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REALIZING THE PRECAUTIONARY PRINCIPLE IN DUE DILIGENCE

Ling Chen*

ABSTRACT

The precautionary principle is a legal principle that has found considerable support in international environmental law. Its emergence, however, has not been without problems and controversies: how do we define its normative content and trigger elements, and how do we ensure concrete implementation. The 2011 *Seabed Mining Advisory Opinion* used states' due diligence obligations to prevent harm to realize the precautionary principle. Focusing on this case, this article examines how the precautionary principle can be applied using the concept of due diligence. First, this article explores the precautionary concept using examples from a selection of regional and multilateral environmental instruments, analyzing its origin and different expressions and identifying the problems in its application. Second, the article analyzes the *Pulp Mills* case and the *Seabed Mining Advisory Opinion* to substantiate the role of the obligation to take precautionary measures in the legal framework of due diligence. Third, by reference to the International Law Commission's Draft Articles on Prevention of Transboundary Harm from Hazardous Activities and the International Law Association's study report on the Legal Principles relating to Climate Change, along with a number of international cases, the article further illustrates the distinction between due diligence, prevention and precaution and argues that they are actually interrelated.

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INTRODUCTION

The precautionary principle is one of the emergent legal principles that has received increased awareness from states and academic literature.¹ Although this principle has achieved a level of sophistication in international environmental law, a uniform understanding has not been reached regarding its meaning, normative content, and legal status.² Nor has its application and consequence become precise.³ In 2011, however, the advisory opinion of the Seabed Disputes Chamber of the International Tribunal on the Law of the Sea (ITLOS) on *Responsibilities and Obligations of States Sponsoring Persons and Entities with respect to Activities in the Area (Seabed Mining Advisory Opinion)* shed some light on the concrete application of the precautionary approach.⁴ The Chamber indicated that the precautionary approach is “an integral part of the general obligation of due diligence.”⁵ Up until now, precaution and the due diligence obligation to prevent harm have been

¹ For detailed analyses of the use of precautionary concept in national laws, and regional and international instruments see e.g. James Cameron & Juli Abouchar, “The Precautionary Principle: A Fundamental Principle of Law and Policy for the Protection of the Global Environment” (1991) 14:1 Boston College Intl & Comp L Rev 1 at 4–18; Chris Tollefson & Jamie Thornback, “Litigating the Precautionary Principle in Domestic Courts” (2008) 19:1 J Envtl L. & Prac 33 at 35–48; Andri G Wibisana, “The Development of the Precautionary Principle in International and Indonesian Environmental Law” (2011) 14 Asia Pac J Envtl L 169 at 172–78, 190–202 [Wibisana]. A large number of academic writings have touched on this topic. See e.g. David Freestone & Ellen Hey, eds, *The Precautionary Principle and International Law: The Challenge of Implementation* (The Hague: Kluwer Law International, 1996) [Freestone & Hey]; Joakim Zander, *The Application of the Precautionary Principle in Practice: Comparative Dimensions* (Cambridge: Cambridge University Press, 2010); James Crawford, *Brownlie’s Principles of Public International Law*, 8th ed (Oxford: Oxford University Press, 2012) at 357–58 [Crawford]; Bénédicte Sage-Fuller, *The Precautionary Principle in Marine Environmental Law, With Special Reference to High Risk Vessels* (Abingdon, Oxon: Routledge, 2013) [Sage-Fuller].

² Philippe Sands, *Principles of International Environmental Law*, 2nd ed (Cambridge: Cambridge University Press, 2003) at 272; Barbara Nicoletti, “The Prevention of Natural and Man-Made Disasters: What Duties for States?” in Andrea de Guttry, Marco Gestri & Gabriella Venturini, eds, *International Disaster Response Law* (The Hague: T.M.C. Asser Press, 2012) 177 at 188; Wibisana, *supra* note 1 at 170–71; Crawford, *supra* note 1 at 357; Sage-Fuller, *supra* note 1 at 82.

³ James E Hickey, Jr & Vern R Walker, “Refining the Precautionary Principle in International Environmental Law” (1995) 14:3 Va Envtl LJ 423 at 424–25; Cass R Sunstein, “Beyond the Precautionary Principle” (2003) 151:3 U Pa L Rev 1003 at 1004–08; Elizabeth Tedsen & Gesa Homann, “Implementing the Precautionary Principle for Climate Engineering” (2013) 7:2 Carbon & Climate L Rev 90 at 94–95 [Tedsen & Homann].

⁴ *Responsibilities and Obligations of States Sponsoring Persons and Entities with respect to Activities in the Area* (1 February 2011), Advisory Opinion, the Seabed Disputes Chamber of the International Tribunal on the Law of the Sea, No 17 [*Seabed Mining Advisory Opinion*]. “The Seabed Disputes Chamber is competent to give an advisory opinion on legal questions arising within the scope of the activities of the Assembly or Council of the International Seabed Authority.” See ITLOS, *Jurisdiction*, online: <<https://www.itlos.org/jurisdiction/>>.

⁵ *Seabed Mining Advisory Opinion*, *supra* note 4 at para 131.

widely treated as separate principles. The Chamber's reasoning highlights the fact that they are actually interrelated.

This article draws upon the obligations of due diligence to clarify the question of how to apply the precautionary principle even though the principle itself has not yet emerged as an independent international custom. In section one, I explore the precautionary concept by analyzing the origin and different expressions of this concept (the precautionary principle, the precautionary approach and precautionary measures). I also present the problems in applying the precautionary principle. In section two, I conduct case analyses to observe the role that the duty to take precautionary measures plays in the legal framework of due diligence. The analytical framework elaborated in the 2010 *Pulp Mills on the River Uruguay (Argentina v Uruguay)*⁶ and the 2011 *Seabed Mining Advisory Opinion* will serve to inform this paper. As the principles of precaution and due diligence are also closely related to the obligation to prevent harm, I further illustrate the distinction and interrelation between these three concepts in section three. I refer to the International Law Commission's Draft Articles on Prevention of Transboundary Harm from Hazardous Activities (2001 Draft Articles)⁷ and the International Law Association's study report on the Legal Principles relating to Climate Change.⁸ These two instruments have elaborated on the relationship between prevention, precaution and due diligence.

1. THE PRECAUTIONARY CONCEPT

1.1. From Prevention to Precaution

Following the common law maxim "*sic utere tuo ut alienum non laedas*" (use your own property in such a way as not to injure that of others),⁹ the notion of

⁶ *Pulp Mills on the River Uruguay (Argentina v Uruguay)*, [2010] ICJ Rep 14 [*Pulp Mills*].

⁷ International Law Commission, *Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, with Commentaries* (2001) [ILC].

⁸ International Law Association, *Washington Conference Report: Legal Principles relating to Climate Change* (2014) [ILA].

⁹ More details about this maxim see Elmer E Smead, "Sic Utere Tuo Ut Alienum Non Laedas: A Basis of the State Police Power" (1936) 21:2 Cornell L Rev 276; Greg Lynham, "The *Sic Utere* Principle as Customary International Law: A Case of Wishful Thinking?" (1995) 2 James Cook U L Rev 172.

prevention is used in international law to deal with transboundary harm. The obligation to prevent transboundary harm was elaborated in principle 21 of the 1972 Stockholm Declaration on the Human Environment (Stockholm Declaration).¹⁰ It imposes an obligation on states not to cause damage to “the environment of other States or of areas beyond the limits of national jurisdiction” when they exercise their sovereign right to “exploit their own natural resources pursuant to their own environmental policies.”¹¹ The 2001 Draft Articles affirmed this obligation in article 3, which reads, “The State of origin shall take all appropriate measures to prevent significant transboundary harm or at any event to minimize the risk thereof.”¹²

Under the obligation of prevention, states should ensure that activities within their jurisdiction do not harm an extraterritorial environment. All states are obligated to prevent cross-border environmental hazards and activities that entail foreseeable environmental risks. They are also required to take international responsibility for the wrongful acts under their control. However, states are only responsible for activities that are (or can be) proved with clear evidence or the existence of foreseeable risks.¹³ Thus, when clear scientific evidence does not exist or when an environmental risk has not been reasonably foreseeable, the obligation of prevention is unable to require states to regulate environmental risks.¹⁴ The emergence of the precautionary concept was an attempt to fill this gap.

1.2. The Origin of Precaution

The precautionary concept originated from the concept of “*vorsorgeprinzip*” (foresight) in German environmental law in 1971.¹⁵ This concept evolved gradually through regional environmental agreements in the 1980s. For example, the Ministerial Declaration Calling for Reduction of Pollution, adopted in the

¹⁰ *Stockholm Declaration on the Human Environment*, 16 June 1972, 11 ILM 1416 [*Stockholm Declaration*].

¹¹ *Ibid*, principle 21.

¹² ILC, *supra* note 7 at 153.

¹³ ILC, *ibid* at 153–54; Sage-Fuller, *supra* note 1 at 79.

¹⁴ Freestone & Hey, *supra* note 1 at 54.

¹⁵ *Ibid* at 4; Tedsen & Homann, *supra* note 3 at 91.

Second International Conference on the Protection of the North Sea, declared that “[in] order to protect the North Sea from possibly damaging effects of the most dangerous substances, a precautionary approach is necessary which may require action to control inputs of such substances even before a causal link has been established by absolute clear scientific evidence.”¹⁶ Numerous multilateral agreements have since appropriated the precautionary concept directly or indirectly to control environmental pollution, and to protect marine and atmospheric environment and international biological resources. Principle 15 of the 1992 Rio Declaration on Environment and Development (Rio Declaration) is a representative example:

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. 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.¹⁷

This definition demonstrates that the precautionary approach was established to bypass the traditional rules of evidence that cannot effectively respond to or deal with a situation in which clear scientific evidence for environmental harm or risk is inadequate. The precautionary principle emphasizes that the implementation of necessary measures, in the occurrence of environmental risks, should not be postponed due to the lack of scientific certainty. This principle has an important role to play in effectively coping with environmental risks of scientific uncertainty.

1.3. Different Expressions of the Precautionary Concept

The precautionary concept has been incorporated into a number of international environmental instruments. The specific terms that reflect this concept include the precautionary principle, the precautionary approach and precautionary measures.

¹⁶ Freestone & Hey, *supra* note 1 at 5.

¹⁷ *Rio Declaration on Environment and Development*, 14 June 1992, 31 ILM 874, principle 15 [*Rio Declaration*].

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¹¹ *Ibid*, principle 21.

¹² ILC, *supra* note 7 at 153.

¹³ ILC, *ibid* at 15354; Sage-Fuller, *supra* note 1 at 79.

¹⁴ Freestone & Hey, *supra* note 1 at 54.

¹⁵ *Ibid* at 4; Tedsen & Homann, *supra* note 3 at 91.

1.3.2. The Precautionary Approach

Instead of explicitly using the term “precautionary principle”, several instruments require states to take a precautionary approach when trigger elements are satisfied.²³ Article 6 of the 1995 Agreement for the Implementation of the Provisions of the 1982 UN Convention on the Law of the Sea relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (Fish Stocks Agreement) stipulates the application of the precautionary approach.²⁴ States are required to widely use the precautionary approach to conserve, manage and exploit the stocks of straddling fish and highly migratory fish²⁵ and “shall be more cautious when information is uncertain, unreliable or inadequate.”²⁶ They cannot delay or refuse to take conservation and management measures because of inadequate scientific information.²⁷ Meanwhile, in order to strengthen states’ capacity to manage risks and facilitate the development of relevant technologies, this agreement requires states to implement the precautionary approach by drawing upon the best available scientific information and technology to deal with risks and uncertainties, considering uncertainties related to the size and productivity of fish stocks, and collecting data to assess the impact of fishing activities on other associated or independent species and oceanic environment.²⁸

The overall purpose of the 2000 Cartagena Protocol on Biosafety to the Convention on Biological Diversity (Cartagena Protocol) is to control transboundary movements of genetically modified organisms (GMOs) based on the precautionary concept.²⁹ This concept has been reflected in many parts of the

²³ Arguably, trigger elements include “reasonable foreseeability of damage falling short of conclusive scientific proof” and “a threat of serious or irreversible damage”. See ILA, *supra* note 8 at 24.

²⁴ UNGA, Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks, 6th Sess, *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*, UN Doc A/CONF.164/37, September 1995.

²⁵ *Ibid*, art 6.1.

²⁶ *Ibid*, art 6.2.

²⁷ *Ibid*.

²⁸ *Ibid*, art 6.3.

²⁹ *Cartagena Protocol on Biosafety to the Convention on Biological Diversity*, 29 January 2000, 2226 UNTS 208 (entered into force 11 September 2003) [*Cartagena Protocol*].

Cartagena Protocol. Paragraph 4 of its preamble is a literal reaffirmation of the precautionary approach elaborated in principle 15 of the Rio Declaration.³⁰

Article 1 provides that the precautionary approach should be adopted to achieve the objective of this protocol.³¹ Articles 10 (6) and 11 (8) do not use the term “precautionary approach”, but the language in these two articles denotes the precautionary concept, including language targeting a “lack of scientific certainty”, “insufficient relevant scientific information and knowledge” and the “avoid[ance] or minimiz[ation of]...potential adverse effects”.³² The Cartagena Protocol is a good example of the capacity of the precautionary concept to deal with a specific environmental problem.

1.3.3. Precautionary Measures

The term “precautionary measures” is also used to reflect the precautionary concept. One example is the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer.³³ In its preamble paragraph 6, parties to this protocol were determined to “protect the ozone layer by taking precautionary measures to control equitably total global emissions that deplete it.”³⁴ Paragraph 8 notes that some precautionary measures have been taken to control the release of certain chlorofluorocarbons at the national and regional level.³⁵ Similarly, article 3.3 of the 1992 UN Framework Convention on Climate Change (UNFCCC) provides that:

The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal

³⁰ *Ibid*, preamble, para 4.

³¹ *Ibid*, art 1.

³² *Ibid*, arts 10 (6), 11 (8).

³³ *Montreal Protocol on Substances that Deplete the Ozone Layer*, 16 September 1987, 1522 UNTS 3 (entered into force 1 January 1989).

³⁴ *Ibid*, preamble, para 6.

³⁵ *Ibid*, preamble, para 8.

with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost.³⁶

In order to make the obligations of limiting the use of fossil fuels under the UNFCCC more specific and clear, nearly 160 states negotiated and agreed to adopt the Kyoto Protocol to the UNFCCC (Kyoto Protocol) in 1997.³⁷ While the term “precautionary measures” do not appear in the protocol, paragraph 4 of its preamble addresses that this protocol should refer to article 3 of the UNFCCC.³⁸ Thus, the Kyoto Protocol still embraced the idea of precaution and regarded it as a justification for taking measures to reduce emissions.

In addition to the direct use of “precaution” in provisions, some instruments only have provisions that implicitly reflect the precautionary concept. Besides articles 10 (6) and 11 (8) of the Cartagena Protocol discussed above, another example is the 1992 Convention on Biological Diversity (CBD).³⁹ Paragraph 9 of its preamble provides that when biodiversity suffers “a serious threat of significant reduction or loss”, lack of adequate scientific certainty cannot be a reason for postponing measures that aim to avoid or minimize such threats.⁴⁰ In contrast to the Rio Declaration and other multilateral environmental agreements that directly used the term of precautionary principle, precautionary approach or precautionary measure, the CBD did not draw upon these terms but elaborated the precautionary concept in its provisions. Although the CBD is viewed as an instrument that intends to adopt the precautionary concept for use in practice, the drafters’ use of language (i.e., avoiding the direct use of the term “precaution” and providing the precautionary concept in the preamble) shows that state parties simply wished to regard the precautionary concept as a reference material rather than as a binding legal obligation.

³⁶ *United Nations Framework Convention on Climate Change*, 9 May 1992, 1771 UNTS 107 (entered into force 21 March 1994), art 3.3.

³⁷ *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, 11 December 1997, 2303 UNTS 148 (entered into force 16 February 2005).

³⁸ *Ibid*, preamble, para 4.

³⁹ *Convention on Biological Diversity*, 5 June 1992, 1760 UNTS 79 (entered into force 29 December 1993).

⁴⁰ *Ibid*, preamble, para 9.

1.3.4. Conclusion

Despite various permutations of the precautionary concept found in the instruments above, the content of precaution is similar. The concept arguably consists of the types of risk (serious, irreversible or other types), the degree of scientific uncertainty, the criteria that should be considered in the decision making process (proportionality and cost-effect analysis), and a shifting burden of proof.⁴¹

The precautionary principle highlights that the lack of full scientific certainty should not be used as a reason for postponing the use of cost-effective measures to prevent environmental degradation. It may serve as a general reference or policy guideline for decision-makers to manage environmental risks when there exists scientific uncertainty. In contrast to the precautionary principle as a legal principle, the precautionary approach and precautionary measures are expedient and temporary tools based on the precautionary concept to achieve the goal of risk management. Fewer conventions directly use the term “principle” than the terms “approach” or “measures”. One reason may be that the term “principle” may direct a court to view it as a source of law. In other words, the precautionary principle may convey a more compulsory meaning than the precautionary approach and precautionary measures.⁴²

Meanwhile, the precautionary concept is mostly reflected in the preambles of multilateral environmental instruments, thus serving a symbolic role. The principle lacks any specific and clear implementation mechanisms and does not create concrete or practical obligations for states. Even if several instruments (e.g., the Bamako Convention, the Fish Stocks Agreement and the Cartagena Protocol) have specific provisions for implementing the precautionary approach, it is still too early to conclude that they have made a real contribution to the implementation of the precautionary principle. For example, major GMOs exporting states such as the US and Argentina have not signed or ratified the Cartagena Protocol, whereas many parties to this protocol have less influence in

⁴¹ Tedsen & Homann, *supra* note 3 at 93; Miguel A. Recuerda, “Dangerous Interpretations of the Precautionary Principle and the Foundational Values of European Union Food Law: Risk Versus Risk” (2008) 4:1 J Food L & Policy 1 at 19 [Recuerda].

⁴² Recuerda, *supra* note 41 at 5.

producing, selling or importing the GMOs.⁴³ Similarly, although the precautionary concept appears in many parts of the Cartagena Protocol, it only uses the term “precautionary approach” in its preamble and text. Articles 10 (6) and 11 (8) are the specific provisions to implement the precautionary approach, but they do not directly use precaution in their wordings.⁴⁴

1.4. Problems with Using Precaution

Since the emergence of the precautionary concept, a series of controversies have arisen over its precise normative content, trigger elements and legal status in international law. The specific questions include “the level and type of harm that would justify action, the amount of knowledge needed to justify action, the types of actions that would be appropriate as precautionary measures, and under what circumstances these would be appropriate.”⁴⁵ While several international instruments have direct and indirect provisions that reflect the precautionary concept, they have no specific provisions to implement this concept. If trigger elements of this principle are uncertain, measures taken to avoid risks under the precautionary concept may cause more controversies. Thus, the precautionary principle or precautionary approach should be undertaken in a more cautious way to reduce its adverse impacts. Two recent cases seem to have implications for the application of precaution.

⁴³ See UNTS, “Cartagena Protocol on Biosafety to the Convention on Biological Diversity” (status as at 12 September 2016), online: https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-8-a&chapter=27&clang=_en; Natural Revolution, “List of Countries That Banned Genetically Modified Food” (9 February 2015), online: <http://naturalrevolution.org/list-countries-banned-genetically-modified-food/>.

⁴⁴ *Cartagena Protocol*, *supra* note 29, arts 10 (6), 11 (8).

⁴⁵ Tedsen & Homann, *supra* note 3 at 94.

2. CASE STUDY

2.1. The 2010 *Pulp Mills Case*

2.1.1. The Relationship between the Preventive Principle and Obligations of Due Diligence

In the 2010 *Pulp Mills* case, the International Court of Justice (ICJ) decided that Uruguay violated the obligation to notify Argentina under article 7 of the Statute of the River Uruguay signed by Uruguay and Argentina in 1975 (1975 Statute).⁴⁶ Uruguay had not informed the Administrative Commission of the River Uruguay (CARU) of its plans before granting environmental authorizations for the CMB (ENCE) mill and the Orion (Botnia) mill and for the port terminal at Fray Bentos.⁴⁷

In reaching its decision, the ICJ noted that the obligation to notify CARU is a necessary part of fulfilling the obligation of prevention. With such notification, the parties may “consult in order to assess the risks of the plan and to negotiate possible changes which may eliminate those risks or minimize their effects.”⁴⁸ The Court restated the status of the preventive principle as an international custom and pointed out that this principle had originated from the obligation of due diligence.⁴⁹ Its analysis was based on the specific holding from the *Corfu Channel* case that every state had the “obligation not to allow knowingly its territory to be used for acts contrary to the rights of other States.”⁵⁰ The *Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons* (*Nuclear Weapons Advisory Opinion*) echoed this point, stating: “[t]he existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the

⁴⁶ *The Statute of the River Uruguay*, 26 February 1975, 1982 UNTS 339 (entered into force 18 September 1976) [1975 Statute].

⁴⁷ *Pulp Mills*, *supra* note 6 at paras 111, 122.

⁴⁸ *Ibid* at para 115.

⁴⁹ *Ibid* at para 101.

⁵⁰ *Corfu Channel (United Kingdom of Great Britain and Northern Ireland v Albania)*, [1949] ICJ Rep 4 at 22.

environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment.”⁵¹

A state should take all possible measures to discharge the obligation of prevention. Under article 36 of the 1975 Statute, both Uruguay and Argentina had the obligation to take measures to avoid changes in the ecological balance of the Uruguay River.⁵² These measures included both the adoption of a regulatory or administrative framework and the compliance by both parties to that framework.⁵³ The obligation to adopt regulatory measures could be regarded as an “obligation of conduct”.⁵⁴ The ICJ suggested Uruguay and Argentina to “exercise due diligence...to preserve the ecological balance of the river.”⁵⁵ Article 41 of the 1975 Statute has a similar provision, obligating states to “prevent pollution and preserve the aquatic environment.”⁵⁶ This obligation should also be taken with due diligence. In addition to the adoption and enforcement of appropriate measures, the obligations of due diligence under this article require that these measures be “in accordance with applicable international agreements and in keeping, where relevant, with the guidelines and recommendations of international technical bodies.”⁵⁷ Thus, the measures taken by states to realize the obligation of due diligence should conform to both domestic laws and regulations and international agreements and standards.

2.1.2. The Potential Use of the Precautionary Principle

When addressing the preliminary issue of the “burden of proof” in this case, the ICJ mentioned the relevance of the precautionary approach in interpreting and applying the provisions of the 1975 Statute.⁵⁸ However, the court did not follow Argentina’s argument that a precautionary approach operates as a reversal

⁵¹ *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion, [1996] ICJ Rep 226 at para 29 [*Nuclear Weapons Advisory Opinion*].

⁵² *1975 Statute*, *supra* note 46, art 36.

⁵³ *Pulp Mills*, *supra* note 6 at para 187.

⁵⁴ *Ibid.*

⁵⁵ *Ibid.*

⁵⁶ *Ibid* at para 190.

⁵⁷ *Ibid.*

⁵⁸ *Ibid* at paras 159–60, 164.

of the burden of proof, placing the burden of proof equally on both Argentina and Uruguay.⁵⁹ It insisted on the principle of *onus probandi incumbit actori* that, “[I]t is the duty of the party which asserts certain facts to establish the existence of such facts.”⁶⁰ The burden of proof was still on Argentina to show Uruguay’s breach of obligations under the 1975 Statute.

However, Judges Awn Al-Khasawneh, Bruno Simma and Cançado Trindade in this case indicated the possible application of the precautionary principle.⁶¹ Judges Al-Khasawneh and Simma contended that the Court should consider the environmental risk posed on the Uruguay River after the completion of pulp mills rather than restrict its consideration to the identified risks or the harm that had occurred.⁶² They regretted that the Court had not made a contribution to resolving scientifically complex disputes.⁶³

Judge Trindade shared a similar opinion with Al-Khasawneh and Simma. He criticized the Court’s silence in deciding the relationship between the preventive principle and the precautionary principle.⁶⁴ He also questioned whether the Court had acted with too much prudence and caution with respect to the precautionary principle.⁶⁵ It was Trindade’s opinion that the precautionary principle is a “reasonable assessment in face of probable risks and scientific uncertainties.”⁶⁶ This principle could be implemented by undertaking “environmental impact assessments, further studies on the environmental issues at stake, as well as careful environmental risk analysis.”⁶⁷ He believed that the mere application of the preventive principle could not suffice to resolve the dispute. Instead of fully

⁵⁹ *Ibid* at para 164.

⁶⁰ *Ibid* at para 162.

⁶¹ *Pulp Mills on the River Uruguay (Argentina v Uruguay)*, [2010] ICJ Rep 14, Joint Dissenting Opinion of Judges Al-Khasawneh and Simma at paras 25, 28 [Al-Khasawneh & Simma]; *Pulp Mills on the River Uruguay (Argentina v Uruguay)*, [2010] ICJ Rep 14, Separate Opinion of Judge Trindade at paras 67, 96 [Trindade].

⁶² Al-Khasawneh & Simma, *supra* note 61 at para 25.

⁶³ *Ibid* at para 28.

⁶⁴ Trindade, *supra* note 61 at para 67.

⁶⁵ *Ibid*.

⁶⁶ *Ibid* at para 96.

⁶⁷ *Ibid*.

relying on the prevention of harm, he turned the attention to the precautionary principle by examining risks and scientific uncertainties.⁶⁸

2.2. The 2011 Seabed Mining Advisory Opinion

In 2011, the Seabed Disputes Chamber of the ITLOS adopted an advisory opinion to clarify states parties' legal responsibilities and obligations in sponsoring activities in the seabed area beyond national jurisdiction (Area).⁶⁹ The Chamber considered the notions of due diligence and precaution by connecting sponsoring states' direct obligations with the obligations of due diligence.⁷⁰ The obligations of due diligence require a state to exercise best possible efforts to avoid harm to the Area or other states. The specific content of due diligence may be ascertained by referring to direct obligations undertaken by the state.

2.2.1. Interpret Obligations of Due Diligence

The Chamber first analyzed the obligation “to ensure compliance and liability for damage” (obligation to ensure) by interpreting article 139 of the 1982 UN Convention on the Law of the Sea (UNCLOS) and article 4 of Annex III to UNCLOS.⁷¹ Article 139 (1) of UNCLOS makes states responsible “to ensure that activities in the Area, whether carried out by States Parties, or state enterprises or natural or juridical persons which possess the nationality of States Parties or are effectively controlled by them or their nationals, shall be carried out in conformity with this Part.”⁷² Article 4 (4) of Annex III adds more requirements to article 139,

⁶⁸ *Pulp Mills on the River Uruguay (Argentina v Uruguay)*, [2010] ICJ Rep 14, Annex to Summary of the Judgment at 5.

⁶⁹ “The Seabed Disputes Chamber is established in accordance with Part XI, section 5, of [UNCLOS]...The Chamber has jurisdiction in disputes with respect to activities in the International Seabed Area.” See International Tribunal for the Law of the Sea, *Chambers*, online: <<https://www.itlos.org/the-tribunal/chambers/>>. See also *Seabed Mining Advisory Opinion*, *supra* note 4.

⁷⁰ In order to conduct exploration and exploitation activities in the international seabed area, natural or juridical persons should be “either nationals of a State Party or effectively controlled by it or its nationals” and “sponsored by such States”. States that provide such sponsorship are called sponsoring states; agreements that are entered by sponsoring states and natural or juridical persons are called sponsoring agreement; natural or juridical persons that enter a sponsoring agreement with sponsoring states are called contractors. See *Seabed Mining Advisory Opinion*, *supra* note 4 at paras 74–81.

⁷¹ *United Nations Convention on the Law of the Sea*, 10 December 1982, 1833 UNTS 3 (entered into force 16 November 1994) [UNCLOS].

⁷² *Ibid.*, art 139 (1).

“[Sponsoring states]...shall...have the responsibility to ensure, within their legal systems, that a contractor so sponsored shall carry out activities in the Area in conformity with the terms of its contract and its obligations under this Convention.”⁷³ A sponsoring state may be exempted from liability if the state “has adopted laws and regulations and taken administrative measures which are, within the framework of its legal system, reasonably appropriate for securing compliance by persons under its jurisdiction.”⁷⁴

Under the Chamber’s interpretation, the state’s obligation may be regarded as an obligation “of conduct” but not “of result”.⁷⁵ The Chamber stated that this obligation should not be understood as requiring sponsoring states to comply with UNCLOS in all circumstances. However, sponsoring states should take adequate measures, “to exercise best possible efforts, to do the utmost, to obtain this result.”⁷⁶ The Chamber further highlighted the close connection between obligations of conduct and obligations of due diligence.⁷⁷ Despite the difficult task of describing the content of due diligence, the Chamber’s analyses seem to have some helpful implications for deciding what measures can be considered as sufficiently diligent. For instance, the Chamber stated that it was necessary to consider the level of technological development at a certain time since the emergence of new science or technology may increase the level of requirement for due diligence.⁷⁸ The extent of due diligence also depends on the risks arising from activities. The activities of high risk in the Area will accordingly require a high degree of due diligence.⁷⁹

Additional elements relevant to the content of due diligence can be explored by interpreting article 153 (4) of UNCLOS and Annex III article 4 (4). According to article 153 (4) of UNCLOS, states parties shall take all measures to assist the International Seabed Authority to ensure compliance with article 139,⁸⁰ including

⁷³ *Ibid*, Annex III, art 4 (4).

⁷⁴ *Ibid*.

⁷⁵ *Seabed Mining Advisory Opinion*, *supra* note 4 at para 110.

⁷⁶ *Ibid*.

⁷⁷ *Ibid* at para 111.

⁷⁸ *Ibid* at para 117.

⁷⁹ *Ibid*.

⁸⁰ UNCLOS, *supra* note 71, art 153 (4).

“compliance with the relevant provisions of this Part and the Annexes relating thereto, and the rules, regulations and procedures of the [International Seabed] Authority, and the plans of work approved in accordance with [article 153 (3)].”⁸¹ Also, article 4 (4) of Annex III requires sponsoring states to fulfill the obligation to ensure compliance with and liability for damage within the scope of their own legal system.⁸² These provisions both require sponsoring states to deploy all reasonably appropriate measures within their legal system, including adopting laws and taking administrative action. The extent of “reasonably appropriate” depends on whether these laws, regulations or administrative measures can suffice to secure compliance by persons under a state’s jurisdiction.⁸³

The Chamber considered the adoption of laws, regulations and administrative action and the establishment of relevant enforcement mechanisms as a necessary condition for states to comply with the obligation of due diligence.⁸⁴ Merely entering into a sponsoring agreement between the sponsoring state and the sponsored contractor cannot be considered as compliance with the obligation of due diligence. The arrangement of signing a contract does not suffice to substitute the legal, regulatory and administrative measures.⁸⁵ The Chamber suggested some necessary measures to help implement sponsoring states’ obligations, including, for example, adding provisions regarding “financial viability and technical capacity of sponsored contractors, conditions for issuing a certificate of sponsorship and penalties for non-compliance by such contractors.”⁸⁶ In addition, the Chamber noted that the measures adopted by sponsoring states may not be perpetually appropriate, so they should be reviewed continuously so that they can meet the existing standards.⁸⁷

⁸¹ *Ibid.*

⁸² *Ibid.*, Annex III, art 4 (4).

⁸³ *Seabed Mining Advisory Opinion*, *supra* note 4 at para 119.

⁸⁴ *Ibid.* at para 218.

⁸⁵ *Ibid.* at paras 223–24.

⁸⁶ *Ibid.* at para 234.

⁸⁷ *Ibid.* at para 222.

2.2.2. The Relationship between Obligations of Due Diligence and Direct Obligations

The obligations of sponsoring states are not simply restricted to the obligations of due diligence. They also include several direct obligations.⁸⁸ Under UNCLOS, the 2000 Nodules Regulations, the 2010 Sulphides Regulations and other relevant instruments, sponsoring states are obligated to adopt a precautionary approach, to apply best environmental practices, to ensure the availability of recourse for compensation, to take measures to ensure the provision of guarantees in the event of an emergency order by the Authority for protecting the marine environment, and to conduct environmental impact assessment.⁸⁹ Although the Seabed Disputes Chamber considered these direct obligations as independent from the obligations of due diligence, it also stressed that direct obligations and obligations of due diligence were closely interrelated because the fulfillment of direct obligations could satisfy the requirements of due diligence.⁹⁰ In other words, the content of due diligence can be determined by interpreting sponsoring states' direct obligations.

Adopting a precautionary approach is an essential part of the direct obligations for sponsoring states. The Seabed Disputes Chamber conducted a detailed analysis of the application of a precautionary approach. The Chamber did not directly refer to the precautionary approach elaborated in principle 15 of the Rio Declaration due to its non-binding force. Instead, the Chamber drew upon the Sulphides Regulations and the Nodules Regulations that “[transformed the] non-binding statement of the precautionary approach in the Rio Declaration into a binding obligation.”⁹¹ Regulation 31 (2) of the Nodules Regulations and regulation 33 (2) of the Sulphides Regulations both provide that, “In order to ensure effective protection for the marine environment from harmful effects

⁸⁸ *Ibid* at para 121.

⁸⁹ *Ibid* at para 122. The International Seabed Authority (ISA) adopted the Nodules Regulations in 2000 and the Sulphides Regulations in 2010 to regulate the prospecting, exploration and exploitation of marine minerals in the international seabed area. See ISA, “The 2000 Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area” (13 July 2000), online: <<http://www.isa.org.jm/files/documents/EN/Regs/MiningCode.pdf>> [2000 Nodules Regulations]; ISA, “The 2010 Regulations on Prospecting and Exploration for Polymetallic Sulphides in the Area” (7 May 2010), online: <<http://www.isa.org.jm/files/documents/EN/Regs/PolymetallicSulphides.pdf>> [2010 Sulphides Regulations].

⁹⁰ *Seabed Mining Advisory Opinion*, *supra* note 4 at para 123.

⁹¹ *Ibid* at paras 125–27.

which may arise from activities in the Area, the Authority and sponsoring States shall apply a precautionary approach, as reflected in Principle 15 of the Rio Declaration.”⁹² Under the Rio Declaration principle 15, states shall apply the precautionary approach widely to the environmental protection. But, this principle has limited the scope of the precautionary approach to “threats of serious or irreversible damage” and to “cost-effective measures to prevent environmental degradation”.⁹³ Additionally, the Sulphides Regulations not only stimulate sponsoring states’ obligation to adopt precautionary approach but also require prospectors, Secretary-Generals, and contractors to take this approach to “prevent, reduce and control pollution and other hazards”.⁹⁴

Elaborating the precautionary approach into the binding Nodules Regulations and the Sulphides Regulations is not the only way to give this approach binding force on signatory states. The Chamber noted that “the precautionary approach is also an integral part of the general obligation of due diligence of sponsoring States.”⁹⁵ The application of a precautionary approach may facilitate the fulfillment of a sponsoring state’s obligation of due diligence. As previously discussed, it is necessary to take all appropriate measures to fulfill the obligation of due diligence as long as their activities have potential environmental risks, even in the absence of full scientific evidence of their adverse effects. Thus, the Chamber concluded that “a sponsoring State would not meet its obligation of due diligence if it disregarded those risks. Such disregard would amount to a failure to comply with the precautionary approach.”⁹⁶

⁹² See 2000 Nodules Regulations, *supra* note 89, regulation 31 (2); 2010 Sulphides Regulations, *supra* note 89, regulation 33 (2).

⁹³ *Rio Declaration*, *supra* note 17, principle 15.

⁹⁴ See 2010 Sulphides Regulations, *supra* note 89, regulations 2 (2), 5 (1), 33 (5).

⁹⁵ *Seabed Mining Advisory Opinion*, *supra* note 4 at para 131.

⁹⁶ *Ibid.*

3. THE IMPLICATIONS FOR APPLYING THE PRECAUTIONARY CONCEPT

3.1. Prevention and Due Diligence

The obligation to prevent transboundary harm has become a principle of customary international environmental law.⁹⁷ It can find adequate support from international instruments and case law. Both the Stockholm Declaration principle 21 and the Rio Declaration principle 2 have enshrined this obligation. In terms of international cases, *Trail Smelter*, *Corfu Channel* and *Lac Lanoux* cases have supported the existence of this obligation.⁹⁸ In 1996, the ICJ confirmed that this obligation was “part of the corpus of international law relating to the environment” in its *Nuclear Weapons Advisory Opinion*.⁹⁹ The ICJ subsequently reaffirmed this trend in *Gabčíkovo-Nagymaros* by stating that, “vigilance and prevention are required on account of the often irreversible character of damage to the environment and of the limitations inherent in the very mechanism of reparation of this type of damage.”¹⁰⁰

The obligation of states to take preventive measures constitutes an important part of their obligation of due diligence. The obligation of due diligence has been supported by a number of international conventions and non-binding instruments and it “[has been] the standard basis for the protection of the environment from harm.”¹⁰¹ The typical examples are article 194 (1) of UNCLOS and article 2 of the Vienna Convention for the Protection of the Ozone Layer.¹⁰² The ILC addressed in the 2001 Draft Articles that the obligation of due diligence includes measures taken by states to “minimize risks of significant transboundary harm or to prevent such harm.”¹⁰³ Under the concept of due diligence, the notion of prevention can be defined more clearly.¹⁰⁴

⁹⁷ ILA, *supra* note 8 at 22.

⁹⁸ Sage-Fuller, *supra* note 1 at 77–78.

⁹⁹ *Nuclear Weapons Advisory Opinion*, *supra* note 51 at para 29.

¹⁰⁰ *Gabčíkovo-Nagymaros Project (Hungary/Slovakia)*, [1997] ICJ Rep 7 at para 140.

¹⁰¹ ILC, *supra* note 7 at 154.

¹⁰² *Vienna Convention for the Protection of the Ozone Layer*, 22 March 1985, 1513 UNTS 293 (entered into force 22 September 1988). Other examples can be found in ILC, *ibid* at 154, nn 880–81.

¹⁰³ ILC, *supra* note 7 at 161.

¹⁰⁴ Sage-Fuller, *supra* note 1 at 79.

A state of origin has an obligation of conduct. Under this obligation, states are not required to “guarantee that significant harm be totally prevented” or that “harm would not occur,” but are required to “exert [their] best possible efforts to minimize the risk.”¹⁰⁵ The commentaries to the Draft Articles also specified that states should adopt appropriate laws and take administrative action regarding risk management and take measures to ensure their compliance.¹⁰⁶ The obligation of due diligence is a continuous obligation for states, which requires them to take measures appropriately and proportionally to “the degree of risk of transboundary harm”.¹⁰⁷

3.2. Prevention and Precaution

Under the obligation of prevention, however, activities with uncertain risks may remain unregulated. This gap may be filled by the precautionary principle. Up until now, the precautionary principle and the obligation to prevent harm have been widely treated as separate principles. The *Pulp Mills* case and the *Seabed Mining Advisory Opinion* highlighted that the principles of prevention and precaution are actually interrelated. Judge Trindade in the *Pulp Mills* case criticized the Court’s ignorance of the precautionary principle and advocated that this principle should come into play when the preventive principle cannot fully resolve the disputes between the parties. The Chamber, in its advisory opinion, not only restated states’ obligations of due diligence to prevent harm, but further clarified the content of due diligence and its relationship with states’ direct obligations (including taking a precautionary measure). These opinions denote that “the principle of prevention of harm could be extended in light of precaution,” and the precautionary principle may “play a significant role in setting the standard of due diligence in the context of scientific uncertainty.”¹⁰⁸

¹⁰⁵ ILC, *supra* note 7 at 154.

¹⁰⁶ *Ibid.*

¹⁰⁷ *Ibid.*

¹⁰⁸ Sage-Fuller, *supra* note 1 at 81.

In the 2014 Legal Principles relating to Climate Change, the International Law Association also addressed the idea that prevention and precaution are interrelated. The legal principles of prevention and precaution are both included in draft article 7 due to their close internal link. Prevention deals with harm or risks that are known or knowable and backed with adequate scientific evidence. In advance of this state of relative certainty, precaution handles uncertain harm or risk.¹⁰⁹ Improvements in scientific knowledge may lead to “a finding of stronger evidence of harm,” which may further result in “a transition from precautionary to preventive measures.”¹¹⁰ Accordingly, these two principles can be treated as “forming part of a continuum.”¹¹¹

3.3. Precaution and Due Diligence

As early as 1999, the ITLOS made an implicit reference to the relationship between obligations of due diligence and the precautionary approach in the *Southern Bluefin Tuna* cases.¹¹² Although the ITLOS could not fully assess the scientific evidence provided by the parties, it was convinced that due to the urgency of the situation, measures should be taken to protect the parties’ rights and protect southern bluefin tuna from further degradation. It stated that the parties in the case should proceed with due diligence in order to take conservation measures.¹¹³ Although the Court in the *Pulp Mills* case circumvented the direct application of the precautionary principle, Judges Al-Khasawneh, Simma and Trindade indicated the potential application of this principle that had been previously considered by the ITLOS in 1999. The *Seabed Mining Advisory Opinion* shed some light on this point. The Seabed Chamber required states to take the precautionary approach to realize the obligation of due diligence to prevent harm.

¹⁰⁹ ILA, *supra* note 8 at 21–22.

¹¹⁰ *Ibid* at 22, 25.

¹¹¹ *Ibid* at 22.

¹¹² *Southern Bluefin Tuna Cases (New Zealand v Japan; Australia v Japan)* (27 August 1999), Order, the Seabed Disputes Chamber of the International Tribunal on the Law of the Sea, Nos 3 and 4.

¹¹³ *Ibid* at paras 77, 79–80.

In summary, the application of the precautionary principle is closely related to the due diligence obligation. On the one hand, the precautionary principle may help clarify and enrich the obligation of due diligence both materially and procedurally, especially in the circumstances where “there is insufficient evidence but...the consequences may be severe and irreversible.”¹¹⁴ On the other hand, the due diligence obligation may facilitate the application of the precautionary approach in resolving disputes.

4. CONCLUSION

There is a close relationship between due diligence, prevention and precaution. The court in the *Pulp Mills* case restated the status of the preventive principle as an international custom and also indicated that this principle originated in the obligation of due diligence. Under the due diligence, the notion of prevention can be defined more clearly. A state should take all possible measures to discharge the obligation of prevention.

The *Seabed Mining Advisory Opinion* further analyzed the notions of due diligence and precaution by connecting states’ obligations of due diligence with their direct obligations of precaution. The Chamber emphasized that the precautionary approach is an integral part of the general obligation of due diligence for states. The obligations of due diligence require states to exercise best possible efforts to avoid harm to the Area or other states, even in face of uncertainty. The content of due diligence may also be specified by reference to the direct obligations that include the adoption of the precautionary approach.

Precaution and prevention have been widely regarded as separate concepts. However, the *Pulp Mills* case and the *Seabed Mining Advisory Opinion* highlighted that they are actually interrelated. They form part of a continuum in which the precautionary concept may come to play in setting the standard of due diligence in the context of scientific uncertainty. With the emergence of strong scientific evidence, an obligation to take precautionary measures may become an obligation to take preventive action.

¹¹⁴ ILA, *supra* note 8 at 26.