

# The Intersection of Law and Technology in Environmental Protection in Algeria

**Brahim MERAMRIA**<sup>(1)</sup>

<sup>(1)</sup> PhD student, University: Mohammed cherif mesaadia, Souk Ahras, Research Laboratory: Comparative Law and Socio-Prospersive Studies, University El-Arabi TBESSI; Tebessa, Algeria.

E-Mail : [b.meramria@univ-soukahras.dz](mailto:b.meramria@univ-soukahras.dz)

**Nabil BOUADJILA**<sup>(2)</sup>

<sup>(2)</sup> Doctor Lecturer A, University: Mohammed cherif mesaadia, Souk Ahras, Algeria.

E-Mail : [n.bouadjila@univ-soukahras.dz](mailto:n.bouadjila@univ-soukahras.dz)

## Summary:

Contemporary societies are increasingly concerned with environmental protection technologies, which play a crucial role in improving health, well-being, and sustainable development. Among these technologies, remote sensing devices and geographic systems have proven effective in identifying and analyzing sources of pollution. However, the utilization of these technologies raises significant legal and ethical concerns, particularly regarding the rights and freedoms of individuals who are suspected of engaging in environmental pollution activities.

This study aims to examine the application of technology in the field of environmental protection in Algeria, shedding light on the legal and human rights challenges that arise and identifying the appropriate legal framework to safeguard the rights of individuals suspected of polluting the environment. This necessitates a comprehensive analysis of the legal and human rights challenges associated with environmental protection in Algeria.

## Keywords:

Technology, pollution, basic rights, environmental protection, sustainable development.

---

*Received: (date) 03/05/2024, Accepted (date) 29/05/2024, Published (date)30/06/2024.*

### ***to Cite the article:***

MERAMRIA Brahim, BOUADJILA Nabil, "The Intersection of Law and Technology in Environmental Protection in Algeria", *RARJ*, vol. 15,n°1, 2024, pp.483-501.

**Available on:** <https://www.asjp.cerist.dz/en/PresentationRevue/72>

Corresponding author: Brahim MERAMRIA, [b.meramria@univ.soukahras.dz](mailto:b.meramria@univ.soukahras.dz)

## تقاطع القانون والتكنولوجيا في حماية البيئة في الجزائر

الملخص:

تهتم المجتمعات المعاصرة بشكل متزايد بتقنيات حماية البيئة، التي تلعب دوراً حاسماً في تحسين الصحة والرفاهية والتنمية المستدامة. ومن بين هذه التقنيات، أثبتت أجهزة الاستشعار عن بعد والأنظمة الجغرافية فعاليتها في تحديد وتحليل مصادر التلوث. ومع ذلك، فإن استخدام هذه التقنيات يثير مخاوف قانونية وأخلاقية كبيرة، لاسيما فيما يتعلق بحقوق وحرية الأفراد المشتبه في تورطهم في أنشطة التلوث البيئي. تهدف هذه الدراسة إلى دراسة تطبيق التكنولوجيا في مجال حماية البيئة في الجزائر، وتسليط الضوء على التحديات القانونية والحقوقية التي تنشأ وتحديد الإطار القانوني المناسب لحماية حقوق الأفراد المشتبه في تلويثهم للبيئة. وهذا يستلزم إجراء تحليل شامل للتحديات القانونية وتحديات حقوق الإنسان المرتبطة بحماية البيئة في الجزائر.

الكلمات المفتاحية:

التكنولوجيا، التلوث، الحقوق الأساسية، حماية البيئة، التنمية المستدامة.

### L'intersection du droit et de la technologie dans la protection de l'environnement en Algérie

Résumé :

Les sociétés contemporaines sont de plus en plus préoccupées par les technologies de protection de l'environnement, qui jouent un rôle crucial dans l'amélioration de la santé, du bien-être et du développement durable. Parmi ces technologies, les dispositifs de télédétection et les systèmes d'information géographique se sont révélés efficaces pour identifier et analyser les sources de pollution. Cependant, l'utilisation de ces technologies soulève d'importantes préoccupations juridiques et éthiques, notamment en ce qui concerne les droits et libertés des individus soupçonnés de se livrer à des activités polluantes.

Cette étude vise à examiner l'application de la technologie dans le domaine de la protection de l'environnement en Algérie, en mettant en lumière les défis juridiques et en matière de droits de l'homme qui se posent, et en identifiant le cadre juridique approprié pour sauvegarder les droits des individus soupçonnés de polluer l'environnement. Cela nécessite une analyse complète des défis juridiques et des droits de l'homme associés à la protection de l'environnement en Algérie.

Mots clés :

Technologie, pollution, droits fondamentaux, protection de l'environnement, développement durable.

## Introduction

Environmental protection technologies are vital concerns for contemporary societies, as preserving the environment contributes to improving health, well-being, and sustainable development. Among the technologies used for environmental protection, remote sensing devices and geographic systems play a significant role in identifying and analyzing sources of pollution.

However, the utilization of these technologies raises legal and human rights issues, especially regarding the rights and freedoms of individuals suspected of being involved in environmental pollution. This includes rights such as privacy, defense, and others. Therefore, society requires an appropriate legal framework that aligns with the use of these technologies while safeguarding the rights of individuals who are suspected of being involved in environmental pollution.

The aim of this article is to study how technology is employed in the field of environmental protection in Algeria and its impact on the rights and freedoms of individuals suspected of being involved in environmental pollution. Additionally, it seeks to analyze the legal and human rights challenges associated with the use of these technologies in environmental protection in Algeria.

***The Problem:*** What are the legal and human rights challenges that arise from the use of technology in the field of environmental protection in Algeria, and how do they impact the rights and freedoms of individuals suspected of being involved in environmental pollution?

This problem encompasses several aspects, including the legal and human rights challenges facing the use of technology in environmental protection in Algeria, and how to strike a balance between environmental protection and safeguarding the rights and freedoms of individuals suspected of involvement in environmental pollution. It also raises questions about the appropriate legal framework that can be applied to protect the rights of individuals who are suspected of polluting the environment in light of the use of technology in the field of environmental protection in Algeria. This problem requires a thorough analysis of the legal and human rights challenges and the suitable legal framework that can be implemented in the field of environmental protection in Algeria. To answer the problem at hand, we divided the study into two parts. The first part will address the importance of environmental protection in Algerian

legislation, while the second part we devoted to the challenges associated with the use of technology in the field of environmental protection in Algeria.

## **Chapter I: The Importance Of Environmental Protection In Algerian Legislation**

Despite emerging from a devastating colonization, the Algerian state has not neglected its comprehensive policies in nation-building with regards to environmental protection. It initiated some relevant legislation, such as the Municipal Law of 1967, which granted the mayor the responsibility to strive for the protection of public order. However, it did not explicitly address environmental protection. On the other hand, the State Law of 1969 included indirect references to environmental protection and granted the state certain competencies aimed at combating pollution, preserving the environment, as well as addressing epidemics and safeguarding health<sup>1</sup>.

In this context, the environment did not receive significant attention in the constitution as the supreme law of the state. The 1963 Constitution, which focused on the foundational aspects of nation-building in light of its recent independence, did not address many important issues, including the environment. Its primary emphasis was on establishing political and constitutional institutions, while many aspects remained unaddressed<sup>2</sup>.

Article 151 of the Algerian Constitution of 1976 stipulates that environmental protection is an issue that falls within the powers of the People's Assembly. In the national, the same applies to the general forest system and the general water system<sup>3</sup>.

The date of February 5, 1983<sup>4</sup> marked a significant turning point in the realm of environmental protection and pollution control in Algeria. It was on this date that the first Algerian environmental protection law (Law No. 83-03 Rabi' al-Awwal) was issued, ushering in a new era in the country. This law

---

1 Souad Hamdan, «Challenges of environmental protection in Algeria between the legal text and institutional claims», *Journal of Economic Studies*, No. 38, August 2019, p. 345.

2 Belil Zineb, «Environmental protection in Algeria between legal texts and practical challenges», *Journal of Legal and Political Thought*, sixth volume, first issue, 2022, p. 783.

3 See Article: 151 of Order No.: 76/97 dated: November 22, 1976, which includes: Promulgating a Constitution, the Official Gazette of the People's Democratic Republic of Algeria for the year 1976, Number: 94, dated: November 24, 1976.

4 Law No. 83-03 of Rabi' al-Thani 22, 1403, corresponding to February 5, 1983, relating to environmental protection, Official Gazette No. 6, issued on Rabi' al-Thani 25, 1403, corresponding to February 8, 1983 AD.

extended its application to all sectors related to environmental protection and played a crucial role in aligning Algeria's internal legislation with international environmental law after a decade of reservation. It also enhanced Algeria's international standing in the field of environmental conservation. It is worth noting that Algeria had taken the initiative to establish a national environmental committee in 1974, just two years after the Stockholm Conference in 1972<sup>5</sup>.

Since 2003, and in line with international developments and the implementation of Algeria's commitments to environmental protection, Law 03-10 was issued, which pertains to environmental protection within the framework of sustainable development<sup>6</sup>.

The first article of Law 03-10 concerning environmental protection within the framework of sustainable development states that this law establishes the principles for environmental protection within the context of sustainable development. Furthermore, the third article of the law outlines eight fundamental principles upon which it is based. These principles are as follows: the principle of biodiversity conservation, the principle of non-deterioration of natural resources, the principle of substitution, the principle of integration, the principle of preventive action, the principle of liability, the principle of "polluter pays," and the principle of information and participation<sup>7</sup>.

After 13 years, the issue of environmental protection was explicitly incorporated into the Algerian Constitution for the first time in 2016. This constitutional emphasis was further reinforced during the constitutional amendment of 2020.

## **Section I: Constitutionally Ensuring Environmental Protection**

Unlike the constitutional amendments that preceded it, the 2016 constitutional amendment included clear and explicit signals and officially enshrined the issue of environmental protection. This was done through several constitutional articles. Article 19<sup>8</sup>, for example, addressed the use of natural

---

5 Conferences, Environment and Sustainable Development, United Nations, access date: 04/05/2024, access time: 15:20, on the following website: <https://www.un.org/ar/conferences/environment>.

6 Law 03-10 of July 19, 2003, relating to environmental protection within the framework of sustainable development, Official Gazette No. 43, issued on Jumada al-Ula 20, 1424, corresponding to July 19, 2003.

7 Law 03-10 of July 19, 2003, relating to environmental protection within the framework of sustainable development, ipic.

8 Law No. 16-01, signed on March 6, 2016, includes the constitutional amendment, ibid., Official Gazette No. 14 dated March 7, 2016.

resources and committed the state to ensuring their rational use and preservation for the benefit of future generations. This signifies the implementation of the concept of sustainable development by guaranteeing the rights of future generations to natural resources. Additionally, the second paragraph of the same article emphasized the state's commitment to protecting agricultural lands and public property.

Moreover, the most explicit provision regarding environmental protection and citizens' environmental rights is found in Article 68<sup>9</sup>. This new provision embodies the state's commitment to protecting citizens' environmental rights and preserving the environment. The details of this commitment will be elaborated in the following section.

The 2020 constitutional amendment represents a pivotal and highly significant milestone in addressing environmental issues and ensuring the stability of the legal framework related to environmental protection and environmental rights. This distinction lies in the newly established supervisory and advisory mechanisms introduced by this amendment. Additionally, the constitutional rules are clearly articulated as general principles that other legislation should not contravene. The preamble of the 2020 constitution, which is an integral part of it according to the last paragraph, further emphasizes these points.

The preamble of the Constitution included, in a clear paragraph, an explicit concern for environmental rights and a precise expression of Algerian society's concern with the deterioration of the environmental situation in the country, which read as follows:

**“The Algerian people express their adherence to the human rights stipulated in the Universal Declaration of Human Rights of 1948 and the international agreements ratified by Algeria.**

**The Algerian people are committed to their choices in order to reduce social disparities and eliminate regional disparities, and are working to build a productive and competitive economy within the framework of sustainable development. The people also remain preoccupied with the deterioration of the environment and the negative consequences of climate change, and are keen to ensure the protection of the natural environment and the rational use of natural resources, as well as Preserving it for the benefit of future generations.”<sup>10</sup>**

---

9 See Article 68 of Law No. 16-01, signed on March 6, 2016, including the constitutional amendment, op. cit.

10 Presidential Decree 20-442 dated 15 Jumada al-Awwal 1442, Relating to the issuance of the constitutional amendment, approved in the referendum of November 1, 2020, in the Official Gazette of the People's Democratic Republic of Algeria, Official Gazette No. 82 dated December 30, 2020.

Addressing the issue of the environment in the preamble of the constitution carries strong implications, emphasizing the paramount importance given by the constitutional founder to environmental protection by including it within the preamble. The preamble serves as an introduction and preamble to the constitutional laws, chapters, and articles that form the fundamental and highest law of the state. Furthermore, this constitutional commitment is embodied by encompassing environmental issues and environmental rights through the state's constitutional obligation to protect them, as well as through the establishment of new relevant constitutional institutions, including the Constitutional Court, the Economic, Social, and Environmental Council, and the National Observatory for Civil Society.<sup>11</sup>

The 2020 constitutional amendment introduced highly significant additions, particularly regarding the explicitness of certain constitutional provisions related to environmental protection and environmental human rights. This has the potential to establish legal certainty and greater clarity regarding the general principles concerning environmental protection endorsed by the constitutional founder through the 2020 amendment.

The Algerian Constitution specifies the environment with a set of explicit articles, in addition to implicit references in many other articles. Article 21 of the Algerian Constitution stipulates the following:

**“The state ensures:**

- Protection of agricultural lands,**
- Ensuring a safe environment in order to protect people and achieve their well-being,**
- Ensuring continuous awareness of environmental risks,**
- Rational use of water, fossil energies and other natural resources,**
- Protecting the environment in its land, sea and air dimensions, and taking all appropriate measures to punish polluters.”**

For its part, Article 64 of the Constitution addresses a very important issue related to third-generation human rights, namely environmental human rights.

---

11 Allawi Al-Tayeb, Belfadl Muhammad, «Enshrining the right to a healthy environment in the Algerian constitutions», *Journal of Scientific Research in Environmental Legislation*, Volume 12, Issue 11, 2022, pp. 231, 232.

Article 64: « **The citizen has the right to a healthy environment within the framework of sustainable development. The law determines the duties of natural and legal persons to protect the environment** »<sup>12</sup>.

## **Section II : Exclusive Legislation For Environmental Protection**

The environmental and developmental challenges entail significant complexities that necessitate precise and comprehensive legislative provisions, executive regulations, decisions, and legal texts to activate and enforce the provisions of Law No. 03-10.

These legal texts associated with environmental law aim to define appropriate procedures and necessary controls to maintain environmental balance and achieve sustainable development in various environmental contexts. They aim to protect all environmental elements in accordance with the principles of environmental protection within the framework of sustainable development, as established by the effective Algerian environmental law.

The regulatory texts and various complementary provisions of Law 03-10 constitute essential components of the environmental legal system in Algeria. They are vital legal tools for implementing the objectives of the law, guiding individuals and institutions, and regulating their activities related to environmental practices to ensure sustainable and responsible environmental protection.

Among the supportive laws of the environmental legislative system is Law No. 07-06<sup>13</sup>, which pertains to the management, protection, and development of green spaces, amended by Law No. 22-17. Green spaces are a fundamental element in cities as they preserve the environmental system and its balance. They are closely linked to sustainable development, thus receiving significant attention in urban planning and the environment in general<sup>14</sup>.

The laws and decisions related to the management, protection, and development of green spaces aim to achieve sustainable development and

---

12 Presidential Decree 20-442 dated 15 Jumada al-Awwal 1442 corresponding to December 30, 2020, relating to the issuance of the 2020 Constitutional Amendment, op. cit.

13 Law No. 07-06, dated May 13, 2007, relating to the management, protection and development of green spaces, Official Gazette No. 31, dated May 13, 2007.

14 Law No. 22-17, dated July 20, 2022, relating to the management, protection and development of green spaces, amends and supplements Law No. 07-06 dated 25 Rabi' al-Thani 1428, corresponding to May 13, 2007, relating to the management, protection and development of green spaces, Official Gazette No. 49 dated On July 20, 2022.



preserve the aesthetic charm of cities through effective management of these green areas.

Successful management of green spaces within the framework of sustainable development, as governed by the relevant laws and executive decisions, requires consideration of their functions and importance to the environment and society. This includes preserving biodiversity, conserving the environment, as well as utilizing these spaces for recreation, leisure, improving the quality of life, and enhancing the aesthetic appeal of neighborhoods and cities.

In the context of sustainable development and in order to prevent environmental harm and mitigate the risks of disasters, the Algerian legislature has issued a specific law on disaster prevention, intervention, and risk reduction within the framework of sustainable development. This proactive and preventive step is outlined in Law No. 24-04, dated February 26, 2024, which includes provisions for disaster prevention, intervention, and risk reduction within the framework of sustainable development. This law repealed the previous Law No. 04-20, dated December 25, 2004, which addressed major hazard prevention and disaster management within the framework of sustainable development but overlooked several types of disasters<sup>15</sup>.

In the context of protecting forest resources as critical ecosystems and rich natural assets, the Algerian legislature issued a new law on forests and forest resources on December 23, 2023. This law, numbered 23-21, supersedes the previous forest law issued in 1984 under the number 84-12, which had been in place for 40 years. The previous law, which included the general framework for forests, needed to be updated as it no longer aligned with the current environmental reality and the evolving nature of crimes, particularly concerning recent offenses. This was especially important regarding penalties imposed on violators of environmental laws.

The purpose of this new law is to establish and regulate the management, protection, expansion, and development of the national forest wealth within the framework of sustainable development. It aims to utilize forests and forested lands while safeguarding them from all forms of degradation and erosion. The law also focuses on the protection of wildlife and plants, land conservation, combating desertification, and enhancing the value of forests and forest resources with the involvement of other relevant sectors<sup>16</sup>.

---

15 Law No. 24-04, signed on February 26, 2024, includes rules for prevention, intervention and disaster risk reduction within the framework of sustainable development, Official Gazette No. 16 dated March 6, 2024.

16 Law No. 23-21, signed on December 23, 2023, relating to forests and forest resources, Official Gazette No. 83 dated December 24, 2023.

There are also many laws and regulations that cannot be enumerated in this study, and they aim in their entirety to protect a pure environment and combat pollution in its various forms within the framework of sustainable development that guarantees the rights of current and future generations to a safe and healthy environment.

## **Chapter II: The Challenges Associated With The Use Of Technology In The Field Of Environmental Protection In Algeria**

The use of technology can have diverse effects on the environment, including both positive and negative impacts. On the positive side, the use of technology can help improve the efficiency of natural resource utilization and reduce waste. For example, technology can be employed to enhance energy efficiency, improve water management, and promote recycling and waste management.

However, the use of technology can also have negative effects on the environment. For instance, the production and operation of technology can result in greenhouse gas emissions, air and water pollution. Additionally, the accumulation of electronic waste from outdated technology can contribute to environmental pollution and have an impact on public health. Furthermore, the environmental applications of technology may intersect with human rights, as technology in some cases can infringe upon privacy and encroach on certain rights that society has recognized.

Therefore, it is important to use technology in sustainable and responsible ways to mitigate the negative impacts on the environment. This can be achieved through the development and adoption of environmentally friendly and efficient technology, promoting recycling and electronic waste management, and encouraging sustainable practices in the design and use of technology.

### **Section I: Requirements For Using Technology To Protect The Environment In Algeria**

Indeed, Algeria is making significant efforts to utilize technology and advanced techniques in environmental protection. These efforts encompass substantial investments in areas such as waste management and water quality improvement.

In terms of waste management, Algeria aims to harness innovative technologies to minimize waste and maximize its potential for economic and environmental benefit. Advanced waste treatment and recycling methods are being implemented to reduce reliance on landfill disposal and promote the

circular economy. The adoption of smart waste management systems and digital solutions enables efficient monitoring, collection, and sorting of waste.<sup>17</sup>

Additionally, Algeria is leveraging technology to enhance water management and conservation. Advanced water treatment and desalination technologies are being deployed to ensure a sustainable water supply, particularly in water-scarce regions. Remote sensing and data analytics are utilized to monitor water resources, optimize irrigation practices, and detect water pollution incidents promptly.

Moreover, digital platforms and mobile applications are being developed to engage citizens in environmental conservation efforts. These platforms facilitate information sharing, raise awareness about sustainable practices, and encourage public participation in environmental initiatives.

Overall, Algeria's focus on integrating technology and innovative solutions into environmental protection showcases its commitment to sustainable development and addressing the challenges posed by waste and water management.<sup>18</sup>

Law 03-10, which relates to environmental protection within the framework of sustainable development, addresses the challenges posed by artificial intelligence technology and its rapid development. This law is characterized by its flexibility in dealing with these technologies, by encompassing a wide range of aspects that aim to preserve the environment and promote sustainable development in this context.<sup>19</sup>

This law includes provisions that focus on concepts such as the precautionary principle and preventive action, aiming to implement risk reduction strategies and ensure that artificial intelligence technology does not cause unexpected negative effects on the environment. It also seeks to develop protective legal systems that safeguard the environment and enhance sustainable development, thereby contributing to reducing the technological risks associated with these technologies.

---

17Integrated Solid Waste Management Oran, Algeria,

<http://r20paris.org/wpcontent/uploads/2016/06/oran-waste-overview301115.pdf>

18 Touitou Mohammed, Abul Quasem Al-amin, «Climate change and water resources in Algeria: vulnerability, impact and adaptation strategy», *Economic and Environmental Studies*, Vol. 18, No 1 (45/2018), 411-429, March 2018.

19 Law 03-10 of July 19, 2003, relating to environmental protection within the framework of sustainable development, op. cit.

In this way, the law on environmental protection within the framework of sustainable development represents an important legal framework to ensure the sustainability of technological progress and the preservation of the environment simultaneously. This is achieved through effective monitoring and regulation of the impact of artificial intelligence technology on the environment and ensuring its responsible use within the context of sustainable development<sup>20</sup>.

In terms of environmental protection, artificial intelligence (AI) can play a significant role in monitoring and accurately tracking environmental changes. AI systems can monitor pollution levels, conduct behavioral analysis of organisms, and monitor human activities that are harmful to the environment. This can contribute to identifying potential environmental threats and taking preventive measures to mitigate them.

When it comes to the exploitation of environmental resources, especially non-renewable ones, AI can improve the efficiency and frameworks for utilization through analyzing weather data, climate predictions, and the potential renewal of these resources and their natural conditions. It can also be used in the development of renewable energies, energy storage systems, and improving electricity distribution more effectively<sup>21</sup>.

Additionally, AI can contribute to raising environmental awareness and encouraging communities and businesses to adopt environmentally friendly practices. It can also assist governments in developing better environmental policies based on data and analysis.

By utilizing AI tools, we can build a more environmentally sustainable future and make better use of eco-friendly renewable energy sources, thereby contributing to the preservation of the planet for current and future generations.

AI can play a pivotal role in enhancing environmental sustainability. The shift towards environmental sustainability relies on data-driven decision-making processes. AI can aid in achieving this by swiftly and efficiently analyzing and interpreting environmental data.

Specifically, AI can improve energy efficiency by monitoring and analyzing energy consumption and providing recommendations for optimization and utilization. It can also predict weather changes and climate patterns, facilitating better planning for the use of renewable energy<sup>22</sup>.

---

20 The official website of the World Meteorological Organization, access date: 03/29/2023, at 15:00, at the following website: <https://public.wmo.int/en>

21 Ahmed Hani, Data Analysis in Environmental Sciences, access date: 02/18/2024, time: 14:00, on the following website: <https://greenfue.com>.

22 Ahmed Hani, ipic.

## **Section II : The Negative Repercussions Of Environmental Electronic Applications On Protecting The Rights And Freedoms Of Individuals**

At first glance, the concept of privacy may seem like a recent development and has only been used in recent years. However, the actual reality confirms that it is a long-standing concept that has existed wherever humans have found themselves. But with the widespread use of technology, especially the internet, significant social changes have occurred, making it necessary to establish safeguards to protect this private life, which has increasingly been encroached upon due to rapid technological advancements.

In fact, the term "privacy" is not new; it has existed since ancient times, as it was considered an important concept when individuals faced challenges in protecting their personal lives. However, with the evolution of technology and the use of artificial intelligence applications in environmental protection and other communication means, new social transformations have emerged, and there have been changes in the nature of privacy.

It has become necessary to establish safeguards to protect privacy in light of the tremendous advancements in internet usage and modern technology. Individuals' lives have become surrounded by technological means and are exposed to multiple threats related to privacy, such as the collection, monitoring, and tracking of personal data online.

Therefore, safeguards and policies must be put in place to protect privacy that address the challenges of the modern age and safeguard individuals' rights to maintain their private lives<sup>23</sup>.

Article 8 of the European Convention on Human Rights, adopted in 1950, serves as the legal bedrock for safeguarding the right to privacy within the realm of human rights protection in Europe. This article sets forth the following provisions:

Every person is entitled to the right to have their private and family life, their home, and their correspondence respected.

No public authority shall interfere with the exercise of this right, except when such interference is in accordance with the law and is necessary in a democratic society for the interests of national security, public safety, the economic well-being of the country, the prevention of disorder or crime, the protection of health or morals, or the protection of the rights and freedoms of others.

---

23 Zainab Muhammad Jamil Al-Dannawi, «Protecting privacy rules on the Internet in light of international and internal perseverance», research participated and published in the book of proceedings of the international conference on privacy in the information society, Generation Center for Scientific Research, Tripoli, and published in the book of proceedings of the conference, Lebanon 2019, p. 24

Under this article, the respect for private life, home, and correspondence is guaranteed to every individual within the territory of any state that is a party to the European Convention on Human Rights, irrespective of their citizenship status, whether they are citizens of the state, citizens of other contracting parties, or non-contracting parties. The protection provided by this article also extends to stateless individuals within the territory of any state party to the convention<sup>24</sup>.

However, it is important to note that the protection of private and family life, home, and correspondence is not absolute. The second paragraph of Article 8 allows for legitimate interference by public authorities if such interference is necessary in a democratic society for reasons of national security, public safety, the economic well-being of the state, the prevention of disorder or crime, the protection of health or morals, or the protection of the rights and freedoms of others<sup>25</sup>.

The use of technology can have diverse effects on the environment, including both positive and negative impacts. On the positive side, the use of technology can help improve the efficiency of natural resource utilization and reduce waste. For example, technology can be employed to enhance energy efficiency, improve water management, and promote recycling and waste management.

However, the use of technology can also have negative effects on the environment. For instance, the production and operation of technology can result in greenhouse gas emissions, air and water pollution. Additionally, the accumulation of electronic waste from outdated technology can contribute to environmental pollution and have an impact on public health. Furthermore, the environmental applications of technology may intersect with human rights, as technology in some cases can infringe upon privacy and encroach on certain rights that society has recognized.

Therefore, it is important to use technology in sustainable and responsible ways to mitigate the negative impacts on the environment. This can be achieved through the development and adoption of environmentally friendly and efficient technology, promoting recycling and electronic waste management, and encouraging sustainable practices in the design and use of technology.

### **Subsection 1: Requirements For Using Technology To Protect The Environment In Algeria**

Indeed, Algeria is making significant efforts to utilize technology and advanced techniques in environmental protection. These efforts encompass

---

24 Abdul Aziz Muhammad Sarhan, *The European Convention on Human Rights*, Dar Al-Nahda Al-Arabi, Cairo, 1966, p. 325.

25 Abdul Aziz Muhammad Sarhan, ipic.

substantial investments in areas such as waste management and water quality improvement.

In terms of waste management, Algeria aims to harness innovative technologies to minimize waste and maximize its potential for economic and environmental benefit. Advanced waste treatment and recycling methods are being implemented to reduce reliance on landfill disposal and promote the circular economy. The adoption of smart waste management systems and digital solutions enables efficient monitoring, collection, and sorting of waste<sup>26</sup>.

Additionally, Algeria is leveraging technology to enhance water management and conservation. Advanced water treatment and desalination technologies are being deployed to ensure a sustainable water supply, particularly in water-scarce regions. Remote sensing and data analytics are utilized to monitor water resources, optimize irrigation practices, and detect water pollution incidents promptly.

Moreover, digital platforms and mobile applications are being developed to engage citizens in environmental conservation efforts. These platforms facilitate information sharing, raise awareness about sustainable practices, and encourage public participation in environmental initiatives.

Overall, Algeria's focus on integrating technology and innovative solutions into environmental protection showcases its commitment to sustainable development and addressing the challenges posed by waste and water management<sup>27</sup>.

Law 03-10, which relates to environmental protection within the framework of sustainable development, addresses the challenges posed by artificial intelligence technology and its rapid development. This law is characterized by its flexibility in dealing with these technologies, by encompassing a wide range of aspects that aim to preserve the environment and promote sustainable development in this context<sup>28</sup>.

This law includes provisions that focus on concepts such as the precautionary principle and preventive action, aiming to implement risk reduction strategies and ensure that artificial intelligence technology does not

---

26 Integrated Solid Waste Management Oran, Algeria,  
<http://r20paris.org/wpcontent/uploads/2016/06/oran-waste-overview301115.pdf>

27 Touitou Mohammed, Abul Quasem Al-amin, op. cit.

28 Law 03-10 of July 19, 2003, relating to environmental protection within the framework of sustainable development, op.cit.

cause unexpected negative effects on the environment. It also seeks to develop protective legal systems that safeguard the environment and enhance sustainable development, thereby contributing to reducing the technological risks associated with these technologies.

In this way, the law on environmental protection within the framework of sustainable development represents an important legal framework to ensure the sustainability of technological progress and the preservation of the environment simultaneously. This is achieved through effective monitoring and regulation of the impact of artificial intelligence technology on the environment and ensuring its responsible use within the context of sustainable development<sup>29</sup>.

In terms of environmental protection, artificial intelligence (AI) can play a significant role in monitoring and accurately tracking environmental changes. AI systems can monitor pollution levels, conduct behavioral analysis of organisms, and monitor human activities that are harmful to the environment. This can contribute to identifying potential environmental threats and taking preventive measures to mitigate them.

When it comes to the exploitation of environmental resources, especially non-renewable ones, AI can improve the efficiency and frameworks for utilization through analyzing weather data, climate predictions, and the potential renewal of these resources and their natural conditions. It can also be used in the development of renewable energies, energy storage systems, and improving electricity distribution more effectively<sup>30</sup>.

Additionally, AI can contribute to raising environmental awareness and encouraging communities and businesses to adopt environmentally friendly practices. It can also assist governments in developing better environmental policies based on data and analysis.

By utilizing AI tools, we can build a more environmentally sustainable future and make better use of eco-friendly renewable energy sources, thereby contributing to the preservation of the planet for current and future generations.

AI can play a pivotal role in enhancing environmental sustainability. The shift towards environmental sustainability relies on data-driven decision-making processes. AI can aid in achieving this by swiftly and efficiently analyzing and interpreting environmental data.

Specifically, AI can improve energy efficiency by monitoring and analyzing energy consumption and providing recommendations for optimization

---

29 - The official website of the World Meteorological Organization, access date: 03/29/2023, at 15:00, at the following website: <https://public.wmo.int/en>

30 Ahmed Hani, Data Analysis in Environmental Sciences, access date: 02/18/2024, time: 14:00, on the following website: <https://greenfue.com>.



and utilization. It can also predict weather changes and climate patterns, facilitating better planning for the use of renewable energy<sup>31</sup>.

## **Subsection 2 : The Negative Repercussions Of Environmental Electronic Applications On Protecting The Rights And Freedoms Of Individuals**

At first glance, the concept of privacy may seem like a recent development and has only been used in recent years. However, the actual reality confirms that it is a long-standing concept that has existed wherever humans have found themselves. But with the widespread use of technology, especially the internet, significant social changes have occurred, making it necessary to establish safeguards to protect this private life, which has increasingly been encroached upon due to rapid technological advancements.

In fact, the term "privacy" is not new; it has existed since ancient times, as it was considered an important concept when individuals faced challenges in protecting their personal lives. However, with the evolution of technology and the use of artificial intelligence applications in environmental protection and other communication means, new social transformations have emerged, and there have been changes in the nature of privacy.

It has become necessary to establish safeguards to protect privacy in light of the tremendous advancements in internet usage and modern technology. Individuals' lives have become surrounded by technological means and are exposed to multiple threats related to privacy, such as the collection, monitoring, and tracking of personal data online.

Therefore, safeguards and policies must be put in place to protect privacy that address the challenges of the modern age and safeguard individuals' rights to maintain their private lives<sup>32</sup>.

Article 8 of the European Convention on Human Rights, adopted in 1950, serves as the legal bedrock for safeguarding the right to privacy within the realm of human rights protection in Europe. This article sets forth the following provisions:

Every person is entitled to the right to have their private and family life, their home, and their correspondence respected.

No public authority shall interfere with the exercise of this right, except when such interference is in accordance with the law and is necessary in a democratic society for the interests of national security, public safety, the economic well-being of the country, the prevention of disorder or crime, the protection of health or morals, or the protection of the rights and freedoms of others.

---

31 Ahmed Hani, ipic.

32 Zainab Muhammad Jamil Al-Dannawi, op. cit, p. 24

Under this article, the respect for private life, home, and correspondence is guaranteed to every individual within the territory of any state that is a party to the European Convention on Human Rights, irrespective of their citizenship status, whether they are citizens of the state, citizens of other contracting parties, or non-contracting parties. The protection provided by this article also extends to stateless individuals within the territory of any state party to the convention<sup>33</sup>.

However, it is important to note that the protection of private and family life, home, and correspondence is not absolute. The second paragraph of Article 8 allows for legitimate interference by public authorities if such interference is necessary in a democratic society for reasons of national security, public safety, the economic well-being of the state, the prevention of disorder or crime, the protection of health or morals, or the protection of the rights and freedoms of others<sup>34</sup>.

## Conclusion

In conclusion, the utilization of technology in the field of environmental protection in Algeria presents both opportunities and challenges. On one hand, technology can enhance the efficiency of natural resource utilization, waste management, and environmental monitoring. It can contribute to sustainable development and improve the overall quality of the environment. On the other hand, the use of technology raises legal and human rights concerns, particularly regarding the rights and freedoms of individuals suspected of being involved in environmental pollution.

To address these challenges, it is crucial to establish a comprehensive legal framework that balances environmental protection with the protection of individual rights. This framework should ensure that the use of technology in environmental protection respects privacy rights, provides fair procedures for individuals suspected of pollution, and guarantees their right to defend themselves against accusations.

Additionally, promoting transparency and accountability in the use of technology is essential. Effective oversight mechanisms should be established to ensure that the application of technology in environmental protection adheres to legal and ethical standards. Public awareness and participation should also be encouraged to foster a culture of environmental responsibility and respect for individual rights.

Furthermore, investing in research and development of environmentally friendly technologies can minimize the negative environmental impacts associated with the production and operation of technology. Emphasizing

---

33 Abdul Aziz Muhammad Sarhan, *op. cit.*, p. 325.

34 Abdul Aziz Muhammad Sarhan, *ipic.*

sustainable practices, such as recycling and waste management, can contribute to reducing pollution and preserving natural resources.

In conclusion, by addressing the legal and human rights challenges and adopting a balanced approach, Algeria can harness the potential of technology to protect the environment while safeguarding the rights and freedoms of individuals suspected of involvement in environmental pollution. This will contribute to achieving sustainable development and a healthier environment for present and future generations.