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THE ENVIRONMENTAL PRECAUTIONARY PRINCIPLE (WITH PARTICULAR REFERENCE TO THE LAW OF THE SEA)

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Introduction

Despite the several decades since it was given its name[1], the precautionary principle (PP) is still being discussed in terms of its significance and scope and even confused with the principle of prevention. This is why, in this short paper, we intend to offer a brief overview of the regulatory sources of the PP (I) and consider some conceptual aspects of this Principle (II), with particular reference to the Law of the Sea in terms of its pertinence.

I. Regulatory sources of the Precautionary Principle

Several international instruments and case law decisions have been outlining a profile with different connotations for the PP.

The oldest statements of the PP or its key elements in *INTERNATIONAL POLITICAL DOCUMENTS,* although with no binding force *per se*, appeared under the aegis of the Law of the Sea.

Among them, the *Ministerial Declaration of the First International Conference on the Protection of the North Sea* (Bremen, 1984)[2] stated, with regard to chemical waste discharge into the oceans, that: "States must not wait for proof of harmful effects before taking action (...)". Although the word "precaution" was not used, this is implicit in this expression. The Second Conference[3] explicitly included the word "precaution" in the following terms: "In order to protect the North Sea from possibly damaging effects of the most dangerous substances (...) a precautionary approach is addressed which may require action to control inputs of such substances even before a causal link has been established by absolutely clear scientific evidence". Along these same lines, the Third Conference[4] mentions the "precautionary principle": "The participants (...) will continue to apply the precautionary principle, which is to take action to avoid potentially damaging impacts of substances that are persistent, toxic, and liable to bioaccumulate even where there is no scientific evidence to prove a causal link between emissions and effects".

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[1] The first known application of the precautionary principle was to remove the handle from the water-pump in Broad Street (Saint James) in London, following the recommendation of physician John Snow, who linked the high number of cholera victims (500 deaths in ten days) to the quality of the drinking water provided by this pump (although with no evidence of a causal relationship). Dr. Snow demonstrated that the potential cost of wrongly removing this pump handle was lower than leaving it in place. The first juridical inclusion of the content of the precautionary precept took place in Germany (*Vorsorgeprinzip*) in 1971 (*Umweltsprogram der Bundesregierung*) and 1976 (*Bundesimmissionsschutzgesetz* §5, para. 1, n° 2).

[2] Dated October 28, 1982, the *World Charter for Nature* (*UN/A/Res/37/7)* included the precautionary principle when indicating that activities that seriously endanger Nature should be preceded by an in-depth examination, and that people undertaking these activities should demonstrate that the forecasted benefits are greater than the harm that could be caused to Nature. Moreover, it stipulated that: "(...) where potential adverse effects are not fully understood, the activities should not proceed".

[3] *Second International Conference on the Protection of the North Sea (Ministerial Declaration Calling for Reduction of Pollution)*, November 25, 1987.

[4] *Third International Conference on the Protection of the North Sea (Final Declaration*, March 8, 1990).

The *Report of the Governing Council* on the Work of its Fifteenth Session of the *United Nations Environment Programme (UNEP)*, recommended in 1989 that all governments adopt "the principle of precautionary action", as the basis for their policies, drawn up to prevent and eliminate marine pollution[5].

In Recommendation 89/1, dated June 22, 1989, the States Party to the *Paris Convention for the Prevention of Marine Pollution from Land-Based Sources* stated that they: "(...) Accept the principle of safeguarding the marine ecosystem of the Paris Convention area by reducing at source polluting emissions of substances that are persistent, toxic, and liable to bioaccumulate by the use of the best available technology and other appropriate measures. This applies especially when there is reason to assume that certain damage or harmful effects on the living resources of the sea are likely to be caused by such substances, even where there is no scientific evidence to prove a causal link between emissions and effects (the principle of precautionary action)".

The *Nordic Council's International Conference on Pollution of the Seas*[6] declared on October 18, 1989: " (...) (T)he need for an effective precautionary approach, with that important principle intended to safeguard the marine ecosystem by, among other things, eliminating and preventing pollution emissions where there is reason to believe that damage or harmful effects are likely to be caused, even where there is inadequate or inconclusive scientific evidence to prove a causal link between emissions and effects".

The *Text on Ocean Protection* (1991) issued by the UN Conference on Environment and Development (UNCED) stipulates that: "A precautionary and anticipatory rather than a reactive approach is necessary to prevent the degradation of the marine environment[7]".

The system implemented throughout the European Union has spurred the PP to a great extent. We find earlier references to the precautionary principle in the *Déclaration Ministérielle de Bergen sur le Développement Durable dans la Région de la CEE de l'ONU*, dated May 16 1990, paragraph 7 and the Guideline in Directive 91/271/CEE, Article 6. 2. on the treatment of urban wastewaters. Additionally, the EC has addressed the integration of the PP in the Common Fisheries Policy. At the request of the Commission, the International Council for the Exploration of the Sea (ICES) has developed a procedure for including precaution in its recommendations on fish stocks and catch volumes. In a Resolution dated April 13, 1999, this Council indicated that the future European policy should be guided by the precautionary principle when drawing up rules and standards, or other activities. On February 2, 2000, the European Commission adopted a communiqué on the PP, in order to advise the stakeholders, particularly the European Parliament, Council and Member States of the manner in which the Commission applies or intends to apply the PP. Among other aspects, this Communiqué states that: *this is a principle addressing the protection of the environment but with a broad scope covering all actions that might be suspected of having harmful effects of any type whatsoever; *the EC[8] has the right to establish the level of protection against risk as deemed appropriate[9]; *the level of risk adopted is an eminently political responsibility[10]; *the application of the PP should be based on a scientific assessment that is as complete as possible, identifying the level of uncertainty at each stage; *the application should be deemed provisional and

[5] UN GAOR, 44th Sess. Supp No 25, 12th Meeting at 153, UN DOC A44/25 (1989).

[6] Final Document. Nordic Action Plan on Pollution of the Seas, 99 app. V.

[7] UNCED Text on Protection of Oceans. UN GAOR, 4th Sess., UN Doct A/CONF.151/PC/100 Add. 21 (1991).

[8] Like any subject under International Law.

[9] The EC opted for high levels of protection, as a zero risk is factually non-existent.

[10] The European Court of Justice in its Judgment of 5 May 1998 (Cases C-157/96 and C-180/96 said: "Where there is uncertainty as to the existence or extent of risks to human health, the institutions may take protective measures without having to wait until the reality and seriousness of those risks become fully apparent" (Grounds 99).

subject to permanent review, in the light of new scientific data[11]; *the measures based on the PP should be proportional to the selected level of protection, with non-discriminatory application and coherent with measures adopted for equivalent situations; *the measures should not constitute hidden protectionism; *the measures should be adopted an analysis of the potential benefits and cost of the action or lack of action (including an economic cost/benefit analysis)[12]. This Communiqué was designed to complete the *White Paper on Food Safety* issued in January 2000. In turn, the *White Paper* issued by the Commission *(Registration, Evaluation, Authorization of Chemicals-REACH Proposal-2001)* recommends that some 30,000 chemical substances sold in the EU should be subject to mandatory registration for volumes exceeding one ton. For some 5,000 registered substances whose production exceeds one hundred tons a year, it proposes a preliminary and subsequent impact assessment. For substances "with certain hazardous properties that give rise to much concern" (e.*g.* carcinogenic, mutagenic, persistent, bioaccumulating and toxic substances, etc.), specific authorization should be required. Moreover, the Technical Guidance Documents (TGDs) of the EU for assessing risk are currently under review. It should be noted that these measures are applicable to marine risks[13].

Countless documents are being produced subsequently under the aegis of the Law of the Sea, even before those mentioned in a general overview, applicable to the Law of the Sea. [14]. Although these instruments are not binding in themselves, as we have already indicated, in terms of the PP they are supported by *GENERAL PRINCIPLES OF LAW* such as: good faith, avoiding abuse of the law, duty of diligence[15], liability for damages, etc. and the *PRINCIPLES OF INTERNATIONAL LAW* such as sovereignty and equality that, at least in terms of the environmental law, has been included in the *sic utere tuo ut alienum non laedas.* It should be noted that, although these principles are more closely attuned to the concept of prevention (due diligence), they also have implications when deciding on an action, due to reasonable qualms about the likelihood that some doubtful risks may arise. In terms of acknowledging the PP as a common law rule, the statements by Justices Shearer, Laing and Treves in the *Bluefin Tuna* Cases, are explanatory, as mentioned below [16].

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[11] In this case, the burden of the proof is reversed, as the person intending to implement the action must prove that it is not harmful at the product or process levels.

[12] It should be borne in mind that the Chief Judge of the Lower Court affirmed in the Order dated June 30, 1999 (Case T.70/99) that "requirements linked to the protection of public health should undoubtedly be given greater weight than economic considerations".

[13] V. HANSSON, S.O., RUDEN, Ch., SANDIN, P. *The Role of Precaution in Marine Risk Assessment*. Background Paper for the News Policy Forum, Javea, Spain, September 26, 2002.

[14] Also: *OECD Council Recommendation C(90)164 on Integrated Pollution Prevention and Control* (1991); *Bergen Ministerial Declaration on Sustainable Development in the ECE Region* (1990)*; Rio Declaration* (1992)*; Agenda 21 (para.17.21); GA UN Res. 44/225 and Res. 46/215; Ministerial Declaration on the Protection of the Black Sea* (1993)*; Draft European Energy Charter Treaty* (1994)*, FAO Code of Conduct for Responsible Fisheries* (1995)*; Sintra Statement of the Ministerial Meeting of the OSPAR Commission* (1998). At the Latin-American sub-regional level, the *Primer Congreso Latinoamericano sobre Parques Nacionales y Otras Zonas Protegidas* (Santa Marta, Colombia, 1997) stressed the close links between preserving biodiversity and the stewardship of national parks and reserves, based on the preventive and precautionary principles. It should be recalled that the Chilean Navy – in charge of the EEZ of this country in the Cape Horn region - invoked the precautionary principle in 1994 as the reason for expelling the *Pacific Pintail* from this maritime area. Moreover, the "sea presence" theory upheld by Chile on the high seas involved the application of the precautionary principle.

[15] The following measures should be adopted: All measures required to avoid the foreseeable damage. In the case of the PP, there is a certain similarity with the duty of prevention (due diligence), as the existence of the duty may be affirmed for a decision-taking entity that is in charge of analyzing the hazards of working or authorizing work when there is some doubt over the existence of potential risks.

[16] It should be noted that several States have included the PP in their domestic laws, particularly in terms of fisheries, including Germany, Australia, Canada, Island, New Zealand, South Africa and Israel.

Among the *INTERNATIONAL TREATIES* that cover the PP in terms of the Law of the Sea[17], we can mention[18]:

The *United Nations Convention on the Law of the Sea* (1982) does not include a specific reference to this principle, although covering perfectly it by obliging the States, among other matters, to accept: *the duty of determining the allowable catch of living resources in their exclusive economic zone, in order to avoid endangering them through excessive exploitation (Article 61); *the commitment to cooperation in terms of confirming highly migratory species (Article 64), marine mammals (Article 65), anadromous species (Article 66), catadromous species (Article 67); *the duty to adopt measures designed to conserve the living resources of the high seas in terms of their nationals (Article 117); * the duty of deciding on the allowable catch and establishing other conservation measures for the living resources of the high seas (Article 119); *the duty to adopt the steps required for the effective protection of the marine environment in the Zone (Article 145); * the general obligation to protect and preserve the marine environment (Article 192); *the obligation to take all steps compatible with the Convention as required to prevent, reduce and control marine pollution from any source whatsoever (Article 194); *the duty to avoid transferring damages or dangers, nor turning one type of pollution into another (Article 195); *the duty of adopting measures to prevent marine pollution caused by the use of technologies or the introduction of new or exogenous species (Article 196); *the obligation to issue laws and regulations to prevent, reduce and control marine pollution from: -onshore sources (Article 207), -activities on sea-bottoms. Subject to national jurisdiction (Article 208), activities performed in the Zone by vessels or facilities operating under their flag (Article 209), dumping (Article 210) by vessels sailing under their flag or registered in their territory (Article 211), pollution from or through the atmosphere (Article 212).

This Convention acknowledges the right of the coastal States * to issue laws and regulations on innocent passage through their territorial waters for matter such as the conservation of the living resources of the sea (22.1.d) and the preservation of their environment, as well as the prevention[19], reduction and control pollution in territorial waters (22.1.f). Moreover, the Convention acknowledges *the sovereign rights and jurisdiction of the coastal State in the Exclusive Economic Zone in terms of the protection and preservation of the marine environment (Article 56); *the rights of the coastal State in its Exclusive Economic Zone to ban, curtail or regulate the exploitation of marine mammals even more strictly than stipulated in the Convention (Article 65); *the powers to establish special requirements for foreign vessels entering their ports or inland waters, in order to prevent marine pollution (Article 211); *the right to issue and ensure compliance with non-discriminatory laws and regulations in order to prevent[20], reduce and control marine pollution caused by vessels in ice-covered zones (Article 234).

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[17] In other areas, among the treaties that include the PP are: *Ozone Layer Protocol* (1987)*, Bamako Convention on Hazardous Wastes within Africa* (1991), *Convention of Climate Change* (1992), the *Convention of Biological Diversity* (1992) and its *Protocol on Biosafety* (2000), *Convention on the Protection and Use of Transboundary Watercourses and International Lakes* (1992), *The Convention to Combat Desertification in Countries Experiencing Severe Drought and/or Desertification, Especially in Africa* (1994), *Agreement on the Application of Sanitary and Phytosanitary Measures* (WTO-1997). It should be noted that this last agreement clearly states that the WTO system "denies" the existence of the PP, when speaking of the right to impose it, but only provisionally. Nevertheless, this interpretation is mistaken as the application of the PP is always provisional, due to its basic characteristics and the need for permanent review in the light of scientific progress that helps define whether or not any risk actually exists.

[18] In general, we will only mention the texts, as a simple regulatory selection becomes significant in order to bring together the elements and perceive the characteristic aspects of the PP (covered in the second section of this brief paper).

[19] This should not be confused with the preventive principle (due diligence), which constitutes a general international obligation. See below.

[20] *Idem* the preceding note.

Article 237 of the United Nations Convention on the Law of the Sea (UNCLS) established that the provisions stated in Part XII (Protection and Preservation of the Marine Environment) do not affect the specific obligations accepted by the States under special agreements and conventions signed earlier on this matter, nor agreements that may be signed to promote the general principles of this Convention.

The Articles that we have mentioned above are worded in ways that allow the PP to be applied, as they are interpreted, particularly through the meaning of the concept of "prevention" as this is not conceptualized as the "principle of prevention", consisting of due diligence that is juridically mandatory, based on general international law.

The Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki Convention) (1992)[21] includes the PP in Article 3.3 as follows:

> *The Contracting Parties shall apply the precautionary principle, i.e., to take preventive measures when there is reason to assume that substances or energy introduced, directly or indirectly, into the marine environment may create hazards to human health, harm living resources and marine ecosystems, damage amenities or interfere with other legitimate uses of sea even there is no conclusive evidence of a causal relationship between inputs and their alleged effects.*

The *Oslo and Paris Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention)* (1992), replaced the earlier Oslo and Paris Conventions adopted in the 1970s. Article 3 states:

> *1. For the purposes of this Annex, it shall inter alia be the duty of the Commission:*
> *a) to draw up programmes and measures for the control of the human activities identified by the application of the criteria in Appendix 3;*
> *b) in doing so:*
> *i)-to collect and review information on such activities and their effects on ecosystems and biological diversity;*
> *ii)-to develop means, consistent with international law, for instituting protective, conservation, restorative or precautionary measures related to specific areas or sites or related to particular species or habitats; (...).*

The *Convention on the Conservation and Management of the Pollock Resources in the Central Bering Sea* (1994) stipulated in its Annex (Part I, b):

> *If there is insufficient scientific and technical information available to allow the two institutions designated to paragraph* a *above to establish the Aleutian Basin pollock biomass, the Parties agree that, for the purpose of this Convention, the pollock biomass for the Specific Area (...) shall be deemed to represent 60 percent of the Aleutian Basin pollock biomass.*

The *Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention)* (1995)[22] stipulated in Article 3:

> *The Contracting Parties shall (...) apply, in accordance with their capabilities the precautionary principle, by virtue of which where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.*

The *Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (1995)*, states in its Article 5 on the *General Principles* in item c): "apply the precautionary approach in accordance with article 6". This Article states:

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[21] *The Helsinki Convention* was signed in 1974 and entered into force in 1980; it was revised and updated in 1992.
[22] *The Barcelona Convention* was adopted in 1976 and entered into force in 1978; it was revised in 1995.

Article 6 Application of the precautionary approach

1. States shall apply the precautionary approach widely to conservation, management and exploitation of straddling fish stocks and highly migratory fish stocks in order to protect the living marine resources and preserve the marine environment.

2. States shall be more cautious when information is uncertain, unreliable or inadequate. The absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures.

3. In implementing the precautionary approach, States shall:

(a) improve decision-making for fishery resource conservation and management by obtaining and sharing the best scientific information available and implementing improved techniques for dealing with risk and uncertainty;

(b) apply the guidelines set out in Annex II and determine, on the basis of the best scientific information available, stock-specific reference points and the action to be taken if they are exceeded;

(c) take into account inter alia, uncertainties relating to the size and productivity of the stocks, reference points, stock condition in relation to such reference points, levels and distributions of fishing mortality and the impact of fishing activities on non-target and associated or dependent species, as well as existing and predicted oceanic, environmental and socioeconomic conditions; and

(d) develop data collection and research programmes to assess the impact of fishing on non-target and associated or dependent species and their environment, and adopt plans which are necessary to ensure the conservation of such species and to protect habitats of special concern.

4. States shall take measures to ensure that, when reference points are approached, they will not be exceeded. In the event that they are exceeded, States shall, without delay, take the action determined under paragraph 3(b) to restore the stocks.

5. Where the status of target stocks or non-target or associated or dependent species is of concern, States shall subject such stocks and species to enhanced monitoring in order to review their status and the efficacy of conservation and management measures. They shall revise those measures regularly in the light of new information.

6. For new or exploratory fisheries, States shall adopt as soon as possible cautious conservation and management measures, including, inter alia, catch limits and effort limits. Such measures shall remain in force until there are sufficient data to allow assessment of the impact of the fisheries on the long-term sustainability of the stocks, whereupon conservation and management measures based on that assessment shall be implemented. The latter measures shall, if appropriate, allow for the gradual development of the fisheries.

7. If a natural phenomenon has a significant adverse impact on the status of straddling fish stocks or highly migratory fish stocks, States shall adopt conservation and management measures on an emergency basis to ensure that fishing activity does not exacerbate such adverse impact. States shall also adopt such measures on an emergency basis where fishing activity presents a serious threat to the sustainability of such stocks. Measures taken on an emergency basis shall be temporary and shall be based on the best scientific evidence available.

The *Protocol to the London Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter of 1972* (1996) states in its Article 3.1:

In implementing this Protocol, Contracting Parties shall apply a precautionary approach to environmental protection from dumping of wastes or other matter whereby appropriate preventative measures are taken when there is reason to believe that wastes or other matter introduced into the marine environment are likely to cause harm even when there is no conclusive evidence to prove a causal relation between inputs and their effects.[23]

[23] Reflecting these principles, the Protocol embodies a major structural revision of the Convention: the so-called "reverse list" approach. Now, instead of prohibiting the dumping of certain (listed) hazardous materials, the Parties are bound to prohibit the dumping of any waste or other matter that is not listed in Annex 1 (*"the reverse list"*) of the 1996 Protocol. Dumping of wastes or other matter on this reverse list requires a permit. Parties to the Protocol are further obliged to adopt measures to ensure that the issuance of permits and permit conditions for the dumping of reverse list substances comply with Annex 2 (the Waste Assessment Annex) of the Protocol. The substances on the reverse list include dredged material; sewage sludge; industrial fish processing waste; vessels and offshore platforms or other man-made structures at sea; inert, inorganic geological material; organic material of natural origin; and bulky items including iron, steel, concrete and similar materials for which the concern is physical impact, and limited to those circumstances where such wastes are generated at locations with no land-disposal alternatives. In addition, the 1996 protocol prohibits altogether the practice of incineration at sea, except for emergencies, and prohibits the exports of wastes or other matter to non-Parties for the purpose of dumping or incineration at sea. Cf. http://international.nos.noaa.gov/conv/ldc.html

The *Framework Agreement for the Conservation of Living Marine Resources on the High Seas of the South Pacific - The Galapagos Agreement" (2000),* states in its Article 5 on the principles of conservation:

> *1 In the implementation of this Framework Agreement, the following principles, among others, shall be followed:*
> *a. The measures adopted shall be based on appropriate scientific and technical information, with the aim of ensuring the long-term conservation of the Southeast Pacific's living marine resources within the area of application.*
> *b. The scarcity or lack of available information shall not be construed as a reason to prevent or delay the adoption of precautionary measures, including points of reference for specific fish populations.*
> *c. In the establishment of conservation measures for regulated species, the effects of fishing for specific fish stocks on the populations of associated or dependent species, as well as on the marine ecosystem as a whole, shall be taken into account.*
> *d. The effects of environmental changes and other phenomena which might affect the marine ecosystem, along with the direct or indirect effects of capture, shall be taken into account, in order to reduce or prevent the risk of potentially irreversible alterations.(...)".*

The *Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (2000)*, stipulates in its Articles 5 and 6[24]:

> *Article 5 Principles and measures for conservation and management*
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> *In order to conserve and manage highly migratory fish stocks in the Convention Area in their entirety, the members of the Commission shall, in giving effect to their duty to cooperate in accordance with the 1982 Convention, the Agreement and this Convention:(...)(c) apply the precautionary approach in accordance with this Convention and all relevant internationally agreed standards and recommended practices and procedures;*
>
> *Article 6 Application of the precautionary approach*
>
> *1. In applying the precautionary approach, the members of the Commission shall:*
>
> *(a) apply the guidelines set out in Annex II of the Agreement, which shall form an integral part of this Convention, and determine, on the basis of the best scientific information available, stock-specific reference points and the action to be taken if they are exceeded;*
>
> *(b) take into account, inter alia, uncertainties relating to the size and productivity of the stocks, reference points, stock condition in relation to such reference points, levels and distributions of fishing mortality and the impact of fishing activities on non-target and associated or dependent species, as well as existing and predicted oceanic, environmental and socio-economic conditions; and*
>
> *(c) develop data collection and research programmes to assess the impact of fishing on non-target and associated or dependent species and their environment, and adopt plans where necessary to ensure the conservation of such species and to protect habitats of special concern.*
>
> *2. Members of the Commission shall be more cautious when information is uncertain, unreliable or inadequate. The absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures.*
>
> *3. Members of the Commission shall take measures to ensure that, when reference points are approached, they will not be exceeded. In the event they are exceeded, members of the Commission shall, without delay, take the action determined under paragraph 1(a) to restore the stocks.*
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> *4. Where the status of target stocks or non-target or associated or dependent species is of concern, members of the Commission shall subject such stocks and species to enhanced monitoring in order to review their status and the efficacy of conservation and management measures. They shall revise those measures regularly in the light of new information.*

[24] To a large extent, this text repeats almost literally the provisions mentioned above in the *Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea,* dated December 10, 1982 relating to the *Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (1995).*

5. For new or exploratory fisheries, members of the Commission shall adopt as soon as possible cautious conservation and management measures, including, inter alia, catch limits and effort limits. Such measures shall remain in force until there are sufficient data to allow assessment of the impact of the fisheries on the long-term sustainability of the stocks, whereupon conservation and management measures based on that assessment shall be implemented. The latter measures shall, if appropriate, allow for the gradual development of the fisheries.

6. If a natural phenomenon has a significant adverse impact on the status of highly migratory fish stocks, members of the Commission shall adopt conservation and management measures on an emergency basis to ensure that fishing activity does not exacerbate such adverse impacts. Members of the Commission shall also adopt such measures on an emergency basis where fishing activity presents a serious threat to the sustainability of such stocks. Measures taken on an emergency basis shall be temporary and shall be based on the best scientific information available.

The European Community system included the PP (together with the principle of prevention in 1986 *(Single European Act)*, in the Treaty establishing the European Community (Article 130 R.2.). These regulation were maintained in the *Maastricht Treaty* (1992) with the same Article number, and as Article 174 from the *Amsterdam Treaty* (1997) onwards.

This Article 174 stipulates that:

Community policy on the environment shall be (...) based on the precautionary principle (..).

Although the Treaty does not define the principle, its development has taken place through the efforts of various entities within the EU system, as may be noted partially above[25] [26].

The *Convention on the Conservation and Management of Fishery Resources in the South-East Atlantic Ocean (2001)*, stipulates in Paragraph V of the Preamble that: "The Contracting Parties to this Convention (...) *dedicated* to exercising and implementing the precautionary approach in the management of fishery resources, in line with the principles set out in the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, 1995, and with the FAO Code of Conduct for Responsible Fisheries, 1995; (...) *have agreed as follows*: (...) Article 3 General principles: (...) (b) apply the precautionary approach in accordance with Article 7 (...)". Thus, when establishing the functions of the Commission, item g) stipulates: "manage stocks on the basis of the precautionary approach to be developed in accordance with Article 7". In turn, the above-mentioned Article stipulates:

Article 7 Application of the precautionary approach
1. The Commission shall apply the precautionary approach widely to conservation and management and exploitation of fishery resources in order to protect those resources and preserve the marine environment.

[25] The European Community Court of Justice and the Lower Court has had the opportunity to review the application of the PP in several cases: Judgments dated May 5, 1998, Cases C-157/96 and C-180/96; Judgment dated July 16, 1998, Case T-199/96 handed down by the Lower Court; Order dated June 30, 1999, Case T-70/99. See below.

[26] In the Southern Cone of Latin-America the *Additional Draft to the Treaty of Asuncion on the Environment* of the MERCOSUR, adopted at the XI Regular Meeting of the *Working Sub-Group N^a 6* (Asuncion, Paraguay, March 16 and 17, 1999), states in its Article 4, Chapter III Principles, Title III *Environmental Policy*, that the principles regulating the coordination of environmental policies in the MERCOSUR include the preventive and precautionary principles. This Draft was not adopted. Nevertheless, the faulty wording of the description of the precautionary principle should be noted, as item c) of this Article in the Draft speaks of the "*imminence"* of the damages to be caused" (our italics), indicating the situation of the potential damage and the lack of certainty regarding the risks entailed by an activity (doubtful risk). The phrase used in this Draft to describe the precautionary principle is at the same level as the preventive principle, namely, the certain risk.

> *2. The Commission shall be more cautious when information is uncertain, unreliable or inadequate. The absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures.*
> *3. In implementing this article, the Commission shall take cognizance of best international practices regarding the application of the precautionary approach, including Annex II of the 1995 Agreement and the FAO Code of Conduct for Responsible Fisheries, 1995.*

In its 1959 Treaty, the Antarctic System was already showing signs of a very cautious approach to the environment by banning all nuclear explosions and eliminating radioactive wastes from the region[27]. This precautionary approach is also apparent in the *Convention for the Conservation of Antarctic Seals* (1972), the *Convention on the Conservation of Living Marine Resources of Antarctica* (1980), the *Convention on the Regulation of Antarctic Mineral Resource Activities* (1988) (not yet in effect), and the *Protocol to the Antarctic Treaty on Environmental Protection* (1991).

In terms to the PP, *international JURISPRUDENCE* is focused on a few cases, such as: *Nuclear Tests* (International Court of Justice, 1995), *Gabčikovo-Nagymaros* (International Court of Justice, 1997), *Beef Hormones* (WTO Appellate Body, 1997), *Agricultural Products* (WTO Appellate Body, 1998), *Southern Bluefin Tuna* (International Law of the Sea Tribunal, 1999), in addition to some other cases by the European Court of Justice.

In the *Nuclear Tests* case, New Zealand invoked the obligation of France to furnish evidence that underground nuclear tests do not result in the introduction of such materials into the environment, in compliance with the PP, which is a principle widely applied in contemporary international law.[28] In a Dissenting Opinion, Justice Palmer indicated that both the PP as well as the requirement for evaluating the environmental impact should be pursued "where activities may have a significant effect on the environment"[29]. In turn, Justice Weeramantry, who also issued a dissenting opinion, thought that the PP was developing into a part of the international environmental law.[30] In both cases, the Justices had assigned a common value to the principle.

In the *Gabčikovo-Nagymaros* case, the International Court of Justice stated, in a decision handed down on September 25, 1997. [31]

> *35. With regard to the suspension of work at Nagymaros, the Hungarian Deputy-Prime Minister, in a letter dated 24 June 1989 addressed to his Czechoslovak counterpart, expressed himself in the following terms: "The Hungarian Academy of Sciences (HAS) has studied the environmental, ecological and water quality as well as the seismological impacts of abandoning or implementing the Nagymaros Barrage of the Gabcíkovo-Nagymaros Barrage System (GNBS).(...). Having studied the expected impacts of the construction in accordance with the original plan, the Committee [ad hoc] of the Academy [set up for this purpose] came to the conclusion that we do not have adequate knowledge of the consequences of environmental risks."*
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> *50. (...) The Court recalls that it has recently had occasion to stress, in the following terms, the great significance that it attaches to respect for the environment, not only for States but also for the whole of mankind:" the environment is not an abstraction but represents the living space, the quality of life and the very health of human beings, including generations unborn. The existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment." (Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, I.C.J. Reports 1996, pp. 241-242, para. 29).*

[27] Marine area, South of the 60° Latitude South.
[28] Request for an Examination of the Situation in Accordance with paragraph 63 of the Court's Judgment of December 1974 in Nuclear Tests, ICJ Reports 1995, Order issued on September 22, 1995.

[29] *Ibidem*.

[30] *Ibidem.*

[31] Case Concerning Gabčikovo-Nagymaros Project. ICJ Reports 1997.

113. The Court recognizes that both Parties agree on the need to take environmental concerns seriously and to take the required precautionary measures (...).

140. It is clear that the Project's impact upon, and its implications for, the environment are of necessity a key issue. The numerous scientific reports which have been presented to the Court by the Parties — even if their conclusions are often contradictory — provide abundant evidence that this impact and these implications are considerable.

In order to evaluate the environmental risks, current standards must be taken into consideration. This is not only allowed by the wording of Articles 15 and 19, but even prescribed, to the extent that these articles impose a continuing — and thus necessarily evolving — obligation on the parties to maintain the quality of the water of the Danube and to protect nature. (...)

Throughout the ages, mankind has, for economic and other reasons, constantly interfered with nature. In the past, this was often done without consideration of the effects upon the environment. Owing to new scientific insights and to a growing awareness of the risks for mankind — for present and future generations — of pursuit of such interventions at an unconsidered and unabated pace, new norms and standards have been developed, set forth in a great number of instruments during the last two decades. Such new norms have to be taken into consideration, and such new standards given proper weight, not only when States contemplate new activities but also when continuing with activities begun in the past. This need to reconcile economic development with protection of the environment is aptly expressed in the concept of sustainable development (...).

The Appellate Body (WTO) in the case of *Beef Hormones* recalls Article 5.7 of the WTO Agreement on the Application of Sanitary and Phytosanitary Measures (SPS), which reads: "(...) In cases where relevant scientific evidence is insufficient, a Member may provisionally adopt sanitary or phytosanitary measures on the bases of available scientific information, including that from relevant international organizations as well as from sanitary and phytosanitary measures applied by other Members. In such circumstances, Members shall seek to obtain the additional information necessary for a more objective assessment of risk and review the sanitary and phytosanitary measure accordingly within a reasonable period of time." In addition the Appellate Body recognizes that the Members have the "(...) right to establish their own level of sanitary protection, which level may be higher (i.e. more cautious) than that implied in existing international standards, guidelines and recommendations."[32]

In the *Agricultural Products* (AB-1998-8, Para. 89) the Appellate Body (WTO) clarifies the requirements for adopting and maintaining a provisional measure: *imposed in respect of a situation where relevant scientific information is insufficient; *adopted on the basis of available pertinent information; *may be maintained if the Member seeks to obtain the additional information necessary for a more objective risk assessment and reviews the measures accordingly within a reasonable period of time. In relation to what constitutes a "reasonable period of time", in Para.93 the Appellate Body indicates that this has to be established on a case-by-case basis and depends on specific circumstances of each case, including the difficulty of obtaining the additional information necessary for the review.

The International Tribunal for the Law of the Sea, in its Order of 27 August 1999 *Southern Bluefin Tuna (SBT) Cases (Requests for provisional measures),* paved the way for the request for the request for a precautionary measure without specifically mentioning this. It should be borne in mind that the provisional measures requested by New Zealand and Australia included: "1) that Japan immediately cease unilateral experimental fishing for SBT; (...) 3) that the parties act consistently with the precautionary principle in fishing for SBT pending a final settlement of the dispute; (...)." On this aspect, the Court stated:

77-Considering that, in the view of the Tribunal, the parties should in the circumstances act with prudence and caution to ensure that effective conservation measures are taken to prevent serious harm to the stock of southern bluefin tuna;(...)
79-Considering that there is scientific uncertainty regarding measures to be taken to conserve the stock of southern bluefin tuna and that there is no agreement among the parties as to whether the conservation measures taken so far have led to the improvement in the stock of southern bluefin tuna;

[32] (AB-1997-4, Para. 124).

80-Considering that, although the Tribunal cannot conclusively assess the scientific evidence presented by the parties, it finds that measures should be taken as a matter of urgency to preserve the rights of the parties and to avert further deterioration of the southern bluefin tuna stock;(...)[33].

The European Court of Justice had the opportunity to consider the PP, in addition to the cases outlined above, in the *Mondtet* case, in which it that Council Regulation N° 345/92 was adopted for the application of a precautionary approach. Additionally, in the *Danish Bees* case, it felt that measures designed to preserve an autochthonous animal species would help maintain biodiversity, despite the fact of scientific evidence. In the *Genetically Modified Products* case, it upheld the right of the Member States to refuse permission for the introduction of genetically modified food[34].

II. Conceptual aspects and characteristics facets of the Precautionary Principle

The perceptions of the PP include some terminological confusion, as well as conceptual variations and differing ranges of measures under its advocacy, as well as stresses between the weight of social economic demands and environmental interests[35]. However, it is quite clear that there are more common elements that have been resolved, from the juridical standpoint of the PP, than areas that are still shadowy.

The PP is a principle that is strongly applied in environmental law, although it extends beyond its purview[36], contained in a significant number of international documents, any of which are supported by a very large number of Party States, representing all sectors of the international community and the world's main legal systems[37].

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[33] The separate Opinions of Judge Laing and *ad hoc* Judge Shearer, indicate that the above-mentioned paragraph has specific meaning and implies the application of the precautionary principle, although the Court saw no need to mention this specifically. Moreover, Judge Shearer felt that based on practice and the *opinio juris,* there were sufficient grounds for considering that the PP had developed into a well-established common law rule (Separate Opinion of Judge Laing, para. 12 and Separate Opinion of *ad hoc* Judge Shearer, 8). In turn, Judge Treves stated: "I fully understand the reluctance of the Tribunal in taking a position as to whether the precautionary approach is a binding principle of customary international law. Other courts and tribunals, recently confronted with this question, have avoided giving an answer. In my opinion, in order to resort to the precautionary approach for assessing the urgency of the measures to be prescribed in the present case, it is not necessary to hold the view that this approach is dictated by a rule of customary international law. The precautionary approach can be seen as a logical consequence of the need to ensure that, when the arbitral tribunal decides on the merits, the factual situation has not changed. In other words, a precautionary approach seems to me inherent in the very notion of provisional measures."(Separate Opinion Judge Treves, p.9). V. MARR, S. "The Southern Bluefin Tuna Cases: The Precautionary Approach and Conservation and Management of Fish Resources", *EJIL*, 2000, Vol. 11, N° 4, pp.826-828; SANDS, Ph. "International Courts and the Precautionary Principle", *Precaution from Rio to Johannesburg*, SAEFL, 2002.

[34] Case C-67/97 (1998), Case C-6/99 (2000), Case C-405/92 (1993).

[35] V. VANDER ZWAAG, D. "The Precautionary Principle and Marine Environmental Protection: Slippery Shores, Rough Seas, and Rising Normative Tides", *Ocean Development and International Law,* Vol 33, N°2, 2002, pp. 165 y ss.

[36] Including when applied to human rights, the invocation of the PP is generally extra-particular in nature, covering human being in general and, on the bottom line, as an element of the ecosystem.

[37] It should be borne in mind that countless multinational conventions that adopted the PP, such as those on the Ozone Layer, Climate Change and Biodiversity exceed the 180 Party States. Moreover, it is estimated that more than sixty States have incorporated the precautionary precept among their environmental protection measures.

Taking into consideration the regulatory sources mentioned in the previous item, it seems clear that, at the international level, precaution constitutes a "good governance" type of conduct that is voluntary in nature, implemented through the exercise of the right to sovereignty and empire of a State or some other subject of law, and is deployed in a constrictive rather than prohibitive manner[38], when there is some doubts about whether an activity may seriously endanger the environment, opting for the safer ground of the known.

When saying that *precaution* is an expression of "good governance", we wish to distinguish it from *prevention* ("due diligence"[39]), as this latter is the duty of the States, a real link between the lawful and unlawful at the international level, due to the risks inherent to certain activities.[40] In contrast, and as we have indicated, precaution constitutes a voluntary act implemented through domestic policy and well aware that there are doubts over whether a specific activity may represent a potential hazard. In brief, it may be stated that precaution bases its actions on doubtful risks, while prevention is focused on an undoubted risk, and doubtful damages.

By stressing that the application of the precautionary principle constitutes an internal policy act, we indicate that this is a free decision through which a State or international entity exercises its sovereign powers to determine the level of environmental protection to be imposed under its jurisdiction.

The fact that the decision to implement a preventive measure is a free and voluntary act of an international subject does not mean that it may be arbitrary and disproportionately, inconsistent, discriminatory or not very transparent.

In contrast to the principle of prevention that may be deployed *ex ante* and *ex post* the damaging fact, precautionary measures must always be implemented *ex ante*, as they respond to forecasts of a potential risk that might cause damages, before being supported by unchallenged scientific evidence of whether the activities are hazardous or not. [41]

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[38] Measure that may be adopted for a new activity, or one that is already established.

[39] Surveillance obligation and adoption of forecasts covering the assets and persons under its jurisdiction, in order to ensure that no damages are caused to third parties under normal conditions. The intensity of the measures to be adopted should be tailored to the forces in play.

[40] At the international level, the relevant case law defines due diligence and the minimum standards of behavior required internationally, (legal and constitutional basis that is vital to comply with international obligations or "internationally indispensable domestic law"). On this matter, see the arbitration decision handed down by Max Huber on the topic related to the *Alabama* and *Florida* vessels (1872); the decisions handed down by the Procedural Court of Justice in matters related to the Treaty on Polish Nationals (1932) and the Free Zones (1932); the statement issued by the General Claims Committee (United States-Panama) and the *Noyes Case Noyes* (1938); the decision handed down on March 11, 1941 by the Mixed Arbitration Tribunal in the *Matter Related to the Trail Foundry;* the decision handed down on April 9, 1949 (a question of law) by the ICJ on the *Matter Related to the Corfu Channel;* the decision handed down on May 24, 1980 by the ICJ on the *Topic Related to the US Diplomatic Corps and Consular Staff in Teheran;* the decision handed down on September 27, 1997 by the International Court of Justice (ICJ) on the *GabčikovoNagymaros Issue*. See our papers entitled "*La Diligencia Debida como Eje de Articulación entre la Responsabilidad por Ilícito Internacional y la Responsabilidad por Actos no Prohibidos en Derecho Internacional*", in *Cuadernos de Federalismo,* National Law and Social Sciences Academy. Cordoba, Nº XI, 1997; "*Los Principios de Prevención y Precaución en Materia Ambiental en el Sistema Internacional y en el Interamericano*", in *Jornadas de Derecho Internacional de la OEA*, OAS Secretariat, Washington, 2001.

[41] See our paper entitled "*El Principio de Prevención*" in REY CARO, R.J. *et al. Derecho Ambiental. Nuevas Tendencias,* Ed. Lerner, Cordoba, 1998.

When deploying the PP, restrictive or prohibitory measures are adopted when in doubt over any dangers that may threaten the environment[42], particularly when the activities in question involve toxic, persistent or bioaccumulative substances.

When deployed, the PP is grounded on reasonable beliefs supported by scientific data[43], which is why it should not be used when based only on irrational fears or alarmist perceptions lacking adequate and objective criteria, which requires a well-balanced and prudent perception of the principle. The criteria of adequate scientific reasonability are founded on the best-possible related information[44]. This requirements of reasonability means that the decision-taker must review the proportionate measures in the light of the various levels of certainty/uncertainty offered by scientific progress, and should not invoke economic constraints to justify delays in assessing the proposed activity or reviewing the measures adopted for the deployment of the PP.

Lack of certainty about the risk an activity may represent[45] – as appropriate to precaution – should not be exhausted due to any unwillingness to search through current means of scientific knowledge[46].

More specifically, due to the speed of scientific progress, the PP itself indicated the provisional nature of these precautionary measures, which should be reviewed in the light of the various levels of certainty/uncertainty offered by scientific progress.

It should be borne in mind that the burden of proof is reversed under the PP, with the person wishing to implement a specific activity necessarily demonstrating that it does not endanger the environment[47].

The measures implemented should proportional and coherent with the level of risk stipulated by a State for activities under its jurisdiction. Otherwise, the measure would result in discrimination against the activity that is curtailed or banned, or the stakeholder in the activity. Under no circumstances whatsoever may precautionary measures constitute a hidden form of protectionism (a type of discrimination).

The application of the principle may not constitute an "obligation" for the international subject to adopt the forecasts issued, due to the lack of scientific certainty over whether or not the activity entails some risk. If it is known to be hazardous, we would be obliged to adopt measures compliant with the

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[42] Taking the environment in its broadest material sense.

[43] V. SANDS, PH.- *L' Affaire des Essais Nucléaires II (Nouvelle-Zelande c. France): Contribution de l' Instance au Droit International de l' Environnement*, in RGDIP, 1997-2.

[44] Threats should be identified through objective elements, i.e. biological, chemical or physical, which could cause damage, and should be categorized in both quantitative and qualitative terms, on the basis of the nature and severity of the possible effects thereof.

[45] In general, the lack of scientific certainty arises from scientific and methodological differences, including the selected variable, the measurements taken, the sample representation, the models used and the relationships of causality established.

[46] See decision dated September 25, 1997 handed down by the International Court of Justice on the *Gabčikovo-Nagymaros Issue,* mentioned above.

[47] This reversion has been largely criticized, as it is felt to hamper scientific progress. SUNSTEIN, C.R. "Beyond the Precautionary Principle", *University of Pennsylvania Law Review*, Vol. 151, N°3, January, 2003, pp. 1011-1025. It has also been affirmed that the principle is too vague to serve as a regulatory standard. V. BODANSKY, D. "Scientific Uncertainty and the precautionary Principle", *Environment*, 1991, N° 33, pp 4-5, 43-44.

principle of prevention[48]. The obligation to apply the PP arises as a requirement of International Law only if this duty arises from an international commitment that remains in effect.

Final Remarks

Although the precautionary principle has been viewed by some as a stumbling-block that is merely intuitive and non-scientific, this is a core principle that underpins long-lasting sustainable development with intergenerational accountability.

Its powerful presence in the Law of the Sea merely underscores its status as and essential element for the rational regulation of the seas, whose ecosystems and behavior are still unknown to the human race. This means that cooperation among research institutions, regional fisheries organizations[49], the FAO and other related entities, as applicable, will allow the PP to be deployed more objectively and consequently more rationally[50].

The PP is a tool that builds up links between science and politics, when outlining plans for sustainable development. .

Although its juridical status still lacks consensus, there is no denying that it has generated an obligation for the policy-makers: remaining permanently alert to the dangers of ignoring the potential risks of specific activities.

[48] See the International Law Commission (ILC), Draft on *International Responsibility for the Harmful Consequences of Acts not Prohibited by International Law.* The ILC included this topic in its 1978 work program, with the *Rapporteurs* on this topic being Quentin Baxter, J. Barboza, P. Rao. See also the *International Watercourse Law for Specific Navigation Purposes,* the outcome of the efforts of the ILC which included this topic in its 1970 work program, with the *Rapporteurs* being Kearney, Schwebel, Evensen, McCaffrey and Rosenstock.

[49] Countless international regional organizations applied the PP in a manner very similar to that of the FAO Code of Conduct, including the Northwest Atlantic Fisheries Organization (NAFO), the International Halibut Commission (IPHC), the International Baltic Sea Fisheries Commission (IBSFC), the General Fisheries Commission for the Mediterranean (GFCM), the International Commission for the Conservation of Atlantic Tuna (ICCAT), the North Atlantic Salmon Conservation Organization (NASCO).

[50] Cooperation is particularly useful for the less developed States that have neither the scientific experts nor the infrastructure to decide on catch sizes or the accuracy of the possible consequences of certain activities. On this aspect see HINDS, L. "Strategy for management and Development of the Oceans. The Precautionary Principle as it Affects Marine Species", Canadian International Development Agency. www.iwmc.org