

Reducing Uncertainty, Advancing Equity: Precaution, Trade, and Sustainable Development

Antonio G. M. La Viña*

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* '95 J.S.D., Yale Law School; '92 LL.M., Yale Law School; '89 LL.B., University of the Philippines. The author is currently the Dean of the Ateneo School of Government and a professor of International Environmental Litigation at the Ateneo Law School. He is a Senior Fellow on Climate Change of the Manila Observatory and is a member of the Compliance Review Panel of the Asian Development Bank. He negotiated for the Philippines at the 2002 World Summit on Sustainable Development; and negotiated in the same capacity during the implementation of the Conventions on Biological Diversity and Climate Change from 1996-1998. In 1997, the Author chaired the negotiations on "Land Use Change and Forestry" under the Kyoto Protocol. In 1988, he co-founded the Legal Rights and Natural Resources Center-Kasama sa Kalikasan/Friends of the Earth Philippines, where he worked in various capacities up to 1995.

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I. INTRODUCTION

From its origins in European environmental policy in the 1980s, there has been increasing global acceptance of the Precautionary Principle as a core approach and guiding principle for decision-making on matters that impact the environment and human health.¹ Indeed, from its articulation in Principle 15 of the 1992 Rio Declaration on Environment and Development² to its incorporation in many other international agreements,

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1. For purposes of this Article, no distinction is made between the Precautionary Principle and the precautionary approach. The difference is actually not just semantic: an approach describes a technique to address uncertainties, scientific or otherwise, while a principle can be legally binding on persons and institutions to apply these techniques. Thus, strictly speaking, the latter accepts precaution as principally a policy consideration (among many) to be considered in making a decision. In this sense, the precautionary approach is perceived as more flexible than the Precautionary Principle, which many consider a legal and binding norm to be made operational through specific rules and regulations. From an implementation point of view, however, this is a superficial distinction as what matters is not so much whether one calls it an approach or principle but whether the specific formulation of precaution allows for its implementation in specific contexts. When used therefore in trade, it does not matter whether precaution is used as a principle or an approach: the same considerations of the need to reduce uncertainty and advance equity are still relevant so that precaution is applied in a manner consistent with sustainable development.

See generally Rosie Cooney, *The Precautionary Principle in Biodiversity Conservation and Natural Resource Management: An Issues Paper for Policy-makers, Researchers and Practitioners*, IUCN Policy and Global Change Series No. 2 (International Union for Conservation of Nature (IUCN)), 2004, available at <http://www.pprinciple.net/publications/PrecautionaryPrincipleissuespaper.pdf> (last accessed Feb. 14, 2009); Markus Gehring & Marie-Claire Cordonier Segger, *Precaution in World Trade Law: The Precautionary Principle and Its Implications for the World Trade Organization* (Center for International Sustainable Development Law, CISDL Research Paper), 2003, available at http://www.cisd.org/pdf/brief_precaution_trade.pdf (last accessed Feb. 14, 2009); Nicholas 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* 128 (Elisabeth Freytag, et al. eds., Diplomatic Academy Vienna, Conference Papers, 2001), available at <http://www.umwelt.net.at/article/articleview/26834/1/7043/> (last accessed Feb. 14, 2009).

2. U.N. Conference on Environment and Development, Rio de Janeiro, Braz., June 3-14, 1992, *Rio Declaration on Environment and Development*, U.N. Doc. A/CONF.151/26 (Vol. I) (Aug. 12, 1992) [hereinafter Rio Declaration]. Principle 15 states:

Principle 15. 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,

the principle is now well-enshrined in the field of international environmental law. It is not, however, only in environmental forums that the principle has emerged as a critical norm for decision-making. It has been used for health regulation, and for dealing with new technologies and their attendant environmental, health, and socio-economic effects, and increasingly it is being applied by countries to international trade decisions.

This Article is focused on the linkage between precaution, trade, and sustainable development. It seeks to answer the question of how the Precautionary Principle can be applied to trade decisions in a manner that is consistent with sustainable development. Concretely, this requires an approach that not only reduces uncertainty in the application of the principle, but one that also advances equity. With such an approach, the application of precaution to trade will not only find wider acceptance, especially by developing countries, but it can also be implemented more effectively to the benefit of environmental and developmental goals.

Moreover, this Article is meant to identify principles and processes that would allow for a balanced approach by both developed and developing countries in implementing the Precautionary Principle. Unfortunately, while the principle is an important advancement in dealing with environmental and similar threats, its acceptance in law and policy, as well as its implementation in practice, has been marked by both controversy and confusion. Analysis of and debate on the principle have to date been dominated by the North and Northern concerns, focusing primarily on the interaction between the Precautionary Principle and industrial economic interests. The principle needs to be examined in the context of sustainable development, looking particularly at its implications for developing countries, for poverty reduction, and for the livelihoods of poor communities.³

This is particularly true if the Precautionary Principle is to be applied to trade decisions. Applying the principle to trade requires the balancing the interests of importing countries (who might invoke the principle on dealing with concerns related to human, animal, or plant health) and of exporting countries, particularly those regarding market access (so that the principle is not used as an excuse for protectionism). This balance is particularly sensitive when seen from a North-South perspective, as it implies weighing incommensurable interests — the public health or environmental interests of an importing nation (a developed country) against the trade and economic interests of a developing country from the South.

lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

3. See generally Cooney, *supra* note 1.

This Article has three principal parts. Part II looks at the key concepts of precaution, trade, and sustainable development individually and how they connect to each other; as well as the current attempts to apply the Precautionary Principle in international trade, with particular attention on the case law that has developed under the World Trade Organization (WTO) dispute system. Part III explores further how the Precautionary Principle can be rationally and effectively applied to trade, focusing on the norms that could guide governments' implementation of the Precautionary Principle so they can apply it in a manner consistent with sustainable development. Part IV takes this discussion further and identifies the forums and processes where the Precautionary Principle can be promoted without compromising sustainable development. In conclusion, Part V presents recommendations on how to move forward so that precaution becomes an opportunity to advance sustainable development rather than threaten its attainment.

II. PRECAUTION, TRADE, AND SUSTAINABLE DEVELOPMENT: IDENTIFYING AND UNDERSTANDING LINKAGES

Precaution, trade, and sustainable development are closely linked from a policy point of view. The Precautionary Principle is a central norm and an integral component of sustainable development. Development that meets the requirements of present generations without sacrificing the needs of future generations⁴ has to be by definition precautionary. But achieving sustainable development requires the generation of wealth and prosperity through economic activities, including trade. And because precaution restricts the nature or extent of economic and livelihood activities, it has been perceived as in tension with, or even in contradiction to, the so-called right to development.⁵

A. The Precautionary Principle: Origins and Concept

The Precautionary Principle originated from the German principle of *Vorsorge* (foresight) that has developed in the early 1970s into a fundamental principle of German environmental law.⁶ It has since spread to much of

4. World Commission On Environment and Development, *Our Common Future*, U.N. Doc. A/42/187/Annex (Dec. 11, 1987) (defining "sustainable development").

5. Cooney, *supra* note 1, at 2.

6. See generally Joel Tickner, et al., *The Precautionary Principle in Action: A Handbook* (1st ed.), available at <http://www.sehn.org/rtdocs/handbook-rtf.rtf> (last accessed Feb. 14, 2009); Stephen Woolcock, *The Precautionary Principle in the EU & Its Impact on International Trade Relations* (Centre for European Policy Studies, Working Document No. 186, 2002), available at <http://aei.pitt.edu/1822/> (last accessed Feb. 14, 2009); Gehring & Cordonier Segger, *supra* note 1.

Europe and to other regions of the world, and it has been extended into other areas such as human, animal, and plant health. Despite the ongoing debate as to whether the principle is now customary international law, the use of precaution in international environmental agreements and in national legislation continues to grow.⁷ More significantly, the principle is being articulated in an increasingly concrete and specific way, although “different formulations and differences remain as to the proper scope of application of the principle and its practical implications.”⁸

In essence, the Precautionary Principle is about anticipation, prevention, and mitigation of uncertain risks for which definitive scientific evidence is not available. Its chief characteristic is “to operate as enabling action, and authorizing preventive measures, in circumstances of scientific uncertainty.”⁹ No matter the formulation, the Precautionary Principle imposes a “high price on inaction.”¹⁰ The Precautionary Principle is clear: not acting on a serious threat of harm, even if there is scientific uncertainty, is not acceptable. Thus, the principle is “a mechanism to counter a widespread regulatory presumption in favor of allowing development/economic activity to proceed when there is a lack of clear evidence about its impacts.”¹¹ What the principle does is to ease “the burden of proof on those seeking to impose controls ... [making it] easier to make the case for regulation.”¹² This shift of the burden of proof is an effective way to implement the Precautionary Principle — it “shifts the balance in decision-making toward ‘prudent foresight,’ in favor of monitoring, preventing, or mitigating uncertain potential threats.”¹³

This is the reason why the principle is controversial. Applying precaution frequently implies restrictions on human actions but these

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7. See generally DAVID FREESTONE & ELLEN HEY, *THE PRECAUTIONARY PRINCIPLE AND INTERNATIONAL LAW: THE CHALLENGE OF IMPLEMENTATION* (1995); INTERPRETING THE PRECAUTIONARY PRINCIPLE (Timothy O’Riordan & James Cameron eds., 1994); REINTERPRETING THE PRECAUTIONARY PRINCIPLE (Timothy O’Riordan, et al. eds., 2000).
 8. Ruth Mackenzie, et al., *An Explanatory Guide to the Cartagena Protocol on Biosafety*, ¶ 58, at 13, IUCN Environmental Policy and Law Paper No. 46 (IUCN), 2003, available at <http://app.iucn.org/dbtw-wpd/edocs/EPLP-046.pdf> (last accessed Feb. 14, 2009).
 9. *Id.* ¶ 56, at 12.
 10. Halina Ward, Note for the Seminar on Science and Precaution in the Trading System organized by the International Institute for Sustainable Development and the Royal Institute of International Affairs 2 (1999), available at http://www.iisd.org/pdf/sci_precaution.pdf (last accessed Feb. 14, 2009).
 11. Cooney, *supra* note 1, at ix.
 12. Woolcock, *supra* note 6, at 17.
 13. Cooney, *supra* note 1, at 5.

restrictions, because of the uncertainty, “cannot be fully justified by unambiguous scientific evidence, [and] yet [these restrictions] may impose substantial costs.”¹⁴ Costs include those incurred because of delay that might come as a result of the principle’s application or the costs of adding mitigation measures that regulators might require. Moreover, the problem is that “[t]here is no internationally agreed definition of ‘scientific uncertainty,’ nor are there internationally agreed norms and procedures to determine its occurrence.”¹⁵

B. Precaution: International Formulations

The formulation of the Precautionary Principle still most commonly referred to internationally is that contained in Principle 15 of the 1992 Rio Declaration on Environment and Development — “[i]n 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.”¹⁶

However, there are formulations in other international declarations, treaties, and protocols, which are essentially — if not explicitly — precautionary. Below are some of these formulations.

- *World Charter for Nature (on natural resources)*. “Activities which are likely to pose a significant risk to nature shall be preceded by an exhaustive examination; their proponents shall demonstrate that expected benefits outweigh potential damage to nature, and where potential adverse effects are not fully understood, the activities should not proceed.”¹⁷
- *Montreal Protocol (on ozone depletion)*. In the preamble of the Montreal Protocol, the Parties state that they are “[d]etermined 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.”¹⁸

14. *Id.* at 1.

15. Mackenzie, et al., *supra* note 8, ¶ 57, at 12.

16. Rio Declaration, *supra* note 2.

17. World Charter for Nature, G.A. Res. 37/7, ¶ 11 (a), U.N. Doc. A/RES/37/7/Annex (Oct. 28, 1982).

18. Montreal Protocol on Substances that Deplete the Ozone Layer, Preamble, Sep. 16, 1987, 1522 U.N.T.S. 3, 26 I.L.M. 1550.

- *North Sea Declarations (on reduction of pollution in the sea)*. In 1987, Ministers attending the Second North Sea Conference declared: “In order to protect the North Sea from possibly damaging effects of the most dangerous substances, a precautionary approach is addressed which may require action to control inputs of such substances even before a causal link has been established by absolutely clear scientific evidence.”¹⁹ In 1990, during the Third North Sea Conference, participants declared that they “will continue to apply the Precautionary Principle, which is to take action to avoid potentially damaging impacts of substances that are persistent, toxic, and liable to bioaccumulate even where there is no scientific evidence to prove a causal link between emissions and effects.”²⁰
- *Bergen Declaration (on sustainable development)*. “In order to achieve sustainable development, policies must be based on the Precautionary Principle. Environmental measures must anticipate, prevent, and attack the causes of 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.”²¹
- *U.N. Framework Convention on Climate Change*. “The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost. To achieve this, such policies and measures should take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors. Efforts to address climate change may be carried out cooperatively by interested Parties.”²²
- *Convention on Biological Diversity*. The Preamble of the Convention on Biological Diversity acknowledges the Precautionary Principle by stating that “where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used

19. Ministerial Declaration Calling for Reduction of Pollution, ¶ VII, Nov. 25, 1987, 27 I.L.M. 835.

20. Final Declaration of the Third International Conference on Protection of the North Sea, Preamble, Mar. 8, 1990, 1 Y.B. INT’L ENVTL. L. 658 (1990).

21. Bergen Ministerial Declaration on Sustainable Development in the ECE Region, ¶ 7, U.N. Doc. A/CONF.151/PC/10/Annex I (May 16, 1990), 1 Y.B. INT’L ENVTL. L. 429 (1990).

22. U.N. Framework Convention on Climate Change, art. 3 (3), May 9, 1992, U.N. Doc. A/AC.237/18 (Part II)/Add.1, 1771 U.N.T.S. 107, 31 I.L.M. 849.

as a reason for postponing measures to avoid or minimize such a threat.”²³

- *Cartagena Protocol (on Genetically Modified Organisms)*. “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, with regard to the import of the living modified organism intended for direct use as food or feed, or for processing, in order to avoid or minimize such potential adverse effects.”²⁴
- *Stockholm Convention (on organic pollutants)*. “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.”²⁵

C. Regional and National Formulations

There is a wide diversity in regional and national formulations of the Precautionary Principle. Indeed, even in regions like Europe, there are differences on how the principle is interpreted and applied. Among developed countries, there is of course a major divergence of views on how strictly to integrate the principle into regulatory decisions. And even among developing countries, governments do not always have the same approach to precaution.

1. Europe and the Precautionary Principle

In Europe, the Precautionary Principle has become the guiding principle for environmental and food safety regulation and is established both by treaty

23. The Convention on Biological Diversity, Preamble, June 5, 1992, 1760 U.N.T.S. 79, 31 I.L.M. 818.

24. Cartagena Protocol on Biosafety to the Convention on Biological Diversity, art. 11 (8), Jan. 29, 2000, U.N. Doc. UNEP/CBD/ExCOP/1/3, 39 I.L.M. 1027 [hereinafter Cartagena Protocol]. This is one of the strongest formulations of the Precautionary Principle.

25. Stockholm Convention on Persistent Organic Pollutants, art. 1, May 22, 2001, 40 I.L.M. 532 (2001). The Precautionary Principle is incorporated in a number of other provisions of the Stockholm Convention (e.g., Preamble, Article 8, and Annex C).

law and in the jurisprudence of the European Court of Justice.²⁶ Article 174 (2) of the Treaty Establishing the European Community states:

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.²⁷

In 2000, the European Commission published a Communication on the Precautionary Principle subsequently adopted by the European Parliament, which provided important guidelines for translation of the general principle into operational measures. This Communication specified that implementation of the Precautionary Principle should be guided by the principles of proportionality, non-discrimination, consistency, examination of the costs and benefits of action and inaction, and examination of scientific developments.²⁸ These principles, as will be discussed later, are useful in developing an approach to the Precautionary Principle consistent with sustainable development.

It should not be ignored, however, that there continues to be diversity of positions on how to apply the principle even among European states; the United Kingdom and the Netherlands are probably less restrictive in applying the principle than such states as Austria, Denmark, and Ireland.²⁹

2. Canada and Other Developed Countries

Other developed countries, including Canada, Australia, and New Zealand have likewise incorporated the Precautionary Principle into their environmental and health laws.³⁰ Generally, these countries have adopted the

26. This is largely a result of political pressure from consumers and voters who, because of various experiences in the 1980s and 1990s, lacked confidence in the existing regulatory regimes and became skeptical of the ability of science as the sole or primary basis for regulatory decisions. Most scholars cite the experience of Europe with Bovine Spongiform Encephalopathy (B.S.E.) or mad cow disease as one major cause for this skepticism by the European public.

See Woolcock, *supra* note 6.

27. Consolidated Version of the Treaty Establishing the European Community, Dec. 24, 2002, 2002 O.J. (C 325) 33, 108.

28. Commission of the European Communities, *Communication from the Commission on the Precautionary Principle*, ¶ 6.3, at 18, COM (2000) 1 final (Feb. 2, 2000).

29. See generally Science and Environmental Health Network (SEHN), *Precautionary Principle: Government Positions*, available at <http://www.sehn.org/govposit.html> (last accessed Feb. 14, 2009).

30. See generally CISDL, Legal Brief, *Precaution in International Sustainable Development Law* (World Summit on Sustainable Development, Johannesburg,

precautionary approach as formulated in Principle 15³¹ while providing for guidelines that are designed to make its implementation more transparent and predictable.

For example, Canada recognizes that guidance and assurance should govern the actions taken in implementing Principle 15 even though this principle is consistent with local environmental legislation. This is particularly true when a decision must be made regarding a risk of serious or irreversible harm about which there is significant scientific uncertainty. Here, there is a recognition that Principle 15 will be applied to: (a) perceived risks for which there is no sound scientific basis; (b) unnecessarily stifle innovation or impose unfair costs on sectors of society; or (c) prevent existing risks from being curtailed by, for instance, impeding the development of new therapeutic products and technologies. Similar to the European principles discussed above, “guiding principles” have also been proposed in Canada.³²

3. The United States: Critical Views on Precaution

The emergence and adoption of the Precautionary Principle as a domestic and international norm has not been without criticism. In the area of trade, the U.S. government, articulating industry concerns, has probably been the most skeptical. The concern is that precaution will be invoked as a political decision by risk managers when they decide that the science is insufficient.³³ According to John Graham, head of the U.S. Office of Information and Regulatory Affairs, the Precautionary Principle is dangerous “because it permits what conservative scholars have called ‘precaution without

South Africa, Aug. 24-Sep. 4, 2002), available at http://www.cisd.org/pdf/brief_precaution.pdf (last accessed Feb. 14, 2009) (“In Canada, the recent Canada Ltée (Spraytech, Société d'arrosage) v. Hudson (Town) case, precaution was a major issue in deciding whether a town had the right to stop chemical spraying operations.”); Charmian Barton, *The Status of the Precautionary Principle in Australia: Its Emergence in Legislation and as a Common Law Doctrine*, 22 HARV. ENVTL. L. REV. 509 (1998); Linda Cameron, *Environmental Risk Management in New Zealand — Is There Scope to Apply a More Generic Framework?* 15-18 (New Zealand Treasury, Policy Perspectives Paper 06/06, July 2006), available at <http://www.treasury.govt.nz/publications/research-policy/ppp/2006/06-6/tpp06-06.pdf> (last accessed Feb. 14, 2009).

31. See Rio Declaration, *supra* note 2.

32. See Government of Canada, A Canadian Perspective on the Precautionary Approach/Principle: Discussion Document, available at http://www.ec.gc.ca/econom/discussion_e.htm (last accessed Feb. 14, 2009).

33. Lori Wallach, *The GMO Dispute: Bush Administration Attack on European Food Safety Policy, Latest Challenge to WTO's Legitimacy* (International Forum on Globalization, Aug. 2003), available at <http://www.ifg.org/pdf/cancun/issues-GMOBushAdmin.pdf> (last accessed Feb. 5, 2009).

principle,' including the possibility that its application may be 'easily manipulated by commercial interests for rent-seeking purposes.'"³⁴

Graham cites what he calls the "dangers of excessive precaution."³⁵ The Precautionary Principle emphasizes the risks posed by the introduction of new technologies with somewhat uncertain effects but does not consider the negative consequences of lack of technological development.³⁶ Likewise, "[t]he risks of change must be weighed against the risk of stagnation."³⁷ "A second peril, more subtle, is that public health and the environment would be harmed as the energies of regulators and the regulated community would be diverted from known or plausible hazards to speculative and ill-founded ones."³⁸

It should be noted that while the official position of the U.S. federal government appears to be critical of the Precautionary Principle, many local jurisdictions have accepted and indeed implement the principle within their respective territories. These include the Mendocino county in California which has an overall precautionary principle policy; the Berkeley City Council, also in California, which has enacted a Precautionary Principle Ordinance; and, the New Mexico Legislature which has urged the adoption of the Precautionary Principle for state departments.³⁹

4. Developing Countries and the Precautionary Principle

A number of countries in Latin America and Africa have incorporated the Precautionary Principle in their respective environmental legislation.⁴⁰ In Asia, the Precautionary Principle has been recognized by the Pakistan Supreme Court as an integral component of sustainable development while in India, the Supreme Court has held that the Precautionary Principle is a

34. John Graham, Administrator of the Office of Information and Regulatory Affairs at the Office of Management and Budget, *The Perils of the Precautionary Principle: Lessons from the American and European Experience*, Lecture for The Heritage Foundation (Oct. 23, 2003), in *Heritage Lecture No. 818*, Jan. 15, 2004, at 3, available at http://www.heritage.org/Research/Rregulation/upload/54513_1.pdf (last accessed Feb. 14, 2009).

35. *Id.* at 3.

36. Jonathan H. Adler, *Dangerous Precaution: The Precautionary Principle's Challenge to Progress*, National Review Online, Sep. 13, 2002, available at <http://www.nationalreview.com/adler/adler091302.asp> (last accessed Feb. 14, 2009).

37. *Id.*

38. Graham, *supra* note 34, at 4.

39. SEHN, *supra* note 29.

40. See generally Cooney, *supra* note 1; Gehring & Cordonier Segger, *supra* note 1.

norm of customary international law and of national law.⁴¹ Acceptance by developing countries of the Precautionary Principle, at least in the field of the environment, was also manifested in the negotiations that led to the adoption of the Cartagena Protocol on Biosafety.⁴² Most developing countries allied with the European Union (EU) to incorporate the Precautionary Principle into the provisions of the protocol.⁴³

In other forums however — and this includes the WTO and the World Summit on Sustainable Development (convened in Johannesburg in 2002) — developing countries have been more cautious in embracing the Precautionary Principle. From the beginning of the debates on trade and environment, many developing countries feared that environmental protection in developed countries would be used as a cloak to disguise protectionism. They were concerned that technical barriers would become the new forms of protection and prominent among these would be environmental measures that would purportedly implement precaution.⁴⁴ In essence, developing countries are concerned that the principle “could be used by the North to impose its own environmental agenda on developing countries.”⁴⁵

Some developing countries that have incorporated the Precautionary Principle into their national systems⁴⁶ — though using Precaution in the limited context of biodiversity and wildlife — include Ecuador,⁴⁷ Peru,⁴⁸ Costa Rica,⁴⁹ Mozambique,⁵⁰ and South Africa.⁵¹

41. See *Ms. Shehla Zia and Others v. Wapda* Supreme Court of Pakistan, P.L.D 1994 S.C. 693 (for Pakistan); see also *Vellore Citizens Welfare Forum v. Union of India*, A.I.R. 1996 S.C. 2715, (1996) Supp. 5 S.C.R. 241, (1996) 5 S.C.C. 647, 1995 (5) S.C.A.L.E. 592; *M.C. Mehta v. Union of India*, A.I.R. 1987 S.C. 1086; *Narmada Bachao Andolan v. Union of India*, A.I.R. 1999 S.C. 3345, (1999) 8 S.C.C. 308 (all three cases for India); Cooney, *supra* note 1, at 17.

42. Cartagena Protocol, *supra* note 24.

43. See *THE CARTAGENA PROTOCOL ON BIOSAFETY: RECONCILING TRADE IN BIOTECHNOLOGY WITH ENVIRONMENT & DEVELOPMENT?* (Christoph Bail, et al. eds., 2002) (discussing the various accounts of the negotiators of the Cartagena Protocol).

44. See AARON COSBEY, *LESSONS LEARNED ON TRADE AND SUSTAINABLE DEVELOPMENT: DISTILLING SIX YEARS OF RESEARCH FROM THE TRADE KNOWLEDGE NETWORK 7* (2004), available at http://www.tradeknowledge.network.net/pdf/tkn_lessons_learned_en.pdf (last accessed Feb. 14, 2009).

45. Cooney, *supra* note 1, at 39.

46. *Id.*

47. The Precautionary Principle is incorporated in law on the conservation and sustainable development of the Galapagos Islands, on invasive alien species, and in the procedure for import and export of wild species.

D. The Precautionary Principle and Trade

Trade and environment are fundamentally related; because of this, the application of precaution to trade decisions is unavoidable. Whether explicitly designed to do so, trade policies tend to encourage — or discourage — certain economic activities, with varying effects on the environment. Trade rules, domestic or global, can weaken environmental rules. Conversely, environmental policies and measures are often more effective if they are reinforced by trade regulations (e.g., trade sanctions) which support their objective. The net outcome of trade for the environment ultimately depends on the extent to which environmental and trade policies have been successfully integrated. A positive outcome for the environment requires the development of complementary and mutually supportive policies.⁵² This is the challenge in finding an approach to implementing the Precautionary Principle in trade decisions: *how can the principle be applied to trade without being a barrier to sustainable development while retaining at the same time its potency as an environmental and health norm?*

To understand the link between trade and precaution, an appreciation of the WTO, its agreements, and its dispute settlement system, is imperative.

See Cooney, supra note 1, at 17.

48. Precaution is incorporated in the National Strategy for Biological Diversity (2001) and regulations implementing the Forest and Wildlife Law (2001).

Id.

49. The Precautionary Principle is incorporated into the 1998 biodiversity law and has been relied on by the Constitutional Court in an important case concerning sea turtle conservation.

Id.

50. The 1997 environment legislation states that environmental management activities should be undertaken so as to avoid significant or irreversible negative environmental impacts, independently of the existence of scientific certainty concerning the occurrence of these impacts while its 1999 law on forest and wildlife activities also adopts “prevention and prudence.”

Id. at 18.

51. Its National Environmental Management Act (1998) provides that sustainable development includes consideration of, *inter alia*, “that a risk averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions.”

Id.

52. U.N. ENVIRONMENT PROGRAMME (UNEP), DIV. OF TECHNOLOGY, INDUSTRY AND ECONOMICS, ECONOMICS AND TRADE BRANCH AND INTERNATIONAL INSTITUTE FOR SUSTAINABLE DEVELOPMENT (IISD), ENVIRONMENT AND TRADE: A HANDBOOK 2 (2d ed. 2005), available at http://www.iisd.org/pdf/2005/envirotrade_handbook_2005.pdf (last accessed Feb. 14, 2009).

The WTO, as successor to the General Agreement on Tariffs and Trade (GATT),⁵³ was established in 1995. It is responsible for administering the WTO Agreements that regulate the international trade in goods and services and the protection of intellectual property rights. In addition, the WTO provides a forum for the negotiation of new trade rules, for reviewing the Members' trade policies, and for the settlement of disputes among its Members.⁵⁴

Among the WTO Agreements, three stand out as the most relevant to the Precautionary Principle: the GATT 1994,⁵⁵ the Agreement on Technical Barriers to Trade (TBT Agreement),⁵⁶ and the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement).⁵⁷ All these agreements share the common purpose of ensuring that measures affecting trade in products do not discriminate on the basis of a product's country of origin in a manner that harms imports, and that these measures are no more trade restrictive than is necessary to achieve the purpose for which they were designed.⁵⁸

53. General Agreement on Tariffs and Trade, Oct. 30, 1947, 61 Stat. A-11, 55 U.N.T.S. 194 [hereinafter GATT 1947].

Provisions of the GATT 1947 are incorporated into GATT 1994 by reference, thus, Articles I, II, XX, and so on refer to GATT 1947; GATT 1994 is not organized as such.

54. Mackenzie, et al., *supra* note 8, ¶ 847, at 226; Duncan Brack, *The World Trade Organization and Sustainable Development: A Guide to the Debate* 5 (Energy, Environment and Development Programme (EEDP), Briefing Paper No. 05/03), Dec. 2005, available at <http://www.globalpolicy.org/soecon/bwi-wto/wto/2005/1207sustdev.pdf> (last accessed Feb. 14, 2009).

55. General Agreement on Tariffs and Trade, Apr. 15, 1994, 1867 U.N.T.S. 187, 33 I.L.M. 1144.

56. Agreement on Technical Barriers to Trade, Apr. 15, 1994, 1867 U.N.T.S. 3 (Annex 1A), 33 I.L.M. 1145 [hereinafter TBT Agreement].

57. Agreement on the Application of Sanitary and Phytosanitary Measures, arts. 2 (2), 2 (3), Apr. 15, 1994, 1867 U.N.T.S. 493, 33 I.L.M. 1139 [hereinafter SPS Agreement].

58. Mackenzie, et al., *supra* note 8, ¶ 848, at 226 (citing TBT Agreement, *supra* note 56, arts. 2.1-2.2; SPS Agreement, *supra* note 57, arts. 2 (2), (3); GATT 1947, *supra* note 53, arts. I, III, XX).

These core principles are to be found in the following articles of the GATT:

- Articles I ('most favoured nation' treatment) and III ('national treatment') outlaw discrimination in trade: WTO members are not permitted to discriminate between traded 'like products' produced by other WTO members, or between domestic and international like products.

Through the concept of “special and differential treatment,” developing countries enjoy some special recognition within the WTO. Different WTO agreements include various provisions giving developing countries — with the least-developed countries benefiting from maximum flexibility — special rights or extra leniency. These include rules (1) allowing developed countries to treat developing countries more favorably than other WTO members, mainly implemented through the various Generalized Systems of Preferences (GSPs); (2) giving them extra time to fulfill their commitments; and (3) requiring WTO members explicitly to safeguard the interests of developing countries when adopting particular measures.⁵⁹

The principal purpose of the WTO is to liberalize markets by removing unnecessary, discriminatory, and protectionist barriers to free trade.

The WTO Agreements do, however, permit unilateral trade restrictions under particular circumstances. These include measures, for example, ‘necessary to protect human, animal or plant life or health’ (GATT, Article XX (b)) and those ‘relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption,’ (GATT, Article XX (g)) both of which have been cited in a series of dispute cases concerned with trade measures.⁶⁰

These environmental and health exceptions, however, do not mention the Precautionary Principle. Neither GATT 1947 nor GATT 1994 indicates an approach to scientific uncertainty.

Although the GATT does not make reference to international standards or standard-setting bodies, the WTO Appellate Body appears to be willing to take into account existing international agreements and state practices outside the WTO. For example, in the *Shrimp-Turtle Case*,⁶¹ the Appellate Body made reference to the Convention on Biological Diversity⁶² when, in the process of clarifying the meaning of “exhaustible natural resources” under GATT Article XX (General Exceptions),⁶³ it reviewed State practice for evidence of the “contemporary concerns of the community of nations

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- Article XI (‘elimination of quantitative restrictions’) forbids any restrictions other than duties, taxes or other charges on imports from and exports to other WTO members. Brack, *supra* note 54, at 5.

59. Brack, *supra* note 54, at 5.

60. *Id.* at 3.

61. Appellate Body Report, *United States — Import Prohibitions of Certain Shrimp and Shrimp Products*, WT/DS58/AB/R (Oct. 12, 1998) [hereinafter WTO Shrimp-Turtle Case].

62. Convention on Biological Diversity, *supra* note 23.

63. WTO Shrimp-Turtle Case, *supra* note 61, ¶ 130.

about the protection and conservation of the environment.”⁶⁴ The Convention was one of many existing international agreements the Appellate Body referred to in concluding that the sea turtles at issue were an exhaustible natural resource.⁶⁵

The Precautionary Principle can and has become a contentious issue in the WTO. As Professor Halina Ward illustrates,

[t]he precautionary principle potentially interacts with the rules of the multilateral trading system in three main ways:

- *When WTO rules have an impact on domestic regulation.* Here the issue is one of finding the proper balance between trade and precautionary disciplines. To what extent will dispute panels in the future be prepared to look inside the national regulatory process? [One] approach to tackling precautionary measures lies with the so-called deference principle, the idea that the WTO should accord deference to the policy choices of its members.
- *Via the link between the rules of the multilateral trading system and general principles of international law.* Here the issue is to what extent the WTO rules and dispute settlement should take the Precautionary Principle into account on the basis that it has become a general principle of international law.
- *In terms of the burden of proof applied in WTO dispute settlement.* The Precautionary Principle tends to support a reversal of the burden of proof. The issue here is how to ensure that WTO rules do not provide incentives for exporting countries *not* to gather scientific evidence of risks associated with their exports — namely, that there should be no presumption in favor of trade at the expense of proper science assessment.⁶⁶

Lastly, with regard to the second point: as pointed out by the Appellate Body, WTO law and jurisprudence should not be isolated from the widespread sources of public international law.⁶⁷

E. The SPS Agreement and the Precautionary Principle

Among all the WTO agreements, the SPS Agreement seems to have the most direct relevance to precaution. This agreement establishes rules on the imposition of trade measures directed at controlling disease, contaminants, or organisms that may pose risks to human, plant, or animal health. In essence,

64. *Id.* ¶ 129. See Robert Howse, *The Appellate Body Rulings in the Shrimp/Turtle Case: A New Legal Baseline for the Trade and Environment Debate*, 27 COLUM. J. ENVTL. L. 491 (2002) (for an analysis of the Shrimp-Turtle case).

65. See WTO Shrimp-Turtle Case, *supra* note 61, ¶¶ 130-34.

66. Ward, *supra* note 10, at 5 (emphasis supplied).

67. See WTO Shrimp-Turtle Case, *supra* note 61, ¶ 67.

it governs all measures which may directly or indirectly affect international trade of any product. It has as policy objective the protection of animal or plant life or health within the territory of Members from risks arising, among others, from pests, diseases, or contaminants. Although it does not explicitly incorporate the Precautionary Principle, the SPS Agreement allows for provisional measures in the face of scientific uncertainty. Thus, the WTO has acknowledged in various disputes⁶⁸ — although with a limited scope — the role of precaution under the SPS Agreement.

1. The Beef Hormones and Japan Varietals Cases

In the *Beef Hormones Case*,⁶⁹ the WTO found that the EU ban on growth hormones in beef was inconsistent with Article 5 (7) of the SPS Agreement.⁷⁰ More specifically, the precautionary measures taken by the EU were ruled inconsistent with the SPS Agreement. Here, the EU argued that the Precautionary Principle was customary international law and was applicable to WTO agreements such as the SPS Agreement. On the merits of the case, the WTO Appellate Body ruled against the EU on the basis that the SPS Agreement only allows for provisional measures based on precaution. The EU ban, however, was permanent and had not been based on any systematic scientific risk assessment — a requirement of the SPS Agreement.⁷¹ Regardless of the final decision, the *Beef Hormones Case* is interesting in as much as the Appellate Body found that Article 5 (7) of the SPS Agreement “contains elements of a Precautionary Principle.”⁷²

68. Appellate Body Report, *European Communities — Measures Concerning Meat and Meat Products*, WT/D26/AB/R, WT/DS48/AB/R (Jan. 16, 1998) [hereinafter WTO Beef Hormones Case]; Appellate Body Report, *Japan — Measures Affecting Agricultural Products*, WT/DS76/AB/R (Feb. 22, 1999) [hereinafter WTO Japan Varietals Case]; Panel Report, *European Communities — Measures Affecting the Approval and Marketing of Biotech Products*, WT/DS291/R, WT/DS292/R, WT/DS293/R (Sep. 29, 2006) [hereinafter WTO GMOs Case].

69. WTO Beef Hormones Case, *supra* note 68.

70. See Justin Kastner & Pawsey, *Harmonising Sanitary Measures and Resolving Trade Disputes Through the WTO-SPS Framework — Part I: A Case Study of the US-EU Hormone-Treated Beef Dispute*, 13 FOOD CONTROL 1, 49-55 (2002) (for a critical analysis of the Beef Hormones Case).

71. See WTO Beef Hormones Case, *supra* note 68, at 172.

72. Woolcock, *supra* note 6, at 30. Article 5 (7) of the SPS Agreement provides:

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 organizations 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

The Appellate Body however recognized “that there is no need to assume that Article 5 (7) exhausts the relevance of the Precautionary Principle.”⁷³ Moreover, the Appellate Body also made it clear that Members have the right to establish their own level of sanitary protection, which may be higher than the existing international standards.⁷⁴

In the *Japanese Varietals Case*,⁷⁵ the Appellate Body clarified four requirements, all of which must be met in order to adopt and maintain a provisional SPS measure: (1) the measure must be adopted provisionally; (2) it must be adopted on the basis of available pertinent information; (3) the Member must seek to obtain the additional information necessary for a more objective assessment of the risk; and (4) the Member must review the measure within a reasonable period of time.⁷⁶ These conditions apply cumulatively, so where one is not met the measure in question will be incompatible with the SPS Agreement.⁷⁷

2. The Asbestos Case

In the *Asbestos Case*,⁷⁸ the WTO Appellate Body applied precautionary reasoning in two instances. First, they confirmed that WTO Members have the undisputed right to determine the level of health protection they deem appropriate.⁷⁹ Second, the Appellate Body found that there is no requirement under WTO law to quantify the risk to human life or health; rather, a risk may be evaluated either in qualitative or quantitative terms.⁸⁰ The Appellate Body also confirmed “that countries can base their health or environmental measures on qualified and respected scientific opinions held by only a minority of scientists, stating that a Member is not obliged, in setting health policy, automatically to follow what, at a given time, may constitute a majority scientific opinion.”⁸¹

objective assessment of risk and review the sanitary or phytosanitary measure accordingly within a reasonable period of time.

SPS Agreement, *supra* note 57.

73. WTO Beef Hormones Case, *supra* note 68, ¶ 124.

74. *Id.*

75. WTO Japan Varietals Case, *supra* note 68.

76. *Id.* ¶ 89.

77. *Id.*

78. Appellate Body Report, *European Communities — Measures Affecting Asbestos and Asbestos-Containing Products*, WT/DS135/AB/R (Mar. 12, 2001) [hereinafter WTO Asbestos Case].

79. Gehring & Cordonier Segger, *supra* note 1, at 35.

80. *Id.* at 36.

81. *Id.*

In the Asbestos case,

the objective pursued by the measure was the preservation of human life and health through the elimination, or reduction, of the life-threatening health risks posed by asbestos fibers. The value pursued was [therefore] both vital and important in the highest degree. Because of this, both the original WTO panel and the Appellate Body shifted the burden of proof onto Canada, the proponent of the exports, to prove that their “controlled use” alternative would achieve the same level of protection — something Canada could not do. ... Thus, the ban was deemed “necessary” to protect human health within the meaning of the Article XX (b) exception, and it passed the test in [WTO] law.⁸²

3. The GMOs Case

In September 2006, the *ad hoc* WTO Panel issued its Reports on a dispute launched in 2003 by the U.S., Canada, and Argentina on the European Communities’ (EC) approval process for genetically modified organisms (GMOs).⁸³ The Panel did not address whether GMO products are generally safe, whether they are to be considered “like products” to conventional food products, or whether the EC legislation was consistent with the WTO.⁸⁴ The Panel agreed with the complainants that the EC had indeed applied a general *de facto* moratorium on approvals of biotech products between June 1999 and August 2003 — the time of the establishment of the Panel — which the EC categorically denied.⁸⁵ It also noted that this moratorium did not constitute an SPS measure in and of itself, but had “resulted in a failure to complete individual procedures without undue delay,” thereby violating

82. *Id.*

83. See generally WTO GMOs Case, *supra* note 68; STEVE SUPPAN, U.S. VS. EC BIOTECH PRODUCTS CASE: WTO DISPUTE BACKGROUNDER (Institute for Agriculture and Trade Policy (IATP)), Sep. 2005, available at <http://www.tradeobservatory.org/library.cfm?refid=76644> (last accessed Feb. 14, 2009); Francesco Sindico, *The GMO Dispute Before the WTO: Legal Implications for the Trade and Environment Debate* (Fondazione Eni Enrico Mattei, Nota di Lavoro National Resource Management, Working Paper No. 11.2005, 2005), available at <http://www.feem.it/NR/rdonlyres/D6C4B280-88C0-4D0C-A0D9-0F9AEE1EABAB/1432/1105.pdf> (last accessed Feb. 5, 2009); Pew Initiative on Food and Biotechnology, *U.S. vs. EU: An Examination of the Trade Issues Surrounding Genetically Modified Food* (Pew Initiative on Food and Biotechnology, Issue Brief, 2005), available at http://www.tccouncil.org/reports/pew_europe0602.pdf (last accessed Feb. 14, 2009).

84. WTO GMOs Case, *supra* note 68, ¶ 8.420.

85. *Id.* ¶ 8.423; see European Communities — Measures Affecting the Approval and Marketing of Biotech Products: Summary of the Dispute to Date, available at http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds291_e.htm (last accessed Feb. 14, 2009).

Article 8 and Annex C of the SPS Agreement,⁸⁶ which set out rules for such approval procedures. And regarding the product-specific measures, the Panel concluded that the completion of the approval process had been unduly delayed for 24 out of the 27 biotech products.⁸⁷

The Panel also observed that “the legal debate over whether the Precautionary Principle constitutes a recognized principle of general or customary international law is still ongoing.”⁸⁸ It noted that there has been “no authoritative decision by an international court or tribunal which recognizes the Precautionary Principle”⁸⁹ as one of general or customary international law. While agreeing that “provisions explicitly or implicitly applying the Precautionary Principle have been incorporated into numerous international conventions and declarations”⁹⁰ and in domestic law,⁹¹ the Panel stated that they are, “for the most part, ... *environmental* conventions and declarations.”⁹² Furthermore, according to the Panel, questions persist regarding the “precise definition and content of the Precautionary Principle,”⁹³ thus, its decision not to apply the Precautionary Principle to the dispute.⁹⁴

When the Panel issued a Preliminary Report on 7 February 2006, a former U.S. trade representative supported the decision, along with a number of industry and farmer groups in the U.S., with one of the group leaders even quoted as saying that the ruling made clear that “biotech regulations must be based on sound science and that the EU’s approach to

86. WTO GMOs Case, *supra* note 68, ¶ 8.423.

87. *Id.* at ¶ 8.419.

88. WTO GMOs Case, *supra* note 68, ¶ 7.88.

89. *Id.*

90. *Id.*

91. *Id.*

92. *Id.* (emphasis supplied).

93. *Id.*

94. The Panel reasoned that:

[s]ince the legal status of the Precautionary Principle remains unsettled, like the Appellate Body before us, we consider that prudence suggests that we not attempt to resolve this complex issue, particularly if it is not necessary to do so. Our analysis below makes clear that for the purposes of disposing of the legal claims before us, we need not take a position on whether or not the Precautionary Principle is a recognized principle of general or customary international law. Therefore, we refrain from expressing a view on this issue.

WTO GMOs Case, *supra* note 68, ¶ 7.89.

biotech crop approvals is unwarranted.”⁹⁵ But in spite of these, a cursory analysis of the Panel Reports seems to support the conclusion that there was no huge victory by either the complainants or the EC; at best, the outcome of the dispute is mixed, with the EC and other countries still left with significant latitude on how to approach the regulation of GMOs.⁹⁶ In fact, “in a statement released on the same day as the interim report, the EC stressed the need for strong regulatory oversight of GMOs and noted that the approvals process it has in place had led to the authorization of more than 30 biotech products.”⁹⁷ The EC also pointed out that “it does not have a ban in place, suggesting that the implications of the biotech case for current EU processes are likely to be minimal because the ruling does not apply to the regulatory framework that came into effect in 2004.”⁹⁸

III. PRINCIPLES BASED ON SUSTAINABLE DEVELOPMENT

It should be clear at the outset that the more extreme or highly restrictive versions of precaution, such as total bans and indiscriminate prohibitions, are, from a sustainable development point of view, problematic for reasons of pragmatism and equity. “Highly protectionist approaches may ‘make the best the enemy of the good:’ by seeking to entirely eliminate risks of exploitation, they may preclude use of the available tools to manage utilization for sustainability.”⁹⁹ Applying precaution in a rational and transparent way should therefore not necessarily lead to such extreme or highly restrictive versions but to other various policy options.¹⁰⁰

In finding an approach to the application of precaution to trade decisions, several norms need to guide decision-makers. These are: (a) the principle of good science; (b) the principle of proportionality; (c) the principle of equitable implementation; and (d) the principle of stakeholder participation.

95. *WTO Panel Provisionally Rules Against EU Moratorium*, BRIDGES TRADE BIORES 1 (International Centre for Trade and Sustainable Development (ICTSD), Geneva, Switz.), Feb. 17, 2006, at 2, available at <http://ictsd.net/downloads/biores/biores6-3.pdf> (last accessed Feb. 14, 2009).

96. See Friends of the Earth International (FOEI), *Looking Behind the U.S. Spin: WTO Ruling Does Not Prevent Countries from Restricting or Banning GMOs* (FOEI, Briefing Paper), Feb. 1, 2006, available at <http://www.biosafety-info.net/article.php?aid=388> (last accessed Feb. 5, 2009).

97. *WTO Panel Provisionally Rules Against EU Moratorium on Biotech Approvals*, *supra* note 95.

98. *Id.*

99. Cooney, *supra* note 1, at 34.

100. See Gehring & Cordonier Segger, *supra* note 1, at 11.

These guiding norms should make precaution a reasonable and transparent policy option for trade decisions. Together, these norms reduce the uncertainty that may arise when precaution becomes a decision criterion for trade matters. More significantly, these principles advance equity in trade and other development decisions.

The first two principles reduce uncertainty in the application of precaution to trade while the last two advance equity. It should be noted that the first two have already been adopted by the EC in its 2000 Communication on the Precautionary Principle.¹⁰¹ Similar principles have also been proposed for other countries such as Canada (as discussed earlier), where some principles to guide the implementation of the Precautionary Principle have been identified.¹⁰²

All four principles should guide implementation of the precautionary approach, but from a sustainable development point of view, the principles of equitable implementation and of stakeholder participation are probably the most important. Because of the nature of the circumstances under which

101. See Commission of the European Communities, *supra* note 28.

102. Some of the similar principles formulated for other countries include:

- Sound scientific information and its evaluation must be the basis for applying the precautionary approach, particularly with regard to (i) the decision to act or not to act (i.e., to implement precautionary measures or not), and (ii) the measures taken once a decision is made. Moreover, the scientific evidence required should be established relative to the chosen level of protection. Precautionary measures should be subject to reconsideration, on the basis of the evolution of science, technology and society's chosen level of protection. (Similar to the principle of good science);
- Mechanisms should exist for reevaluating the basis for the decisions and for providing a transparent process for further consultation. A greater degree of transparency, clearer accountability and increased public involvement are appropriate. (Similar to the principle of stakeholder participation); and
- Precautionary measures should be proportional to the potential severity of the risk being addressed and to society's chosen level of protection. Precautionary measures should be cost-effective, with the goal of generating (i) an overall net benefit for society at least cost, and (ii) efficiency in the choice of measures. (Similar to principle of proportionality).

Government of Canada, A Framework for the Application of Precaution in Science-Based Decision Making About Risk, *available at* http://www.pco-bcp.gc.ca/index.asp?lang=eng&page=information&sub=publications&doc=precaution/precaution_e.htm (last accessed Feb. 14, 2009).

the Precautionary Principle can be invoked, adhering consistently to the principle of good science is probably also an imperative.

A. Principle of Good Science

“Good science” — that is, science based on the best available information and most updated methodology, peer reviewed and consistent with international standards — should be the basis of making the threshold decision on whether the Precautionary Principle is even in fact applicable. “Good science” should be distinguished from “sound science,” the latter being the favored term of critics of the Precautionary Principle.¹⁰³

“Good science” recognizes that the meaning and significance of the Precautionary Principle do not end with scientific analysis. Because of its focus on scientific uncertainties, the Precautionary Principle implies that regulatory decisions cannot be determined purely by science even if science is very helpful.

The application of the Precautionary Principle requires a more overtly political decision about the balance of risks involved, since “[d]eciding on the appropriate balance between burden and risk involves social choices.”¹⁰⁴ In applying the Precautionary Principle, scientific risk assessment will be done within a broader framework, including non-scientific value judgments of risks acceptable to society. “Decisions will need to be based on judgments, influenced by values and perceptions, about acceptable risks, costs, and benefits.”¹⁰⁵

In other words, “good science” recognizes that a decision to do or not do something about any environmental or health risk is not just a scientific decision but also depends upon the alternatives, values, and beliefs that are considered.

Implementing the Precautionary Principle starts with a scientific evaluation which must be as complete as possible and must identify the degree of scientific uncertainty.¹⁰⁶ There should also be a continued examination of scientific developments. The life of any measure should be determined by the status of scientific knowledge. In other words, if science is able to clarify risk or show that risk is less than was originally anticipated, then the measure should be modified or revoked.¹⁰⁷

103. In any case, the description below of “good science” is generally consistent with the views by proponents of “sound science” and therefore the distinction made here is not important for purposes of this analysis.

104. Ward, *supra* note 10, at 2.

105. Cooney, *supra* note 1, at 8.

106. Gehring & Cordonier Segger, *supra* note 1, at 10.

107. See Commission of the European Communities, *supra* note 28, ¶ 6.3.5.

The practical implication of the Principle of Good Science is that there must be a recognition that risks exist along different dimensions — individual, collective, societal, country-specific. The diversity of perspectives on risks is true not only within societies but also between countries, particularly between rich and poor countries. The Principle of Good Science requires an appreciation for this and that a balanced approach must be followed in implementing precaution. Identification of risks, in the context of national regulatory decisions, can be based on purely domestic perceptions of what are acceptable risks. However, when decisions with international or extraterritorial consequences must be made, the identification of risks should be made through the appropriate consensus-based process. In many instances, such decisions should be made in the appropriate environmental or health forum, such as the Cartagena Protocol on Biosafety, or the Basel or Stockholm Conventions. In certain cases where the trade element is central to the decision, the WTO dispute settlement system might be unavoidable.

Concretely, the trade decisions are better deliberated in light of both the Precautionary Principle and the Principle of Good Science. As earlier stated, the Precautionary Principle starts with “good science” but expands in application beyond scientific bounds. The Precautionary Principle entails an appreciation and judgment of risks, thus social decisions are unavoidably value-laden and will be based on societal perception of what is acceptable risk or not. As applied to international trade, identifying risks should not be a unilateral process but should be based on genuine dialogue between trading partners.

B. Principle of Proportionality

Under the Principle of Proportionality (already adopted by the EU in 2000 as a guiding norm for its implementation of precaution), precautionary measures should be in proportion to the risks entailed but should also not aim at zero risk. In addition, “proportionality” must take account of long-term developments and should not, for example, result in risks being shifted onto future generations. As such, the Principle of Proportionality, which requires an appropriate relationship between the protective measures adopted and the level of security to be achieved, should guide the implementation of the Precautionary Principle.¹⁰⁸

Concretely, “proportionality” requires that measures that are highly restrictive and costly should not be aimed at achieving insignificant gains in environmental or health security. Conversely, measures directed against clearly plausible (if uncertain) catastrophic and irreversible environmental harm should not be delayed due to a moderate economic cost. Because proportionality involves a balancing act of threats, benefits, and uncertainties

108. *Id.*, ¶ 6.3.1.

across environmental, economic, and social realms, it requires “a judgment which takes into account the uncertainty surrounding threats, the seriousness and possible likelihood of threats, the likely economic, social (and environmental) costs of the protective action, the environmental, economic, and social benefits of the action, and the level of security that is desired.”¹⁰⁹ Consequently, total bans and absolute prohibitions should not be the preferred option; instead alternative policy measures that are less restrictive should be the policy of first recourse.

From a trade point of view, “proportionality” is applied by asking “whether the benefits of precautionary measures in the importing countries [are] out of proportion to the economic costs borne by exporters.”¹¹⁰ For instance, the set of EU standards on aflatoxin levels in peanuts is an environmental and health regulation that has been questioned in light of the principle of proportionality. The standards were criticized for exceeding the norms established by the Codex Alimentarius and also for leading to disproportionate costs. The standards were even said to have been designed to serve protectionist ends.¹¹¹

An implication of the Principle of Proportionality is another principle endorsed by the EC: the Principle of Benefits and Costs of Action. The latter principle simply means that before regulators adopt precautionary measures, there should be a cost-benefit analysis covering both economic and non-economic factors as well as both long- and short-term costs and benefits.¹¹² Thus, the cost-benefit analysis should include examining the burden such measures imposes on exporters and not just the costs of regulation by the importing country.

A cost-benefit analysis is even more imperative when the exporting country is a least developed country (LDC) which relies on a few exports for its economic needs. In doing the cost-benefit analysis, particular attention should be given to the direct and indirect socio-economic and environmental impacts of precautionary measures on poor communities or sectors. These factors should be taken into account before the precautionary measures are finally adopted; and where the adoption of strict precautionary actions is required, both importing and exporting countries should collaborate to provide appropriate mitigation and compensation measures and mechanisms that would allow poor communities or sectors to adapt to

109. Cooney, *supra* note 1, at 36.

110. COSBEY, *supra* note 44, at 16.

111. See COSBEY, *supra* note 44, at 16 (citing Atul Kaushik, International Institution for Sustainable Development, *Promoting Sustainable Trade: The Case of Environmental Requirements 2* (Trade and Sustainable Development Project Workshop Paper, Apr. 12-14, 1999), available at http://www.tradeknowledge.network.net/pdf/pk_kaushik.pdf (last accessed Feb. 14, 2009)).

112. Commission of the European Communities, *supra* note 28, ¶ 6.3.4.

such measures. It would be ironic if precautionary measures taken in a rich country (presumably for environmental objectives) would result in greater poverty in a developing country, and in turn result into greater environmental degradation (at least for that developing country).

In sum, as applied to the precautionary approach — and as consistent with sustainable development — the Principle of Proportionality aims to avoid highly restrictive measures and places the burden of proving proportionality on those who would pursue such measures. Furthermore, the principle encourages cost-benefit analyses to precede the imposition of precautionary measures. Finally, in implementing precautionary measures, appropriate mitigation and compensation should also be implemented to help poor communities and sectors to adapt.

C. Principle of Equitable Implementation

Applying the Precautionary Principle to trade raises important equity issues. Its application — especially if highly restrictive or protectionist — can have negative livelihood and socio-economic impacts, particularly for poor communities or sectors within those countries whose economic well-being depends on a specific export product. Thus, in developing precautionary measures for trade, focus should be on allocating the burdens of precautionary restrictions: who participates in (or even influences) the decision-making and who bears the burden of proving the desired outcome. As Rosie Cooney suggests, “[f]or precaution to contribute to, rather than conflict with, sustainable development, the burden of the Precautionary Principle must be borne by those most able to afford it.”¹¹³

The Trade Knowledge Network (TKN) has documented cases where environmental measures in developed countries “*inadvertently* lead to outcomes that may have development implications”¹¹⁴ in developing countries. These outcomes are not so much in terms of protectionism, but because “they favor larger, more intensive or more integrated producers.”¹¹⁵ The case of Bangladesh, for example, shows the impacts of the EU’s relatively strict standards for production and processing — the so-called Hazard Analysis and Critical Control Points (HACCP) standards — on the said country’s shrimp aquaculture industry (shrimp is Bangladesh’s second biggest export).

1. Environmental Policies and Inequity: The Bangladesh Experience

113. Cooney, *supra* note 1, at 37.

114. COSBEY, *supra* note 44, at 8 (emphasis supplied).

115. *Id.*

In Bangladesh, many producers are small scale farmers with shrimp cultivation as source of farm income. As environmental economist Aaron Cosbey observes, most of these farmers are, “first, largely unaware of the HACCP requirements, and second, unable to implement the stringent and expensive monitoring systems required.”¹¹⁶ “As such, the TKN Bangladesh research, conducted by IUCN, predicted that there will likely be an intensification of production, with small scale producers being pushed out of the system in favor of larger producers, perhaps vertically integrated with the processors and exporters.”¹¹⁷ The result was better compliance with environmental requirements but greater inequity. In turn, this situation might have actually increased “environmental degradation, since small-scale producers tend to create fewer environmental problems than intensive producers.”¹¹⁸

Cosbey summarizes the dilemma and the challenge well:

To recap: regulations propounded in the EU, designed to protect EU consumer health, may have negative impacts in the exporting country in terms of sustainable development, concentrating ownership and income related to shrimp aquaculture, and degrading the environment. The lesson here is not that these regulations are illegitimate (and it is certainly not that they are protectionist — HACCP standards are recognized as legitimate by the Codex Alimentarius Commission, a blue-chip seal of approval). But rather, they need to be more carefully designed, taking account of their ancillary negative impacts abroad. And there may need to be efforts in the exporting country to avert those impacts.¹¹⁹

The lesson from the TKN research is that higher environmental and health standards can have serious impacts beyond their intended goals. “The most serious impacts come from regulations that do not stem from protectionist sentiment, but rather from legitimate objectives, combined with ignorance of the impacts in exporting countries.”¹²⁰

Higher standards can be more difficult for small and medium-sized enterprises than they are for larger enterprises because of the costs to changing the production process, as well as costs to information, certification, monitoring and management. These costs can, in bigger companies, be spread over a greater base of revenues and over a longer period of time.¹²¹ The result, therefore, of higher environmental standards

116. *Id.* at 9.

117. *Id.*

118. *Id.*

119. *Id.*

120. COSBEY, *supra* note 44, at 11.

121. See COSBEY, *supra* note 44, at 10 (citing Tom Rotherham, *Implementing Environmental, Health and Safety (EH&S) Standards, and Technical Regulations: The Developing Country Experience* 19 (IISD, TKN Thematic Paper, 2003), available at

(usually introduced by a foreign element; either international or importing country requirements) can be consolidation in larger firms. But what does this mean for sustainable development? “Are the poor worse off if many small enterprises are shut down and one large one built in their place?”¹²²

2. Addressing the Problem of Inequitable Implementation

A better understanding of the impacts of higher standards, especially the socio-economic ones, is needed. Governments, both exporters and importers, work at avoiding undesirable outcomes through appropriate domestic policies. Those proposing standards should be open to the input of their trade partners and allow for adequate comment periods. Technical assistance, technology transfer, or capacity building¹²³ might be necessary to help exporters adjust to the standards and avoid negative consequences.

Also, the burden of proof should be allocated. But along with it come significant consequences for equity and distribution of costs. As Cooney elucidates:

For threats to biodiversity posed by new technologies, or large-scale change or expansion of economic activities, proponents will often be economically powerful interests which are appropriately placed to bear the burden of proof. But ‘proponents’ of actions will often be local resource-using communities seeking to meet basic needs, with few technical resources. Should the burden of proof fall on them? A small community faced with a well-funded international NGO arguing for precautionary exclusion of traditional uses will have difficulty providing evidence to the contrary. Similarly, it will be difficult for developing countries with limited technical and scientific capacity to gather scientific evidence to counter precautionary import restrictions on wildlife products, supported by powerful States and NGOs.

In the trade context, under WTO disciplines the burden of proof rests with those attempting to demonstrate environmental harm — in the absence of adequate scientific evidence, trade restrictive environmental measures are difficult to justify. This may impose substantial burdens on developing countries seeking to protect their biodiversity and natural resources with scarce technical and financial resources. For instance, requirements under the SPS Agreement for extensive scientific assessments to support precautionary action against threats such as invasive alien species may impose major regulatory burdens.¹²⁴

http://www.tradeknowledgenetwork.net/pdf/tkn_standards.pdf (last accessed Feb. 14, 2009)).

122. COSBEY, *supra* note 44, at 10.

123. *See* COSBEY, *supra* note 44, at 11.

124. Cooney, *supra* note 1, at 38.

The Principle of Equitable Implementation, therefore, implies that precautionary measures for trade should be implemented in the following way:

- Equity considerations must be paramount in designing appropriate precautionary measures; in particular, the socio-economic impacts of such measures must be identified and evaluated before the measures are adopted and implemented.
- In deciding levels of protection, equity considerations must likewise be of the highest priority if precaution is to be applied in a manner consistent with sustainable development.
- Equity also requires that compensation and mitigation measures and mechanisms might be needed to help affected stakeholders, who are poor and marginalized, to adapt to the precautionary actions.
- Communities, groups and individuals who bear the burdens of precautionary restrictions, must be allowed to influence, that is, have a say in decision-making. As described below, this can be done specifically through inclusive and participatory processes, including in international negotiations.

D. Principle of Stakeholder Participation

The Principle of Equitable Implementation is intimately tied to the Principle of Stakeholder Participation. These two principles are specifically intertwined such that applying precaution requires the involvement and representation in the decision-making process of the stakeholders directly affected, with particular emphasis on including the poor and least powerful constituencies in the process. As observed earlier, “science-based decisions are not without normative biases and that as a result the assessment of risk should be open to wider participation,” thereby allowing societal norms and values to be factored into the risk assessment process.¹²⁵

There is growing recognition that the effective application of the Precautionary Principle requires the participation of all relevant stakeholders, including the public, in the policy choices that surround its application. Because regulatory institutions (whether domestic or international) usually have a narrow and limited focus, a major effort to reach out to all relevant stakeholders is needed.

In developing and implementing an approach to precaution, it is critical to make sure that stakeholders will own-up to their decisions which would affect them. This may be accomplished through the “establishment of multi-stakeholder decision-making processes, supported by appropriate political and legal authority and adequate budgets. Such processes, to be credible, would have to be transparent and allow for meaningful participation by all

125. Woolcock, *supra* note 6, at 12.

affected stakeholders, particularly poor [sectors] and [communities].”¹²⁶ The Precautionary Principle Project acknowledged this imperative and recommended the adoption of a similar norm in applying the principle to natural resources management.¹²⁷

The Principle of Stakeholder Participation is not only for policy and regulatory decisions but should also extend to dispute settlement.¹²⁸ Indeed, this particular principle also implies the right of stakeholders to multiple reviews of precautionary decisions. Such mechanisms are valuable to prevent “precaution from being used by special interests as an excuse for disguised protectionism.”¹²⁹ In this regard, applying the Precautionary Principle requires a more inclusive, participatory, and democratic form of dispute resolution, where the participation of all relevant and affected stakeholders is essential in deliberation and decision-making. In the context of the WTO,

126. Antonio G.M. La Viña, et al., *Beyond the Doha Round and the Agricultural Subsidies Debate: Toward a Reform Agenda for Livelihoods and the Environment* 14 (World Resources Institute (WRI), WRI Conference Paper, Dec. 2005), available at http://pdf.wri.org/beyond_doha.pdf (last accessed Feb. 14, 2009).

127. See IUCN-The World Conservation Union, *Guidelines for Applying the Precautionary Principle to Biodiversity Conservation and Natural Resource Management* 4, available at http://www.pprinciple.net/PP%20Guidelines_english.pdf (last accessed Feb. 14, 2009). Guideline 4 states:

Include all relevant stakeholders and right-holders in a transparent process of assessment, decision-making and implementation.

Elaboration: Precautionary decision-making involves making decisions where there is uncertainty about the underlying threat. This means that judgements, (sic) values and cultural perceptions of risk, threat and required action must play a role. Therefore, it is important to include stakeholders and rightholders and to be transparent throughout the process of assessment, decision-making and implementation. Key stakeholders include those who bear the costs of the potential threat, such as those who will be impacted by degradation or loss of biodiversity or natural resources, and those who bear costs of precautionary action (if any), such as those whose legitimate use of natural resources will be restricted. Indigenous peoples and local communities often play a very important role in NRM [Natural Resource Management] or rely on biodiversity and natural resources, and should be included. They should have the opportunity and resources to represent themselves and their interests effectively and this should not be precluded by logistical, technical or language barriers. The imperative of including key stakeholders should, however, be balanced against potential conservation costs of delaying a decision.

Id.

128. See generally Ward, *supra* note 10.

129. Gehring & Cordonier Segger, *supra* note 1, at 43-45.

this means a greater respect for third party and non-governmental submissions during disputes.¹³⁰

Finally, an essential component of authentic stakeholder participation is transparency and access to information. In implementing precaution, transparent structures should be established and effective mechanisms that provide stakeholders efficient access to relevant information is paramount.

Concretely, what the principle of stakeholder participation means to the implementation of precaution to trade decisions are as follows:

- Countries contemplating precautionary measures must consult with all relevant stakeholders — including those advocating environmental and health interests, and those who will be economically affected by the imposition of precautionary measures;
- Effective access to relevant information, scientific, economic or other relevant information, must be provided to such stakeholders so that they can participate meaningfully in the consultations.
- In reaching out to stakeholders, particular emphasis should be given to LDCs and to poor communities and sectors within developing countries as they are likely to bear the heaviest burden of precautionary measures.
- Dispute settlement bodies, whether domestic or international, should likewise apply, in appropriate ways, the principle of stakeholder participation.

IV. FORUMS AND PROCESSES

The Precautionary Principle could be applied by countries through any of the following forums and processes:

- Trade forums in the context of the WTO;
- International environmental forums and processes within the various Multilateral Environmental Agreements (MEAs);
- Domestic processes of policy-making and regulation; and,
- Other intergovernmental and informal processes of consensus-building.

A. Forums and Processes in the Context of the WTO

Within the WTO, the Committee on Trade and Environment, the Codex Alimentarius (Codex), and the Dispute Settlement System are some of the

130. For example, in the Panel Reports of the WTO GMOs Case, the Panel noted that they received the submissions of non-governmental and public interest organizations but they saw no reason for taking them into account in making their ruling.

See WTO GMOs Case, *supra* note 68, ¶¶ 7.10-7.11.

useful forums and processes where countries could approach precaution in a manner consistent with sustainable development.

1. The Committee on Trade and Environment

The Committee on Trade and Environment (CTE), established in 1995 when the WTO was still in its infancy, has an international mandate covering all areas of the multilateral trading system.¹³¹ The CTE can be an effective forum to discuss approaches to implementing precaution that will support and coexist with sustainable development. For example, there has been a general recognition within the CTE that the key to achieve sustainable development was *improved market access* for developing countries' products.¹³² There is also acknowledgement within the CTE that "the protection of the environment and of health were *legitimate policy objectives* and that Members had the right to set their own appropriate level of environmental protection so as to address such objectives. However, it was also recognized that environmental requirements could affect exports adversely,"¹³³ with "small and medium sized enterprises (SMEs) especially vulnerable."¹³⁴

In the CTE, a discussion was made on "the importance of involving developing countries in the design and development of environmental measures as a way of mitigating negative trade effects."¹³⁵ Once developed, flexibility in the application of environmental measures (e.g., inclusion of longer time-frames and admission of exceptions) was seen as important.¹³⁶ From this perspective, "[t]he answer to concerns about reduced market access was not to weaken such standards, but rather to enable exporters to meet them."¹³⁷ Consequently, there has been a widespread recognition in the CTE that technical assistance, technology transfer, and capacity-building were critical to help developing countries' exporters to meet environmental requirements.¹³⁸

131. See generally The Committee on Trade and Environment ('regular' CTE), available at http://www.wto.org/English/tratop_e/envir_e/wrk_committee_e.htm (last accessed Feb. 14, 2009) (for a brief background on the CTE).

132. WTO-Committee on Trade and Environment (CTE), *Report to the 5th Session of the WTO Ministerial Conference in Cancun — Paragraphs 32 and 33 of the Doha Ministerial Declaration*, ¶ 4, WT/CTE/8 (July 11, 2003).

133. *Id.* ¶ 5.

134. *Id.* ¶ 4.

135. *Id.* ¶ 7.

136. See WTO-CTE, *supra* note 132, ¶ 7.

137. *Id.* ¶ 5.

138. See generally WTO-CTE, *supra* note 132.

The problem with the CTE is that it is essentially a forum for discussion and not for decision-making. From an operational point of view, therefore, the value of the CTE is limited. Nevertheless, it is a good place for Members to exchange ideas. Certainly, it is as good a forum as any to initiate discussions on what principles or guidelines could be acceptable in implementing precaution in trade.

2. The Codex Alimentarius

The Codex Commission is an important forum where concerns about the application of the Precautionary Principle could be dealt with. It works jointly with the United Nations Food and Agriculture Organization and the World Health Organization.¹³⁹ “The Codex is recognized by the SPS Agreement as the international organization responsible for standard-setting related to food safety.”¹⁴⁰ As such, it is both a key player to and a process for finding an agreed interpretation or application of the Precautionary Principle.

Since 2002, the Codex Committee on General Principles (CCGP) has been deadlocked on how to apply precaution to food safety. At the heart of the debate, as reflected in the April 2005 meeting of the CCGP, is the role of precaution in risk analysis. The EU argued that “the Precautionary Principle must be clearly identified and defined with clear guidance on how to apply it to ensure food safety.”¹⁴¹ Latin America, U.S., and several Southeast Asian countries, however, opposed this, arguing that it was not necessary to include an explicit reference to precaution in the document.¹⁴² This opposition was raised for fear that the Precautionary Principle will be invoked indiscriminately to justify existing or prospective trade barriers.

Ideally, the Codex should be a good forum for finding a consensus on the application of precaution to trade decisions. Decisions made in Codex have binding effect and are treated with great respect by the WTO. Unfortunately, given the deadlock on precaution vis-à-vis food safety, it appears that this forum is not likely to produce results that will move this issue forward.

139. See generally Codex Alimentarius, available at http://www.codexalimentarius.net/web/index_en.jsp (last accessed Feb. 14, 2009) (for background information on Codex).

140. *Codex Adopts New Food Safety Standards*, BRIDGES TRADE BIORES 3 (ICTSD, Geneva, Switz.), July 20, 2007, at 5, available at <http://ictsd.net/downloads/biores/biores7-14.pdf> (last accessed Feb. 5, 2009).

141. *Codex Considers Role of Precaution in Risk Standard*, BRIDGES TRADE BIORES 2 (ICTSD, Geneva, Switz.), Apr. 15, 2005, at 3, available at <http://ictsd.net/i/news/biores/9489/> (last accessed Feb. 5, 2009).

142. *Id.*

3. Reviewing the SPS and TBT Agreements

As earlier discussed, the TBT Agreement and the SPS Agreement share the common purpose of ensuring that measures affecting trade in products do not discriminate on the basis of a product's country of origin in a manner that harms imports, and that these measures are no more trade restrictive than is necessary to achieve the purpose for which they were designed.¹⁴³ Both TBT Agreement and SPS Agreement, in their current form, follow the principles of "non-discrimination" and "less restrictive measures" in trade law.

The Principle of Non-Discrimination established the rule that national policies must not allow discrimination in trade of products on the basis of a product's country of origin in a manner that harms imports. This principle is further elaborated by two rules: the "most-favored-nation" (MFN) rule and the "national treatment" rule. According to GATT 1947, a country should not discriminate between its trading partners and give them equally the MFN status.¹⁴⁴ A country should also eliminate discrimination between its own products, services, or nationals and those of foreign origin, thus giving them "national treatment."¹⁴⁵ "National treatment" in this context requires that imported and locally-produced goods should be treated equally — at least after the foreign goods have entered the market.¹⁴⁶

The Principle of Least Restrictive Measures requires the consideration of measures less restrictive than prohibition in selecting the level of regulatory intervention. Examples of this principle can be found in the TBT Agreement and SPS Agreement¹⁴⁷ which draw upon GATT Article XX (b) by requiring

143. Mackenzie, et al., *supra* note 8, ¶ 848, at 226 (citing TBT Agreement, *supra* note 56, arts. 2.1-2.2; SPS Agreement, *supra* note 57, arts. 2 (2), (3); GATT 1947, *supra* note 53, arts. I, III, XX).

144. GATT 1947, *supra* note 53, art. I.

145. *Id.* art. III.

146. See GATT 1947, *supra* note 53, art. III.; General Agreement on Trade in Services, art. XVII, Apr. 15, 1994, 1869 U.N.T.S. 183, 33 I.L.M. 1167 [hereinafter GATS]; Agreement on Trade-Related Aspects of Intellectual Property Rights, part I, art. 3, Apr. 15, 1994, 1689 U.N.T.S. 299, 33 I.L.M. 1197 [hereinafter TRIPS].

147. Article 2 (2.2) of the TBT Agreement states:

Members shall ensure that technical regulations are not prepared, adopted or applied with a view to or with the effect of creating unnecessary obstacles to international trade. 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. Such legitimate objectives are, inter alia: national security requirements; the prevention of deceptive practices; protection of human health or safety, animal or plant life or health, or the

Members to ensure that measures falling under these agreements are no more trade-restrictive than necessary to achieve their objectives.

For example, Article 2.2 of the TBT Agreement obliges Members to ensure that technical regulations are not prepared, adopted, or applied with a view to or effect of creating unnecessary obstacles to international trade. Stated otherwise, technical regulations shall not be more trade-restrictive than necessary to fulfill a legitimate objective — such as protection of human health or safety, animal or plant life or health, or the environment. In assessing the risks to life, health, safety, and the environment, the relevant elements of consideration include: available scientific and technical information, related processing technology or intended end-uses of products.¹⁴⁸

Followed strictly, the TBT Agreement and SPS Agreement would have little room for regulating products according to their Processing and Production Methods (PPMs). Applying the Precautionary Principle to trade implies that countries can regulate international trade in goods and services on the basis of the inputs and process technologies utilized in their production.

Robert Read, a professor of International Economics at the Lancaster University Management School, U.K., writes:

The broadest interpretation of PPMs embraces several contentious international trade issues of contemporary concern: (a) The health and safety aspects of new technologies; (b) Resource depletion, both renewable and non-renewable; (c) Environmental pollution, and (d) The use of child, forced, prison and slave labor. ... The key debate concerning PPMs

environment. In assessing such risks, relevant elements of consideration are, *inter alia*: available scientific and technical information, related processing technology or intended end-uses of products.

TBT Agreement, *supra* note 56.

Meanwhile, Article 5 (6) of the SPS Agreement provides:

Without prejudice to paragraph 2 of Article 3, when establishing or maintaining sanitary or phytosanitary measures to achieve the appropriate level of sanitary or phytosanitary protection, Members shall ensure that such measures are not more trade-restrictive than required to achieve their appropriate level of sanitary or phytosanitary protection, taking into account technical and economic feasibility. (For purposes of paragraph 6 of Article 5, a measure is not more trade-restrictive than required unless there is another measure, reasonably available taking into account technical and economic feasibility, that achieves the appropriate level of sanitary or phytosanitary protection and is significantly less restrictive to trade.)

SPS Agreement, *supra* note 57.

148. TBT Agreement, *supra* note 56.

however, is the extent to which these contentious issues can be dealt with effectively under the existing WTO Agreements ... specifically ... the [SPS] and [TBT] Agreements.¹⁴⁹

Ideally, the SPS Agreement and TBT Agreement, and even the GATT itself, should be reviewed with the objective of making these agreements more explicit about the role of precaution and how it is to be applied. Moreover, the concept of PPMS should also be incorporated in these agreements. The incorporation of PPMs, however, must be consistent with the principle of equitable implementation as described in this Article. These are major undertakings and can only happen in the context of a major overhaul of the WTO system. Perhaps, the current suspension of the Doha negotiations might provide an opportunity to make this overhaul.

4. WTO Dispute Settlement

A logical place to initiate and pursue the development of an approach to precaution that is consistent with sustainable development is through the compulsory and binding WTO Dispute Settlement System. The WTO's procedure for resolving trade quarrels under the Dispute Settlement Understanding¹⁵⁰ is vital for enforcing trade rules and ensuring that trade flows smoothly. Under this system, a dispute arises when a Member believes another is violating an agreement or a commitment that it has made in the WTO; any Member that feels that the benefits it expected to derive from the WTO Agreements have been undermined by a trade-related measure put in place by another Member can challenge the validity of that measure through dispute settlement procedures.¹⁵¹

149. Robert Read, *Process and Production Methods and the Regulation of International Trade*, in *THE WTO AND THE REGULATION OF INTERNATIONAL TRADE: RECENT TRADE DISPUTES BETWEEN THE EUROPEAN UNION AND THE UNITED STATES* 239-40 (Nicholas Perdakis & Robert Read eds., 2005).

150. Understanding on Rules and Procedures Governing the Settlement of Disputes, Apr. 15, 1994, 1869 U.N.T.S. 401, 33 I.L.M. 1226 [hereinafter Dispute Settlement Understanding].

151. *Id.* art. 3 (3). This article reads:

Art. 3. General Provisions.

...

3. The prompt settlement of situations in which a Member considers that any benefits accruing to it directly or indirectly under the covered agreements are being impaired by measures taken by another Member is essential to the effective functioning of the WTO and the maintenance of a proper balance between the rights and obligations of Members.

The Annexes to the Dispute Settlement Understanding enumerate the agreements covered thereby (e.g., GATT, TRIPS, TBT, SPS, GATS, etc.).

It is a powerful system, and perhaps, as one expert noted, the “strongest” inter-State judicial dispute settlement mechanism in existence, reflecting the evolution of dispute settlement in international trade from a power-based system, to one that is rules-based.¹⁵² International environmental lawyer Richard Tarasofsky summarizes the features of the System thusly:

- A request by one Member to establish a panel is complied with unless there is a consensus not to do so, i.e., compulsory jurisdiction.
- The WTO Director General selects panelists if the disputants do not agree.
- A specific timetable for the panel process is provided for which, barring unforeseen developments.
- Adoption of the panel report unless there is a consensus not to, or one of the disputants launches an appeal
- Establishment of an Appellate Body (composed of seven trade law specialists), an independent body that examines questions of law. Its reports are adopted, unless there is a consensus not to.
- WTO-incompatible measures are to be removed or else the complainant may seek compensation or suspend concessions vis-à-vis the Member in violation.¹⁵³

Is the WTO the right forum to develop the Precautionary Principle? There is a view that choosing the WTO as the forum in cases involving environment or health and safety may do both trade and environment a disservice. The WTO is not served well by forcing its dispute-settlement system to tackle cases when it involves an issue which the system is ill-equipped to deal with. According to Professor Konrad von Moltke, “the World Trade Organization settlement process should be avoided ... because at present it would produce inadequate results due to a poor balancing at present of trade and environmental policy goals at the international level.”¹⁵⁴ Environmental interests can also suffer when decisions are made using primarily the lens of trade rules. Moreover, panels and the Appellate Body, most of whom tend to be trade lawyers or experts, usually do not have inherent expertise to evaluate and assess environmental measures.¹⁵⁵

152. Richard Tarasofsky, Report on Trade, Environment, and the WTO Dispute Settlement Mechanism 4 (June 2005), available at http://www.chathamhouse.org.uk/files/3269_r-wtodisputes.pdf (last accessed Feb. 14, 2009).

153. *Id.* at 4 (citing Dispute Settlement Understanding, *supra* note 150).

154. Konrad von Moltke, The Precautionary Principle in Environmental Policy, Address at The Environment Canada Policy Research Seminar Series (Mar. 10, 2000), available at http://www.ec.gc.ca/seminar/VM_e.html (last accessed Feb. 14, 2009).

155. Tarasofsky, *supra* note 152, at 7.

Nevertheless, panels and the Appellate Body have of course the ability to seek out external expertise¹⁵⁶ (and they have done so, e.g., the GMOs case); but without internal capacity within the WTO system, the environmental interest is likely to suffer.

These concerns notwithstanding, it appears that the earlier fear that the WTO dispute system might not be sympathetic to environmental concerns, was misplaced. Decisions from the Appellate Body of the WTO, as discussed earlier in Part III, have shown ample sensitivity to environmental concerns.¹⁵⁷ Nonetheless, some still argue the need to have alternative forums for trade–environment disputes based on a “need to secure a safe political and legal space”¹⁵⁸ for developing environmental norms. The problem is that “there is currently no rational basis for allocating jurisdiction between different tribunals — for example, multilateral environmental agreements, the WTO, and the International Court of Justice.”¹⁵⁹

Whether one likes it or not, the WTO Dispute Settlement System will eventually have to deal with the Precautionary Principle. So far, panels and the Appellate Body have not addressed the Precautionary Principle directly. These bodies have for an excuse, from *Beef Hormones* to *GMOs*, that they do not find it necessary to decide whether the Precautionary Principle has become a recognized principle of general or customary international law. The panels and the Appellate Body have relied solely on the text of the SPS Agreement to make decisions on precautionary measures that have been taken. It is increasingly likely, however, that a dispute requiring adjudication on the applicability of Precautionary Principle will eventually come to the WTO. Given such likelihood, influencing how the WTO Dispute Settlement System will deal with these matters should be sought.

One concern about the WTO Dispute Settlement System is that developing countries, especially the least developed ones, find it difficult to effectively use the System for their interests. This is true when they find themselves prosecuting for (or defending from) trade complaints. Because of

156. *Id.*

157. Kevin Gray, *Acommodating MEAs in Trade Agreements* 1 (IDDRI, International Environmental Governance Conference, Conference Paper) Mar. 15–16 2004, available at <http://www.worldtradelaw.net/articles/graymea.pdf> (last accessed Feb. 14, 2009).

158. Stefanie Pfahl, *Is the WTO the only way? Safeguarding Multilateral Environmental Agreements from international trade rules and settling trade and environment disputes Outside the WTO* 3 (Adelphi Consult, Friends of the Earth Europe and Greenpeace, Briefing Paper) 2004, available at <http://www.greenpeace.org/raw/content/china/en/press/reports/is-the-wto-the-only-way.pdf> (last accessed Feb. 14, 2009).

159. Ward, *supra* note 10, at 7.

this, access to legal and technical assistance and capacity-building has become a priority within the WTO. For example, in the WTO Secretariat, special legal advisers are assigned to assist developing countries in WTO disputes. Also, least-developed countries are eligible for advice at subsidized rates from the Advisory Centre on WTO Law (set up in 2001). These privileges are available whether for their participation in negotiations or in dispute settlement.¹⁶⁰

Another urgent task would be to make the WTO Dispute Settlement System more transparent and participatory. As Tarasofsky writes,

[o]ne key component of transparency is the entitlement of civil society to submit *amicus curae* briefs, which so far is not absolute. ... [D]espite the divisions among Members, the WTO Appellate Body has interpreted its authority so as to permit *amicus curae* briefs to be submitted despite the absence of any express allowance to do so in the WTO Dispute Settlement Understanding.¹⁶¹

In addition, the acceptance of the briefs submitted by non-governmental organizations is not enough: the panels and the Appellate Body should take the arguments presented in these briefs into account in making the final decisions. Currently, the practice in this regard is uneven and inconsistent.

B. International Environmental Forums and Process

International environmental forums and processes have the potential to advance an approach to precaution compatible with sustainable development. However, the relationship between global environmental norms and international trade obligations has always been problematic: the implementation of obligations under Multilateral Environmental Agreements (MEAs) can run afoul trade rules and, conversely, trade rules can undermine actions directed at achieving specific MEA objectives. Thus, as an MEA scholar observed, “concerns about the consistency with international trade obligations can also complicate ... drafting efforts.”¹⁶²

This relationship is particularly challenging due to the proliferation of international agreements in the last 20 years. The emergence of global

160. See Brack, *supra* note 54, at 5.

Developing countries, however, should not be treated as a single group; the larger developing countries are better positioned than other Members to avail of the dispute settlement system. For example, Argentina, Brazil, Korea, and Thailand are among the ten most frequent complainants in the WTO and these countries have so far won almost all of the cases they have initiated.

Id.

161. Tarasofsky, *supra* note 152, at 7.

162. Gray, *supra* note 157, at 2.

environmental concerns such as climate change and loss of biodiversity has resulted in the adoption of policies and measures intended to protect the global environment, often with trade consequences.¹⁶³ Many of these environmental policies and measures result from intergovernmental negotiations and are contained in MEAs.¹⁶⁴

At the Fourth WTO Ministerial Conference in Doha, Qatar, the Ministers agreed to launch negotiations, among others, on “the relationship between existing WTO rules and specific trade obligations set out in multilateral environmental agreements (MEAs).”¹⁶⁵ However, the negotiating mandate in the WTO for clarifying the relationship between trade obligations and MEAs is quite limited. Under the Doha Declaration, “the negotiations shall be limited in scope to the applicability of such existing WTO rules as among parties to the MEA in question [and such] negotiations shall not prejudice the WTO rights of any Member that is not a party to the MEA in question.”¹⁶⁶

Also, the relationship between MEAs and WTO rules is still being clarified. The negotiations on MEAs are taking place in Special Sessions of the Committee on Trade and Environment and, like most environmental issues in the Doha agenda, have so far not progressed significantly.¹⁶⁷ For this

163. See for example the trade consequences of the Rio Declaration, the Convention on Biological Diversity, and the Cartagena Protocol.

164. Some more MEAs with trade implications include the International Plant Protection Convention; the International Convention for the Conservation of Atlantic Tunas; the Convention on International Trade in Endangered Species of Wild Fauna and Flora; the Convention on the Conservation of Antarctic Marine Living Resources; the Montreal Protocol on Substances that Deplete the Ozone Layer; the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal; the U.N. Framework Convention on Climate Change; the Kyoto Protocol; the International Tropical Timber Agreement; the U.N. Fish Stocks Agreement; the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals And Pesticides in International Trade; and the Stockholm Convention on Persistent Organic Pollutants.

See WTO-CTE, *Matrix on Trade Measures Pursuant to Selected Multilateral Environmental Agreements*, WT/CTE/W/160/Rev.3, TN/TE/S/5/Rev.1 (2005).

165. World Trade Organization, Ministerial Declaration of 14 November 2001, ¶ 31 (i), WT/MIN(01)/DEC/1, 41 I.L.M. 746 (2002) [hereinafter Doha Declaration].

166. *Id.*

167. *Environment @ Hong Kong: Momentum on Fish, Little Progress Otherwise*, BRIDGES TRADE BIORES (ICTSD, Geneva, Switz.), Jan. 20, 2006, at 1, available at <http://ictsd.net/downloads/biores/biores6-1.pdf> (last accessed Feb. 14, 2009).

reason alone, the WTO discussion on MEAs is probably not the best forum to make progress on the Precautionary Principle.

The more promising forums are actually the MEAs themselves. The negotiated MEAs that have entered into force after the adoption of WTO Agreements in 1994 are particularly relevant — in the negotiations of these MEAs, governments were aware of the trade implications of their decision to incorporate the Precautionary Principle into particular agreements.

One incentive for using the MEA forums in developing an approach to the implementation of the Precautionary Principle is that many (not all) developing countries are sympathetic to the use of precaution in addressing environmental and health issues. As noted earlier, this is why precautionary language was accepted into the Biosafety Protocol. This embrace of precaution is also obvious in the Montreal Protocol, the Climate Change Convention, and the Stockholm and Rotterdam Conventions. At the same time, even as the Principle has found wider acceptance in MEAs, developing countries in these agreements continue to be vocal about development imperatives. “Common but differentiated responsibilities”¹⁶⁸ has been a common perspective of developing countries in these forums and processes, and, because of this, whatever notion of precaution ultimately emerges from the MEAs is likely to be sensitive to development concerns and will (hopefully) not be as overly restrictive as sometimes feared.

In sum, the MEAs are ideal avenues to have serious discussions on the principles elaborated in Part III of this Article. The MEAs are also ideal for developing other means of advancing an approach to implementing precaution that would not defeat sustainable development goals. Although progress regarding these issues should ultimately be had in both the MEAs and the post-Doha WTO negotiations, much can already be done within some MEAs to develop an equitable approach to applying the Precautionary Principle.

A good example of this is the World Conservation Union (IUCN)-led Precautionary Principle Project, which concluded in December 2005 and focused on the application of the Precautionary Principle to biodiversity conservation and natural resource management. It produced several case studies as well as guidelines.¹⁶⁹ In March 2006, the Conference of the Parties of the Convention on Biological Diversity, meeting in Curitiba, Brazil,

168. See generally CISDL, Legal Brief, The Principle of Common But Differentiated Responsibilities: Origin and Scope (World Summit on Sustainable Development of 2002, Johannesburg, South Africa), Aug. 26, 2002.

169. See generally Cooney, *supra* note 1; The Precautionary Principle Project, Guidelines for Applying the Precautionary Principle to Biodiversity Conservation and Natural Resource Management (2005), available at http://www.pprinciple.net/PP%20Guidelines_english.pdf (last accessed Feb. 14, 2009) [hereinafter Guidelines].

acknowledged this work and formulated an approach to precaution that is consistent with sustainable development —

[t]he precautionary approach should be applied in decision-making in cases of scientific uncertainty when there is a risk of significant harm to biodiversity. Higher risks and/or greater potential harm to biodiversity require greater reliability and certainty of information. The reverse implies that the precautionary approach should not be pursued to the extreme; in case of minimal risk, a greater level of uncertainty can be accepted.¹⁷⁰

C. Domestic Forums and Processes — Policy-making and Regulation.

Developing an approach to precaution consistent with sustainable development may well begin from building the capacity of governments, institutions, and exporters in developing countries to incorporate the Precautionary Principle into their own decisions and actions. This capacity-building should in turn be done as rapidly and expansively as possible. Governments in poor countries should develop the ability to identify, develop, and adopt precautionary measures that will meet domestic health and environmental objectives. Exporters, meanwhile, should develop the paramount ability to defend themselves from (and where unavoidable, to adapt to) precautionary measures imposed by importing countries. The TKN research discussed earlier provides insight into the nature of the problems faced by exporters and some of the ways in which exporting governments and standard-setters could ease the exporters' burdens. As the research shows, this can be done by developing institutional capacity at the national and/or regional levels and through fostering organizational capacity within exporting firms. From this perspective, environmental and health standards that affect trade "serve as opportunities to foster sustainable development, rather than as obstacles to development."¹⁷¹

It should not be assumed, however, that all countries have the same capacity to incorporate precaution in their regulatory systems. Ensuring that developing countries have access to science and risk assessment is challenging enough and without such access, developing countries will find it difficult to apply the Precautionary Principle in a way favorable to its economic and environmental interests. For example, it is difficult for developing countries to take advantage of the opportunities that the SPS Agreement offers for precautionary action.¹⁷² John Mugabe of the African Commission on

170. Convention on Biological Diversity, Conference of the Parties to the Convention on Biological Diversity, Curitiba, Braz., Mar. 20-31, 2006, *Voluntary Guidelines on Biodiversity — Inclusive Environmental Impact Assessment*, ¶ 42, UNEP/CBD/COP/8/27Add.2/Annex I (citing Guidelines, *supra* note 169).

171. COSBEY, *supra* note 44, at 23.

172. Ward, *supra* note 10, at 6.

Science and Technology suggests that certain conditions must be fulfilled for developing countries, especially in Africa, to be able to apply the principle:

- There must be political and organizational stability and policy-making must be informed by science, otherwise it is not possible to apply the principle.
- There must be a range of choices available. If a country does not have a range of choices because, for example, there is a situation of food insecurity, a country will not be able to apply the Precautionary Principle.
- There must be a certain level of scientific capacity. This is needed in order to determine the degree of uncertainty. Countries cannot effectively employ the Precautionary Principle without scientific capacity;
- There must be a general institutional capacity to apply the Precautionary Principle. If countries do not have the institutional capacity to carry out risk assessment, decision-making will be left to political institutions.¹⁷³

The challenge is how to support the necessary capacity-building programs so that developing countries could achieve the capacities described above. One approach would be to include in the agenda of the Global Environmental Facility a capacity building program on the Precautionary Principle. Such a program can be justified by the fact that the application of the Principle is a cross-cutting theme in many global environmental conventions. Another approach is to ask developed country members in the WTO to support such a program, similar to what they have done in the area of legal capacity.

In sum, it is not an exaggeration to say that precaution can only and truly be at the service of sustainable development if poor countries, communities, and sectors are able to build at least the capacity to engage the more powerful actors in this debate. The “playing field” can never probably be leveled, but it nevertheless needs to be less unbalanced for there to be a basis for any consensus over an approach to precaution consistent with sustainable development.

D. Other Intergovernmental and Informal Processes

Given the state of play on precaution in most intergovernmental forums, whether trade or environmental or food safety, it might make sense to invest in other processes that could identify and elaborate approaches to precaution,

173. Heike Baumüller, Report on Uncertainty, Conservation and Confusion: Clarifying the Role of the Precautionary Principle in Natural Resource Management Discussion 2 (Aug. 26, 2002), available at <http://www.pprinciple.net/publications/wssd-ppreport.pdf> (last accessed Feb. 14, 2009)

such as the principles discussed earlier in this Article.¹⁷⁴ One proposal, for example, is to resort to the International Law Commission (ILC) to develop guidelines for addressing the WTO-MEAs relationship, including the elaboration of an approach to the Precautionary Principle that is consistent with sustainable development. “Generally, the ILC’s role is to pursue either (a) the progressive development of international law through a draft convention or (b) codification through the more precise formulation and systematization of rules of international law in fields where there already has been extensive State practice precedent and doctrine.”¹⁷⁵

Another route is to do the work outside of the intergovernmental and formal context and to invest, at least temporarily, in informal consensus-building processes. One possibility is to build on the work of the International Law Association whose formulation of precaution¹⁷⁶ seems to be consistent with the principles elaborated earlier in Part III. Hopefully, such discussions would mature into more official forums where more formal decisions could be made.

174. See discussions on the Principles of Good Science, Proportionality, Equitable Implementation, and Stakeholder Participation in Part III of this Article.

175. Steve Charnovitz, *Expanding the MEA Mandate in the Doha Agenda*, in ACHIEVING HARMONY IN TRADE AND ENVIRONMENT, GLOBAL ENVIRONMENT AND TRADE STUDY (GETS) 2 (2003), available at <http://www.ppl.nl/bibliographies/wto/files/1553.pdf> (last accessed Feb. 14, 2009).

176. The New Delhi Declaration states:

4.1. A precautionary approach is central to sustainable development in that it commits States, international organizations and the civil society, particularly the scientific and business communities, to avoid human activity which may cause significant harm to human health, natural resources or ecosystems, including in the face of scientific uncertainty.

...

4.3. Decision-making processes should endorse a precautionary approach to risk management and in particular should proceed to the adoption of appropriate precautionary measures [even when the absence of risk seems scientifically assured].

4.4. Precautionary measures should be based on up-to-date and independent scientific judgment and be transparent. They should not result in economic protectionism. Transparent structures should be established which involve all interested parties, including non-state actors, in the consultation process. Appropriate review by a judicial body or administrative action should be available.

Conference of the International Law Association, New Delhi, India, Apr. 2-6, 2002, *New Delhi Declaration of Principles of International Law Relating to Sustainable Development*, I.L.A. Res. 3/2002 (Apr. 2, 2002).

Some examples of forums that could be helpful in creating a momentum to have these principles adopted more formally would be meetings of parliamentarians and local government executives. Among the organizations that could convene these meetings are:

- The Parliamentarians for Global Action (PGA), a unique network of over 1,300 legislators from 114 parliaments engaged in a range of action-oriented initiatives that promote democracy, peace, justice, and development throughout the world;¹⁷⁷
- The Global Legislators Organisation for a Balanced Environment (GLOBE), also an organization of parliamentarians;¹⁷⁸ and
- The ICLEI-Local Governments for Sustainability, an international association of local governments and national and regional local government organizations that have made a commitment to sustainable development.¹⁷⁹

177. See Parliamentarians for Global Action: About Us, *available at* <http://www.pgaction.org/aboutus.aspx> (last accessed Feb. 14, 2009).

The PGA was established in 1978-1979 in Washington, D.C. by concerned parliamentarians from around the world to address global problems which could not be solved by any one government or parliament. While its initial focus was on disarmament and the prevention of nuclear proliferation, PGA today works on an expanded list of global issues such as fostering democracy, conflict prevention and management, international law and human rights, population and sustainable development.

Id.

178. See GLOBE International, *available at* <http://www.globeinternational.org> (last accessed Feb. 14, 2009).

It was founded in 1989 to enhance international co-operation between parliamentarians on global environmental issues, has more than 700 members, and provides an active forum in which parliamentarians from different countries work together to forge balanced and informed policy responses to pressing global environmental challenges.

Id.

179. See ICLEI-Local Governments for Sustainability: About Us, *available at* <http://www.iclei.org/index.php?id=global-about-iclei> (last accessed Feb. 14, 2009).

More than 475 cities, towns, counties, and their associations worldwide comprise ICLEI's growing membership. ICLEI works with these and hundreds of other local governments through international performance-based, results-oriented campaigns and programs.

Id.

V. CONCLUSIONS AND RECOMMENDATIONS

An effective international legal order requires harmony of the trade and environmental regimes on their approach to the Precautionary Principle. Today, governments and societies are frequently confronted with environmental and health issues in the face of scientific uncertainty. Whether precautionary measures should be taken is not really the question; instead, avoiding arbitrary action by addressing the right issues and formulating sound safeguards with sufficient basis.¹⁸⁰ Trade-environment debates should be free from animosity — it is not productive, for example, to cast all attempts at applying the Precautionary Principle as resulting from protectionist motivations. Perhaps, dealing with each environmental or health standard on a case-by-case basis would be a better approach.¹⁸¹

Finding an approach to precaution and applying it to trade in a manner consistent with sustainable development will not be easy. Finding an effective one even requires global consensus which will not happen overnight. It needs to be built simultaneously in different places — in meetings or conferences of MEA parties, in WTO negotiations or resolution of trade disputes, in domestic forums and processes, and in other intergovernmental or informal processes.

In this regard, the most urgent task would be to build as rapidly and as widely as possible the capacity of developing country governments, institutions, and exporters to incorporate the Precautionary Principle into their own decisions and actions, including the ability to identify, develop, and adopt their own precautionary measures to meet domestic health and environmental objectives. The following priority activities are also suggested so progress on developing such an approach can be had:

1. Developing further the principles that advance equity. Equitable implementation and stakeholder participation are priorities.
2. The WTO Committee on Trade and Environment and the Codex Alimentarius are important but they are not likely to produce results that will move this issue forward anytime soon. The SPS and the TBT, and perhaps even the GATT itself, should be reviewed with the objective of making these agreements more explicit about the role of precaution and how it is to be applied. The concept of PPMs should also be acknowledged in these agreements, subject to the principle of equitable implementation. These are major undertakings and can only happen in the context of a major overhaul in the WTO system. Perhaps, the current suspension of the Doha

180. Gehring & Cordonier Segger, *supra* note 1, at 48-49.

181. COSBEY, *supra* note 44, at 11.

negotiations might provide an opportunity to make this overhaul.

3. Attention needs to be given to disputes that are being resolved through the WTO dispute settlement system. Making the WTO disputes settlement system more transparent and participatory is a priority and should continue regardless of progress in the WTO negotiations on the DSU.
4. The meetings and conferences of parties of MEAs provide opportunities for serious discussions on the Precautionary Principle. In these forums, advantage can be taken by the fact that many developing countries support precaution while insisting on common but differentiated responsibilities based on capacity and on development needs.
5. Other processes, intergovernmental or otherwise, might also provide opportunities for developing further a sustainable development friendly approach to using precaution for trade. These include processes under the International Law Commission and the International Law Association.

Trade can result in sustainable development, but good governance, “at both international and national levels, is necessary so that increased trade benefits the poor, and prevents or minimizes ecosystem degradation.”¹⁸² In the end, this is what applying the Precautionary Principle is all about: it is about good governance. Developing a practical and effective framework for applying the Precautionary Principle to trade is not in the realm of science alone nor even of trade law and policy; developing the framework is above all about governance in society — how societies make decisions on risks, given the diversity of interests within them. Above all, in the context of sustainable development, it means an approach to precaution that reduces uncertainty and advances equity.

182. La Viña, et al., *supra* note 126, at 1.