The Precautionary Principle as a Fundamental Pillar for Achieving Sustainable Development Under Environmental Legislation – The Algerian Legislation as a Model

Asma ANTEUR*
The Real Estate and Environmental Law Laboratory –
University of Mostaganem, Algeria
Belhadj Bouchaib University - Ain Temouchent, Algeria
asma.anteur@univ-temouchent.edu.dz

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Abstract: The concept of sustainable development is among the most important topics that have occupied those interested in modern developmental thought, especially when compared to the evolution of development over recent decades. The concept of sustainable development emerged within the framework of the United Nations in an attempt to reconcile the different viewpoints of developed and developing countries regarding the importance to be given to the environmental aspect.

The first use of the term "sustainable development" came from activists in a non-governmental organization in 1980, called World Wildlife, and its Arabic translation includes several terms such as: "development that can be sustained."

Sustainable development is based on a set of principles and pillars that guide its strategy, with the most important of these being:

- The Principle of Participation,
- The Principle of Inclusion,
- The Polluter Pays Principle,
- The Precautionary Principle (Le principe de précaution).

The latter is a preventive principle among the 27 principles outlined in the Rio Declaration on Environment and Development, which was held in Brazil in 1992 and is commonly known as the "Earth Summit."

This study aims to cover as many aspects as possible regarding the application of the precautionary principle in the environmental field, especially considering the unique nature of the environment. Additionally, the close relationship between the environment and sustainable development cannot be overlooked, as it is impossible to talk about the sustainable development of a country without considering the environmental aspect and ensuring it is not harmed—this is the approach adopted by most Arab legislations.

Keywords: Precautionary Principle, Scientific Certainty, Environmental Protection, International Environmental Law, Sustainable Development.

***Corresponding author: Asma ANTEUR**

Introduction:

The discourse on environmental issues has become a pressing global concern, growing increasingly complex with the passage of time. The advent of the industrial revolution and humanity's transition into an era of scientific and technological advancements have significantly altered the dynamics of the environment. Negative impacts of industrial and urban development, coupled with the mismanagement of natural resources, have led to widespread degradation of environmental components, including water, soil, and biodiversity, with effects becoming more prominent and alarming.

The environment's inability to replenish its natural resources has caused imbalances in ecological systems. However, humanity only began to recognize the severe consequences of environmental degradation in the latter half of the 20th century, spurred by a series of natural disasters that shook the world. This realization heightened global interest in environmental issues, establishing them as critical challenges interconnected with sustainable development and economic activities.

In this context, calls for environmental preservation and protection have intensified, becoming central to scientific research and studies at both international and national levels. This movement gained momentum with the 1972 Stockholm Conference, which marked the issuance of the first international document outlining principles and recommendations for environmental protection. This was further advanced by the 1992 Earth Summit in Brazil, which emphasized sustainable development aimed at meeting the needs of present generations without compromising the ability of future generations to fulfill their own needs.

Sustainable development relies on various foundational principles, chief among them being the precautionary principle. This principle is a preventive approach that seeks to mitigate unforeseen risks and prevent irreversible damage. Western and developing countries, including Algeria, have sought to incorporate this modern principle into their legal frameworks as a mechanism for environmental protection.

This legal study aims to shed light on the precautionary principle, a contemporary concept that has sparked significant debate at both the international and national levels.

Research Question

To what extent has the Algerian legislator incorporated the precautionary principle as a mechanism for environmental protection, and how effective is this principle in promoting sustainable development?

Study Structure

To address this question, the study is divided into two chapters:

I. **The Emergence of the Precautionary Principle and Its Establishment in Environmental Policy.**

II. Mechanisms for Implementing the Precautionary Principle in Environmental Matters.

TITLE 1: The Emergence and Establishment of the Precautionary Principle in the Environmental Field

After the 1972 Stockholm Conference, the pace of environmental conferences, agreements, and international treaties accelerated, contributing to the enrichment of international environmental law and the introduction of new legal principles aligned with environmental issues. The 1992 Rio Conference was one of the most significant milestones in this process, reaffirming the agreements reached at Stockholm by outlining the **Agenda 21**, a comprehensive program for the 21st century.

The Rio Summit also adopted 27 principles to embody the principle of environmental protection, and one of the most controversial of these was **Principle 15**, the **Precautionary Principle**. This principle emphasizes that countries must adopt precautionary measures to protect the environment based on their capabilities. It asserts that the absolute absence of scientific certainty cannot be used as an excuse to delay actions against potential risks that could lead to severe and irreversible damage[1].

The conference's treatment of this principle does not provide a definition for it, but rather refers to some of its distinguishing characteristics, in contrast to the other principles that were included as foundations of international environmental policy.

As for the Rio Conference, it played a foundational role in the establishment of the precautionary principle, which is considered one of the new and emerging principles in the field of international environmental protection. This principle had not previously been granted such importance.

Based on the above, we will divide this section into two parts: the first will address the emergence of the precautionary principle, while the second will focus on the concept of the precautionary principle.

First Subtitle: The Emergence of the Precautionary Principle.

Some believe that the precautionary principle was developed to manage the institutions and public policies of Germany, particularly in environmental matters. It imposed an obligation of vigilance on public authorities, guiding their actions in all areas to ensure the protection of the environment[2].

However, some argue that the source of the precautionary principle lies in the idea of Hans Jonas[3]In 1979, Hans Jonas introduced the **Principle of Responsibility** under the title "The Ethics of Responsibility," which he developed as a theory of action. This was the result of his research, which began in 1957, on the topic of "scientific applications."

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[1] -**Rio Declaration on Environment and Development**, adopted during the United Nations Conference on Environment and Development (UNCED) from June 3 to 14, 1992, Rio de Janeiro, Brazil, p. 4.

[2] -Youssef Mohamed Safi, *The Precautionary Principle for Preventing Environmental Harm: A Study within the Framework of International Environmental Law*, Dar Al-Nahda Al-Arabia, Cairo, 2007, p. 177.

[3] -Hans Jonas was a German philosopher and historian, born in 1903 and passed away in 1993. He is known for his philosophy on the ethics of technology. One of his most significant intellectual contributions is the **Principle of Responsibility** (*Le principe de responsabilité*), which some consider to be the doctrinal source of the precautionary principle.
For more details, refer to the website: Hans Jonas - Wikipedia.

It is worth noting that this principle for public administration also found its source in the need to monitor the significant impact of human activities, including industrial and agricultural practices, which negatively affect the environment.

Therefore, it was logical to propose the idea of a **duty of care**, which imposes on public authorities the obligation to act with wisdom and vigilance at all times in order to protect the environment[4].

In the face of increasing environmental dangers of all kinds, which led to the problem of the depletion of the ozone layer, a set of texts (both binding and non-binding) from conventions and protocols calling for the establishment of precautionary measures to address regional environmental issues was adopted.

Legal scholars emphasized that the precautionary principle was part of Anglo-Saxon legal thought, which did not hesitate to recognize it as a customary principle. However, this idea quickly faded as a customary principle after the Earth Summit and the Stockholm Conference on the environment. These conferences led to the formal establishment of the precautionary principle in international environmental law, thus imposing its binding nature on all states. Subsequently, numerous agreements were adopted that enshrined the mandatory nature of this principle[5].

Thus, we will attempt to clarify the origin of the precautionary principle in the first section, while the second section will be dedicated to the adoption of the precautionary principle at the international level in the field of environmental protection.

Section One: The German Origin of the Precautionary Principle

The first appearance of the precautionary principle in Germany dates back to the late 1960s, under the name **"Vorsorgeprinzip"**, derived from the **Vorsorgeprinzip Conference** which discussed the initial draft of the 1970 law to ensure clean air, aligning with the development of ecological environmental issues in general within political life.

By 1974, the law concerning protection against the harmful effects of environmental pollution, caused by rain, air, vibration, and similar phenomena, was enacted. This law emphasized the need to take all necessary and reasonable measures to address potential risks and protect the environment[6].

The principle was formulated as follows:

"Responsibility towards future generations demands that the natural foundations of life be preserved to avoid irreversible damage, such as the degradation of forests. Likewise, the precautionary principle requires that harm to the natural world be prevented as early as possible, depending on the circumstances and opportunities."[7].

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[4] -Alain Gest and Philippe Tourtelier, *The Evaluation of the Implementation of Article 5 of the Environmental Charter Concerning the Application of the Precautionary Principle*, Edition: 2001, p. 18.

[5] -Kamel Nabila Abdel Rahim, *Towards a Unified Law for Environmental Protection*, Dar Al-Nahda Al-Arabia, Cairo, Egypt, 1993, p. 15.

[6] -Omar Omar, *Environmental Protection in International Humanitarian Law During Armed Conflict*, Jordanian Journal of Applied Sciences, Volume 1, 2008, p. 07.

[7] -« La responsabilité envers les générations futures exige que les bases naturelles de la vie soient préservées et que des types irréversibles de dommage, comme le dépérissement des forêts, soient évités » ainsi : le principe de précaution exige que les dommages causés au monde de la nature qui nous entoure tous soient évités à l'avance en fonction des circonstances et des possibilités.

- Flogaitis S. et Pétrou C.H., *Les avancées du principe de précaution en droit public grec*, R.H.D.I. 2006-1, pp. 449-470, p. 449.

Thus, we find that the German government has outlined a series of principles in adopting the precautionary principle in environmental matters, including:

1. Taking all measures aimed at preventing specific environmental threats.

2. Prevention to avoid, reduce, or limit the risks threatening the environment.

3. The German state's forward-looking approach to the environment, focusing on the protection and improvement of natural living conditions.

Section Two: The Adoption of the Precautionary Principle at the International Level in the Environmental Field

The precautionary principle has gradually gained significant expansion in its application. Since its emergence and confirmation in international relations through the Stockholm Declaration, which sought to address environmental issues, the precautionary principle has moved from one sector to another in environmental protection areas. It has been applied to issues such as long-range air pollution, ozone layer protection, marine environmental protection, and international watercourses.

It is worth noting that precautions presented in the form of simple declarations do not legally bind the state parties to fulfill their obligations regarding precautionary measures. As previously mentioned, a range of binding and non-binding texts have been adopted, calling for the adoption of precautionary measures to address regional environmental issues.

International efforts reflect the adoption of precautionary measures in various environmental fields, as evidenced by international treaties where the parties have demonstrated commitment to precautionary actions taken to protect the environment. Notable among these is:

- The Stockholm Conference on Human Environment, held in 1972[8].
- The signing of the **Long-range Air Pollution Convention** in 1979.
- The **Nairobi Conference on the Assessment of the Environmental Situation**, held in 1982[9].

In addition to the Stockholm Declaration on the Environment in 1972 and the Nairobi Declaration in 1982, the United Nations General Assembly adopted the **"World Charter for Nature"** in 1982. This charter called for a set of principles, the most prominent of which emphasized the importance of protecting nature and ecological systems to ensure the survival of humanity. It also highlighted the need for the protection and wise management of resources, emphasizing the duty of humans to maintain a livable planet for future generations. This could be achieved through the

- [8] -The United Nations Conference on the Human Environment (CNEUH) was held from June 5 to 16, 1972, in Stockholm, Sweden. It was the first time that ecological issues were elevated to the level of international concern. The participants adopted a declaration of 26 principles and a comprehensive action plan to combat pollution.

[9] -The United States expressed objections to the principles contained in the declaration, and 80 countries abstained from voting on it, as they believed the principles of the charter conflicted with the right of states to exercise sovereignty over their natural resources.

adoption of appropriate measures at both the international and national levels to protect nature and promote international cooperation[10].

Precaution and the Right to Sustainable Development: The precautionary principle was established as a general principle in environmental policy under the **Brundtland Conference on Sustainable Development[11]**.

- **Rio Summit (Earth Summit) 1992**: The conference reinforced the precautionary principle in environmental matters, and Algeria's ratification of the **Rio de Janeiro Treaty** further solidified its commitment to international environmental standards and actions[12].

Second Subtitle: Concept of the Precautionary Principle:

International environmental law has undergone significant development since the 1990s to address emerging new risks. Initially, it was a legal framework applied in emergency situations to address disasters. However, it has entered a new phase where it is now a law focused on the future, within the context of sustainable development[13].

In this context, the precautionary principle emerged, which stipulates that countries must take the necessary measures to prevent environmental degradation, even in the absence of conclusive scientific certainty about the potential impacts of the proposed activities.

The harm that the precautionary principle aims to prevent is one that scientific knowledge, as it stands, cannot confirm will occur, nor can it specify its effects or consequences on the environment if it does happen. This means there is a lack of scientific certainty regarding the nature of the harm.

Therefore, this principle is characterized by foresight and anticipation, making it entirely or partially directed towards the future. Based on current scientific data, action should be taken before any evidence is available to demonstrate the likelihood of harm[14].

The First Section: Defining the Precautionary Principle

In this section, we will attempt to define the precautionary principle (as the first branch) and mention a set of conditions that must be met for the application of the precautionary principle (as the second branch).

First Branch: Definition of the Precautionary Principle

In defining the precautionary principle, it is necessary to mention its linguistic, technical, and legal meanings.

[10] -Slafa Tarek Abdel Karim Al-Shalaan, *International Environmental Protection (From the Greenhouse Effect Phenomenon in the Kyoto Protocol)*, Halabi Legal Publications, 1st Edition, 2010, p. 97.

[11] -Sadeleer, Nicolas, *Les principes du pollueur-payeur, de prévention et de précaution : Essai sur la genèse et la portée juridique de quelques principes du droit de l'environnement*, Bruylant, Bruxelles, Universités francophones, 1999, p. 138.

[12] -This treaty was ratified under **Order No. 95/03** dated **January 21, 1995**, published in the **Official Gazette, No. 32**, dated **June 14, 1995**, p. 3.

[13] -Youssef Mohammed Safi, the previous reference, p. 60.

[14] -Martin-Bidou, "The Precautionary Principle in International Environmental Law," RGDIP, October-December 1999, No. 03, p. 633.

- **Linguistic Meaning of the Precautionary Principle:**

In its linguistic context, "precaution" refers to caution, care, and the act of taking preventive measures. To "exercise precaution" means to act with caution in a particular matter, or to take steps to avoid potential harm or danger[15].

Precaution refers to the measures taken to rectify or avoid harm and minimize its potential effects.

*Second: The Terminological Meaning

There is a disparity and difference in providing a specific definition for the principle of precaution and revealing its nature. Some have considered the meaning of caution and safeguarding against falling into prohibited actions, which is the referential effect of acting with precaution. Others have combined both meanings. Therefore, definitions that merge the elements of doubt and caution are the closest to clarifying the essence and truth of precaution, and these are the ones that can be relied upon in defining it[16].

Third: The Legal Meaning

The principle of precaution is an ambiguous principle because it lacks a clear legal definition. Legally, it is a principle outlined among the 27 principles presented in the Rio Declaration on Environment and Development; it is one of the principles of environmental law. This creates difficulty in providing a definition for it and determining its nature and implementation methods, especially since the development of this principle has been rapid and closely tied to significant advancements in the scientific field, as well as its negative impacts, particularly at the environmental level[17].

Even the reference to the principle of precaution in some constitutions has not removed the ambiguity surrounding its definition, and its impact remains limited in one of the fundamental changes, without allowing for the precise determination of its scope of application. However, the consensus among scholars on certain issues related to this principle has greatly contributed to spreading this philosophical approach across all branches of law and has helped judges adopt clear stances towards this principle.
This ongoing debate over providing a clear concept of the principle of precaution has led to the emergence of several schools of thought, and we will briefly touch upon what these schools have adopted:

*The Catastrophist School (l'école catastrophiste): Led by the spiritual father of the precautionary principle, the German philosopher Hans Jonas, who called for our activities and actions to be appropriate and ensure the continuity of human life on Earth[18].

The Precautionary School (École Prudentielle): Led by Philippe Kourilsky and Geneviève Viney, this school views precaution and prevention as hallmarks of wisdom. Supporters of this

[15] -It seems like you referenced a dictionary, "Almaany," but I'm not sure if you want a translation or more information. Could you clarify what you'd like to do with the text?

[16] -Shir Mohamed Amin, "The Principle of Precaution and its Role in Environmental Protection," Master's Thesis (Doctoral School) in Health Law, Djilali Liabes University / Sidi Bel Abbes, 2010/2011, pp. 09-10.
[17] -AUBENQUE Pierre, *La prudence chez Aristote*, PUF Edition, Quadrige Grands Textes Collection, Paris, 2004, p. 220.
[18] -GORARD Olivier, "Le principe de précaution n'est pas un catastrophisme," Centre National de la Recherche Scientifique, École Polytechnique, Cahier N 2006-04, March 2006, p. 04.

approach advocate for risk reduction, as completely eliminating risks is considered impossible[19].

The Dialogical School (École Dialogique): Led by Michel Callon, Pierre Lascoumes, and Yannick Barthes, these scholars argue that the principle of precaution is a procedural tool in the decision-making process and a means of public criticism of our democratic trends. Thus, we have covered various legal schools that have specifically studied the precautionary principle, which serves as clear evidence of the ambiguity of this principle. Significant efforts have been made to provide a legal definition for the principle of precaution, including what was introduced by the French Barnier Law[20].

This failure to define the principle of precaution did not prevent the widespread use of the term, especially in recent years, to refer to positions adopted to exercise caution regarding situations characterized by scientific or technical uncertainty. The ambiguity in this principle is not related to the meaning attributed to it, but rather to the similarity and overlap with terms like 'prevention,' for example.

Section Two: Conditions for Applying the Precautionary Principle

An analysis of the various statements of this principle in all international texts reveals a set of conditions that must be met when applying the principle of precaution. Once these conditions are met, it becomes evident that this principle is different from other environmental principles. We will attempt to mention the most important of them:

Condition of Uncertainty in the Scientific Field:

It has become necessary to take into account the uncertainty regarding the possibility of significant harm. Therefore, the principle of precaution acknowledges that humans cannot control scientific data and considerations, thus recognizing scientific uncertainty. This principle aims to take precautionary measures in the face of risks that are still unknown or not fully understood. Hence, the absence of scientific certainty has become an acknowledged reality[21],From here, we observe that the fundamental element of the precautionary principle lies in the difficulty of understanding and applying it.

The risk must be uncertain:

The characteristic of risk in the precautionary principle is that it is sudden and its occurrence is not certain. However, what is certain is the causal relationship between the potential incident and its occurrence and the expected harm. The duration during which the risk occurs remains general[22].

Among its characteristics:

From a scientific perspective, the uncertain risk is the risk that is not scientifically certain. From a practical perspective, it is the potential risk.

[19] -ZYLBERMEN Patrick, "Le principe de précaution," Thesis (École de Haute Études de Santé Publique), Interprofessional Public Health Module, 2010, p. 07.

[20] -The Barnier Law No. 95-101 of February 25, 1995, Article 200-1L, paragraph three, stipulates as follows: '... the absence of certainty, given the scientific and technical knowledge at the time, should not delay the adoption of effective and proportionate measures aimed at preventing a risk of serious and irreversible damage to the environment at an economically acceptable cost.

[21] -Bashir Mohamed Amin, *Op. cit.*, p. 34.

[22] -Sadeleer, *Op. cit.*, p. 167.

The risk must be significant, irreparable, and non-recoverable: Therefore, we observe the difficulty in assessing the importance and the degree of impact of any risk, as the latter can be amplified when combined with other risks.

TITLE 2 : Mechanisms for Applying the Precautionary Principle in Environmental Issues.

Proving the lack of harm of any activity to the environment and human health can only be achieved by conducting an impact assessment study on the environment, according to specific rules and conditions. The issue of determining the degree of harm poses many difficulties.

Since the precautionary principle has achieved unparalleled success in international legal systems, it is expected that this principle will be accepted at the level of national legal systems. From the outset, the precautionary principle began to be integrated into national legislation. Many countries adopted it, albeit implicitly in terms of application and legislation, through resorting to a precautionary approach[23].

Thus, we will attempt to study the scope of application of the precautionary principle in the domestic systems of some countries. In the first section, we will address the mechanisms for applying this principle in both Germany and the United States of America. As for the second section, we will dedicate it to studying these application mechanisms in Algeria.

First Subtitle: Mechanisms for Applying the Precautionary Principle in Germany and the United States of America.

Germany was a pioneer in applying the precautionary principle, as was the United States, which developed this principle and today seeks to apply it at the level of its foreign policy. Therefore, we decided to begin our study in this area with both Germany and the United States.

Section One: Mechanisms for Applying the Precautionary Principle in Germany.

Germany is among the first countries to incorporate the precautionary principle, or what is known as the precautionary approach, into its legal system. It is considered not only one of the key foundations of environmental health policy, such as those related to genetic technologies, but also those concerning the use of chemicals. However, German law blends the concepts of precaution (précaution) and prevention (prévention) under the term *Vorsorge*, while German legal doctrine distinguishes between the two terms[24].

It is worth noting that Germany was among the first to adopt the idea of precaution in the field of environmental protection to safeguard the planet's atmosphere. The German government expressed its commitment to reducing carbon dioxide (CO2) emissions starting from 2005 by 25% compared to 1997 levels. For this purpose, a committee was established to research precautionary measures to protect the Earth's atmosphere from environmental pollution[25].

Section Two: Mechanisms for Applying the Precautionary Principle in the United States of America.

[23] -Sadeleer, *Op. cit.*, p. 115.
[24] -Bashir Mohamed Amin, *Op. cit.*, p. 105.
[25] -D. Vanderzwag, "La LCPE et le principe de précaution.

The United States has resisted this principle in the field of climate change, where its approach has been referred to as the 'No Regrets Policy.'[26].

In addition, many domestic legislations in the United States have been said to align with some interpretations of the precautionary principle. Therefore, the 'Clean Air Act' of 1993 requires that, in the case of establishing national legal standards for air quality, a reasonable safety margin must be applied[27].

The 'Clean Water Act' of 1993 aims to establish a national policy to regulate the technology necessary to remove pollutants from U.S. waters. Additionally, the federal legislation regarding food, drugs, and cosmetics, known as the 'Federal Food, Drug, and Cosmetics Act,' prohibits the trade of additives unless the manufacturer can prove the safety of the product.

Second Subtitle: Mechanisms for Applying the Precautionary Principle in Algeria.

After addressing the applications of the precautionary principle in the environmental field in both Germany and the United States of America in the first section, we will study the mechanisms and scope of applying this principle in the Algerian legal system and how the Environmental Protection Law addresses this principle.

Section One: The Scope of Applying the Precautionary Principle in Law 03-10.

The issue of environmental protection in Algeria is a sensitive and important matter, as evidenced immediately after independence. The public authorities took a series of precautionary measures, particularly with the adoption of a comprehensive planning approach in construction and development policies. Although these measures were initially limited to the industrial sector and environmental cleanliness, this was due to the priorities and considerations established at that time[28].

Given the development of Algerian society in all aspects (economically, socially, and culturally), Algeria's perspective on the environment has evolved, leading to increased attention to it. This is evident in the establishment of specialized bodies and structures for monitoring and addressing the risks of environmental pollution in all its forms and across various activities. The Algerian state has enshrined a series of legislative provisions aimed at preserving the living environment of the population and protecting the environment from all forms of violations, whether direct or indirect[29].

Among the legal texts previously mentioned is Law No. 03-10 concerning environmental protection within the framework of sustainable development[30].

Thus, this law generally seeks to protect the environment in its various aspects, including those related to nature, the biological environment, and even the human environment. As stated in Article 3 of Title I, 'General Provisions,' the general principles underpinning this law are

[26] -The No Regrets Policy.
[27] -Bashir Mohamed Amin, *Op. cit.*, p. 106.
[28] - Al-Ghouthi Malha, "On Environmental Protection in Algerian Legislation," *Algerian Journal of Legal, Economic, and Political Sciences*, University of Algiers, Issue 03, 1994, p. 718.
[29] - Bashir Mohamed Amin, *Op. cit.*, p. 114.
[30] - Law No. 03-10, dated 19 Jumada al-Awwal, 1424 AH, corresponding to July 19, 2003, concerning the Law on Environmental Protection within the Framework of Sustainable Development, Official Gazette No. 43 of 2003. This law replaced Law 83-03, dated February 5, 1983, concerning environmental protection, Official Gazette No. 06.

outlined, and in paragraph six, the precautionary principle is mentioned[31], As is recognized internationally.

Section Two: The Adoption of the Precautionary Principle in the Law on Environmental Protection within the Framework of Sustainable Development.

After the Rio Conference of 1992, known as the Earth Summit, Law 03-10 incorporated the concept of sustainable development along with several principles, including the 'polluter pays' principle, the principle of biodiversity protection, and the principle of information and participation. This law also took into account all the international treaties that Algeria has ratified.

It is worth noting that this law was issued after the Ministry of Regional Planning and Environment prepared a report on the state and future of the environment in Algeria in the year 2000. This report served as a summary of the work of experts both at the national and international levels, in addition to a comprehensive study based on available data to date[32], This report, which was prepared, serves as a description of the state of the environment in Algeria, and its goal is to enact and establish legal texts and principles for environmental protection that are internationally recognized, such as the precautionary principle, the principle of sustainable development, and others.

In 2003, the law on environmental protection within the framework of sustainable development was issued, three years after the preparation of the aforementioned report. Following the issuance of the law, another report was released regarding the study of the environmental situation, as well as the significant changes that occurred during the period between the release of the first report and the enactment of Law 03-10.
Due to the severity of ecological problems in Algeria, which are closely linked to the means and procedures used in the national economy, Algeria decided to implement a reform strategy[33], The strategy is primarily aimed at preserving the balance of various ecosystems and reinforcing all of this by establishing national environmental and sustainable development plans. The objectives of this strategy include improving health, preserving natural resources, and enhancing their productivity.

One of the most notable aspects addressed in this report is the creation of several bodies responsible for monitoring and ensuring that environmental law aligns with the goals outlined in Algeria's general strategy.

Among the bodies tasked with monitoring, we mention the National Observatory for the Environment and Sustainable Development, which will be able to support and improve the operation of the national network for monitoring, guarding, and measuring the quality of various environmental media, in coordination with other sectoral networks such as the National Water Resources Agency and laboratories of the Ministry of Health, in addition to several other bodies concerned with biodiversity, such as coastal development and the National Information Observatory[34].

[31] - Article 3, paragraph 6 of Law 03-10 states: '... the precautionary principle, according to which the lack of available technologies due to current scientific and technical knowledge should not be a reason to delay the adoption of effective and proportionate measures to prevent the risk of serious environmental damage, with an economically acceptable cost.'

[32] - Bashir Mohamed Amin, *Op. cit.*, p. 115.

[33] - National Strategy for the Environment and Sustainable Development, Environmental Report of 2003, pp. 26-27.

[34] -environment report 2023,

Conclusion:

In conclusion, this legal study demonstrates that the precautionary principle is one of the most important tools for protecting the environment. The precautionary principle is not a modern invention, but its evolution and current form, with a series of legal and jurisprudential studies that treat it as an independent principle with significant importance and a prominent place in both international and national legal texts, only occurred recently.

The circumstances in which this principle arose make it distinct and unique from other principles, as the lack of scientific certainty plays a decisive role in prioritizing the activation of the precautionary principle over others. If we were to compare this principle with others, it would be at the top in terms of the level of protection it offers to the environment.

Therefore, today the world needs to pay more attention to the precautionary principle, with international and national policies striving to elevate it to the level of fully developed legal principles, in response to the growing environmental crises. We must not forget the reluctance of some countries to develop everything that would place international responsibility on their shoulders.

The efforts of all countries are more needed than ever to develop international environmental law and improve the legal principles implemented in environmental protection in general, such as creating specific international mechanisms capable of monitoring the application of the precautionary principle in the environmental field, like global bodies such as the International Atomic Energy Agency and the World Health Organization.