

The Legal Nature of the Precautionary Principle

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ABSTRACT:

Swift leaps in science and technology across diverse fields have ushered in fresh, unforeseen risks that threaten human health and the planet. As science advances, so too do uncertainty and ambiguity. This calls for embracing the precautionary principle as a shield against uncertain threats that could harm us later. The lack of complete scientific knowledge should not stall us from taking decisive actions to protect health and the environment. Given the novelty of the precautionary principle and the murkiness surrounding its use at national and global levels, it becomes essential to test its suitability and tease out its legal significance amid an era of increasingly intricate crises.

key words: Risks, Scientific Certainty, Potential Damages, Prevention.

Introduction:

Human life is full of risks; it always has been and always will be. the need to manage the risks to which we are exposed is a fundamental part of our existence. Science and technology not only alleviate some of life's trials, they can also help to avoid or reduce some of the most threatening risks posed by nature itself. Human development has reached a point where we must control our impact on the biosphere, the very basis of our existence.

The precautionary principle is a strategy aimed at taking into account scientific uncertainties in the assessment and management of risks. Precaution means taking action to protect human life from the danger of very serious harm. However, in the

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international arena, there are a variety of views on what precaution means, and the precautionary principle is subject to varying interpretations.

The precautionary principle requires the competent authorities to take measures in response to a potential risk assessed according to the state of the art and science; it is in fact an obligation for public authorities.

The enshrinement of the precautionary principle by national legislators should have an impact on the development of preventive measures, which cannot be validly justified by a purely hypothetical approach to risk based on mere assumptions that have not yet been scientifically verified. A minimum level of scientific knowledge is therefore necessary, which means that it can only be applied in situations of risk, particularly for human health, which, without being based on mere scientifically unverified hypotheses, has not yet been fully demonstrated.

The majority of issues covered by the precautionary principle are international in nature. The disagreements it raises show that each nation does not have the same understanding of risk, as the exposure and financial consequences are different for each of them.

The precautionary principle, which requires that, in cases of suspected serious risk, definitive scientific evidence should not be awaited before taking the necessary measures to reduce or even eliminate the suspected risk, is the result of a growing awareness of the uncertainties associated with the seemingly limitless expansion of our scientific knowledge and its technical applications.

The emergence of the precautionary principle reveals a double relativity, that of scientific evidence and that of legal evidence. It disconcerts those who expect science to provide definitive answers to all societal problems and unsettles those who might have thought that the deductive logic of classical legal reasoning could overcome the limitations of the scientific method in a context of uncertainty, because the law only recognises it if a minimum of evidence gives minority theories a certain plausibility. A minimum threshold of scientificity is therefore required in order to exclude purely speculative discussions from the scope of application. Combining this principle with that of proportionality, the legal system also allows for the nuancing of scientific (un)certainly by conferring on decisions taken on its basis an uncertain – or, more precisely, provisionally certain – character, reflecting the uncertainties that it has not dispelled.

The precautionary principle is becoming increasingly prevalent in the legal sphere as legislators proclaim it, courts invoke it and important doctrinal analyses are devoted to it. However, this success should not obscure the fact that, due to the diversity of definitions given to it in different legal spheres, its contours remain difficult to define, as neither doctrine nor case law has managed to dispel the mystery surrounding its legal status¹.

¹ Nicolas de Sadeleer, The legal status of the precautionary principle, article published online: www.cairn.info/le-principe-de-precaution--9782130566298-page-73.htm, date of publication: 07/09/2022, 17:38.

This raises the main question:

what is the legal nature of the precautionary principle?

To resolve this issue, we will attempt to address it in two chapters:

- The legal nature of the precautionary principle.
- The legal recognition of the precautionary principle.

THE FIRST TOPIC: THE CONCEPT OF THE PRECAUTIONARY

PRINCIPLE

The precautionary principle implies that measures should be taken when there is sufficient doubt that a product or action may cause serious irreparable damage to health and the environment. It targets hypothetical risks that have not yet been scientifically confirmed but whose possibility can be identified on the basis of empirical and scientific knowledge. For this reason, the precautionary principle entails a profound revision of the relationship between science and decision-making¹, it is customary to consider that the precautionary principle concerns potential risks, while prevention concerns only actual risks, but analysis of the logic of precautionary reasoning shows that in order to make a precautionary decision, it is necessary to produce an assessment establishing a conversion of a potential risk into an actual risk², so it is now essential to clarify the meaning and scope of their use.

First Requirement: What is the precautionary principle?

Legal terminology distinguishes between the principle of prevention and the principle of precaution, in the same way that the concept of precaution differs from that of prevention, which has long been established in national and international law, because³:

- **Prevention:** prevention consists of taking measures to minimise a more or less known risk, but for which it is not possible to assess with acceptable accuracy the probability of occurrence and the potential severity of the event that one is seeking to avoid. Examples: nuclear risk, risk of dam failure.

- **Precaution:** precaution consists of taking measures to reduce risks whose probability and significance are unknown or poorly understood given current knowledge. Examples: the development of genetically modified organisms, genetic engineering.

The distinction is based on the degree of certainty required regarding the harmful or inconvenient nature of certain impacts (behaviour, substance or condition)

¹ Article without author, Precautionary principle, article published online: www.ritimo.org/Principe-de-precaution-6763, date of publication 08/09/2022, 08:14.

² Ibid

³ Anne CHEVALIER and Bernard Flury-Hérard et al., Pour une application raisonnée du principe de précaution (Towards a reasoned application of the precautionary principle), Cahier n°19, IESF, France, June 2015, p8

for a measure to be taken: while the "prevention principle" applies to cases where this nature is proven, the "precautionary principle" only presupposes sufficiently probable potential damage. The precautionary principle therefore specifically concerns how to act in the face of scientific uncertainty¹.

Second Requirement: The emergence of the precautionary principle

The precautionary principle has a much longer history. The book *Late Lessons from Early Warnings* mentions the example of Dr John Snow, who in 1854 recommended removing the handles from water pumps in London to stop a cholera epidemic. The existence of a cause-and-effect relationship between contact with the pump and the spread of cholera was uncertain and did not constitute "indisputable proof", but the fact remains that the recommended measure, which was simple and relatively inexpensive, was effective in ending the epidemic².

The precautionary principle emerged in Germany³ during the drafting of air pollution legislation in the 1970s. Since then, it has been adopted at other levels of governance and its application has been extended to areas other than environmental protection, as seen in environmental agreements in the 1980s, starting with the Vienna Convention for the Protection of the Ozone Layer in 1985, whose preamble mentions "precautionary measures".

In 1987, the ministerial declaration of the Second International Conference on the Protection of the North Sea stated:

"A precautionary approach is required to protect the North Sea from the potential harmful effects of the most dangerous substances. This may require the adoption of measures to control emissions of these substances even before a causal link has been formally established by science."

In 1990, the same ministerial declaration from the third conference expanded on the concept: *"Signatory governments must apply the precautionary principle, i.e. take measures to avoid potentially harmful environmental impacts of (toxic) substances, even when there is no scientific evidence of a causal link between emissions and effects"*⁴.

¹ Daniela THURNHERR, *The precautionary principle: Obligations and limitations for the administration and other state actors*, published by the Federal Office for the Environment (FOEN), Basel, Switzerland, 6 May 2020, p8

² Jens Erik Fenstad and Koïchiro Matsuura, *The Precautionary Principle*, World Commission on the Ethics of Scientific Knowledge and Technology (COMEST), United Nations Educational, Scientific and Cultural Organisation, Compiled and printed in the UNESCO workshops, Paris, March 2005, p9

³ Under the term *Vorsorgeprinzip* (which can also be translated as "principle of foresight"), see Didier Bourguignon, *The Precautionary Principle: Definitions, Applications and Governance*, In-depth Analysis, European Parliamentary Research Service (EPRS), European Parliament, publication of the Research Service for Members, Brussels, December 2015, p5.

⁴ *Ibid*, pp. 5 and 6

The principle became widespread with Rio¹ in all legal instruments concerning the environment. Depending on the wording used, the precautionary principle can be applied in different ways, either as a formal obligation, a recommendation, or an intermediate standard of behaviour, establishing a typology of these conventions according to the degree of normativity of the precautionary principle, whose reference text, which sets out the content of the precautionary principle, that of the Earth Summit, RIO 1992, which gave it global recognition: *"To protect the environment, precautionary measures must be widely applied by States according to their capabilities. In the event of a risk of serious or irreversible damage, the absence of absolute scientific certainty must not be used as a pretext for postponing the adoption of effective measures to prevent environmental degradation."*

It is therefore a question of taking effective and safe measures even in the face of scientific uncertainty.²

Third Requirement: Definition of the precautionary principle

There is no single definition of the precautionary principle, due to its link to developments in case law, which are influenced in some ways by the social and political values prevailing in a society³.

Despite efforts to clarify it, there remains considerable confusion regarding its definition and interpretation. This confusion makes it difficult to apply, and its consequences remain unknown. Taken as such, the precautionary principle is a guarantee against potential risks that are not yet identifiable in the current state of our knowledge. This principle asserts that, in the absence of formal scientific certainty, the existence of a risk of serious or irreversible damage requires the implementation of measures to prevent such damage⁴.

In relation to these different definitions, we propose the following definition: ***"it is a principle whereby the absence of scientific certainty should not prevent measures being taken to prevent a potential risk to health or the environment"***.

¹ In June 1992, in Rio de Janeiro (Brazil), the United Nations Conference on Environment and Development - known as the "Planet Earth" Summit - adopted a declaration that advanced the concept of countries' rights and responsibilities in the field of the environment, see Michel PRIEUR, *The Precautionary Principle*, published by the Society for Comparative Legislation, France, n.p., p3

² K BATOUCHE, *The Precautionary Principle in Environmental Law*, thesis for a postgraduate diploma specialising in environmental law, Faculty of Law and Political Science, University of Oran, 2010, p 5

³ Didier Bourguignon, *Op_cit*, p6

⁴ Béatrice Guardiola, *Prevention and protection in a risk society: the precautionary principle*, Elsevier SAS Scientific and Medical Publishing, 2008, France, p15

THE SECOND TOPIC: LEGAL RECOGNITION OF THE PRECAUTIONARY PRINCIPLE

There is general agreement that the precautionary principle changes the conditions for decision-making. However, while some legal experts affirm the legal nature of this principle, others from different disciplines deny it any legal value. This dispute over the nature of the precautionary principle deserves attention, given the significant consequences it entails. In this regard, a methodological effort is required, and lawyers must emphasise the autonomy of the legal system if they wish to demonstrate the legal nature of this principle. Precaution is not only a moral and political principle. It is a genuine legal principle¹.

First Requirement: The legitimacy of the precautionary principle

The introduction of a new principle into the legal system is never a trivial matter; it reveals new requirements or questions for which the normative system does not provide appropriate answers. The recent emergence of the precautionary principle in positive law follows this path and can be explained both by the need to regulate the formidable effects that may be generated by the uncertainties associated with the development of modern science and by the absence of a legal instrument capable of fulfilling this role. Its contribution is therefore essential, particularly in two areas²:

- It responds to a need for enhanced safety. The principle of safety, as it had been conceived until then, was based exclusively on a logic of action founded solely on prevention, which implies intervening only when scientific knowledge of a risk has been established.

- Because the precautionary principle aims to legally regulate the doubts raised by science, it overturns the usual perception of the so-called exact sciences. The precautionary principle brings the field of the so-called exact sciences closer to that of the human sciences, which traditionally ignore each other rather than interact.

In at least these two respects, the precautionary principle is undoubtedly innovative, and its introduction into positive law fills the gap in legal protection against scientific uncertainties. It is therefore legitimate for the law to have adopted this principle.

To this end, state action is guided by a series of principles guaranteeing respect for the values of the rule of law. It is therefore necessary to ask whether and under

¹ Laurence Boy, The legal nature of the precautionary principle, Elsevier SAS Scientific and Medical Publishing, NSS, vol. 7, no. 3, Belgium, 1999, p6

² Laurence Baghestani-Perrey, The legal value of the precautionary principle, Revue Juridique de l'Environnement, special issue, France, 2000, pp. 19 and 20

what conditions it is permissible to take action in the absence of scientifically recognised evidence. Three principles are of particular interest here: legality, proportionality and the prohibition of arbitrariness¹ :

- **Legality:** First and foremost, a law must empower the state to take preventive measures. If this standard only allowed action to be taken in cases of indisputable scientific data, the state would violate the democratically expressed will of the legislature by taking measures when there is major scientific controversy. The emergence of the precautionary principle in national and international legal systems can be explained in part in this context.

- **Proportionality:** During this review, the authority, legislator or administration first verifies whether the preventive measure chosen is suitable for achieving the intended objective (suitability criterion). Interpreted strictly, this requirement would certainly not authorise the state to take preventive measures in a s without a duly proven causal link, a rule that the precautionary principle specifically allows to be tempered.

- **Prohibition of arbitrariness:** State action must not be arbitrary; the authorities must therefore base their decisions on sufficiently established facts. The reality of such facts must therefore be supported by sufficient evidence.

Second Requirement: The constitutionalisation of the precautionary principle

The precautionary principle did not originate as a "right"; each of its textual recognitions, from the Rio Declaration in 1992 to the Environmental Charter in 2005² , including primary European Union law, takes the form of an objective obligation³ .

The introduction of the precautionary principle into law came about naturally international environmental treaties to which most nations are signatories, which take precedence over national law. However, in this context, it was applied on an ad hoc basis in relation to specific texts. A significant development will result from the gradual extension of the scope of the precautionary principle on the basis of domestic law. the importance of the ongoing development will justify an expert assessment commissioned by governments⁴ .

¹ Alexandre Flückiger, Legal evidence put to the test of the precautionary principle, Published: <https://doi.org/10.4000/ress.385>, 15/03/2025, 13:25

² The Environmental Charter is a text of constitutional value. It was incorporated into French constitutional law in 2005, recognising fundamental rights and duties relating to environmental protection. In particular, it introduces three major principles into the Constitution: the principle of prevention, the precautionary principle, and the polluter pays principle.

³ Article 5 of the Environmental Charter: "*Where the occurrence of damage, although uncertain in the current state of scientific knowledge, could seriously and irreversibly affect the environment, the public authorities shall, in accordance with the precautionary principle and within their areas of competence, ensure that risk assessment procedures are implemented and that provisional and proportionate measures are adopted to prevent the occurrence of such damage.*" French Constitutional Law No. 2005-205 of 1 March 2005 on the Environmental Charter (JORF No. 0051 of 2 March 2005, page 3697)

⁴ Michel PRIEUR, Op_cit, p5

In these circumstances, and given the doctrinal importance of the constitution, the question of whether the precautionary principle has a place in the constitution is largely meaningless, since the constitution is the product of the sovereignty of the people. nothing prevents the people or their representatives from inserting provisions into the constitutional text that go beyond the organisation of state bodies and functions. It is on this point that the legislator wanted to make it clear that the precautionary principle was neither a principle of abstention in the face of risk nor catastrophism. It certainly requires it is a major step forward, an early response to risks still marked by scientific uncertainty, in order to avoid being condemned to powerlessness or to taking measures that have become largely ineffective because they are too late, but it does not require paralysing activity and blocking any new in on on the grounds of the uncertainty that still surrounds them¹ , For this reason, public authorities now have a constitutional obligation to address risks at a stage where their existence has not yet been established or where the prospect of their harmful occurrence cannot be reduced by rational means to a probability distribution. However, this idea of early intervention in scientific terms should not be confused with excessive caution or a break with society, as advocated by the catastrophist approach to risk² .

On the one hand, the recommended measures must be proportionate and their cost must be taken into consideration. Furthermore, this principle of constitutional value is only applicable within the framework of laws that define its scope. On the other hand, this important development will justify the government, before considering introducing this principle into the constitution, commissioning an expert assessment and, as with the circumstances for applying the precautionary principle, designating the body primarily responsible for organising its application – the public authorities – and then what needs to be done: first assess the risks and then take both provisional and proportionate measures to prevent any damage³ .

Ultimately, the principle thus established moves from a legislative status, interpreted by the case law of administrative and judicial courts, to a constitutional level.

¹ Alain Laquière, The introduction of the precautionary principle into the Constitution: sense or nonsense?, *Revue de Métaphysique et de Morale*, Institute of European Studies, University of the Sorbonne Nouvelle – Paris III, No. 4/2012, Paris, p554

² Olivier Godard, The precautionary principle is not catastrophism, econometrics laboratory, École Polytechnique National Centre for Scientific Research, Cahier No. 2006-04, Paris, March 2006, p2

³ Alain Feretti, The Precautionary Principle and Innovation Dynamics, Study by the Economic, Social and Environmental Council, Les éditions des Journaux officiels, March 2013, Paris, p10

Third Requirement: The precautionary principle in international agreements and national legislation

The precautionary principle is very frequently found in declarations, resolutions and directives adopted in various international contexts. In recent years, international legislators have adopted the precautionary principle in most of the main agreements relating to environmental protection (more than 60 international instruments).

This principle is frequently introduced into framework conventions. Although this strategy is widely used in international environmental law, it is only a first step in the development of more specific rules at the international level to give substance to this principle. To this end, many EU programmes, policy statements, strategy documents, white papers and green papers refer to the precautionary principle. Given the non-binding nature of these instruments, the precautionary principle is largely devoid of legal effect because it does not compel EU institutions to act in a strictly defined manner. Nevertheless, the precautionary principle is enshrined in the EU Treaty and is increasingly finding its way into secondary legislation (directives and regulations, particularly concerning environmental issues, genetically modified organisms and food safety)¹. As an autonomous norm, the precautionary principle referred to in national legislation can produce concrete results, especially in administrative case law; in other words, it is primarily in litigation that the principle comes into play.

Conclusion :

The precautionary principle now forms the basis of a legal framework applicable to public decision-making in certain situations that is set out in legislation and highlights situations involving uncertainty about causality. In such cases, the public authority must take measures in accordance with procedures.

The application of the precautionary principle must not result from arbitrary decisions but must meet specific criteria:

- It should only be considered in the event of a risk, i.e. when a significant threshold of severity is reached.
- Its implementation must be preceded by an objective risk assessment. This study must define the level of scientific uncertainty at each stage.

¹ Jens Erik Fenstad and Koïchiro Matsuura, *The Precautionary Principle*, World Commission on the Ethics of Scientific Knowledge and Technology, COMEST, Compiled and printed by UNESCO, Paris, pp 23 and 24

- The scientific results must be made public and all parties concerned must have the opportunity to conduct additional studies in a fully transparent manner, and then consider all management options.
- An assessment of the risk and the repercussions of the decision not to act must be carried out.

Principles of good risk management also apply :

- Non-discrimination in the implementation of measures.
- Proportionality between the measures taken and the expected protection.
- Consistency between the measures taken and similar cases that have already arisen.
- A review of the measures taken in the event of scientific developments. The precautionary principle can therefore only be temporary.
- An analysis of the benefits and costs in order to consider reducing the risk to a level acceptable to all parties.

Knowing how to measure the threat allows the principles of prudence, prevention and precaution to be applied appropriately

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