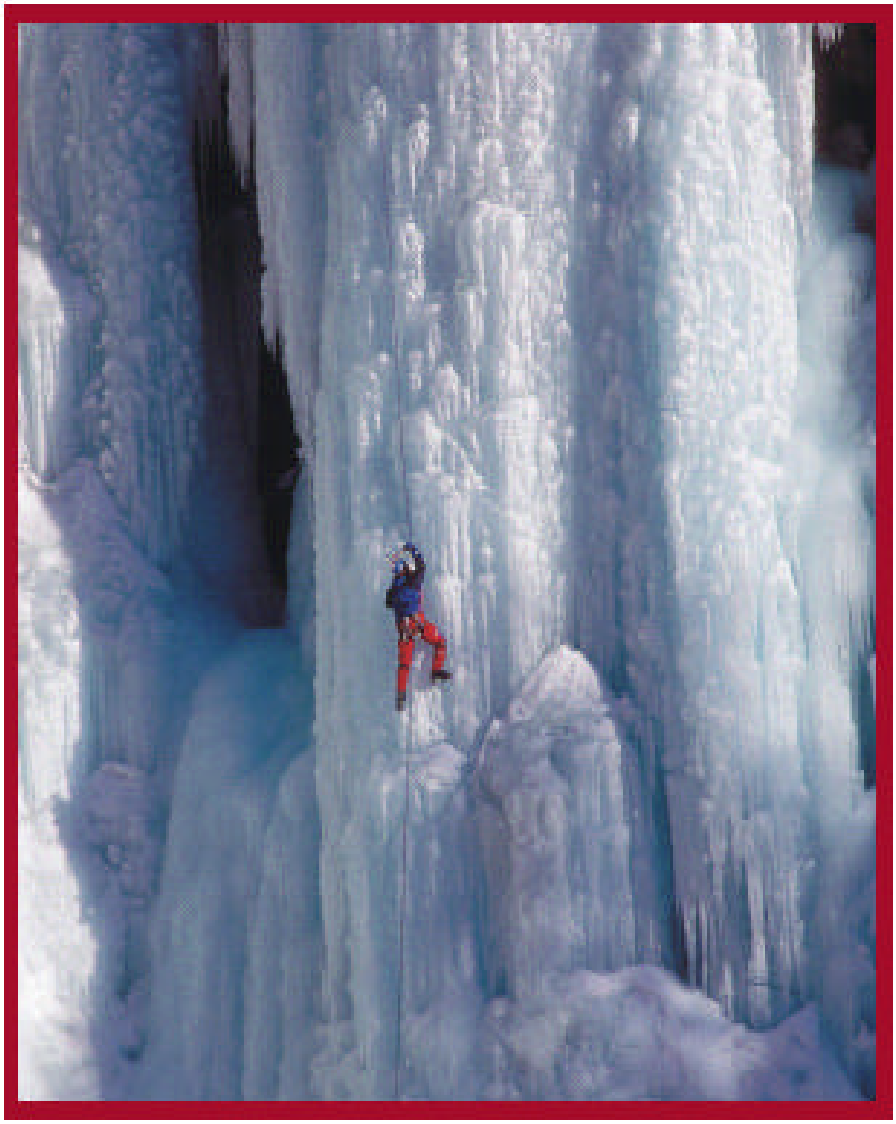
PRECAUTION

from Rio to Johannesburg



Proceedings of a Geneva Environment Network roundtable

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Precaution from Rio to Johannesburg:

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Foreword

by Philippe Roch, Director, Swiss Agency for the Environment, Forests and Landscape (SAEFL) and Klaus Töpfer, Executive Director, United Nations Environment Programme (UNEP)

Precaution underlies much of modern environmental policy-making. Its importance derives from the nature of science and how scientists struggle to understand the world around us. In recent decades science has generated many answers – but it has produced even more questions. Empowered by the answers but hobbled by the uncertainties, policy-makers must nevertheless address highly complex natural systems – from the atmosphere and the oceans to the bio-chemistry of genes, ecosystems and the human body itself. Human tampering with these systems can create such enormous risks that taking no action at all is simply not an option.

Recognizing this dilemma, the 1992 Earth Summit agreed on the need for precautionary action. The Rio Principles' succinct definition is worth repeating here:

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.

This new paradigm of precaution enables us to anticipate and respond to credible environmental threats. It permits a lower level of proof to be used whenever the consequences of waiting for irrefutable proof may be very costly or even irreversible. Precaution is now widely embedded in conventions on environment and sustainable development, including the Montreal Protocol on ozone depletion, the Climate Change Convention, the Convention on Biological Diversity, the Stockholm Convention on Persistent Organic Pollutants, and others.

To ensure that precaution remains an effective basis for environmental policy-making, environmental agreements and decisions must continue to be based on the best available science. Credible international assessments such as those produced by the Intergovernmental Panel on Climate Change can establish clearly what is known about a problem and what uncertainties remain. A reliance on precaution must therefore go hand in hand with continued work on resolving remaining uncertainties.

Transparency in the scientific process must be reflected in the political process as well. Policy-makers must respect and consider the views and interests of all stakeholders. Often these interests will be economic or commercial. In particular, environmentalist need to work more closely with the World Trade Organization to ensure that trade principles and environmental principles are mutually understood and are fully compatible.

This booklet summarizes a series of presentations on precaution that were delivered last May at a roundtable sponsored by the Geneva Environment Network, which in turn is supported by both UNEP and SAEFL. We believe they offer useful insights into the debate over precaution as we prepare for the World Summit on Sustainable Development.

Precaution from Rio to Johannesburg: An introduction

by Franz Perrez, Head of Section, Global Affairs, International Division,
Swiss Federal Agency for the Environment, Forests and Landscape

Precaution has become perhaps the most hotly debated of the concepts adopted at the 1992 United Nations Conference on Environment and Development. While some consider precaution to be central to solving global environmental problems, others see it as a threat to sound science and human development. Unfortunately, the emotions, fears, hopes and irritations swirling around the controversy on precaution risk distracting us from the underlying issues. For this reason alone, it is important to carry on a constructive and forward-looking debate to clarify what precaution really means.

With the World Summit on Sustainable Development (WSSD) on the horizon, it is time to de-emotionalize the discussion and to focus on precaution not as a concept, but as it is actually practiced. With this objective in mind, the Swiss Agency for the Environment, Forests and Landscape and the Geneva Environment Network organized a round-table on Precaution in Environmental Policy-Making at the International Environment House, Geneva, on 16 May. We invited experts from academia and international organizations to analyze how the concept of precaution has been implemented since Rio, and we have collected their papers together in this volume.

By way of introduction, this essay will briefly recall the context in which the concept of precaution emerged. It will then summarize the round-table discussion and conclude with some reflections and suggestions on the concept and its role at WSSD.

The origins of precaution

The concept of precaution evolved within national legislation before entering the international arena. [1] Municipal environmental policy in Germany is often considered the starting point.[2] However, one expert has recently linked precaution's development to US court decisions on health, safety and the environment, decisions that preceded precaution's appearance in European law.[3] Today, many countries apply the concept at the national level. [4]

The emergence of precaution reflects a paradigm shift: While it was assumed until the late 1960s that the capacity of the environment to absorb human impacts could be precisely determined, it became clear over time that science is not always able to provide the firm conclusions needed to protect the environment effectively and cost-efficiently. Precaution was a response to the growing appreciation of the scientific uncertainties about environmental degradation. [5] Thus, the combination of two important insights lead to the acceptance of precaution: That we can not always rely on scientific certainty for

[1] Philippe Sands, Principles of International Environmental Law 208 (1996).
[2] K. von Moltke, *The Vorsorgeprinzipin West German Environmental Policy, in*: Twelfth Report, Royal Commission on Environmental Pollution (1988), 57; Lothar Gündling, *The Status in International Law of the Principle of Precautionary Action*, 5 International Journal of Estuqrine and Coastal Law 23, 23-25 (1990); Charles D. Siegal, *Rule Formation In Non-Hierarchical Systems*, 16 Temp. Envtl. L. & Tech. J. 173, 211 (1998)
[3] Nicholas A. Ashford, *Implementing a Precautionary Approach in Decisions Affecting Health, Safety, and the Environment: Risk, Technology Alternatives, and Tradeoff-Analysis, in*: The Role of Precaution in Chemicals Policy (Elisabeth Freytag e.a. ed., Diplomatische Akademie Wien, 2002)
[4] See e.g. Art. 1.2 of Siwtzerland's Federal Law relating to the Protection of the Environment. For references to the application of the concept e.g. in India, Costa Rica, Canada and the United States, see: Precaution in International Sustainable Development Law, legal brief of the Centre for International Sustainable Development Law (2001), with further references
[5] Laurence Boisson de Chazournes, *Le principe de précaution: Nature, contenu et limites*, (forthcoming, on file with the author); James Cameron, Will Wade-Gery and Juli Abouchar, Precautionary Principle and Future Generations, in: Future Generations & International Law 93, 94 (Agius and Busuttil eds., 1998); Franz Xaver Perrez, Cooperative Sovereignty: From Independence to Interdependence in the Structure of International Environmental Law, 289 (2000), with further references.

determining response measures, and that the consequences of not taking preventive measures early enough could be irreversible. It is in this context that the 1992 Earth Summit adopted the Rio Declaration containing Principle 15 on the precautionary approach.

Precaution, then, helps to guide the development and application of international environmental law in the light of scientific uncertainties.[6] Principle 15 states that "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." From this general formulation, different conclusions have been drawn:[7] Precaution as a duty – or a right – to take remedial action where there is a significant risk of environmental harm even though this risk is not provable;[8] as a requirement to ensure that errors are made on the side of excess environmental protection rather than on the side of estimated capacity of the environment to absorb pollution and other human impacts;[9] as a duty to avoid risk;[10] as a shift to the person who wishes to carry out an activity of the burden of proof that this activity will not cause harm;[11] or as a concept requiring states to cooperate in order to prevent environmental degradation in the light of scientific uncertainty.[12]

Despite these varying interpretations, the concept as stipulated in the Rio Declaration is widely accepted. It is generally agreed that precaution is in the process of crystallizing into a rule of international customary law.[13]

The presentations

With this background in mind, the panelists for the round-table on Precaution in Environmental Policy-Making presented their views on how precaution is being implemented in various fields. ***Laurence Boisson de Chazournes*** of the University of Geneva introduced the basic elements of precaution that have been at the center of the debate since Rio. She stressed that precaution is a tool for dealing with uncertainty. While it is not yet a fully agreed concept, there is nevertheless a common understanding that it includes the following four elements: risk, damage, scientific uncertainty and differentiated capabilities. When an issue features all four of these elements, precautionary measures may be adopted.

Ms. Boisson de Chazournes highlighted the distinction between precaution, which deals with uncertainty, and prevention, which addresses cases where the threat or possible damage is certain. As to whether precaution is a "principle", an "approach" or a "standard", the best answer comes from international practice. Precaution is multi-faceted. Precaution provides not only for obligations of conduct - such as the obligation to make an effort in good faith to reduce or eliminate a potential risks - but also for obligations of result by prohibiting activities that *may*, rather than *do* have significant adverse environmental impacts. The precautionary principle has not yet reached the status of an agreed rule of customary international law, but it is rooted in international environmental law and is evolving into a principle of international law. The concept of precaution requires greater cooperation at both the national and international level.

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[6] Sands, supra note 1, at 208.
[7] See also Richard B. Stewart, *Environmental Regulatory Decisionmaking under Uncertainty*, (forthcoming, on file with the author).
[8] See e.g.: Gunther Handl, *Environmental Security and Global Change: The Challenge to International Law, in*: Environmental Protection and International Law 59, 99 (W. Lang et al. Ads., 1991)
[9] Ellen Hey, *The Precautionary Concept in Environmental Policy and Law: Institutionalizing Caution*, 4 Geo. Int'l Envtl. L. Rev. 303, 305 (1992)
[10] Catherine Tinker, *Responsibility for Biological Diversity Conservation Under International Law*, 28 Vand. J. Transnat'l L. 777, 793 (1995)
[11] Charmian Barton, Note, *The Status of the Precautionary Principle in Australia: Ist Emergence in Legislation and as a Common Law Doctrine*, 22 Harv. Envtl. L. Rev. 509 (1998).
[12] Perrez, supra note 5, at 291.
[13] Id., with further references in note 317.

Carolina Lasén Diaz of the Foundation for International Environmental Law and Development (FIELD) discussed how precaution is reflected in the Cartagena Protocol on Biosafety. The issue of precaution became especially controversial towards the end of the Protocol negotiations.

As finally agreed, the scope of the Protocol – and thus its use of precaution – encompasses adverse effects not only on the environment but also on humans. Moreover, by permitting precautionary measures against "potential adverse effects", the Protocol's threshold for triggering precautionary measures is significantly lower than that of Principle 15 and of the Biodiversity Convention itself.

Ms. Lasén Diaz then demonstrated how precaution became a key policy principle of the European Union in environment generally and in consumer health, food safety and risk management for genetically modified organisms (GMOs) in particular. Precautionary measures must be proportionate, no more trade restrictive than necessary, and provisional while further and more comprehensive risk assessments are conducted. After presenting briefly the use of precaution in Africa and New Zealand, Ms. Lasén Diaz concluded that the Cartagena Protocol and related laws will play an important role in further clarifying the use of precaution in practice.

Bo Wahlström of the United Nations Environment Programme described how the Stockholm Convention on Persistent Organic Pollutants (POPs) addresses precaution. He presented the Convention and explained that the particular qualities of POPs – persistence, mobility over long distances and bio-accumulation – requires the use of precaution. He highlighted how the Convention captures precaution explicitly but also embeds its implicitly as an underlying and overarching principle throughout the text.

Importantly, decisions to list substances as controlled POPs shall be taken in a precautionary manner; the lack of full scientific data shall not hinder the procedure of listing a new chemical. As in the case of the Biosafety Protocol, the objective of the POPs Convention is to protect the environment and human health. Mr. Wahlström concluded by stressing that much of the heated debate during the Convention negotiations focused on semantics more than on substance. Moreover, the arguments over precaution were clearly less of a "North-South" conflict and more of a "North-North" issue.

Gabrielle Marceau of the World Trade Organization addressed the question of how the WTO and its Panels and Appellate Bodies have dealt with precaution. She argued that the emergence of a new customary rule on precaution would not necessarily affect existing WTO rules, as precaution already features in the WTO treaties. Precaution is taken into account by the WTO agreements on the Application of Sanitary and Phytosanitary Measures (SPS) and on Technical Barriers to Trade (TBT) as long as certain elements and criteria are taken into account. In particular, precaution cannot be used as a basis for ignoring existing WTO rules; WTO members have the right to establish their own level of protection; responsible governments commonly act from a perspective of prudence and precaution; precaution does not undermine the obligation to do and continue to do scientific research and to base decision on sound scientific findings. In the light of these generally accepted elements and criteria, there seems to be no necessity for a conflict between the concept of precaution and WTO law. Ms. Marceau concluded by indicating that WTO rules and jurisprudence can be expected to contribute in a constructive way to the development of customary law on precaution over the coming years.

Finally, ***Philippe Sands*** of University College London and New York University provided an overview of how international courts and tribunals have been applying precaution in general international law. While the International Court of Justice did not address the issue of precaution in early cases such as the Nuclear Text case of 1995,[14] the Court recognized in 1997 in the Gabcikovo/Nagymaros case[15] that there are serious uncertainties concerning environmental harms.

[14] International Court of Justice: request for an examination of the situation in accorance with paragraph 63 of the court's 1974 judgment in the case concerning nuclear tests (New Zealand v. France) (1995).
[15] International Court of Justice: Judgment in the Gabcikovo-Nagymaros Project (Hungary and Slovakia) (Sept. 25, 1997).

However, as the Court in this case was concerned with the application of the law as it stood in 1989, it could not yet realistically apply the precautionary principle as a rule of customary law. This might be the reason why the Court indicated in that Decision that what might have been a correct application of the law in 1989 could be a miscarriage of justice in 1997. Thus, more recent decisions of international courts and tribunals such as the Southern Blue-Fin Tuna Decision of the International Tribunal for the Law of the Sea of 1999[16], the order of the Tribunal in the still pending MOX Plant case[17], or decisions of the WTO Appellate Body[18] make reference to or rely on the concept of precaution. Mr. Sands concluded by underlining that there is a significant body of individual separate or dissenting views of judges indicating that that the precautionary principle has customary international law status and that this increasing body of views could crystallise into majority opinion.

Precaution and the WSSD

The roundtable presentations made clear that the concept of precaution has evolved since Rio. Its meaning and requirements have been further clarified. Precaution now provides a practical basis for action on hazardous chemical substances and GMOs. The international courts are also increasingly recognizing its importance.

Nevertheless, there are still several important elements that need further clarification. What is the acceptable threshold for "threat of serious or irreversible damage"? What is the exact meaning of "scientific uncertainty"? What is the relevance of proportionality and cost-effectiveness? How can we make sure that precaution is not misused for protectionist goals?

The WSSD will certainly need to address the issue of precaution. Precaution was not only one of the most important and most debated elements of the Rio Declaration, it is at the heart of many of the difficulties and disagreements in on-going international policy debates and negotiations. Moreover, some countries have explicitly requested WSSD to address science-based decision-making as a key element of good governance.[19] It would therefore be difficult to forego any discussion whatsoever of precaution. The roundtable offered some useful insights on how WSSD might handle the discussion:

- Since 1992, important elements of the concept of precaution have been clarified. Precaution is now being implemented in several areas. This important evolution should be reflected at WSSD and any language denying this progress should be avoided.

- The debate over whether precaution should be considered a "principle" or an "approach" is over-politicized and not fruitful. At the practical level, there is no conflict or contradiction between principles and approaches; this debate seems to be more one of semantics than substance.

- Instead of engaging in lengthy negotiations on abstractions, WSSD should focus on precaution's concrete application and implementation. This is the best route to resolving any remaining uncertainties and ambiguities. Progress is needed – and common understanding possible – primarily at the concrete, and not at the abstract, level.

- Precaution is often viewed as being a basis for unilateral action, but in fact it can – and should – also serve as the basis for cooperative efforts. In the light of scientific uncertainties, increasingly complex interdependencies and complexities, cooperation is a more effective approach than

[16] International Tribunal for the Law of the Sea: Southern Bluefin Tuna Cases (Australia/NZ vs. Japan) (July 1999).
[17] International Tribunal for the Law of the Sea: The MOX Plant Case (Ireland v. United Kingdom) (December 2001)
[18] See e.g.: WTO: EC concerning meat and meat products (hormones); USA/CAN vs. EC – WT/DS26/AB/R; WT/DS48/AB/R (January 1998)
[19] See the submission on Good Governance by the USA and other JUSCANZ-countries to the 2nd PrepCom for the WSSD (on file with the author).

unilateralism. Cooperation can lead to a better understanding of the underlying risks and threats as well as to coherent, comprehensive, effective and efficient solutions. Precaution will provide greater benefits to all if developed and implemented through cross-sectoral and international cooperation.

The Precautionary Principle

by Laurence Boisson de Chazournes, Professor and Director,
Department of Public International Law and International Organization, University of Geneva

Rio, a foundation for precaution

The Rio Declaration on environment and development constitutes a cornerstone in the process of crystallization of the precautionary principle[20]. Principle 15 stipulates that "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". Important elements of a new equilibrium between economic development and the protection of the environment were thereby laid.

Precaution, for what?

Major catastrophes (such as Chernobyl) and scientific uncertainties (such as the climate change phenomenon) have led to the development and evaluation of alternative strategies and policies for state action in the international sphere. Precaution is an innovative tool that brings a new lease of life to the protection of the environment within the international legal system[21]. Centered on the uncertain effects of human activity, it highlights the need to take into consideration potential and future damages. It is a technique of anticipation to the extent that it attempts to regulate events which have not occurred, and which may in fact never occur[22].

Defining precaution

Precaution requires decision-makers at the local, national and international levels to cooperate among themselves in the case of uncertainty or scientific disagreement over the consequences of a human activity. They must also cooperate with all other interested actors in carrying out environmental impact assessments, and in implementing effective and efficient measures in order to prohibit either temporarily or permanently the relevant activities. These measures should lead to a reduction or elimination of potential damage to the environment, public health, and more generally to everything related to the safety, integrity and survival of human beings. Within this framework, procedures need to be established enabling judicial review to guarantee the transparency of the decision-making process. Such mechanisms should also regulate questions such as those relative to the burden of proof, and indeed, possibly provide for its reversal[23].

Identifying precaution

Precaution is a unique legal technique for addressing some of contemporary society's environmental and public health challenges. The absence of a generally accepted legal definition nonetheless renders somewhat relative this unique technique. This said, four fundamental constitutive elements generally

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[20] One should note however that the Rio Declaration is not the first international instrument to refer to the precautionary principle. See for example the Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes Within Africa, 30 January 1991, (art. 4).

[21] L. Boisson de Chazournes, *Faire entrer le doute dans le droit*, in Bio Tech forum, Le principe de précaution pour mieux gérer les incertitudes, 3, Septembre 2001, pp. 10-11.

[22] L. Boisson de Chazournes, *Le principe de précaution: Nature, contenu et limites*, Le Principe de précaution, IHEI- Paris II, Pedone (forthcoming 2002).

[23] Ibid.

appear in the relevant international legal instruments[24]. Their combined presence gives rise to a *prima facie* requirement for a precautionary approach.

Risk: It is the defining characteristic of precaution. Risk is a more or less predictable potential danger that may cause damage. It is therefore by its very nature uncertain. Precaution has been developed in international law taking into account a new category of risk : ecological risks.[25] The main difficulty linked to this criteria of risk lies in its assessment, that is, in the quantification of the probability of its occurrence, but also in its qualitative description. International law does not provide any precise answers. Nonetheless, international practice gives some indications as to the conditions under which an evaluation of risk can be considered as being objective[26].

Damage: Risk connotes both uncertainty and damage. Risk cannot be isolated from ensuing potential damage. Damage is usually characterised by reference to a threshold of gravity and thus the application precaution is at least to some extent limited. This threshold refers to the concepts of "gravity" and "irreversibility". The question also arises as to the difficulties of its assessment and management. Furthermore, the issue of managing risk has its own difficulties. The technique of conducting an environmental impact study is a relevant tool in this context.

Scientific Uncertainty: Uncertainty is raised to the rank of a condition *sine qua non* for the application, and indeed for the legitimization, of the precautionary principle. Uncertainty furthermore represents the difference between precaution and prevention. The "prevention model" must rely constantly on science and its expertise, which alone can provide a degree of objectivity regarding the risks being run. What does scientific uncertainty encompass? Does it lead to a society without economic and technological activities? The answer is no. The extent of precautionary measures must be based on a minimum of knowledge, ie., on the basis of scientific results presenting a degree of consistency. Precaution necessitates a constant reevaluation of the risks, and as a consequence, a regular readjustment and revision of those decisions, which were taken in the name of the protection of the environment or of public health. To the extent that the qualitative and/or quantitative identification of risk progresses, the precautionary measures will constantly be refined, thus leading to a better ability to manage and control the risk. Nevertheless, it must be recognized that law has difficulty in managing uncertainty. Uncertainty in fact calls for political answers more than for legal deductions.

Differentiated capabilities: Taking into consideration the capabilities of a state allows one to bring the precautionary principle into relation with a proportionate approach in the light of a state's status.[27] States of different levels of development cannot be subjected to the same requirements regarding the implementation of precautionary measures. As far as the evaluation of risks and damages are concerned, states do not have access to the same techniques, which means that the content as well as the reliability of the results will necessarily vary from one state to another. Proportionality is determined in this context as a function of capabilities, that is, human, financial, economic, and technical means at the disposal of each state for apprehending a risk and better managing it.

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[24] See for instance Principle 15 of the Rio Declaration on Environment and Development, *op.cit.;* see also the Framework Convention on Climate Change which stipulates: "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 (art. 3)." http://unfccc.int/text/resource/conv/conv_005.html

[25] N. de Sadeleer, *Les principes du pollueur-payeur, de prévention et de précaution (Essai sur la genèse et la portée juridique de quelques principes du droit de l'environnement)*, Bruylant/AUF, 1999, pp. 174-176.

[26] See for instance the procedures contained in the Cartagena Protocol on Biosafety to the Convention on Biological Diversity, in the Codex Alimentarius, or in the WTO's Agreement on the Application of Sanitary and Phytosanitary Measures.

[27] See Principle 15 of the Rio Declaration on Environment and Development: "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities..." See also the amended Convention on the Protection of the Marine and Coastal Environment of the Mediterranean, which stipulates that the member States apply the precautionary principle according to their capacity (art. 4).

The status of the precautionary principle

The fact that the precautionary principle is mentioned in numerous conventions does not determine its legal value. Indeed, the fact that the precautionary principle is mentioned in the provisions of a convention does not necessarily make it a principle of law. Another question is its status in general international law. No international courts and tribunals have so far taken a position in this regard, be it the International Court of Justice, the WTO's Dispute Settlement Body, or the International Tribunal of the Law of the Sea.

Even if it has not as yet acquired an unambiguous status in general international law, one should nonetheless consider the precautionary principle as an emerging customary norm.[28] Its inclusion in numerous legal instruments of international and national law, and the fact that it has been taken into consideration by the European Court of Justice[29] as well as by national tribunals bear witness to this. The only important obstacle is with regard to its acceptance by the international community as a whole as a principle of general international law.

It is difficult to determine precisely, technically speaking, what the precautionary principle means in international law. Is precaution a "standard," an "approach," or a "principle" in the legal sense? Elements of an answer can be found in international practice.

The role of precaution

The precautionary principle is multi-faceted, providing for obligations of means and of result. It is an obligation of means (that is an obligation for every state to make an effort in good faith to use the existing means at its disposal to reduce or to eliminate a potential risk without there necessarily being an obligatory threshold for environmental protection) when it refers to the capacity of states in the taking of measures but also when reference is made to the "cost-benefit relationship" of the envisaged precautionary measures. The means to be implemented in order to respect the precautionary approach vary as a function of their cost, especially their economic cost, and of their effectiveness in preventing degradation of the environment.

As an obligation of result (namely, the obligation of all states to reach a specific pre-determined threshold of environmental protection), the precautionary principle imposes an obligation to prevent possible detrimental effects on the environment. In extreme cases, precaution may lead to a moratorium, which means that the activity in question is banned so long as its innocuous character has not been proven. It is in this context that certain international conventions provide for a reversal of the burden of proof.

The precautionary principle is rooted in international environmental law. It is evolving within this *corpus juris* with other fundamental principles such as the principle of intergenerational equity or the principle of public participation, all of which represent different dimensions of the promotion of sustainable development.

The precautionary principle offers one picture of a special type of relationship between the international and the national. It is applicable at the international level, where it requires greater cooperation between state actors, as well as at the national level, where it forces decision-makers to confront a public opinion which is increasingly demanding with regard to the measures that need to be adopted in order to manage today's threats and risks.

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[28] L. Boisson de Chazournes, *Le principe de précaution: Nature, contenu et limites*, *op. cit.*

[29] N. de Sadeleer, *Le statut juridique du principe de précaution en droit communautaire: du slogan à la régle*, Cahiers de droit européen, 1-2, 2001, pp. 91-132.

Precaution and the Stockholm Convention

by Bo Wahlström, Senior Scientific Advisor, UNEP Chemicals

The Stockholm Convention on Persistent Organic Pollutants

The Stockholm Convention is a global treaty to protect human health and the environment from persistent organic pollutants (POPs). It was adopted at the Conference of Plenipotentiaries, held from 22 to 23 May 2001 in Stockholm, Sweden, and opened for signature until 22 May 2002. To date 150 countries and one regional economic integration organisation have signed the Convention and 11 countries have ratified it. The Conference of Plenipotentiaries also adopted a number of resolutions on, *inter alia*, interim arrangements and voluntary implementation of the Convention prior to its entry into force. In implementing the Convention, Governments will take measures to eliminate or reduce the release of POPs into the environment.

What are POPs?

POPs are organic (carbon-based) compounds of natural or anthropogenic origin. They possess a unique combination of physical and chemical properties, including persistence, low but significant vapour pressure, low water solubility and high fat solubility. This leads to the regional and global distribution of POPs by air, water and migratory species and to the long-term exposure to POPs of humans and the environment. These chemical substances bio-accumulate in fatty tissues of living organisms and can cause acute and chronic toxic effects on humans and wildlife.

What does the Convention do?

The objective of the Convention, which acknowledges precaution as an important element, is the protection of human health and the environment from persistent organic pollutants.

The main provisions of the Convention include control measures for intentionally produced POPs (Article 3/Annex A, B), unintentionally produced POPs (Article 5/Annex C), stockpiles and wastes (Article 6); addition of new chemicals (Article 8/Annex C); general obligations; financial and technical assistance; and implementation aspects.

How is precaution captured?

The Stockholm Convention refers to precaution explicitly but also incorporates it implicitly as an overarching principle throughout the text.

Explicit References to "precaution"

The treaty contains four explicit references to precaution:

The Preamble of the Convention acknowledges that "*precaution underlies the concerns of all the Parties and is embedded within this Convention*".

Article 1 states: *"Mindful of the precautionary approach as set forth in Principle 15 of the Rio Declaration on Environment and Development, the objective of this Convention is to protect human health and the environment from persistent organic pollutants."*

Article 8, which deals with the listing of chemicals in Annexes to the Convention, stipulates that *"The Conference of the Parties, taking due account of the recommendations of the Committee, including*

any scientific uncertainty, shall decide, in a precautionary manner, whether to list the chemical, and specify its related control measures, in Annexes A, B and/or C."

Finally, Annex C (Article 5) establishes that *"In determining best available techniques, special consideration should be given, generally or in specific cases, to the following factors, bearing in mind the likely costs and benefits of a measure and consideration of precaution and prevention…"*

The spirit of precaution

The spirit of precaution flows through the treaty, encouraging the Parties to take various measures to prevent the release and distribution of persistent organic pollutants and minimise their adverse effects on human health and the environment.

Examples of the Convention's provisions that are based on the precautionary approach are:

Preventing "new POPs":

"Each Party that has one or more regulatory and assessment schemes for new pesticides or new industrial chemicals shall take measures to regulate with the aim of preventing the production and use of new pesticides or new industrial chemicals which, taking into consideration the criteria in paragraph 1 of Annex D, exhibit the characteristics of persistent organic pollutants." (Article 3)

Preventing "future POPs":

"Each Party that has one or more regulatory and assessment schemes for pesticides or industrial chemicals shall, where appropriate, take into consideration within these schemes the criteria in paragraph 1 of Annex D when conducting assessments of pesticides or industrial chemicals currently in use."(Article 3)

Circumscribing exemptions and acceptable purposes:

"Any Party that has a specific exemption in accordance with Annex A or a specific exemption or an acceptable purpose in accordance with Annex B shall take appropriate measures to ensure that any production or use under such exemption or purpose is carried out in a manner that prevents or minimizes human exposure and release into the environment." (Article 3)

Establishing a "pollution prevention hierarchy":

"Promote the development and, where it deems appropriate, require the use of substitute or modified materials, products and processes to prevent the formation and release of the chemicals listed in Annex C, taking into consideration the general guidance on prevention and release reduction measures in Annex C and guidelines to be adopted by decision of the Conference of the Parties" (Article 5) and

"Priority should be given to the consideration of approaches to prevent the formation and release of the chemicals listed in Part I." (Annex C)

Listing chemicals as new POPs:

Article 8 and Annex D determine that precaution will be incorporated in a number of ways to ensure that all proposed candidates for listing in Annexes to the Convention are thoroughly considered on the basis of available data to see if they possess POPs properties.

Summary thoughts

Discussions on precaution and how to make reference to it in the text of the Stockholm Convention figured prominently in the highly charged atmosphere of the final round of negotiations in Johannesburg in December 2000. It was obvious that some industrialized country representatives were very nervous about the ultimate objectives of other industrialized countries that were proponents of the precautionary principle/approach. Thus, to some degree it was an issue that divided the group of industrialized countries, while most developing countries that addressed the subject favoured a strong wording on precaution in the Convention. The debate could also be viewed as a fight between visionaries and pragmatists. It remains to be seen how precaution will be addressed during the practical implementation of the Stockholm Convention.

Biotechnology and the Cartagena Protocol

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Introduction

The application of modern biotechnology to modify the genetic material of living organisms has not been proved to be free of risks for both the environment, including biodiversity, and human health. Scientific knowledge as to the effects that these genetically modified organisms (GMOs) may have on the receiving environment, in case of release, is uncertain or at best incomplete. In addition, the impact that GMOs may have on human health and on the livelihoods of local communities and indigenous peoples has not been fully addressed.

International, regional and national legal and policy instruments in the area of biotechnology and biosafety increasingly incorporate or refer to the precautionary principle, directly or indirectly, when they regulate or guide the production, use, transport, handling, marketing and/or release of GMOs.

The application of the precautionary principle has been and remains controversial, as countries differ in the way they perceive, assess and value the risks and lack of certainty associated with the use of modern biotechnology. In this sense, the use of the precautionary principle requires "good judgment", a concept related to ethics and politics rather than science[30].

Sound science, as a methodological concept, and the precautionary principle, as guideline for decision-making, can operate in harmony. The adoption of the precautionary approach does not imply the end of technological innovation, and policy-making needs to be based on available scientific information, but not on science alone. Research shows that scientific risk analysis is "unavoidably and inextricably intertwined with subjective framing assumptions, values, trade-offs and expectations"[31].

In the context of the Biosafety Protocol, the precautionary principle enhances the search for scientific knowledge by promoting risk assessments and data collection, as well as by providing the scientific evaluation of ecological, health and socio-economic risks of GMOs on biological diversity and human health[32].

The 2000 Cartagena Protocol on Biosafety

The objective of the Cartagena Protocol is "to contribute to ensuring an adequate level of protection" in the safe transfer, handling and use of living modified organisms (LMOs)[33] resulting from modern biotechnology that may have adverse effects on the conservation and sustainable use of biodiversity, "taking also into account risks to human health, and specifically focusing on transboundary movements" (Article 1). To achieve this end, the Protocol establishes an advance informed agreement (AIA) procedure and a Biosafety Clearing House for ensuring that countries are provided with the information necessary to make informed decisions before agreeing to the import of such organisms into their territory[34].

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[30] Saner, M. *An Ethical Analysis of the Precautionary Principle*, International Journal of Biotechnology 4 (2002).
[31] Stirling, A. *On Science and Precaution in the Management of Technological Risk* Vol. I, A Synthesis report of case studies, European Science and Technology Observatory, May 1999.
[32] Meyer, H. *Precise precaution versus sloppy science*. See http://www.twnside.org.sg/title/3food-cn.htm
[33] LMOs means "any living organisms that possesses a novel combination of genetic material obtained through the use of modern biotechnology" (Article 3 of the Cartagena Protocol).
[34] See Cartagena Protocol homepage, at http://www.biodiv.org/biosafety

The Preamble of the Cartagena Protocol on Biosafety[35], "reaffirms" the "precautionary approach" as formulated in Principle 15 of the Rio Declaration on Environment and Development, which sets the threshold in the existence of *"threats of serious and irreversible damage"* to justify preventive action in the absence of scientific certainty. The Protocol was negotiated and adopted under the 1992 Convention on Biological Diversity (CBD), which includes a preambular paragraph inspired in Principle 15. The mandate of the Second Conference of the Parties to the CBD, in 1995, stated that "the Protocol will take into account the principles enshrined in the Rio Declaration on Environment and Development and, in particular, the precautionary approach contained in Principle 15"[36].

It is considered that the fact that such a multilateral environmental agreement (MEA) was agreed and signed by over 100 countries shows the international recognition of the need to apply precaution in the management of potential risks for the environment and human health derived from modern biotechnology[37]. However, the consideration of the precautionary principle in the negotiations of the Protocol was given a low priority and the differences in the position of negotiating countries on this issue, in particular between producers and importers of GMOs, made progress slow. The European Union, influenced by the BSE and dioxin crises, actively supported a strong and explicit reference to the precautionary principle in the Protocol[38]. Discussions on the specific language on the precautionary principle became more important towards the end of the negotiations. By the time of the final meeting in Montreal, in January 2000, the precautionary principle had become one of the core elements of the Protocol[39].

The Cartagena Protocol makes the precautionary principle "operational" as it includes it in three provisions, in addition to the Preambular reference. Article 1 sets out the objective of the Protocol, "in accordance with the precautionary approach contained in Principle 15 of the Rio Declaration on Environment and Development". Furthermore, Articles 10(6) and 11(8) allow countries to take precautionary measures aimed at avoiding or minimising the "potential adverse effects" of importing GMOs when there is "lack of scientific certainty due to insufficient relevant scientific information and knowledge" as to the extent of those risks. In this sense, the Protocol is relevant for the application of the precautionary principle at the national level.

The threshold that triggers precautionary measures in these provisions of the Cartagena Protocol ("potential adverse effects") is significantly lower than that of Principle 15 ("threats of serious or irreversible damage") and the reference in the CBD ("threat of significant reduction or loss of biological diversity"). Parties to the Protocol are therefore entitled to decide on the levels of risk and protection they deem necessary in their territories, without establishing the link with "serious or irreversible damage" or signif icant biodiversity loss or reduction. The objective of these national measures is to avoid or minimise those "potential adverse effects" that need to have been previously identified through the risk assessment procedure.

Annex III of the Cartagena Protocol on Biosafety spells out the objective, use and general principles related to the risks assessments that must be used by the relevant authorities "to make informed decisions" about GMOs in the context of the Protocol. A decision as to allow or not the import of GMOs into a country must be based on a scientifically sound risk assessment[40], whose objective is to "identify and evaluate the potential adverse effects" of GMOs on the conservation and sustainable use of biodiversity "in the likely potential receiving environment"[41] and taking into account the risks to human health. One of those general principles indicates that "lack of scientific knowledge or scientific

[35] Adopted on 29 January 2000 (not yet in force). See http://www.biodiv.org/biosafety/protocol.asp
[36] CBD COP Decision II/5, Annex, para.5.
[37] Graff, L. *The precautionary principle*, in Bail, Falkner and Marquard (eds.), *The Cartagena Protocol on Biosafety: Reconciling Trade in Biotechnology with Environment and Development*, Royal Institute of International Affairs/Earthscan, 2002.
[38] Id. at 412.
[39] Id. at 415.
[40] Cartagena Protocol on Biosafety, Articles 10 (1) and 15.
[41] Cartagena Protocol on Biosafety, Annex III, para. 1.

consensus should not necessarily be interpreted as indicating a particular level of risk, an absence of risk, or an acceptable risk"[42].

Precaution in the European Union: focus on biosafety

Article 174(2) of the EC Treaty establishes that Community policy on the environment must aim at a high level of protection and be based on the precautionary principle, as well as on the principles that preventive action should be taken, that environmental damage should be rectified at source and that the polluter should pay.

The European Commission adopted a Communication on the Precautionary Principle in 2000[43] where it states that the application of the precautionary principle is a key tenet of Community policy. The Communication includes guidelines only intended to serve as general guidance, which do not modify or affect the provisions of the Treaty or any secondary Community legislation.

Although the only reference in the Treaty relates to environmental policy, the Commission considers that the precautionary principle is a general one which should be taken into consideration particularly in the fields of environmental protection and human, animal and plant health. In its Communication on consumer health and food safety[44], the Commission stated that it "will be guided in its risk analysis by the precautionary principle, in cases where the scientific basis is insufficient or some uncertainty exists".

In 1999, the EU Council adopted a Resolution[45] within the framework of the adoption of the consumer policy action plan 1999-2001, urging the Commission to be more determined to be guided by the precautionary principle when preparing legislative proposals, as well as in its other consumer-related activities. This call was repeated at the European Council meeting in Nice, in December 2000, where the Heads of Government and State of the EU countries called on the Commission to "incorporate the precautionary principle, wherever necessary, in drawing up its legislative proposals and in all its actions"[46].

The Commission Communication takes the view that the precautionary principle should be considered within a structured approach to risk analysis, which comprises the three elements of risk assessment, risk management and risk communication.

Of particular importance to the management of risks derived from GMOs is the need to start with a scientific evaluation as complete as possible which, where possible, identifies at each stage the degree of scientific uncertainty. This has been one of the cornerstones of the experience and development of biosafety-related legislation in the EU, as there has very often been a lack of reliable scientific information on which to base the required risk assessments.

The new EC Directive that regulates intentional release of GMOs into the environment (Directive 2001/18[47]) includes three references to the precautionary principle to reflect that:

- the principle must be taken into account in the Directive's implementation[48];

[42] Id, at para. 4.
[43] COM (2000) 1 final, of 2 February 2000.
[44] COM (97) 183 final, of 30 April 1997.
[45] Council Resolution of 13 April 1999, EU Council on Consumer Affairs, no.7212/99
[46] Annex III to European Council Conclusions, Nice, 7-9 December 2000 (Council Resolution on the Precautionary Principle).
[47] Directive 2001/18/EC, of 12 March 2001, on the deliberate release into the environment of genetically modified organisms (Official Journal L 106, of 17 April 2001). This Directive will enter into force on 17 October 2002, repealing Directive 90/220.
[48] Preamble, Recital 8.

- the Directive's objective is in line with this principle[49];

- measures taken by Member States aimed at avoiding adverse effects from GMOs on human health and the environment are in accordance with it[50].

In addition, risk assessments conducted under this Directive must take account of direct, indirect, immediate, delayed and cumulative long-term effects of the GMOs[51]

On the future Community regulatory activity on biotechnology, the Commission has recommended that the products of biotechnology should "be authorised on the basis of a comprehensive scientific risk assessment if found to be safe for human, animal or plant life, and health and the environment"[52]. The strategy also includes the need to apply the precautionary principle to risk management measures "where scientific evidence is insufficient, inconclusive or uncertain, and where possible risks are judged to be unacceptable"[53].

More recent examples of EC legislation in the area of biosafety that incorporate the precautionary principle are:

- Regulation 2002/178, of 28 January 2002[54], laying down the general principles and requirements of food law and procedures in matters of food safety[55], which defines the precautionary principle in its Article 7 as follows:

  "*In specific circumstances, where following an assessment of available information, the possibility of harmful effects on health is identified but scientific uncertainty persists, provisional risk management measures necessary to ensure the high level of health protection chosen in the Community may be adopted, pending further scientific information for a more comprehensive risk assessment*".

  The measures adopted under this Article must be proportionate and no more restrictive of trade than is required to achieve the high level of health protection of the EU[56]. They must be reviewed "within a reasonable period of time depending on the nature of the risk identified and the type of scientific information needed to clarify the scientific uncertainty and to conduct a more comprehensive risk assessment"[57].

- Proposal for a Regulation on the transboundary movement of GMOs[58]. The objective of this draft Regulation is the establishment of a common system of notification and information for exports of GMOs from the EU to third countries, which it is stated to be "in accordance with the precautionary principle" (Article 1). This is considered to be the final regulatory measure at EU level, paving the way for the ratification of the Biosafety Protocol by the EC.

[49] Article 1.
[50] Article 4(1).
[51] Annex II of Directive 2001/18 (see n.19 above).
[52] Commission Communication on 'Life Sciences and Biotechnology- A Strategy for Europe', COM (2002) 27 final, of 23 January 2002, EC Official Journal C 55, of 2 March 2002.
[53] Id.
[54] In force since 21 February 2002.
[55] EC Official Journal L 31, of 1 February 2002.
[56] Article 7(2) of EC Regulation 2002/178.
[57] Id.
[58] COM (2002)85 final, of 18 February 2002.

Other regional instruments: The African Model Law on Safety in Biotechnology

A further example of a regional measure in the field of biotechnology that embraces a precautionary approach is the Organisation for African Unity (OAU) draft Model Law on Safety in Biotechnology. The OAU[59] has called for a speedy finalisation of this text[60], urging its Member States to use it as a basis for their national legislation. This model law follows on previous OAU initiatives where they draft and make available to African countries model laws in important and complex areas of environmental legislation[61].

After the active and crucial role that the African Group played in the negotiations of the Cartagena Protocol, the OAU and the Ethiopian Environmental Protection Authority took the initiative to develop a draft model law to serve as a basis for drafting national laws and harmonising them. This initiative also includes the development of a mechanism to co-ordinate the implementation of the Model Law across African countries (the "Africa-wide Biosafety System"). It is expected that such a system will enhance the compatibility of national regulations and information exchange among countries, as well as the development of additional capacity to deal with this issue in Africa.

The scope of the draft African Model Law on Safety in Biotechnology is the import, export, transit, contained use, release or placing on the market of GMOs "whether intended for release into the environment, use as a pharmaceutical, for food, feed or processing, or a product of a GMO" (Article 2).

The Preamble also includes a reference to precaution when it states that *"with the potential risks posed by genetic modification, it is consistent with* ***the precautionary principle*** *to regulate any undertaking for the import, contained use, release or placing on the market of GMOs and products of GMO"* (emphasis added)

Article 6, on "decision-making procedure", includes the following provisions that relate to the application of the precautionary principle in relation to biosafety:

- "No approval shall be given unless there is a firm and sufficient evidence that the GMOs or the product of a GMO poses no risks/significant risks to the environment, biological diversity or human health" (Article 6(7)).

- "In any event, where there is reason to suspect threats of serious damage, lack of scientific evidence shall not be used as a basis for not taking preventive measures" (Article 6(8)).

In addition, the African model law reverses the burden of proof in the sense that it requires the competent authorities not to approve the import, contained use, release or marketing of GMOs or their products until these authorities have considered "and duly determined" that those activities will[62]:

(i) benefit the country without causing any significant risk to the environment, biological diversity or human health;
(ii) contribute to sustainable development;
(iii) not have adverse socio-economic impacts; and
(iv) accord with the ethical values and concerns of communities and will not undermine community knowledge and technologies.

[59] See Decision AHG/Dec.164 (XXXVII) of the 37th OAU Summit held in Lusaka, Zambia, on 9-11 July 2001.
[60] An Experts Meeting on the Model Law on Biosafety and an Africa-wide Biosafety System was held in Cairo on 19-21 March 2002.
[61] Such as the African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources (2000).
[62] Article 6(9), African Model Law on Safety in Biotechnology.

These conditions raise difficult questions as to the extent to which they will be able to be "determined" and/or "proved" in practice. However, this draft model law represents a different and innovative approach to the regulation of biotechnology, drafted in the framework of specific regional circumstances and concerns it seeks to address.

An example of national legislation: New Zealand's biosafety regime

New Zealand's 1996 Hazardous Substances and New Organisms Act ("HSNO Act"[63]) seeks "to protect the environment, and the health and safety of people and communities *by preventing or managing the adverse effects* of hazardous substances and new organisms"[64]. The Act covers the deliberate introduction or creation of "new organisms", which include GMOs[65] that have not previously been approved by the Authority for release in New Zealand.

Section 7 of the HSNO Act, on the "Precautionary approach", states that "All persons exercising functions, powers, and duties under this Act […] shall take into account the need for caution in managing adverse effects where there is scientific and technical uncertainty about those effects". However, the interpretation of this need for caution is left open in the methodology and other guidance related to the application of the HSNO Act, which only state that "there will be a presumption in favour of caution"[66]. Furthermore, the interpretation of this need for caution clarifies that "while the precautionary approach is applied specifically to scientific and technical uncertainty in the Act, the Authority will apply the same approach to other sources of uncertainty"[67].

Uncertainty requires the Authority to exercise judgment in making decisions, taking account of both the nature and extent of that uncertainty and its approach to the risks being considered. In doing so the Authority is to take into account evidence on statistical probabilities, but allows for the possibility of such evidence being inconclusive. However, in all cases the competent authority has to ensure that the rationale for each of its decisions is documented.

The New Zealand's government set up an independent Royal Commission in 2000 with the objective of studying the situation of genetic modification in the country. The Royal Commission issued its report in July 2001, which also covered the consideration and application of the precautionary approach in the area of biosafety. The conclusions reached in the *Report of the Royal Commission on Genetic Modification* in relation to the precautionary approach included the observation that 'the meaning of precaution often rests on the values held by the speaker'[68]. In addition, the Commission considered that decisions on the use of the technology must be based on a range of factors, "including the risks and acceptability to the public of the proposed use", and considered these "the factors that should inform the process of managing genetic modification"[69].

A similar initiative took place in Canada last year, as an Expert Panel on the Future of Food Biotechnology was set up by the Royal Society of Canada issuing a report on *"Elements of Precaution: Recommendations for the Regulation of Food Biotechnology in Canada"*[70]. Based on the findings of the report, the Panel recommended the use of the precautionary principle, and in particular "the precautionary regulatory assumption that, in general, new technologies should not be presumed

[63] The provisions of the 1996 HSNO Act dealing with new organisms came into force in July 1998.
[64] Section 4 of the HSNO Act, emphasis added.
[65] "Any plant, animal or micro-organism developed through genetic engineering" *Interpretations and Explanations of Key Concepts*, Protocol No.3, Series 2, New Zealand's Environment Risk Management Authority, 1999.
[66] *Annotated Methodology for the consideration of applications for hazardous substances and new organisms under The HSNO Act 1996*, p.22.
[67] Id.
[68] Report of the Royal Commission on Genetic Modification, Wellington, 2001, pp. 67-68.
[69] Id. at para.95.
[70] See http://www.rsc.ca/foodbiotechnology/GMexsummaryEN.pdf

safe unless there is reliable scientific basis for considering them safe" (Recommendation 8.1). The Panel further stated that, as a precautionary measure, "the prospect of serious risks to human health, of extensive, irremediable disruptions of the natural ecosystems, or of serious diminution of biodiversity, demand that the best scientific methods be employed to reduce the uncertainties with respect to these risks. Approval of products with these potentially serious risks should await the reduction of scientific uncertainty to minimum levels" (Recommendation 8.4).

Conclusions

This paper has illustrated, through a series of examples derived from recent international, regional and national legislation, the increasing number of legislative and policy measures in the field of biosafety that are contributing to the consolidation and relevance of the precautionary principle. The Cartagena Protocol and related laws are expected to play an important role in further clarifying the consideration and "operationalisation" of the precautionary principle in practice. Furthermore, the interlinkages between national, regional and international measures on biosafety that incorporate the need to address precaution should result in a better understanding of this concept. The next step is to start gathering experience on the practical application of this principle through the implementation of specific legal provisions.

The approach to precaution in the area of biotechnology and biosafety reflects the different values, perceptions and judgments both on the specific area of the use of modern biotechnology and on the way different societies relate to uncertainty and deal with risk.

In addition, if the application of the precautionary principle relates to the actions needed to protect the environment and human health, the decision-making process followed to reach and implement those precautionary measures is also crucial[71]. The need to ensure open, transparent and participatory processes in the assessment and management of risks related to biotechnology will be key in determining the success or failure of applying the precautionary principle to GMOs.

[71] Barret, K. *Applying the Precautionary Principle to Agricultural Biotechnology*, Science and Environmental Health Network, March 2000 (see at http://www.sehn.org/rtfdocs/Precaution.doc)

The Precautionary Principle under WTO Law

by Gabrielle Marceau[72]*, Counsellor, Legal Affairs Division, WTO Secretariat*

Elements relating to the precautionary principle/approach

- The precautionary principle is said to be a safeguard against potential risks, which are not, or not yet, identifiable because of the current status of scientific knowledge. It provides that in cases where there is lack of full scientific certainty and there is a risk of serious or irreversible harm, action should be taken to prevent that harm. It would therefore include an obligation to take action in certain circumstances.

- It the WTO context, the precautionary principle/approach is considered as a defense, i.e. an alleged justification to trade restrictions or non-compliance with WTO obligations, i.e. as a defense. So WTO is concerned only with some of the component of this alleged precautionary principle/approach.

- Difficult to arrive at a uniform formulation of the principle (various treaty provisions providing different rights and obligation and conditions for the precautionary principle/ approach to be invoked).

- Is the Precautionary Principle a "requirement" (and obligation to do or not to do something) or a "right" or a "permission" or a "general principle"? Does it make a difference?

- What is the difference with the right and/or the obligation of WTO Members to be "prudent" (*EC – Hormones*) or the principle of "due diligence"?

- Since the AB (WTO Appellate Body) has considered that the precautionary principle was taken into account already in the SPS Agreement (Agreement on the Application of Sanitary and Phytosanitary Measures), would it change anything if such precautionary principle were to crystallize into a customary rule?

The status of the precautionary principle in international law

- In order to be recognized as customary international law,[73] a principle must satisfy two conditions: there must be a uniform state practice and a notion that this practice is followed because it is the law (the so-called *opinio juris)*. In the case of the precautionary principle, both requirements are lacking.

- The precautionary principle has been given varying forms in international treaty law, but has not yet developed into customary international law.

- Particularly relevant in this respect is the case EC- *Hormones*, where the EC argued that the precautionary principle had become "a general customary rule of international law" or at least "a general principle of law". By contrast, the United States did not consider that the precautionary principle represents customary international law and suggested it is more an "approach" rather than a "principle". Canada took the same view, even if it acknowledged that the "precautionary principle" or "concept" is "an emerging principle of law recognised by civilised nations". The

[72] The views expressed during the roundtable are strictly and only those of the author and do not bind the WTO Secretariat or its Members. I base my presentation on a previous paper "Le principe de précaution et les règles de l'Organisation mondiale du commerce (OMC)", chapitre à paraître dans "Le Principe de précaution et le droit international", Panthéon-Assas (Institut des hautes études internationales), Paris, 2001.

[73] Art. 38.1 of the Statute of the International Court of Justice.

WTO Appellate Body ruled that although *"the precautionary principle is regarded by some as having crystallised into a general principle of customary international law it is not clear whether it has been widely accepted as such"*.[74] Like other Tribunals did,[75] the AB confirmed the somewhat controversial nature of the principle and concluded that it was *"unnecessary and probably imprudent"* to address further this issue.[76] The AB also noted that the ICJ (International Court of Justice) had not yet reached the conclusion that the precautionary principle had crystalized into a general principle of law.

- The precautionary principle/approach does not appear to have reached a general customary status.

The status of the precautionary principle in WTO law

- WTO law is part of public international law and should evolve consistently with international law.

- Panels are required, according to Article 3.2 of the DSU, to apply "customary rules of interpretation of public international law", when interpreting the WTO Agreements. This means that in such interpretation they not only have to look at the text, context, object and purpose of the WTO Agreements, but also at *"other rules of international law applicable between the parties"*.[77]

- Such *"other rules of* international *law"* can be customary international law, which is binding on all WTO Members. So when, and if, it becomes customary, the precautionary principle would become relevant in disputes between any Members.

- Such rules can also be treaty provisions, but would then only be relevant in case the parties to the dispute were also parties to an international agreement, which contained a reference to the precautionary principle.

The precautionary principle within the WTO Agreements themselves

(a) The precautionary principle in the SPS Agreement

- In *EC – Hormones*, the Appellate Body made interesting statements regarding the relationship between WTO law and an eventual precautionary principle:

> 124. It appears to us important, nevertheless, to note some aspects of the relationship of the precautionary principle to the *SPS Agreement.* First, the principle has not been written into the *SPS Agreement* as a ground for justifying SPS measures that are otherwise inconsistent with the obligations of Members set out in particular provisions of that Agreement. Secondly, the precautionary principle indeed finds reflection in Article 5.7 of the *SPS Agreement*. We agree, at the same time, with the European Communities, that there is no need to assume that Article 5.7 exhausts the relevance of a precautionary principle. It is reflected also in the sixth paragraph of the preamble and in Article 3.3. These explicitly recognize the right of Members to establish their own appropriate level of sanitary protection, which level may be higher (i.e., more cautious) than that implied in existing international standards, guidelines and recommendations. Thirdly, a panel charged with determining, for instance, whether "sufficient scientific evidence" exists to warrant the maintenance by a Member of a particular SPS measure may, of course, and should, bear in mind that responsible, representative

[74] Paragraph 123, AB Report.
[75] For similar rulings, see the International Tribunal of the Law of the Sea (hereafter ITLOS), Order on Provisional Measures, in the Southern Bluefin Tuna cases (New Zealand v Japan and Australia v Japan), 27 August 1999 (available at www.un.org/Dept/los/ITLOS/Order-tuna34.htm), especially Paragraphs 77-81.
[76] Paragraph 123, AB Report.
[77] See Article 31(3)(c) of the 1969 Vienna Convention on the Law of Treaties.

governments commonly act from perspectives of prudence and precaution where risks of irreversible, e.g. life-terminating, damage to human health are concerned. Lastly, however, the precautionary principle does not, by itself, and without a clear textual directive to that effect, relieve a panel from the duty of applying the normal (i.e. customary international law) principles of treaty interpretation in reading the provisions of the *SPS Agreement*.

125. We accordingly agree with the finding of the Panel that the precautionary principle does not override the provisions of Articles 5.1 and 5.2 of the SPS Agreement.

- Arguably, the SPS treaty provisions find various expressions of such a precautionary principle:

  - The Preamble to the SPS Agreement and Article 2.1 SPS (read together with Article 5 SPS and the accompanying footnote) lay down the right of each WTO Member to adopt measures that are necessary to achieve the level of health and phyto-sanitary protection it deems appropriate;
  - A measure only has to be "based on scientific principles" and "based on international standards";
  - A measure may result in a higher level of protection than what is offered by international standards if there is scientific justification;
  - A measure can be based on minority opinions;
  - A risk assessment is not only a scientific exercise:
    "… However, to the extent that the Panel purports to exclude from the scope of a risk assessment in the sense of Article 5.1, all matters not susceptible of quantitative analysis by the empirical or experimental laboratory methods commonly associated with the physical sciences, we believe that the Panel is in error. (…) It is essential to bear in mind that the risk that is to be evaluated in a risk assessment under Article 5.1 is not only risk ascertainable in a science laboratory operating under strictly controlled conditions, but also risk in human societies as they actually exist, in other words, the actual potential for adverse effects on human health in the real world where people live and work and die".(AB Report in *EC – Hormones*, at Para. 187)

- Article 5.7 SPS allows for the adoption of SPS measures on a provisional basis in cases of scientific uncertainty if and when the following four cumulative and equally important conditions are fulfilled:

  - It was initially conceived rather as an emergency measure;
  - The measure is imposed in respect of a situation where relevant scientific information is insufficient;
  - The measure must be adopted on the basis of available pertinent information;
  - The measure cannot be maintained unless the Member which adopts it seeks to obtain additional information;
  - The measure cannot be maintained unless the Member which adopts it conducts a review within a reasonable period of time, which has to be established on a case-by-case basis. In *Japan-Agricultural Products*, the Panel found that three years were too long and that additional information would have been relatively easy for Japan to supply.

- In *EC-Hormones*, however, the EC did not claim that its import ban could be justified as a provisional measure under Article 5.7. Rather, it invoked the precautionary principle more generally, in the context of Article 5.1 (the obligation to base SPS measure on a risk assessment). The AB agreed with the finding of the Panel that the precautionary principle does not override the provisions of Article 5.1[78], and the EC was found to be in violation of that particular provision, having failed to conduct a proper risk assessment.

[78] Paragraph 125, AB Report.

- This is consistent with the principle of good faith whereby States are bound by all their international obligations and rights and must comply with them simultaneously. Even if there were a customary principle binding on all States, the same States, as WTO Members, would continue to have to comply with their WTO obligations. Setting aside the issue of the "applicable law" before WTO adjudicating bodies, it is suggested that the crystallisation of a precautionary principle would not extinguish the provisions of the WTO requirements. The requirements of the SPS Agreement would still have to be complied with but their interpretation would have to take into account such rules of international law.

(b) The precautionary principle in Article XX of GATT

- The AB appears to have based it conclusion that precautionary principle had found expression in the SPS Agreement in the fact that some of the SPS provisions recognize the right of Members to choose the level of protection they wish, to go above international standards and to base their decision on minority opinion. If these are the relevant criteria, one may suggest that Article XX of GATT has recently been interpreted in such a way that it might be said that the idea of precaution has found a niche there as well. Article XX[79] authorizes Members to adopt measures, derogatory of GATT disciplines, but necessary to protect human, animal or plant life or health or relating to the preservation of natural resources.

- In *EC – Asbestos*, the Appellate Body stated clearly: "We note that it is undisputed that WTO Members have the right to determine the level of protection of health that they consider appropriate in a given situation." (para. 168) Does this statement protect any chosen level of protection, even if such level is based on precautionary considerations?

- However the Appellate Body also stated: "The more vital or important the common interests or values pursued, the easier it would be to accept as "necessary" measures designed to achieve those ends" (para. 172 and *Korea – Beef*, at para. 162). So the AB may go into assessing (finding it more or less necessary) the chosen level of protection.

- In *EC – Asbestos*, the AB interpreted Article XX in parallel to its interpretation of the provisions of the SPS Agreement:

> "In addition, in the context of the *SPS Agreement*, we have said previously, in *European Communities – Hormones*, that "responsible and representative governments may act in good faith on the basis of what, at a given time, may be a *divergent* opinion coming from qualified and respected sources." [80] (emphasis added) In justifying a measure under Article XX(b) of the GATT 1994, a Member may also rely, in good faith, on scientific sources which, at that time, may represent a divergent, but qualified and respected, opinion. A Member is not obliged, in setting health policy, automatically to follow what, at a given time, may constitute a majority scientific opinion"(para. 178 from *EC – Asbestos*).

- The panel in *EC – Asbestos* recognized that an absolute level of certainty cannot be required for a Member to be entitled to apply Article XX:

[79] Article XX of GATT 1994 provides a Member is entitled to take measures "necessary to protect human, animal or plant life or health" or measures "relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption" which would not "constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade".
[80] *Supra*, footnote 48, para. 194.

> "...to make the adoption of health measures concerning a definite risk depend upon establishing with certainty a risk ... would have the effect of preventing any possibility of legislating in the field of public health"[81].

- So the balancing called for in the necessity test of Article XX (Para.164 *Korea – Various Measures on Beef*) can be viewed as "reflecting" the precautionary principle, as having taken into account the precautionary principle.

> "The determination of whether a measure, which is not "indispensable", may nevertheless be "necessary" within the contemplation of Article XX(d), involves in every case a process of weighing and balancing a series of factors which prominently include the contribution made by the compliance measure to the enforcement of the law or regulation at issue, the importance of the common interests or values protected by that law or regulation, and the accompanying impact of the law or regulation on imports or exports."

- Article XIV of GATS's (General Agreement on Trade and Services) wording shares similarities with Article XX of GATT.

- Article VI and XIV GATS also refer to a necessity test.

(c) The precautionary principle in the TBT Agreement (WTO Agreement on Technical Barriers to Trade)

- The Preamble recognize the right of measures to determine their appropriate level of protection:

> *Recognizing* that no country should be prevented from taking measures *necessary* to ensure the quality of its exports, or for the protection of human, animal or plant life or health, of the environment, or for the prevention of deceptive practices, *at the levels it considers appropriate.*

- Article 2.2 contains also a necessity test: "For this purpose, technical regulations shall not be more trade-restrictive *than necessary* to *fulfill a legitimate objective*, taking account of the risks non-fulfillment would create." A high (and precautionary) level of protection may in some circumstances be considered legitimate and necessary.

- If the above provisions were interpreted so as to recognize the right of Members to (i) chose the level of protection they wish, (ii) go above international standards and (iii) base their decision on minority opinion, they could be viewed as evidence that WTO Members are also considered to have taken into account elements of precautionary considerations ion the TBT Agreement.

(d) Precautionary principle in the Agriculture Agreement

- The "non-trade" concerns in Article 20

Conclusion

- The precautionary principle should contribute to sustainable development (as envisaged by the Preamble to the WTO Agreement), i.e. elimination of poverty and respect of the environment.

- The crystallization of the precautionary principle into a customary rule, if ever, would have to be taken into account in the interpretation of the WTO provisions, but would not trump the WTO

[81] Paragraph 8.221, Panel Report.

treaty provisions, including the fundamental WTO principle against protectionism. States are expected to comply with all their international rights and obligations simultaneously.

- Article 5.7 of the SPS Agreement may influence the interpretation of the precautionary principle in WTO law and in international law generally, so as to guarantee that the State benefiting from a non-protectionist invocation of the precautionary principle continues its scientific research and performs serious reviews of its precautionary measure, as evidence of its good faith.

International Courts and the Precautionary Principle

by Philippe Sands, Professor of Laws, University College London,
Global Professor of Law, New York University, Barrister, Matrix Chambers

In recent years international courts and tribunals have increasingly been presented with arguments premised upon the precautionary principle. The practice of states, which is reflected in their statements before these bodies, as well as the decisions of the courts and tribunals and of individual judges, provides insights into the status, meaning and effect of the precautionary principle.

International Court of Justice (ICJ)

Before the International Court of Justice the principle appears to have first been raised in New Zealand's 1995 request concerning French nuclear testing. New Zealand relied extensively on the principle, which it described as "a very widely accepted and operative principle of international law", which applied so that the burden was on France to prove that the proposed tests would not give rise to environmental damage.[82] The five "intervening" States (Australia, Micronesia, Marshall Islands, Samoa and Solomon Islands) also invoked the principle. France responded that its status in international law was "tout à fait incertain", but that in any event it had been complied with and that evidentiary burdens were no different in the environmental field from other area.[83] The Court's order did not refer to these arguments. Judge Weeramantry considered that the principle had "evolved to meet [the] evidentiary difficulty caused by the fact information required to prove a proposition may be "in the hands of the party causing or threatening the damage", and that it was "gaining increasing support as part of the international law of the environment".[84] Ad hoc Judge palmer stated that "the norm involved in the precautionary principle ha[d] developed rapidly and m[ight] now be a principle of customary international law relating to the environment".[85]

Two years later, in the *Gabcikovo/Nagymaros* case Hungary and Slovakia also invoked the precautionary principle. Once again the Court did not feel the need to address the precautionary principle, limiting itself to a passing reference to Hungary's claim that the principle justified the termination of the 1977 Treaty and its recognition of the Parties' agreement on the need to take environmental concerns seriously and to take the required precautionary measures.[86] Of particular note was the failure of the Court to refer to or apply the principle in its consideration of the conditions under which Hungary could invoke the concept of ecological necessity to preclude the wrongfulness of its suspension of works on the two barrages in 1989.[87] Having acknowledged without difficulty "that the concerns expressed by Hungary for its natural environment in the region affected by the Gabcíkovo-Nagymaros Project related to an "essential interest" of that State", the Court nevertheless found that Hungary had not proven that "a real, "grave" and "imminent" "peril" existed in 1989 and

[82] New Zealand Request, para.105; see also ICJ CR/95/20, pp. 20-1, 36-8).
[83] ICJ CR/95/20, pp. 71-2. 75.
[84] 1995 ICJ Reports, [p. 342]. See also his *Dissenting in Opinion* in Threat or Use of Nuclear Weapons, 1996 IVJ Reps. P. 502.
[85] Ibid., [p. 412].
[86] 1997 ICJ Reps, pp. 62 (para. 97) and 68 (para. 113). See also Chapter [9], pp. xx-xx. But see Separate Opinion of Judge Koroma, that the precautionary principle was incorporated in the 1977 Treaty but "had not been proved to have been violated to an extent sufficient to have warranted the unilateral termination of the Treaty": ibid., p. 152.
[87] The Court found that a state of necessity was, on an exceptional basis, a ground recognized by customary international law for precluding the wrongfulness of an act not in conformity with an international obligation, and relied on the formulation of draft Article 33 of the ILC's draft Articles on State Responsibility: 1997 ICJ Reps., p. (paras. 50-2).

that the measures taken by Hungary were the only possible response to it."[88] The Court found that there were serious uncertainties concerning future harm to freshwater supplies and biodiversity, but that these:

> "could not, alone, establish the objective existence of a "peril" in the sense of a component element of a state of necessity. The word "peril" certainly evokes the idea of "risk"; that is precisely what distinguishes "peril" from material damage. But a state of necessity could not exist without a "peril" duly established at the relevant point in time; the mere apprehension of a possible "peril" could not suffice in that respect. It could moreover hardly be otherwise, when the "peril" constituting the state of necessity has at the same time to be "grave" and "imminent". "Imminence" is synonymous with "immediacy" or "proximity" and goes far beyond the concept of "possibility". […] That does not exclude, in the view of the Court, that a "peril" appearing in the long term might be held to be "imminent" as soon as it is established, at the relevant point in time, that the realization of that peril, however far off it might be, is not thereby any less certain and inevitable."[89]

This is not precautionary language, premised as it is on the need to establish the certainty and inevitability of serious harm. However, it must be recognised that the Court was concerned with the application of the law as it stood in 1989, when Hungary wrongfully suspended work on the Project. At that time the precautionary principle had not yet emerged and could not realistically be applied as general international law. It may be that the Court also had this in mind when it indicated later in the Judgment that "What might have been a correct application of the law in 1989 or 1992, if the case had been before the Court then, could be a miscarriage of justice if prescribed in 1997."[90]

International Tribunal for the Law of the Sea (ITLOS)

The International Tribunal for the Law of the Sea has also been presented with arguments invoking precaution, and has shown itself to be notably more open to the application of the principle, albeit without express reliance. In 1999, in the *Southern Blue-Fin Tuna Cases* Australia and New Zealand invoked the precautionary principle to support their claim that Japan was not entitled to proceed to its scientific experimental fishing programme in view of the compelling need to conserve dwindling stocks of blue-fin tuna in the southern pacific. Their application requested the Tribunal to Order 'that the parties act consistently with the precautionary principle in fishing for Southern Bluefin Tuna pending a final settlement of the dispute". Japan did not address the question of the status or effect of the principle. In its Order the International Tribunal expressed the view that the parties should "act with prudence and caution to ensure that effective conservation measures are taken to prevent serious harm to the stock of southern bluefin tuna" (para. 77), that there was "scientific uncertainty regarding measures to be taken to conserve the stock of southern bluefin tuna" (para. 79) and that, although it could not conclusively assess the scientific evidence presented by the parties, 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 (para. 80). The Tribunal ordered the parties to refrain from conducting experimental fishing programmes involving the taking of southern blue-fin tuna, This is precaution applied in all but name, as Judge Treves recognised in his separate opinion. [91]

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[88] Ibid., para. 54.
[89] Ibid.
[90] Ibid., para. 134.
[91] "In the present case, it would seem to me that the requirement of urgency is satisfied only in the light of such precautionary approach. I regret that this is not stated explicitly in the Order": Separate Opinion of Judge Treves, para. 8. See also Separate Opinion of Judge Lang ("Nevertheless, it is not possible, on the basis of the materials available and arguments presented on this application for provisional measures, to determine whether, as the Applicants contend, customary international law recognizes a precautionary principle ", at para. 15) and ad hoc Judge Shearer ("The Tribunal has not found it necessary to enter into a discussion of the precautionary principle/approach. However, I believe that the measures ordered by the Tribunal are rightly based upon considerations deriving from a precautionary approach.")

In 2001, in the *MOX Case*, Ireland claimed that the United Kingdom had failed to apply a precautionary approach to the protection of the Irish Sea in the exercise of its decision-making authority in relation to the direct and indirect consequences of the operation of the MOX plant and international movements of radioactive materials associated with the operation of the MOX plant.[92] The principle was also invoked by Ireland at the provisional measures phase to support its claim that the United Kingdom had the burden of demonstrating that no harm would arise from discharges and other consequences of the operation of the MOX plant, and to inform the assessment by the Tribunal of the urgency of the measures it is required to take in respect of the operation of the MOX plan.[93] For its part, and whilst accepting that in assessing the level of risk in any given case considerations of prudence and caution may be relevant, the United Kingdom argued that in the absence of evidence showing a real risk of harm precaution could not warrant a restraint of the rights of the United Kingdom to operate the plant.[94] The Tribunal did not order the suspension of the operation of the plant, as Ireland had requested, but instead ordered the parties to cooperate and enter into consultations to exchange further information on possible consequences for the Irish Sea arising out of the commissioning of the MOX plant and to devise, as appropriate, measures to prevent pollution of the marine environment which might result from the operation of the MOX plant.[95] That Order, which has a certain precautionary character, was expressly premised on considerations of "prudence and caution".[96]

WTO Appellate Body

The principle has also been addressed by the WTO Appellate Body. In 1998, in the Beef Hormones Case, the European Community invoked the principle to justify its claim that it was entitled to prohibit imports of beef produced in the United States and Canada with artificial hormones, where the impacts on human health were uncertain. The Community argued that the principle was already "a general customary rule of international law or at least a general principle of law", that it applied both to the assessment and management of a risk, and that it informed the meaning and effect of Articles 5.1 and 5.2 of the WTO's Agreement on Sanitary and Phytosanitary Measures.[97] The United States denied that the principle represented a principle of customary international law, and preferred to characterize it as an "approach" the content of which may vary from context to context.[98] Canada also preferred to refer to a precautionary approach as "an emerging principle of international law, which may in the future crystallize into one of the "general principles of law recognized by civilized nations", within the meaning of Article 38(1)(c) of the ICJ Statute".[99] The Appellate Body agreed with the United States and Canada that the precautionary principle did not override Articles 5.1 and 5.2 of the SPS Agreement, although it considered that it was reflected in the preamble and Articles 3.3. and 5.7 of the SPS Agreement, which did not exhaust the relevance of the principle.[100] Recognising that the status of

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[92] Statement of Claim, 25 October 2001, para. 34 ("the precautionary principle is a rule of customary international law which is binding upon the United Kingdom and relevant to the assessment of the United Kingdom's actions by reference to LOSC").

[93] Order of 3 December 2001, para. 71.

[94] UK Response, 15 November 2001, para. 150.

[95] Order of 3 December 2001, para. 89(1).

[96] *Ibid*., para. 84. Cf. the Separate Opinion of Judge ad hoc Szekely (the Tribunal "should have been responsive, in the face of such uncertainty, to the Irish demands regarding the application of the precautionary principle (see paragraphs 96 to 101 of the Request, pp. 43-46). It is regrettable that it did not do so, since acting otherwise would have led to granting the provisional measure requested by Ireland regarding the suspension of the commissioning of the plant.").

97 See Report of the Appellate Body, 16 January 1998, WT/DS48/AB/R, at para. 16.

98 Ibid., para. 43. The United States stated that the SPS Agreement recognized a precautionary approach (in its Article 5.7) so there was no need to invoke a "precautionary principle" to be risk-averse.

[99] Ibid., para. 60.

[100] Ibid., para,. 124 ("a panel charged with determining […] whether "sufficient scientific evidence" exists to warrant the maintenance by a Member of a particular SPS measure may, of course, and should, bear in mind that responsible, representative governments commonly act from perspectives of prudence and precaution where

principle in international law was the subject of continued debate, and that it was regarded by some as having crystallized into a general principle of customary international environmental law, the Appellate Body said:

> "Whether it has been widely accepted by Members as a principle of general or customary international law appears less than clear. We consider, however, that it is unnecessary, and probably imprudent, for the Appellate Body in this appeal to take a position on this important, but abstract, question. We note that the Panel itself did not make any definitive finding with regard to the status of the precautionary principle in international law and that the precautionary principle, at least outside the field of international environmental law, still awaits authoritative formulation."[101]

Other courts

There is also evidence that the principle is increasingly being invoked before other courts, such as the European Court of Justice (based on the formulation in Article 174(2) of the EC Treaty, or ex-Article 130r)[102] and the European Court of Human Rights. In *Balmer-Schafroth v Switzerland* the applicants claimed that the failure of Switzerland to provide for administrative review of a decision extending the operation of a nuclear facility violated Article 6 of the European Convention.[103] The claim was rejected by the majority, because the connection between the Government's decision and the applicants' right was too remote and tenuous. The Court ruled that they had failed to

> "establish a direct link between the operating conditions of the power station … and their right to protection of their physical integrity, as they failed to show that the operation of Mühleberg power station exposed them personally to a danger that was not only serious but also specific and, above all, imminent. In the absence of such a finding, the effects on the population of the measures which the Federal Council could have ordered to be taken in the instant case therefore remained hypothetical. Consequently, neither the dangers nor the remedies were established with a degree of probability that made the outcome of the proceedings directly decisive […]."[104]

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risks of irreversible, e.g. life-terminating, damage to human health are concerned.") The Appellate Body went to state that "responsible and representative governments may act in good faith on the basis of what, at a given time, may be a divergent opinion coming from qualified and respected sources" (para. 194), a view endorsed in EC-Asbestos (Appellate Body Report, 12 March 2001, at para. 178, and adding "In justifying a measure under Article XX(b) of the GATT 1994, a Member may also rely, in good faith, on scientific sources which, at that time, may represent a divergent, but qualified and respected, opinion. A Member is not obliged, in setting health policy, automatically to follow what, at a given time, may constitute a majority scientific opinion").

[101] Ibid., para. 123. The Appellate Body noted that in the Gabcíkovo-Nagymaros case the ICJ had not identified the precautionary principle as a recently developed norm in the field of environmental protection, and had declined to declare that such principle could override the obligations of the 1977 Treaty: ibid., at note 93.

[102] See e.g. Case C-180/96, United Kingdom v EC Commission, 1998 ECR I-2265 ("the institutions may take protective measures without having to wait until the reality and seriousness of those risks become fully apparent", at paras. 99 and 100); see also Case T-70/99, Alpharma Inc. v Council of the European Union, Order of 30 June 1999 (Interim Measures) 1999 ECR II-2027, the President of the Court of First Instance referring to the principle and affirming that "requirement linked to the protection of public health should undoubtedly be given greater weight than economic considerations"). See also Case C-6/99, Association Greenpeace France and Others v Ministere de l'Agriculture et de la Peche and Others, 2000 ECR I-1651 (French edition) (in relation to Directive 90/220, observance of the precautionary principle is reflected in the notifier's obligation immediately to notify the competent authority of new information regarding the risks of the product to human health or the environment and the competent authority's obligation immediately to inform the Commission and the other Member States about this information and, secondly, in the right of any Member State, provisionally to restrict or prohibit the use and/or sale on its territory of a product which has received consent where it has justifiable reasons to consider that it constitutes a risk to human health or the environment, at para. 44).

[103] Judgement of 26 July 1987, Eur.CtHR Reps-IV. Article 6 of the Convention provides that "In the determination of his civil rights and obligations ..., everyone is entitled to a fair ... hearing ... by [a] ... tribunal ..."

[104] Ibid., para. 40.

A dissenting opinion by seven judges, however, criticised this finding, on the grounds that it "ignored the whole trend of international institutions and public international law towards protecting persons and heritage, as evident [inter alia] in … the development of the precautionary principle".[105]

At the national level there have also been several decisions addressing the status of the precautionary principle in international law. In *Vellore* the Indian Supreme Court ruled that the precautionary principle, as an essential feature of "sustainable development" was part of customary international law.[106] By contrast United States federal courts appear more restrained in their approach, holding that the principle was not yet established in customary international law so as to give rise to a cause of action under the Alien Tort Claims Statute.[107]

Conclusions

The practise described indicates that different international courts and tribunals treat the precautionary principle in distinct ways. A number of features emerge. First, it is evident that international courts and tribunals consider the principle and its status to be an important matter. Second, no international court has been willing to state that the principle has a customary international law status, but equally they have declined to state that it has no such status. Third, there is now a significant body of individual views (whether separate or dissenting) which could crystallise into majority opinion. Fourth, the majority of states that have participated before the bodies have asserted that the precautionary principle has a customary international law status (Australia, New Zealand, European Community, Ireland, Micronesia, Samoa, Solomon Islands and Marshall Islands), three have not made that assertion but have not expressly contradicted it (France, United Kingdom, Japan), and two have stated that it is not a principle and is not reflected in customary international law (United States, Canada). Fifth, as to the consequences of the application of the principle, and notwithstanding the unwillingness to declare its status, the principle has been utilised by international courts to inform the application of procedural norms (for example the conditions under which a situation of urgency exists so as to require the prescription of provisional measures) rather than substantive norms. That said, it is noteworthy that in the cases in which the principle has been invoked, and apparently against its background, the international courts and tribunals concerned have occasionally come to rather radical conclusions (e.g. Hungary not required to construct a second barrage, notwithstanding the fact that the 1977 Treaty which was found to remain in force required such construction; the European Community held to be entitled to rely on independent scientific evidence even if it reflects minority opinion).

Against this background it may be that the present situation is accurately reflected in a Separate Opinion by Judge Treves in the *Southern Bluefin Tuna Cases*:

> 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

[105] Dissenting opinion of Judge Pettiti, joined by Judges Golcukul, Walsh, Russo, Valticos, Lopes Rocha and Jambrek,

[106] Vellore Citizens' Welfare Forum v Union of India and Others, Writ Petition (C) No. 914 of 1991 (Kuldip Singh, Faizanuddin JJ), Judgment 28 August 1996, paras. 10, 11 and 15.

[107] *Beanal v Freeport-Mcmoran*, US District Court for Eastern District of Louisiana, 9 April 1997, 969 F. Supp. 362, at 384 (the principle does not constitute [an] international tort for which there is universal consensus in the international community as to [its] binding status and [its] content"); affirmed by the US Court of Appeals for the Fifth Circuit, 29 November 1999, 197 F.3d 161.

seems to me inherent in the very notion of provisional measures. It is not by chance that in some languages the very concept of "caution" can be found in the terms used to designate provisional measures: for instance, in Italian, *misure cautelari*, in Portuguese, *medidas cautelares*, in Spanish, *medidas cautelares* or *medidas precautorias.*[108]

[108] Supra. note 10, para.9 .

Annex A

Precaution in environmental policy-making

16 May 2002, 14h00 - 17h15
International Environment House, Meeting Room 3

Programme

14:00	Welcome and introduction, United Nations Environment Programme (UNEP)
14:10	**The Precautionary Principle and Rio**, Laurence Boisson de Chazournes, Professor of international law and Director of the Department of Public International Law and International Organization, Law Faculty, University of Geneva
14:25	**The Precautionary Principle since Rio:** - Biotechnology and the Cartagena Protocol, Carolina Lasén Diaz, Staff Lawyer, Foundation for International Environmental Law and Development - Precaution and the Stockholm Convention, Bo Wahlström, UNEP Chemicals - The precautionary principle under WTO law, Gabriele Marceau, Counsellor, World Trade Organization - International courts and the precautionary principle, Philippe Sands, Professor of Laws and Director, Centre for International Courts and Tribunals, University College London, Global Professor of Law, New York University
15:25	Coffee
15:45	**Johannesburg and beyond:** Introduction and general debate, Laurence Boisson de Chazournes, Professor of international law and Director of the Department of Public International Law and International Organization, Law Faculty, University of Geneva
16:00	Discussion with panelists and participants
17:00	Summing up and closure of the meeting, Franz Perrez, Swiss Agency for the Environment, Forests and Landscape
17:15	Refreshments
18:00	End

Biographies

Laurence Boisson de Chazournes, a professor of international law, is the Director of the Department of Public International Law and International Organization at the University of Geneva. She is also a Visiting Professor at Geneva's Graduate Institute of International Studies. Ms. Boisson de Chazournes serves as a consultant and an expert with the World Bank, World Health Organization, UN Development Programme, International Labour Organization, UN Environment Programme, and others, and she is the author of many publications.

Carolina Lasén Diaz joined the Foundation for International Environmental Law and Development (FIELD) in January 2000 as a staff lawyer on the Biodiversity and Marine Resources Programme. She previously worked in the UK for the Royal Society for the Protection of Birds as the EU Environment and Development Policy Officer. She has also been a member of the Legal Committee of CODA, the umbrella federation of Spanish environmental NGOs, in Madrid.

Gabrielle Marceau serves as Counsellor with the Legal Affairs Division of the World Trade Organization and teaches WTO law at the University of Geneva and at the University of Paris (Sorbonne). She previously worked in Quebec, Canada in private practice, specializing in labour and civil litigation. Ms. Marceau has written widely on matters concerning international trade and dispute settlement in international law.

Franz Xaver Perrez is an official at the Swiss Agency for the Environment, Forests and Landscape where he serves as Head of Section, Global Affairs, International Division. He was formerly legal advisor in the WTO Division of the State Secretariat for Economic Affairs and legal counsel to the Department of Public International Law in the Swiss Department of Foreign Affairs. Mr. Perrez has published in the fields of international environmental law, WTO law and sovereignty.

Philippe Sands is Professor of Law and Director of the PICT Centre for International Courts and Tribunals at University College London. He is also Global Professor of Law at New York University Law School. His main publications include *Principles of International Environmental Law* and *Bowett's Law of International Institutions.* As a practicing barrister he has acted as counsel in several cases involving the precautionary principle.

Bo Wahlström presently holds a position as Senior Scientific Advisor at UNEP Chemicals in Geneva. During the negotiations for the 2001 Stockholm Convention on Persistent Organic Pollutants he was responsible within the Secretariat for the Criteria Expert Group on POPs. Before joining UNEP in 1998 he worked for more than 20 years in the Swedish Government on chemical assessment and management. Mr. Wahlström is also Assistant Professor in Zoophysiology at the University of Göteborg, Sweden.

Background note
prepared by the Swiss Agency for the Environment, Forests and Landscape

1. PRECAUTIONARY PRINCIPLE

1.1 Conventions and non binding instruments making reference to the Precautionary Principle

Instrument	Text	In relation to Rio Declaration Principle 15
Rio Declaration 1992[i] Principle 15 French Version (without concept of cost-effectiveness)	"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." "Pour protéger l'environnement, des mesures de précaution doivent être largement appliquées par les Etats selon leurs capacités. En cas de risque de dommages graves ou irréversibles, l'absence de certitude scientifique absolue ne doit pas servir de prétexte pour remettre à plus tard l'adoption de mesures effectives visant à prévenir la dégradation de l'environnement. "	
Montreal Protocol 1987[ii] Preamble	"Parties to this Protocol, determined to protect the ozone layer by taking **precautionary measures** to control equitably total global emissions of substances that deplete it, with the ultimate objective of their elimination **on the basis of developments in scientific knowledge**, taking into account **technical and economic considerations** and bearing in mind the **developmental needs** of developing countries."	• **taking precautionary measures** (doesn't mention principle) • **doesn't limit measures to cost-effectiveness,** but takes in account **technical and economic considerations** • Doesn't mention "threats of serious and irreversible damage" • Doesn't mention "lack of scientific certainty", but shows the importance of **development in scientific knowledge**
Bergen Ministerial Declaration 1990[iii] Paragraph 7	"In order to achieve sustainable development, policies must be based on the **precautionary principle**. Environmental measures must anticipate, prevent and attack the causes of	• Bergen Declaration was the first international instrument to treat the principle as one of general

	environmental degradation. Where there are **threats of serious or irreversible** damage, *lack of full scientific certainty* should not be used as a reason for postponing **measures** to prevent environmental degradation."	application. • **No limitation** on grounds of **cost effectiveness**
The Hague Declaration 1990 [iv] Preamble	"The Parties (...) will continue to **apply the precautionary principle**, that 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..."	• **Precautionary principle** • **Doesn't require damage to be "serious" and "irreversible" but substances to be persistent, toxic and liable to bioaccumulate** • **No limitation** on grounds of **cost effectiveness**
Bamako Convention 1991 [v] Article 4(3)(f)	"Each Party shall strive to adopt and implement the preventive, **precautionary approach** to pollution problems which entails, *inter alia*, preventing the release into the environment of substances which may cause **harm to humans or the environment** *without waiting for scientific proof* regarding such harm. The Parties shall co-operate with each other in taking **appropriate measures** to implement the **precautionary principle** to pollution prevention through the application of clean production methods, rather than the pursuit of a permissible emissions approach based on assimilative capacity assumptions."	• Obligation to strive to adopt the precautionary approach • **Doesn't require damage to be "serious" and "irreversible"** • Reference to **appropriate measures (no cost effectiveness)** • Harm to the environment **and the humans**
Convention on the Protection and Use of Transboundary Watercourses and International Lakes 1992 [vi] Article 2(5)(a)	"(…) to be guided by the **precautionary principle** by virtue of which action to avoid the potential **transboundary impact of the release of hazardous substances** shall not be postponed on the ground that *scientific research has not fully proved* a causal link between those substances, on the one hand, and the potential transboundary impact, on the other hand."	• Precautionary principle • **" transboundary** impact of the release of hazardous substances" **is below** the **"serious" and "irreversible"** level of damage • transboundary impact is not limited to environmental degradation
Biodiversity Convention 1992 [vii] Preamble	"Where there is a **threat of significant reduction or loss of biological diversity**, *lack of full scientific certainty* should not be used as a reason for postponing **measures** to avoid or minimise such a threat."	• Similar to the Rio and the Bergen Declarations • **"Significant" is below** the **"serious" and "irreversible"** level of damage • **No limitation** on grounds of **cost effectiveness**
Climate Change Convention 1992 [viii]	"The Parties should take **precautionary measures** to **anticipate**, prevent or minimize the causes of climate change and mitigate its	• Precautionary measures should be taken • Follows the Rio

Article 3(3)	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 with the climate change **should be cost-effective** so as to ensure global benefits at the lowest possible cost (...)"	Declaration • **Threats of serious and irreversible damage** • **Cost-effective measures** • **Explicit- link between precaution and anticipation**
Agreement on the Application of Sanitary and Phytosanitary Measures 1993 Article5 (7)	"In cases where *relevant scientific evidence is insufficient*, a Member may **provisionally** adopt **sanitary or phytosanitary measures** on the basis of available pertinent information, including that from the relevant international organisations as well as from sanitary or 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 or phytosanitary measure accordingly within a **reasonable period of time**."	• **Provisional measure** • **Sanitary or phytosanitary measures** on the basis of **available pertinent information** • Obligation to seek additional information • Doesn't mention "threats of serious and irreversible damage" • Sanitary measure include protection of **human health** • **doesn't limit decision to cost-effectiveness**
Maastricht Treaty 1994 [ix] Paragraph 31	"Community policy on the environment (...) shall be based on the **precautionary principle** and on the principles that preventive actions should be taken, **that environmental damage** should as a priority be rectified at source and that the polluter should pay."	• **precautionary principle** mentioned with other principles (**polluter payer**) • **doesn't limit decision to cost-effectiveness**
United Nations Fish Stocks Agreement 1995 [x] Article 6(1-7) – Application of the precautionary approach	"(1) States shall apply the **precautionary approach** *(French version: "approche de prudence")* 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**." "(7)…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**."	• Article 1 obliges the states to use widely the **precautionary approach** • Mentions "absence of adequate scientific information" • **In situation of serious threats** to the sustainability of fish stocks measures shall be adopted • Measures: temporary and based on best scientific evidence (**no cost-effectiveness**)

Amsterdam Treaty 1997 Article 175	"Community policy on the environment shall aim at a high level of protection taking into account the diversity of situations in the various regions of the Community. It *shall be based on* ***the precautionary principle*** *and on the principles that preventive action* should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay."	• **Precautionary principle** • **Explicit distinction between precaution and prevention** • Doesn't mention "threats of serious and irreversible damage" • **doesn't limit decision to cost-effectiveness**
Cartagena Protocol 2000 [xi] Preamble Article 1 Article 10 (6) Article 11 (8)	"1 In accordance with **the precautionary approach contained in Principle 15 of the Rio Declaration** on Environment and Development, the objective of this Protocol is to contribute to ensuring an adequate level of protection in the field of the safe transfer, handling and use of living modified organisms resulting from modern biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity, taking also into account risks to human health, and specifically focusing on transboundary movements." "10(6) *Lack of scientific certainty* due to insufficient relevant scientific information and knowledge regarding the extent of the potential **adverse effects** of a living modified organism on the conservation and sustainable use of biological diversity in the Party of import, taking also into account **risks to human health**, shall not prevent that Party from taking a **decision, as appropriate**, (…)."	• Article 1 makes explicit reference to **Precautionary approach** • Articles 10(6) and 11(8) are seen as an **operationalization of the Precautionary Principle** • **"Adverse effects"** is below the level of "serious and irreversible damage" • reference to **human health** • **doesn't limit decision to cost-effectiveness**
OECD Ministerial Declaration 2001 Paragraph 14 Paragraph 41	"(...) When designing policies for sustainable development, countries **should apply precaution as appropriate** in situations where there is *lack of scientific certainty* (...)." "(...) *In cases where the scientific evidence is insufficient* and **precaution is applied to address risks to food safety**, **measures** taken should be subject to review and on-going **risk analysis**, consistent *with the WTO Agreement on the Application of Sanitary and Phytosanitary Measures (...)*"	• obligation to apply precaution • Doesn't mention "threats of serious and irreversible damage" • **doesn't limit decision to cost-effectiveness** • Need of **on-going risk analysis,** when precaution is applied to address risks to food safety
Stockholm Convention 2001 [xii] Preamble	"Acknowledging that precaution underlies the concerns of all the Parties and is embedded within this Convention…"	• Article 1 makes explicit reference to **Precautionary approach**

Article 1: Objective Annex C, para. B Article 8(7); Annex E and F Article8 (9); Listing of chemicals in Annexes A, B and C	"Mindful of the **precautionary approach** as set forth in Principle 15 of the Rio Declaration on Environment and Development, the objective of this Convention is **to protect human health and the environment** from persistent organic pollutants." "(Annex C)(...) In determining best available techniques, special consideration should be given, generally or in specific cases, to the following factors, bearing in mind the likely costs and benefits of a **measure and consideration of precaution** and prevention:" "(7)(...) *Lack of full scientific certainty* shall **not prevent the proposal from proceeding** (...)." "(Annex E) The purpose of the review is to evaluate whether the chemical is likely, as a result of its long – range environmental transport, **to lead to significant adverse human health and/or environmental effects**, such that global action is warranted (...)." "(9)(...) The Conference of the Parties, taking due account of the recommendations of the Committee, including any scientific uncertainty, shall decide, **in a precautionary manner**, whether to list the chemical, and specify its related control measures, in Annexes A, B and/or C."	• Article 8 and Annexes C, E and F are seen as an **operationalization of the Precautionary Principle** • Protect environment **and human health** • **doesn't limit decision to cost-effectiveness** • Doesn't mention "threats of serious and irreversible damage"

1.2 Conventions without explicit reference to the Precautionary Principle

Law of the Sea 1982 [xiii]	However, It cannot be denied that the UNCLOS (law of the sea) **adopts a precautionary approach** (ITLOS, Case 3 and 4 , Southern Bluefin Tuna Case, Separate Opinion by Judge Laing, §17)
Basel Convention 1992 [xiv] **Rotterdam Convention** 1998 [xv]	The Basel Conventions has ***adopted the philosophy of the Precautionary Principle*** The PIC-procedure is **an *implementation of the Precautionary principle***

2. CASES WITH REFERENCE TO THE PRECAUTIONARY PRINCIPLE

Case	Reference to the Precautionary Principle	Conclusion
Gabcìcovo-Nagymaros Case Hungary vs. Slovakia[xvi] September 1997 Slovakia filed in the Registry of the International Court of Justice a request for a Judgement in the case concerning **Gabcìcovo-Nagymaros Project (Hungary/Slovakia)** relating to the construction and operation of dams on the river Danube for the production of electricity, flood control and improvement of navigation because Hungary had abandoned the Treaty from 1977. **The Court address Hungary's claim that it was entitled to terminate the 1977 Treaty because** new requirements of international law for the protection of the environment **precluded performance of the Treaty.**	**Hungary relied on the Precautionary Principle** because in their opinion continuing the constructions and not terminating the Treaty entails ***threats of serious or irreversible damage*** *to the environment.* The Court disagrees in this point and held that in this case, there is no Threat of serious and irreversible damage.(§ 56) BUT: The Court wishes to point out: "that **newly developed norms of environmental law** are relevant for the implementation of the Treaty and that the parties could, by agreement, incorporate them through the application of Articles 15, 19 and 20 of the Treaty. These articles do **not contain specific obligations** of performance but require the parties, in carrying out their obligations to ensure that the quality of water in the Danube is not impaired and that nature is protected, **to take new environmental norms into consideration** when agreeing upon the means to be specified in the Joint Contractual Plan " (§112)	The Court recognized: " that both Parties agree on the need to take environmental concerns seriously and to take the **required precautionary measures**, but they fundamentally disagree on the consequences this has for the project."(§130) The Court refers generally to **newly developed norms of environmental law** without mentioning explicitly the **precautionary principle**.
Hormones Case USA/CAN vs. EC[xvii] January 1998 (paragraphs 123-126) The measure at issue is an EC	According the EC the **precautionary principle** could be used to interpret **Articles 5.1 and 5.2[109] of the SPS Agreement** on the assessment of risks (...).(§120)	• The Precautionary Principle is implied in the SPS Agreement • **Article 5.7** does not exhaust the relevance of the principle

[109] SPS, Art. 5
1. Members shall ensure that their sanitary or phytosanitary measures are based on an assessment, as appropriate to the circumstances, of the risks to human, animal or plant life or health, taking into account risk assessment techniques developed by the relevant international organizations.
2. In the assessment of risks, Members shall take into account available scientific evidence; relevant processes and production methods; relevant inspection, sampling and testing methods; prevalence of specific diseases or pests; existence of pest — or disease — free areas; relevant ecological and environmental conditions; and quarantine or other treatment.
7. See tabular overview above, P.2

prohibition of imports of meat and meat products derived from cattle to which either the natural hormones. The EC claimed the ban was necessary for food safety and invoked the precautionary principle. The USA/CAN claimed there was no evidence of harm to human health.	**The EC doesn't invoke Article 5.7.** The Appellate Body (AP) recognised: *"that the principle is clearly implied in the SPS Agreement and that there is **no need to assume that Article 5.7 exhausts the relevance of a Precautionary principle**."* The members have the right … *" to establish their own level of sanitary protection, which level may be higher (i.e more cautions) than that implied in existing international standards, guidelines and recommendations."* The AB accepted that: *"responsible, representative governments commonly act from **perspectives of prudence and precaution** where **risk of irreversible**, e.g. life-terminating, **damage to human health** are concerned.* (§124) The AP agreed: *"that the precautionary principle does not override the provisions of Articles 5.1 and 5.2 of the SPS Agreement.(§125)* In the final decision, the AP precise that the EC can take non-provisional measures according to the Article 5.1 only after a risk evaluation of every hormone (article 3.3). This conclusion is seen by the USA as well as by the EC as a victory.	• Precautionary measures according to art. 5.7 must be **provisional** • Precaution should also relate to **human health**
Southern Bluefin Tuna Cases Australia/NZ vs. Japan[xviii] July 1999 The dispute between **Australia and New Zealand** on the one side and **Japan** on the other concerned the conservation of the population of **Southern Bluefin Tuna**. In 1985, the three parties agreed to a global total allowable catch (TAC). Despite the catch limits, the parental stock continued to decline (§ *28 of the Order from 27.08.1999*). The species is according to the applicants significantly **overfished** by Japan and is below commonly accepted thresholds for biologically safe	*In the request to the Tribunal dated 30 July 1999* **Australia and New Zealand** claim that Japan's amount to a failure to conserve and to cooperate in the conservation of the Southern Bluefin Tuna stock. The applicants claim that Japan, by initiating an **unilateral experimental fishing** programme for Southern Bluefin Tuna in 1998 and 1999, **threaten serious or irreversible damage** to the Southern Bluefin Tuna population. The request is for an **interim injunction** against Japan to immediately cease the unilateral fishing. Australia and New Zealand request the Tribunal to prescribe that: *"the parties act consistently with* **the precautionary principle (caution and vigilance**) *in fishing for the*	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**. (§77)* *"Considering, that **also 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." (§80)* In the view of the Tribunal,

parental biomass (§ *2 and* § *5 of the Order from 27.08.1999*) .	*Southern Bluefin Tuna pending final settlement of the dispute."*(§ 31 (3))	*"**provisional measures** are appropriate under the circumstances" (§85)*

[i] Rio Declaration on Environmental Development (1992)
[ii] Montreal Protocol on Substances that deplete the Ozone Layer 1987
[iii] Bergen Ministerial Declaration on Sustainable Development in the ECE Region,
signed by 34 countries from the UN Economic Commission for Europe in 1990
[iv] Ministerial Declaration of the Third International Conference on the Protection of the North Sea, The Hague, 8 March 1990. Participants: The Kingdom of Belgium, the Kingdom of Denmark, the Federal Republic of Germany, the French Republic, the Kingdom of the Netherlands, the Kingdom of Norway, the Kingdom of Sweden, the Swiss Confederation, the United Kingdom of Great Britain and Northern Ireland and the Member of the Commission of the European Communities responsible for environmental protection.
[v] Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa (1991)
Adopted by the Conference of Environment Ministers at Bamako, Mali, 30 January 1991:Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Djibouti, Egypt, Equatorial Guinea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Kenya, Liberia, Socialist People's Libyan Arab Jamahiriya, Mad agascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sahrawi Arab Democratic Republic, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zaire, Zambia, Zimbabwe
[vi] UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes 1992
[vii] Convention on Biological Diversity, Rio de Janeiro, 1992
[viii] UN Framework Convention on Climate Change, New York, 1992
[ix] Treaty on the European Union (Maastricht Treaty), 1994
[x] 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
[xi] Cartagena Protocol on Biosafety 2000
[xii] Stockholm Convention on Persistent Organic Pollutants 2001
[xiii] United Nations Convention on the Law of the Sea of 10 December 1982
[xiv] Basel Convention On The Control Of Transboundary Movements Of Hazardous Wastes And Their Disposal (1989)
[xv] Convention on the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides in International Trade
[xvi] International Court of Justice: Case concerning the Gabcìcovo-Nagymaros Project; Hungary vs. Slovakia, September 1997
[xvii] WTO: EC concerning meat and meat products (hormones); USA/CAN vs. EC – WT/DS26/AB/R, WT/ DS48/ AB/R, January 1998
[xviii] International Tribunal for the Law of the Sea: Southern Bluefin Tuna Cases; Australia/NZ vs. Japan – Cases 3 and 4 of ITLOS, July 1999