construction process.

This definition encompasses various sources and technologies that harness energy from renewable and sustainable sources while promoting energy efficiency and eco-friendly construction methods<sup>23</sup>. Where it has become evident, given national and international developments, that a radical change is necessary, abandoning the policy of working first and cleaning later. It has become clear that the economy can be environmentally sustainable through adopting an economic model that encourages

---

[engineering-literacy/2014-technology-framework/toc/ch\\_2/society/society2.html](https://www.russianlawjournal.com/engineering-literacy/2014-technology-framework/toc/ch_2/society/society2.html)

<sup>21</sup>- Sajid Ahmed Abul Rikabi, reference mentioned earlier, page 32 and beyond.

<sup>22</sup>- The Fifth Report of the International Labor Office, Geneva, "Sustainable Development, Decent Work, and Green Jobs" within the framework of the International Labor Conference Session 02-01-2013, First Edition, 2013.

<sup>23</sup>- The Law No. 04-09 dated August 14, 2004, relates to the promotion of renewable energies within the framework of sustainable development, the official gazette of the Algerian Republic number 52 for the year 2004.



the use of non-polluting energy sources and contributes to combating climate change by reducing emissions of greenhouse gases. Additionally, it contributes to sustainable development by preserving renewable energies and promoting their use.

Therefore, the mechanisms for transitioning to a green economy focus on reducing carbon emissions resulting from energy production and consumption. Increasing energy efficiency and expanding the use of renewable energy sources are fundamental pillars of the path towards transitioning to a green economy<sup>24</sup>.

As we mention here, the Algerian state's prospects, through its efforts and endeavors towards sustainable development, include the establishment of the National Observatory for Cities as an inevitable reality, with promising future expectations.

Article 26 of Law 06-06, concerning the guidance law for cities<sup>25</sup>, stipulates the establishment of the National Observatory for Cities. Among its tasks are:

- Monitoring the implementation of urban policies.
- Conducting studies on urban development.
- Proposing all measures for the national urban policy to the government.
- Contributing to the enhancement of international cooperation in the field of urbanization.

It is notable that these tasks aim to create modern, smart, and green cities. Unfortunately, it appears that this has remained a paper structure without concrete progress towards implementation.

## **2-Legislative measures in the field of environmental protection :**

adopted by Algeria include several key laws and decrees, such as:

- Presidential Decree No. 20/442 dated December 30, 2020, which includes constitutional amendments. Article 64 of this decree specifically enshrines the right of citizens to a healthy environment as one of the fundamental human rights.
- Law No. 01/19, which pertains to the management and monitoring of waste. This law aims to regulate the unreasonable handling of industrial waste<sup>26</sup>.
- Law No. 03-10, dated July 19, 2003, concerning environmental protection within the framework of sustainable development, which is one of the most important laws aimed at protecting the environment and its resources from threats that pose a danger to both the environment and human safety, as well as for sustainable development for future generations.
- Executive Decree No. 02-115, dated April 3, 2002, establishing the National Observatory for the Environment and Sustainable Development, Official Gazette No. 22 of the year 2002.
- Law No. 04/09 related to the promotion of renewable energies within the framework of sustainable development, which aims to explore renewable alternative energies that preserve environmental resources.

## **3- the specialized environmental regulatory agencies :**

### **- National Agency for Climate Change :**

Established by Executive Decree No. 05-373, this administrative institution aims to integrate climate change issues into all development plans and contribute to environmental protection<sup>27</sup>.

### **- National Waste Agency :**

This Algerian public institution, with an industrial and commercial character and legal personality, was created by Executive Decree No. 02-175. It is responsible for developing waste sorting,

<sup>24</sup>- Qaham, Wahiba, and Tsarkark Samir. "Green Economy to Address Environmental Challenges and Create Employment Opportunities - Green Economy Projects in Algeria." *Economic and Financial Research Journal*, University of Ouargla, Issue 06, December 2016, page 440.

<sup>25</sup>- Law No. 06-06 related to the Guiding Law for the City, dated February 20, 2006, Official Gazette of the Algerian Republic, Issue 15.

<sup>26</sup>- Law No. 01/19 related to Regional Planning and Sustainable Development, dated December 12, 2001, Official Gazette of the Algerian Republic, Issue 77.

<sup>27</sup>- \*Executive Decree No. 05-375\*: This decree, signed on September 26, 2005, establishes the National Agency for Climate Change, outlines its missions, and regulates its organization and operations. It was published in the official journal of the Algerian Republic, issue number 67 for the year 2005.



processing, and valorization activities<sup>28</sup>.

**- National Institute for Environmental Training:**

This Algerian public institution, with industrial characteristics and financial independence, was established by Executive Decree No. 02-263. Its mission is to ensure training, education, and awareness in the field of environmental issues<sup>29</sup>.

**- National Center for Cleaner Production Technologies:**

This Algerian public institution, with industrial and commercial characteristics, was established by Executive Decree No. 02-262. It falls under the supervision of the Ministry of Environment and Renewable Energies and is part of the national policy for environmental protection. It focuses on reducing pollution and industrial damage at their source and promoting the ecological use of natural resources<sup>30</sup>.

**- National Observatory for the Environment and Sustainable Development:**

This Algerian public institution, with industrial and commercial characteristics, was established by Executive Decree No. 02-115. It operates under the authority of the Ministry of Environment and Renewable Energies and is tasked with collecting environmental information, processing it scientifically, technically, and statistically, and distributing it<sup>31</sup>.

### CONCLUSION:

Technological advancement and its chemical, physical, and radiation byproducts pose a real challenge that threatens the environment and its natural resources, with negative implications for human health and well-being. Therefore, it has become evident that in the face of these threats, a balance must be struck between the requirements of economic development and the imperatives of environmental protection. This necessitates adopting environmental security and, consequently, human security to ensure sustainable development.

This is a commitment that the Algerian state has affirmed through the adoption of new technologies, the formulation of a national strategic plan for the beneficial use of alternative energy sources, particularly renewable energies. This commitment has been translated into clear policies and regulations in the field of renewable energy, serving as an indicator for green economy and sustainable development that meets the human right to a healthy, safe, and sound environment, both in the present and the future.

The study has led to several findings and recommendations, the most important of which include:

- Algeria is making significant efforts to develop and promote the use of renewable energies, achieving various levels of progress. Further endeavors are expected to fulfill aspirations and consolidate these efforts, as renewable energy can significantly contribute to environmental protection.
- Despite the diverse array of laws related to environmental protection and the legislative efforts of the Algerian authorities to establish regulatory bodies in the environmental field, environmental problems persist. This is primarily due to the absence of effective on-ground enforcement by administrative environmental control bodies.
- To ensure the success of the Algerian state's policy in protecting the environment, civil society's

<sup>28</sup>- \*Executive Decree No. 02-175\*: This decree, signed on May 20, 2002, establishes the National Waste Agency, regulates its activities, and outlines its organization. It was published in the official journal of the Algerian Republic, issue number 37 for the year 2002.

<sup>29</sup>- National Institute for Environmental Training: Established by Executive Decree No. 02-263, dated August 17, 2002, and published in the Official Gazette of the People's Democratic Republic of Algeria, No. 56, in the year 2002.

<sup>30</sup>- National Center for Cleaner Production Technologies: Established by Executive Decree No. 02-262, dated August 17, 2002, and published in the Official Gazette of the People's Democratic Republic of Algeria, No. 56, in the year 2002.

<sup>31</sup>- National Observatory for the Environment and Sustainable Development: Created by Executive Decree No. 02-115, dated April 3, 2002, and published in the Official Gazette of the People's Democratic Republic of Algeria, No. 22, in the year 2002.

role in this field should be activated, and environmental awareness should be cultivated to achieve genuine and sustainable environmental protection and the right to physical safety.

#### References:

##### Legal Texts:

- [1] Constitution of 1996, as amended by Presidential Decree No. 20/442 dated December 30, 2020, related to the issuance of the constitutional amendment approved in the referendum on November 1, 2020, Official Gazette No. 82.
- [2] Law No. 03-10, dated July 19, 2003, concerning environmental protection within the framework of sustainable development, Official Gazette No. 43, dated July 20.
- [3] Law No. 01/19, dated December 12, 2001, concerning the development and sustainable development of regions, Official Gazette No. 77.
- [4] Law No. 04-09, dated August 14, 2004, concerning the promotion of renewable energies within the framework of sustainable development, Official Gazette No. 52, dated 2004.
- [5] Executive Decree No. 05-375, dated September 26, 2005, establishing the National Agency for Climate Change and specifying its tasks and organizing its regulations, Official Gazette No. 67, dated 2005.
- [6] Executive Decree No. 02-175, dated May 20, 2002, establishing the National Waste Agency and regulating its work, Official Gazette No. 37, dated 2002.
- [7] Executive Decree No. 02-263, dated August 17, 2002, establishing the National Institute for Environmental Training, Official Gazette No. 56, dated 2002.
- [8] Executive Decree No. 02-262, dated August 17, 2002, establishing the National Center for Purer Production Technologies, Official Gazette No. 56, dated 2002.
- [9] Executive Decree No. 02-115, dated April 3, 2002, establishing the National Observatory for Environment and Sustainable Development, Official Gazette No. 22, dated 2002.

##### Books:

- [1] Mohammed Nasser Boughzala and others, "Environment and Human Rights (Concepts and Dimensions)," Sakhri Printing, El Oued, Algeria, 2011, p. 292.
- [2] Fares and Kor, "Protection of the Right to a Clean Environment between Legislation and Application," Baghdadi Publications, Algeria, 2015.
- [3] Sajid Ahmed Abul Rikabi, "Sustainable Development and Facing Environmental Pollution and Climate Change," The Arab Democratic Center, First Edition, Berlin, 2020.

##### Theses and Research Papers:

- [1] Jalati Amar, "Modern Objectives of Administrative Regulation," Doctoral Thesis in Public Law, Faculty of Law and Political Science, Abi Bakr Belkaid University, Tlemcen, 2015-2016.
- [2] Mona Taheri, "Towards a New Approach to Environmental Security in Achieving Sustainable Development in Algeria," Algerian Journal of Security and Development, Issue 11, July 2017.
- [3] Fifth Report of the International Office Geneva, "Sustainable Development, Decent Work, and Green Jobs" as part of the proceedings of the International Labor Conference, Session 02-01-2013.
- [4] Qaham Wahiba, Tserqirq Samir, "Green Economy to Address Environmental Challenges and Create Job Opportunities - Green Economy Projects in Algeria," Journal of Economic and Financial Research, University of Oum El Bouaghi, Issue 06, December 2016, p. 440.

##### \*Foreign Publications:\*

- [1] Mary Kaldor, Human Security: A Relevant Concept?, Foreign Policy, French Institute of International Relations, 2006/4 (WINTER), pp. 901-914.

##### \*Internet Sources:\*

- [1] Effects of technology on the natural world. [Link]([https://www.nagb.gov/naep-frameworks/technology-and-engineering-literacy/2014-technology-framework/toc/ch\\_2/society/society2.html](https://www.nagb.gov/naep-frameworks/technology-and-engineering-literacy/2014-technology-framework/toc/ch_2/society/society2.html)).
- [2] Technological Change: Its Meaning and Process, Article Shared by Debasish. [Link](<https://www.economicdiscussion.net/articles/technological-change-its-meaning-and-process/4447>).





- [3] Arabic-Arabic Comprehensive Dictionary [Link](<https://www.almaany.com/ar/dict/ar-Jar/%D8%A7%D9%84%D8%AA%D9%84%D9%88%D8%AB/>).
- [4] Technological Change: Its Meaning and Process, Article Shared by Debasish. [Link](<https://www.economicdiscussion.net/articles/technological-change-its-meaning-and-process/4447>).
- [5] Nesma Gafsa, The Concept of Technology, Article Published on the Website [Link](<https://gafsa.jeun.fr/t7927-topic>) Accessed on March 23, 2020, at 16:00.
- [6] -B.Effects of technology on the natural word.[https://www.nagb.gov/naep-frameworks/technology-and-engineering-literacy/2014-technology-framework/toc/ch\\_2/society/society2.html](https://www.nagb.gov/naep-frameworks/technology-and-engineering-literacy/2014-technology-framework/toc/ch_2/society/society2.html)