

**THE PRECAUTIONARY PRINCIPLE, BIOTECHNOLOGY AND
ENVIRONMENTAL LITIGATION**

**COMPLEXITIES IN LITIGATING NEW AND EMERGING
ENVIRONMENTAL PROBLEMS**

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Acknowledgements

This policy brief is a product of ACODE's continuing work analyzing the practical aspects of implementation of principle 10 of the Rio Declaration on Environment and Development. Under principle 10 of the Rio Declaration, States committed themselves to guarantee their citizens access to environmental information, the right to public participation in environmental decision making and access to justice in environmental matters. While substantial progress has been achieved in promoting other access rights access to justice especially for poor resource dependent communities has not attracted equal attention. As part of our programme of work, we hope that this policy brief can stimulate further debate on access to justice, public interest litigation being one of the key mechanisms enforcing and achieving this right.

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Introduction

The problem of scientific uncertainty is one of the difficult challenges facing environmental regulatory agencies and managers worldwide. The critical question is how to make environmental policies in the face of glaring uncertainty about the potential costs and benefits of any development activity. In such cases, science and policy and the law have always reacted differently. For the scientist, the answer lies in undertaking further detailed and rigorous studies to try to understand the complex workings of nature. However, this response is not always available to the policy maker. In policy making there are always pressures to cope with: the desire for faster economic growth, immense pressures for resource extraction, and the calls to liberalize the trading system and open up the markets. Ultimately, wrong policy decisions are sometimes made despite the poor knowledge of the environmental effects of anthropogenic activities.

For the public interest lawyer who is faced with litigating such complex legal problems, the challenge is always to make an assemblage of the best evidence available to support his claims. In the case of new and emerging problems such as biotechnology, the evidence may not be readily available and the traditional rules of evidence are tilted against the public interest lawyer. Unless new concepts and practices emerge to keep pace with new and emerging environmental problems, environmental lawyers may have to creatively use and attempt to stretch the boundaries of the existing rules of procedure and evidence.

While the precautionary principle provides a fresh opportunity to link up science and policy, and mitigate the dilemma faced by public interest lawyers, this paper argues that the principle is being lost in the debate over free market access and "sound science." Consequently, the principle is unlikely to crystallize into an accepted principle of customary international law and this will adversely affect its application in municipal jurisdictions. While its very genesis can be traced in the historical evolution of global environmentalism, its interpretation is heavily dominated by neo-liberal thinking that favors market expansionism that is not necessarily guided by acceptable environmental principles and ethics. Countries that hope to rely on the precautionary principle to reject global exportation of pollution and trade in toxic substances must come up with their own understanding of when and how to apply the principle. If they act too slowly too late, the precautionary principle may soon be sacrificed at the altar of free trade and sound science.

The purpose of this paper is threefold. First, it is intended to contribute to the ongoing theoretical discourse on the evolution and application of the principle. This is based on

the perception that environmental litigation is distinct from common litigation since the former must be informed by a very rigorous understanding of basic notions of environmental law theory. Unlike the "ordinary" legal practitioner, the best environmental litigation lawyer is one who can easily grasp the theoretical foundations of environmental law as well as the basic science on which such laws are predicted. The environmental legal theory and the basic science determines the scope of evidence that is required for successful environmental litigation.

Second, the paper is intended to stimulate debate on the application and interpretation of the principle within the East African Community as an emerging supra national legal entity. This will enable the relevant organs of the community and national environmental agencies within the Community's Member States to contribute to the emerging jurisprudence on the precautionary principle. This second objective is particularly important for a number of reasons: first, the three countries are signatories to several international instruments that emphasize the precautionary principle as a basis for taking action.¹ Second, the principle is slowly finding its way in national policy and legislation without articulating what it involves. The East African countries in general and environmental legal scholars and practitioners should therefore be able to contribute to the ongoing discourse on defining its meaning, application and practicability. Third, an inclusive dialogue that brings together policy makers, scientists, lawyers, business representatives and civil society would encourage openness and transparency upon which decisions based on the precautionary principle can be legitimated.

The third objective of this paper is to demonstrate the fact that there are new and emerging ecological and public health problems that cut across traditional professional disciplines. No profession can claim to be a master of all problems such as those associated with genetically modified organisms, toxic chemicals or cyber space. The discourse on the precautionary principle therefore becomes a vehicle through which we can mobilize professional solidarity and cooperation to promote and defend the public interest. When confronted with new and emerging environmental problems, the evidence of scientific experts and the lawyers' understanding of evidence generated through scientific methodologies are crucial for successful litigation.

¹ The duty to implement international obligations is now well established in international law. See for example, Article 26 and 27 of the Vienna Convention on the Law of Treaties, 1969; Greco-Bulgarian Communities Case (1930) PCIJ, Series A/B No. 17; The Case Involving Polish Nationals in Danzing (1931) PCIJ, Series A/B No. 44; Free zones Case (1932) PCIJ, Series A/B No. 46; The Headquarters Agreement Opinion (1988) ICJ Rep.11

The Evolution of the Precautionary Principle

The origin of the now well-pronounced precautionary principle has attracted considerable attention from several legal scholars and publicists. The preoccupation of these writers has been to explore the meaning of the principle and try to define limits within which it can be applied. What is particularly lacking in the ongoing discourse is its theoretical contextualization that tends to permeate well beyond this environmental law discourse.

The first traces of what eventually came to be the precautionary principle can be traced to the early 1980s.² In 1980, the German Council of Experts on Environmental Matters considered the principle of precautionary action as a 'requirement for a successful environmental policy for the North Sea Ecosystem'.³ Two years later in 1982, the World Charter for Nature re-emphasized this position in its principle 11 (b). The Charter stated that

"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."⁴

Although the World Charter for Nature did not make any explicit mention of the precautionary principle, it contained the essential

² Some writers in particular Weintraub have fallen into the trap of confusing the precautionary principle with the principle of state responsibility See Bernard A. Weintraub, "Science, International Environmental Regulation, and the Precautionary Principle: Setting Standards and Defining Terms", *New York University Environmental Law Journal*, vol. 1 (1992). We think that these two principles are explicitly distinct in a number of ways; State responsibility normally arises where damage has already occurred and what is in issue is the establishment of the link between the damage and effect. On the contrary, the precautionary principle anticipates damages and therefore becomes an interventionist approach to stop the damage from occurring. Secondly, state responsibility is a principle that applies between states while the precautionary principle can be exclusively applied in domestic jurisdiction. The distinction between the two principles seems to be very clear to leave no room for confusion by linking the emergence of the precautionary principle to that of state responsibility. Indeed, in the Trail Smelter Arbitration, the Tribunal explicitly referred to the seriousness of the consequences and presence of "clear and convincing evidence", elements that may not be necessary for a regulatory agency to apply the precautionary principle.

³ L. Gundling, "The Status in International Law of the Principle of Precautionary Action," *5 International Journal of Estuarine and Coastal Law* 23, 26 (1990)

⁴ This signified a deviation from the traditional tort law liability principles that required proof of causation as the basis for awarding damages. Even in international law, the link between cause and effect had been articulated in the Trail Smelter Arbitration between the US and Canada. In that case that has become a leading precedent on state responsibility, the Tribunal required proof of "substantial injury" demonstrated by "clear and convincing evidence."

⁵ The World Charter for Nature introduced the elements of risk assessment, cost-benefit analysis of proposed activities and precaution.

ingredients of what eventually evolved into this contentious "legal doctrine".⁵ In particular, the Charter presented the earliest attempt to put the burden of proof on those that proposed the presumed potentially hazardous activity.

Since 1982, the principle has been progressively incorporated into subsequent soft law and has eventually found itself in major international environmental law agreements.⁶ While the language used in different agreements has been largely inconsistent, it still reflects growing unanimity within the international community that there are certain activities, processes, technologies or chemicals that science can not provide sufficient evidence about their ecological impacts. In these cases, the international community has consistently agreed that a precautionary approach be adopted.

In the preamble to the Montreal Protocol, for example, the principle was expressed in terms of "taking precautionary measures".⁷ The Protocol states that;

"Parties to this Protocol *Determined* to protect the ozone layer *by taking precautionary measures* to control equitably total global emissions of substances that deplete it, with the ultimate objective of their elimination on the basis of developments in scientific knowledge, taking into account technical and economic considerations" (emphasis mine)⁸

The principle appears to have been stated in more explicit terms in the Ministerial Declaration at the 1987 Second International Conference on the Protection of the North Sea.⁹ The Ministerial Declaration of the Conference usually referred to as the London Declaration stated inter alia:

"[The Parties] . agree to . accept the principle [by using] the best available technology and other appropriate measures. This applies especially when there is reason to assume that certain damage or harmful effects on the living resources of the sea are likely to be

⁶ The latest of these agreements include; The United Nations Convention on Biological Diversity, 1992, the United Nations Framework Convention on Climate Change, 1992, the Kyoto Protocol to the Climate Change Convention, 1998 and the Cartagena Protocol on Biosafety, 2000.

⁷ Montreal Protocol on Substances that Deplete the Ozone Layer, September 16, 1987. See also vol. 26, International Legal Materials at page 1541.

⁸ Montreal Protocol on Substances that Deplete the Ozone Layer, Montreal, 1987. The Montreal Protocol was negotiated as a protocol to the Vienna Convention for the Protection of the Ozone Layer after glaring scientific evidence emerged about the extent of destruction to the ozone layer. Additional scientific evidence by American scientists showed that the threat to the ozone layer was in fact much greater than had been known at the time of negotiating the Vienna Convention.

⁹ North Sea Conference, London, November 24-25, 1987.

caused by [toxic] substances, even where there is no scientific evidence to prove a casual link between emissions and effects".¹⁰

Cameroon and Abouchar have argued that the London Declaration "was a clear statement of the intent of the signatories to accept the precautionary principle as a guiding principle in the policy of environmental protection."¹¹ While they point to the incorporation of the principle into national laws of the signatories to the Declaration as demonstration of the principle's general acceptability, they make no attempt to explain the inconsistency in its interpretation and application that follows in their analysis of national legislation.¹²

In 1990, the Ministerial Declaration on Sustainable Development in the ECE Region stated "in order to achieve sustainable development, policies must be based on the precautionary principle. 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"¹³ Under the Declaration, the countries of the ECE Region committed themselves to base their national policies on the precautionary principle. The Declaration stated, "Environmental measures must anticipate, prevent and attack the causes of environmental degradation. Where there are threats of serious or irreversible damage, lack of scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation". (Para 7)

This articulation of the principle was reaffirmed and restated in almost similar terms at the Second World Climate Conference.¹⁴ It is nevertheless important to note that the Climate Conference made an attempt to limit the parameters within which the principle could be applied in so far as it referred to "cost-effective measures" or "taking into account different socio-economic context". This formulation is later to find itself in subsequent international environmental instruments.¹⁵

At the 1990 Third North Sea Conference held at The Hague in the Netherlands, the Ministers representing states that border the North Sea reiterated the centrality of the precautionary principle

¹⁰ London Declaration, supra Article XVI (1) cited in Cameron and Abouchar, supra.

¹¹ James Cameroon and Juli Abouchar, "The Precautionary Principle: Fundamental Principle of Law and Policy for the Protection of the Global Environment". Boston College International and Comparative Law Review, Vol. XIV, No. 1 (1991)

¹² Cameroon and Abouchar, Ibid, pp 6-12

¹³ Also referred to as the Bergen Declaration. Bergen, Norway, May 16, 1990. UN Doc.A/CONF.151/pc/10 cited in, 30 I.L.M. 800 (1991)

¹⁴ See Ministerial Declaration of the Second World Climate Conference, The Hague, The Netherlands, November 7, 1990, reprinted in Selected Documents, 20 Environmental Policy and Law. 220 (1990)

¹⁵ See for example, Rio Declaration on Development and Environment, 1992. *Infra*.

to the North Sea Treaty regime. In their declaration at the end of the Conference, the Ministers pledged to "continue to apply the precautionary principle, that is, to take action to avoid potentially damaging impacts of substances that are persistent, toxic and liable to bioaccumulate even when there is no scientific evidence to prove a casual link between emissions and effects."¹⁶ The North Sea Conference underlined the political commitment of the North Sea riparian states to adopt a more cautious approach in managing the North Environment. One can discern from the wording of the declaration that the precautionary principle was to be applied in cases where scientific evidence is insufficient, inconclusive or uncertain and it is difficult to establish the chain of causation. Indeed, subsequent discourse generally suggests that the principle should be applied where preliminary scientific evaluation indicates that there is a likelihood of an activity in question having potentially harmful impacts on the environment and human health.¹⁷

Throughout the 1990s, various international legal instruments have continued to refer to the precautionary principle, albeit in a manner that does not resolve the definitional controversies surrounding its application. The net effect of this ambiguous articulation of the principle has been to create persistent uncertainty in scientific, legal and policy-making circles. No international or national instrument has made an attempt to define the principle or the nature of obligation or responsibility it imposes on states or environmental managers, or on developers. The inconsistent wording used in the various multilateral environmental agreements particularly adds to the principle's own vagueness. That wording ranges from the very wide construction such as in the Rio Declaration on Development and Environment¹⁸ to more narrow statements especially those related to the marine environment.¹⁹

Scholars and publicists who have made an attempt to define the principle have left it at the level of rhetoric, particularly since their analysis has largely remained at the international level. And yet, the precautionary principle is an emerging

¹⁷ Weintraub has argued that "the Hague North Sea conference's articulation of the precautionary principle represents an attempt to remedy the vagueness and imprecision of the London Declaration". See Bernard A. Weintraub, "Science, International Environmental Regulation, and the Precautionary Principle: Setting Standards and Defining Terms," 26 New York University Environmental Law Journal, 1 (1992)

¹⁷ See for example, the Wingspread Statement on the Precautionary Principle, January 23-25, Wingspread, Wisconsin, USA. Produced in Rachel's Environment and Health Weekly, No. 586. http://www.biotech-info.net/rachels_586.html

¹⁸ The Rio Declaration on Development and Environment states the principle in the following terms; "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used for postponing cost-effective measures to prevent environment degradation."

¹⁹ Principle 10 of the Rio Declaration also recognizes differences in scientific capabilities by requiring that the "precautionary approach" be applied by States in accordance with their capabilities.

international norm that may be mostly useful at the national level, or at least within supra national legal jurisdictions such as the European Union or the East African Community.

Whatever the formulation of the precautionary principle, it essentially lays down certain responsibilities that ought to be considered by environmental regulators in making development decisions.²⁰ It is premised on the need to balance risk especially when an issue arises as to who should bear the burden of uncertainty where on a preponderance of scientific evidence may exist possible contamination resulting from a certain type of behavior.²¹ It suggests that it should not be the environment that bears that burden, but rather those who seek to make profit out of the proposed activity. Consequently, the principle ought to be considered based on a 'pragmatic' understanding of the legislative system where the individual's freedom of action can only be limited by legislation in situations where the legislator has good reason to believe that the action can be detrimental to other interests.

The precautionary principle, Biosafety Protocol and the Biotechnology debate

International efforts to develop an acceptable biosafety legal regime gained momentum from the work of the World Commission on Environment and Development (WCED) and the publication of its report, *Our Common Future* in 1987. In the aftermath of the WCED report, the International Community gathered in Rio de Janeiro in 1992 to reconsider the necessary legal and political responses to the environmental problems highlighted by *Our Common Future*. At Rio, the global environment plan of action agreed to by the international community and code-named Agenda 21 stated thus:

There is a need for further development of internationally agreed principles on risk assessment and management of all aspects of biotechnology, which should build upon those [principles] developed at the national level. Only when adequate and transparent safety

²⁰ John M. Van Dyke has asserted that the precautionary principle imposes specific burdens on the users of the Ocean. These burdens include; the need for policy makers to be alert to risks of environmental damage. The greater the probability of harm, the more rigorous the requirements of alertness, precaution and effort. He argues that the precautionary principle "rejects the notion that the oceans have infinite or even a measurable ability to assimilate wastes, and it instead recognizes that our knowledge about the ocean's ecosystem may remain incomplete and that policy makers must err on the side of protecting the environment." [Http://www.nci.org/ib3496a.htm](http://www.nci.org/ib3496a.htm)

²¹ Recourse to the precautionary principle essentially presupposes that potentially hazardous effects deriving from a phenomenon, process or product has been identified, and that scientific evaluation does not allow the risk to be determined with sufficient certainty.

and border- control procedures are in place will the
community at large be able to derive maximum
benefits from, and be in a much better position to accept
the potential benefits and risks of, biotechnology.²²

The political significance of this Agenda 21 statement is that within the international community, there was an early realization that while biotechnology presented great opportunities for humanity and the environment, little was known about the possible negative impacts of biotechnology products. Agenda 21 also became a breeding ground for consensus building and the subsequent need to include biotechnology and biosafety considerations into the subsequent multilateral agreements. Agenda 21 also emphasized the centrality of transparency to any regime under which biotechnology issues would be handled.

The political resolve to address biotechnology safety issues was re-affirmed in the Convention on Biological Diversity.²³ Under article 19 regarding handling of biotechnology and distribution of its benefits, the parties committed themselves to consider the negotiation of a protocol to deal with biotechnology issues. Article 19 (3) hence states:

The Parties shall consider the need for and the modalities of a protocol setting out appropriate procedures, including, in particular, advance informed agreement, in the field of the safe transfer, handling and use of any living modified organisms resulting from biotechnology that may have adverse effect on the conservation and sustainable use of biological diversity.

It is clear that despite strong opposition from countries with highly developed biotechnology industries, there has been considerable international consensus about the potential environmental dangers that this technology may have on the environment and human health. The issues have ranged from handling, risk assessment, deliberate release of Living Modified Organisms (LMO) to unintended releases. And while it has not been possible to agree on the proper course of action, it appears from the ongoing debates on the subject that consensus has been emerging regarding the need for caution when dealing with biotechnology issues.

The international consensus about the need for a cautious

²² Agenda 21, 16.29

²³ Nairobi, 1992

approach to biotechnology issues has now been expressed in the passage of the Cartagena Protocol on Biosafety. Delegates from 133 Parties to the Convention on Biological Diversity adopted the Cartagena Protocol on Biosafety on Saturday 29 February 2000.

It is nevertheless important to note that while there has been recognition of the need to regulate the development and proliferation of biotechnology, there has been no agreement on how best and to what extent the biotechnology industry should be regulated. For example, the conflict between the EU and the US on the application of the principle with regard to genetically modified foods has bordered on the conflict between food safety and technical barriers to trade.

The language of the Final Text largely reflects the compromises that have had to be made by the various interests after almost five years of negotiations. It also demonstrates the increasing complexity of having to translate environmental commitments into binding treaties especially when such commitments may have implications for trade. The Protocol also shows that the international community has, through experience in negotiating and drafting international environmental instruments, mastered the art of concluding environmental agreements without making binding commitments. In fact, the preamble itself is largely "successful" in retaining the ambiguity of the Convention on Biological Diversity and it may be a long time before legal experts can figure out the real intentions of the parties.²⁴

According to Article 1 the main objective of the Protocol is to contribute to ensuring an adequate level of protection in the area of safe transfer, handling and use of living modified organisms resulting from modern biotechnology. The Protocol

²⁴ The Preamble in part provides as follows; "Recognizing that trade and environment agreements should be mutually supportive with a view to achieving sustainable development; Emphasizing that this Protocol shall not be interpreted as implying a change in the rights and obligations of a Party under any existing international agreements; Understanding that the above recital is not intended to subordinate this Protocol to other international agreements." Read together, these three paragraphs are as meaningless as the negotiators of the Protocol were not agreed as to the nature of the regime they intended to create. The question of precedence between trade and environment agreements has dominated much of the environmental negotiations over the last decade and the language adopted by the Cartagena Protocol offers no help in resolving that contradiction.

applies to the transboundary movement, transit, handling and use of all living modified organisms that may have adverse effects on the conservation and sustainable use of biological diversity.²⁵

The Cartagena Protocol on Biosafety reaffirms the centrality of the precautionary principle as a useful instrument in regulating biotechnology products. The inclusion of the principle in the Final Text amidst severe opposition from industry and states with well-developed biotechnology industry reflects the growing public apprehension about the effects of LMOs on the environment and humans. The protocol's use of the precautionary principle is essentially in tandem with the statement of the principle in Principle 15 of the Rio Declaration on Environment and Development. And the mere mentioning of the principle rather than explicit delineation of what it entails within the meaning of the Protocol suggests the complexity of the negotiations and the compromises that had to be made both in Cartagena and Montreal.

The Protocol explicitly mentions the precautionary principle both in the preamble and Article 1 dealing with objectives. In article 10 and article 11, the principle is mentioned in the terms of "lack of scientific certainty due to insufficient relevant scientific information and knowledge " shall not preventing an importing Party from taking appropriate action in order to avoid or minimize any likely potential adverse impacts.

The Protocol like all the other multilateral agreements offers no guidance on what amount of scientific evidence or knowledge should act as a threshold for a Party to invoke the precautionary principle to protect the environment. The said provisions are not only redundant but they also leave room for different interpretations depending on what interest is at stake. For that reason, we are unlikely to see the precautionary principle crystallizing into a universally acceptable legal norm that can confer clearly defined legal rights and duties.

Despite the above shortcomings, the Biosafety Protocol on its part provides a useful policy, legal and political context within which to confront the challenges associated with biotechnology risk management. Its emphasis of the precautionary principle further demonstrates the international community's recognition of the inadequacy of existing scientific knowledge regarding the effect of living modified organisms on the environment or human health. It recognizes the shortcomings of available scientific

²⁵ LMOs that are used as pharmaceuticals for humans that are addressed by other international agreements or organizations are exempted from the application of the Biosafety Protocol. The Protocol also provides partial exemption for LMOs in transit or destined for contained use.

techniques to predict and ascertain the negative impacts of GMOs.

The Biosafety Protocol also makes an attempt to apportion the cost of risk assessment. According to article 15(2), the intending Party of import "shall ensure that risk assessment are carried out for decisions taken under Article 10."²⁶ Paragraph (3) further provides that "the cost of risk assessment shall be born by the notifier if the Party of import so requires."²⁷ While this approach is a significant breakthrough for countries that may not be able to afford the huge costs of undertaking costly scientific assessments, it comes with it the problem of conflict of interest especially where the notifier is required to undertake the assessment. National regimes to implement the provisions of this Protocol should therefore be able to address the issue of transparency in the risk assessment process on the one hand, and accountability on the part of the National Competent Authorities on the other.

It is not clear whether the Protocol provisions relating to risk assessment resolve the controversial debate about the efficacy and accuracy of the procedures involved in the risk assessment process. Article 10 does not give a clear indication as to whether the Protocol makes a departure from conventional GMO risk assessment methodologies. Conventional GMO testing has tended to rely on what is normally referred to as the "principle of substantial equivalence". Yet some observers have argued that "substantial equivalence" is a pseudo-scientific concept because it's a commercial and political judgment masquerading as if it were scientific." These observers further argue that the principle is "inherently anti-scientific because it was created primarily to provide an excuse for not requiring biochemical or toxicological tests."²⁸ In trying to counter these observations, the OECD has pointed out that the gist of the substantial equivalence principle is that it uses the comparison between new food varieties and their traditional counterparts as the basis for safety assessment.²⁹ Under the principle, GM foods are compared with analogous conventional foods in terms of characteristics such as toxicity and nutritional qualities.

Further more, the Protocol, does not resolve the fundamental legal question that has eluded international environmental law, that of liability and compensation. According to Article 27, the Conference of the Parties to the Protocol is mandated

²⁶ Article 10 relates to the decision making procedures under the Protocol

²⁷ See also Annex I; Information required in notifications under Articles 8, 10 and 13.

²⁸ Erik Millstone, Eric Brunner and Sue Mayer, Nature Magazine (undated)

²⁹ OECD Media Relations Division, "The Concept of Substantial Equivalence in the Safety Assessment of Novel Foods", October 6, 1999. http://www.biotech-info.net/concept_SE.htm. The OECD has further noted that there may be new foods which are so novel in certain respects, that they could not be considered substantially equivalent. In such cases, the OECD recognizes the need for more sophisticated assessments.

to set in motion a "process with respect to the appropriate elaboration of international rules and procedures in the field of liability and redress for damage resulting from transboundary movements of living modified organisms."³⁰The contentious nature of the negotiations with respect to liability questions again demonstrates the complexity of the relationship between trade and environment agreements. The compromises that are reflected in these "mild" provisions shows beyond doubt that what is at stake is not just biodiversity conservation but rather whether transnational corporations can gain unlimited access to the global markets. Indeed as James Cook, a plant pathologist put it at a Washington meeting hosted by the CGIAR and the US National Academy of Sciences "This whole debate isn't really about safety. Safety is the card which is played to get the deeper political and economic issues on to the table."³¹

Notwithstanding the limitations of the Protocol, it provides a useful legal and political framework for addressing the shortcomings in biotechnology and biosafety regulation in domestic legislation. For public interest environmental lawyers, the Protocol also provides a useful advocacy tool to promote the development of national biosafety regimes and a further articulation of the precautionary and liability principles in national legislation. Public interest law groups should therefore take the opportunity of the policy reform processes that may be triggered by the coming into force of the Protocol to ensure that these reforms address the issues that are not yet resolved.

The precautionary principle and public interest litigation

We have seen that the precautionary principle is still shrouded in some level of inconsistency and vagueness. The question then arises as to what is its value to a public interest lawyer? Under what circumstances should one invoke the principle before a court of law? Answering these and many other questions especially in the area of litigation requires a consideration of various aspects. These include:

The international customary law argument

Because of the consistent reference to the precautionary principle in various international instruments, there is emerging opinion among legal scholars that the principle has qualified into an international custom. Indeed, Cameron and Abouchar have argued that the "endorsement of the principle by thirty-four nations at Bergen is an indication that the precautionary principle is emerging as a principle of customary international law."³² That proposition is not tenable in the case of the precautionary principle because a legal principle cannot be ~~said to form part of~~ international customary law unless there

³⁰ The parties committed themselves to endeavor to complete the process of elaborating liability and redress issues within four years. Article 27.

³¹ [http://www.biotech-info.net/developing_countries2.html]

³² James Cameron and Juli Abouchar, supra.

is evidence of its acceptability among "civilized" nations. That acceptability ought to be evidenced by an extensive and virtually uniform practice "with a clear conviction that its actions are obligatory under international law."³³

However, given the broiling controversy over the scope of the principle's interpretation and application, it fails to fulfill the two tests of *opinio juris* and *jus cogens*. Indeed, a legal principle cannot gain acceptability as a principle of customary international law if there are indications that its applicability has been consistently contested. The general acceptance of the principle should be reflected not only in treaties, declarations or its promulgation in national legislation, it should also be evidenced by its uniform applicability in enforcing legal norms and rights.

If the Precautionary Principle is not an accepted international legal norm, what is it and what is the basis for its application in national environmental decision-making. It may appear that the existing debate leads to one conclusion: the precautionary principle is a political norm for both legislative and administrative purposes. It is yet to coalesce into an acceptable norm of customary international law conferring clearly defined rights and obligations upon states.

The concept of proportionality: This is the notion that every regulation must serve a definite purpose. The regulation must be necessitated by the need to achieve this purpose and it must not have a wider scope than necessary to achieve the purpose. Finally, the proportionality principle requires that regulatory interventions must provide as little disturbance as possible to those the intervention is meant to regulate. The principle of proportionality therefore requires that "the selected degree of restraint is not unduly costly."³⁴

Consequently, although under the precautionary principle environmental regulatory agencies are released from demonstrating direct evidence of possible environmental harm, the concept of proportionality must involve a requirement on the degree of probability that, must be shown for the probable environmental damage to form the basis for intervention. In a recent communication by the European Union on the principle, the European Commission stated that where action is deemed necessary on the basis of the precautionary principle, such "measures should be proportionate to the chosen level of protection, non-discriminatory in their application and consistent with similar measures already taken. They should

³³ *Continent Shelf Cases (West Germany v. Netherlands; West Germany v. Denmark)* 1969 I.C.J 3; see also Birnie, P.W and Byle, A.E (1992): *International Law and the Environment*. Clarendon Press. Oxford.

³⁴ Tim O'Riordan and James Cameron (Eds.), "Interpreting the Precautionary Principle. Earthscan Publications, 1994.

also be based on an examination of the potential benefits and costs of action or lack of action and subject to review in the light of new scientific data and should thus be maintained as long as the scientific data remain incomplete, imprecise or inconclusive and as long as the risk is considered to be too high to be imposed on society." ³⁵

The European Commission Communication appears to have been largely a response to the ongoing trans-Atlantic dispute between the EU and the US over trade in genetically modified foods. The Communication leaves no uncertainty as to under what circumstances the EU Member States may apply the precautionary principle. In essence, the Communication cushions the Brussels Club of states against any criticism from the United States. Indeed, the United States has been the first country to give an official and sharply critical reaction to the EU Communication. In its preparation for the *Codex Alimentarius* Commission's 15th Session,³⁶ the US attacked the EU Communication describing it as the European Union's complex concept.³⁷ In fact, the US submission even questions the reference to the precautionary principle in such international instruments such as the Rio Declaration and the Convention on Biological Diversity. Besides this now too familiar transatlantic trade dispute, one can not ignore that with emerging concepts such as the precautionary principle, official declarations such as the EU Communications and the US submission are central to determining the ultimate scope and content of those principles.

Consequently, for the public interest lawyers, the proportionality concept appears to be the point for determining the threshold of the scientific evidence that is required according to the precautionary principle. At that point, environmental regulators have to balance the extent to which the available scientific evidence makes causality sufficiently likely to permit intervention by invoking the precautionary principle. In, practice, the principle becomes rather a question of assessing uncertainty and consequences of making a mistake, something that may be entirely administrative than legal.

Burden of proof:

Traditional tort law principles impose the burden of proving injury or damage on the plaintiff. In classic cases of pollution or nuisance, the plaintiff has the duty to prove that he suffered

³⁵ The Communication was presented and adopted by the European Commission in Brussels on February 2, 2000.

³⁶ Codex Alimentarius is an international body that oversees the implementation of the WTO's Sanitary and Phytosanitary Agreement.

³⁷ U.S Food and Drug Administration/U.S Department of Agriculture, 2000. "A U.S Government submission to the Committee on General Principles of the Codex Alimentarius Commission for the Committee's April 10-14, 2000 meeting". Note: The 15th Session of the Commission took place in Paris, France between April 10-14, 2000. The EU Communication was circulated as Codex Document CX/GP 00/3-Add.3

damage and that the given activity was the cause of the damage. The increasing reference to the precautionary principle, therefore, suggests a growing desire to shift the burden of proof from the complainant to the defendant who must now prove that the proposed action is harmless. As a general principle, the precautionary principle transposes the burden of proof to a person or enterprise proposing to undertake the disputed activity. It is that person or enterprise that must build confidence by rendering it probable that the proposed activity is harmless.

While the burden to prove the harmlessness of the proposed activity largely rests on an enterprise, in cases of litigation, the regulatory agency that approved the activity may also be under a duty to prove that it acted within its statutory authority. The essence of the precautionary principle is that such agencies ought to act in good faith and with a lot of prudence. Litigation raises a prima facie distrust in relation to the prudence of the decision taken by a regulatory agency to approve the activity in question. This raises the possibility that in all cases where the precautionary principle is invoked as the basis for litigation, the approving government agency should be joined as a party

Liability and computation of damages

The issues of liability and compensation in cases of civil damage are so intertwined that they are always difficult to separate. Their very intricate nature dominated, and may continue to dominate, international legal jurisprudence and discourse for some time. These issues may become a big problem for the public interest litigation lawyer in cases where the precautionary principle is invoked.

Under English common law, civil liability and the corollary responsibility to compensate the victims arose under very well established principles. The most common causes of action revolved around the principles of negligence,³⁸ occupier's liability,³⁹ nuisance⁴⁰ and the Rule in *Rylands v. Fletcher*.⁴¹ Under common law, the traditional principles that formed a basis for liability

³⁸ Dhonogue V Stevenson (1932) AC.

³⁹ As late as 1993, claims for civil remedies founded on negligence were rejected as not conforming to the common law principle of "reasonable foreseeability".

See for example Eastern Countries Leather (ecl) v Cambridge Water Company, (CWC) 1993. In this case, the issue was whether the appellant company (ECL) was liable to the respondent (CWC) on account of damage suffered by reason of chemical contamination of water available for abstraction at CWS's borehole. Reaffirming the decision of the Court of Appeal (Ian Kennedy, J.) the House of Lords held that the appellants (ECL) could not reasonably have foreseen that such damage would occur.

⁴⁰ See *The Wagon Mound (No 2)*, (1967) A.C 617 (particularly the judgement of Lord Reid) In this case, the Privy Council held that reasonable foreseeability of the type of damage sustained was a requirement of liability in private nuisance, just as in negligence. In any case, nuisance has its origins in a remote past when straying cattle, offensive odours and property damage were causes of action capable of identification with individuals. It is therefore in doubt that such a concept can be adopted to deal with new ecological problems such as biotechnology.

placed the burden on the person alleging injury.⁴² However, it is clear that causes of action founded on these principles would not necessarily cover torts occasioned by substances or activities in which the precautionary principle is invoked as a basis for litigation.⁴³ Second, the traditional approach by both the lawyers and the courts to the assessment of damages has been largely superficial. The approach has always been to determine the measure of damages according to the loss that is readily and immediately apparent. With new ecological problems or in cases of environmental pollution, lawyers must persuade and convince the courts of the relevance of and necessity for a new set of legal theories and principles upon which damages can be ascertained and computed.

In the case of Living Modified Organisms and other genetically modified products, activities or processes that may require the application of the precautionary principle, the issue of ascertaining potential liabilities is still a big problem. Accurate predictions about potential damage and the amount of compensation that would be involved are not possible within the parameters of existing scientific knowledge or judicial precedents. As a result, industry is less cooperative in such circumstances where there may be huge unpredictable costs. However, this is exacerbated by the lack of established liability concepts, legal precedents and consistent enforcement principles in international legal jurisprudence.

The precautionary principle and the courts

Existing precedents show that the courts have been rather ambivalent in their application of the precautionary principle. This may be understandable since traditionally, courts insist on "sufficient evidence" to be able to reach a verdict. Consequently, the notion of scientific uncertainty may be at tangent with established judicial practice. Essentially, the precautionary principle appears to question the foundations of common law evidentially principles especially when the matter has to do with ecological stewardship and sustainability. None of the available precedents are clearly instructive on such pertinent issues as burden of proof; the scope of liability or even the nature and scope of evidence that has to be adduced when one relies on the principle as a basis for litigation. It therefore appears that the courts are uncertain as to the legal implications of the principle and particularly when to put aside the traditional requirements

⁴² Only in a few circumstances did the burden have to shift to the respondent especially under certain principles of negligence such as *res ipso loquita*.

⁴³ For a detailed discussion of the literature, see Tumushabe G.W., 1996: Legal Aspects of the Control and Management of Toxic Chemicals in International

for discharging the burden of proof either beyond reasonable doubt or on a preponderance of evidence.

**Leatch V. National Parks and Wildlife Service and
Shoalhaven City Council (Land and
Environment Court of New South Wales)
(1993081LGERA 270)**

In this case, the Shoalhaven City Council granted itself development consent for the construction of a link road within an area under the Council's jurisdiction. The road construction project would include a bridge over Bomaderry creek. In 1993, the Council applied to the Director-General of the National Parks and Wildlife Services for a license to take or kill endangered fauna within the creek. The license application was supported by a fauna impact statement pursuant to section 92A of the *National Parks and Wildlife Act*. An objection was raised against the grant of the license by the Director-General on the basis that the fauna impact statement was invalid or legally inadequate as failing to comply with section 92D of the same Act. It was submitted that there had been a failure to include "to the fullest extent reasonably practicable" a description of the fauna affected by the actions and the habitat of the fauna. The objection made express reference to the precautionary principle

While disposing off the appeal, Judge Stein made explicit mention of the various international instruments in which the precautionary principle has been referred to.⁴⁴ After careful analysis of the articulation of the precautionary principle in the Convention on Biological Diversity and its applicability in Australia's legal system, he concluded thus;

" .In my opinion the precautionary principle is a statement of commonsense and has already been applied by decision-makers in appropriate circumstances prior to the principle being spelt out. It is directed towards the prevention of serious or irreversible harm to the environment in situations of scientific

⁴⁴ The Judge made mention of the 1992 Rio Declaration on Environment and Development [principle 15], the 1992 UN Framework Convention on Climate Change [article 3 (3)], the June 1990 London Adjustments to the Montreal Protocol on Substances that Deplete the Ozone Layer [preamble, par 6] and the 1992 Convention on Biological Diversity.

uncertainty. Its premise is that where uncertainty or ignorance exists concerning the nature or scope of environmental harm (whether this follows from policies, decisions or activities,) decision-makers should be cautious."

The court also considered whether the precautionary principle would be applicable in situations where it is not expressly stated in the relevant legislation. The Court noted, "Where a matter is not expressly referred to, consideration of it may be relevant if an examination of the subject matter, scope and purpose shows it not to be an extraneous matter".⁴⁵

.. **Ms Shehla Zia and Others V. WAPDA [Supreme Court of Pakistan] PLD 1994 Spreme Court 693**

This was a petition commenced by way of letter to the Supreme Court of Pakistan. In a letter addressed to the Chairman of the Court, citizens of Street No. 35, F-6/1, F-6/1, Islamabad expressed apprehension about the construction of a grid station allegedly located in the green belt of a residential locality. In their plaint, the petitioners pointed out that electromagnetic field (EMF) by the presence of the high voltage transmission lines at the grid station would pose a serious hazard to the residents of the area "especially the children, the infirm and the dhobi-ghat families that live in the immediate vicinity. The plaint disclosed two issues: first, whether any Government agency has a right to endanger the life of citizens by its actions without the latter's consent; and second, whether zoning laws vest rights in citizens which cannot be withdrawn or altered without the citizens' consent.

A number of scientific studies have been conducted on the effect of electromagnetic fields but uncertainty remains on the issue. As a result, the court was confronted with the issue of scientific uncertainty on the subject and consequently the application of the precautionary principle. The court noted that the question of electromagnetic fields is a highly technical subject and that the experts and evidence put before it in the course of the proceedings was inconclusive. It could therefore not make a definite finding on the matter. With respect to the precautionary principle, it made the following observation;

⁴⁵ With reference to the legislation under consideration, Judge Stein had this to say; "When Pt 7 of the Act is examined it is readily apparent that the precautionary principle, or what I have stated this may entail, cannot be said to be an extraneous matter. While there is no express provision requiring consideration of the "precautionary principle", consideration of the state of knowledge or uncertainty regarding species, the potential for serious or irreversible harm to an endangered fauna and the adoption of a cautious approach in protection of endangered fauna is clearly consistent with the subject matter, scope and purpose of the Act.

" There is a state of uncertainty and in such a situation the authorities should observe the rules of prudence and precaution. The rule of prudence is to adopt such measure, which may avert the so-called danger, if it occurs. The rule of precautionary policy is to first consider the well-fare and safety of the human beings and the environment and then to pick up a policy and execute the plan which is more suited to obviate the possible danger or make such alternate precautionary measures which may ensure safety."

The court concluded, "to stick to a particular plan on the basis of old studies or inconclusive research cannot be said to be a policy of prudence and precaution." Court further emphasized the fact that taking precaution did not necessarily entail scrapping the whole scheme but rather, making "such adjustments, alterations and additions which may ensure safety and security or at least minimize the possible hazards."

" **Greenpeace Australia Ltd. V. Redbank Power Company Pty Ltd. And Singleton Council [Land and Environment Court of New South Wales] (1995)**
86 LGERA 143

This was an appeal by Greenpeace Australia Ltd. brought under section 98 of the Environmental Planning and Assessment Act of 1979. The appellants challenged a development consent granted to the first respondent, Redbank Power Company Pty Ltd. by the second respondent, Singleton Council. The first respondent application described the development as "generating works involving the construction of a 120 MWe nominal rated fluidised-bed combustion power plant" which involved the construction of a "power station and ancillary facilities including overland pipes carrying slurry and water". Greenpeace Australia Ltd. raised an objection pursuant to section 98 of the Environmental Planning and Assessment Act. They contended that the impact of air emissions from the project would unacceptably exacerbate the "greenhouse effect" in the earth's atmosphere. They argued that the court should apply the precautionary principle and refuse development consent for the proposal.

Pearlman CJ, approvingly quoted the judgment of Stein J in *Leatch v National Parks & Wildlife services*. He noted that the important thing about the application of the precautionary principle [in this case] is that "decision-makers should be cautious: The application of the precautionary principle dictates that a cautious approach should be adopted in evaluating the various relevant factors in determining whether or not to grant

consent; it does not require that the greenhouse issue should outweigh all other issues".

Several conclusions can be drawn from these court decisions. First, there is considerable judicial unanimity in considering the precautionary principle as a statement of political intent rather than a clearly articulated legal doctrine. Indeed, "while it may be framed appropriately for the purpose of a political aspiration, its implementation as a legal standard could have the potential to create interminable forensic argument" and "taken literally in practice it may prove to be unworkable."⁴⁶ Drawing on the example of electro-magnetic field (EMF), there appears to be reluctance on the part of the courts to make a finding on issues where scientists cannot agree amongst themselves as to the nature of the problem. Consequently, both science and the law consider the determination of what is an acceptable level of risk to be a political responsibility.

It appears from some of the judicial decisions that the courts have not yet determined how to deal with both the postulate that a substance is hazardous as well as the postulate that it is harmless. What seems clear is that there is judicial acknowledgement of the inability of science to provide sufficient knowledge. Courts also seem to recognize that political decisions have to be made in margins of error -from determinism's ideal of an all-encompassing knowledge, to uncertainty and unpredictability. In that situation, the conclusion from the above decision is that the courts are very likely to be unwilling to push the interpretive margins of the precautionary principle.

However, as the debate on the proper meaning and application of the precautionary principle continues unabated, it is likely that the courts will increasingly take a more proactive approach once it is faced with uncertainty as to the likely impact of new products, processes or activities. In a 1999 case in Brazil, a Federal Court issued a definitive ruling against the commercial distribution for planting of genetically modified Roundup Ready soybean seeds unless the respondents provides an environmental impact study (EIS). In this court running battle, the Brazilian Institute of Consumer's Defense (IDEC) challenged the decision by Brazil's National Technical Commission for Biological Safety in which it declared the soybeans harmless to public health and the environment. IDEC obtained additional orders requiring that all products containing the biotech soy be labeled as such, and further requiring the respondent to keep the altered seeds separate from the conventional ones,

⁴⁶ Nicholls v Director General of National Parks and Wildlife Services and others, Land and Environment Court of New South Wales, August-September 1994.

⁴⁷ http://www.biotech-info.net/brazil_court.html "Brazil court reaffirms ban on biotech soybean planting". August 13, 1999. According to this report, since the National Technical Commission for Biological Safety approved the Roundup Ready seeds, its president and other members have resigned.

declare who it sold the modified seeds and the volumes of such sales.⁴⁷

Concluding Remarks

Emerging environmental and public health problems present significant challenges for environmental regulators, policy makers and public interest litigation lawyers. In East Africa, there is still very limited understanding of both the concepts and the legal theories that dictate the direction of these phenomenon. It therefore remains to be seen what policy direction and legal innovations will be undertaken as issues such as biotechnology policy take on new dimensions. Consequently, a few conclusions can be drawn as to the future of litigation with respect to these new and emerging environmental problems.

First, in the absence of well articulated policies and laws, the acceptability of new legal principles will largely depend on the legal creativity of environmental lawyers to guide the Bench so as to extend the existing bounds in both procedure and practice. In this respect, articulating the underlying legal theories to advance new notions of risk, novel rules of evidence and strategic shifts in the burden of proof will be crucial for advancing public interest litigation.

Secondly, continuous legal training for both the Bar and the Bench ought to be promoted, sustained and made more interactive. The dialogue should focus both on the procedures and the substance of new subjects and causes of action as well as the international legal theories upon which new causes of action are founded.

Thirdly, it appears that the rules relating to the implementation of international treaties have been changing. Countries are incorporating provisions relating to the implementation of international environmental commitments and other international obligations in their constitutions and laws. It is not clear whether this signifies a shift in the traditional Commonwealth practice relating to treaty implementation. It will be useful to watch how the Bench interprets these provisions and the implication of such interpretation for internationally recognized rights and obligations.

Finally, there is need for further policy research and advocacy work in support of the precautionary principle. This work should mainly focus on the following pertinent issues:

“ **Broadening treaty ratification process:** Traditionally, ratification of treaties is always reserved for the legislature. Civil society organizations

should seek to broaden this process to make it more transparent, accountable and inclusive. This can be achieved through public hearings conducted by the relevant sub-committees of parliament.

“ **Promoting transparency in the decision making**

process: The efficacy of the precautionary principle will largely depend on the content of national laws implementing the relevant international agreements. Consequently, civil society organizations should ensure that those laws contain provisions that require full transparency in the decision making process. In the case of genetically modified organisms, for example, the law should require the national competent authorities to publish notifications for intended imports. These provisions should extend to other products, activities or processes where available scientific evidence on a preponderance of evidence shows a likelihood of potential negative impacts.

Consequently, the challenge is for the East African countries to enact appropriate policy and legislation to respond to new and emerging environmental problems. The tendency of always having reactive rather than proactive policies makes environmental management more complicated and largely unpredictable. Reacting to environmental crisis can no longer be considered a prudent strategy in environmental management. The continuing evolution of the precautionary principle and now the adoption of the Cartagena Protocol is an opportunity for both government and civil society to take proactive steps to promote sustainable

development. The complexity of the biotechnology controversy can be useful in testing the determination of both government and civil society to work together in identifying national priorities and formulating national policies.

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PRECAUTIONARY APPROACH: A set of agreed cost-effective measures and actions, including future courses of action, which ensures prudent oversight, reduces or avoids risk the resources, the environment, and the people, ton the extent possible taking explicitly into account existing uncertainties and the potential consequences of being wrong [FAO, 1997. Inland Fisheries: FAO Technical Guidelines for Responsible Fisheries. Rome].

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