



**TRAFFIC**

## **Workshop Summary Report**

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# **The Precautionary Principle in Biodiversity Conservation and Natural Resource Management**

**Convened by  
The Precautionary Principle Project and TRAFFIC, South  
America**

**Quito, Ecuador, 16<sup>th</sup>-18<sup>th</sup> March, 2005**

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**This is a summary of key points emerging from the workshop “The Precautionary Principle in Biodiversity Conservation and Natural Resource Management: Uncertainty, Risk, Biodiversity and Livelihoods”, Quito, Ecuador 16<sup>th</sup>-18<sup>th</sup> March, 2005.**

Individuals participated in this workshop in their individual capacity, not as representatives of their government or institution.

**General**

Conservation and management of biodiversity and natural resources typically confronts great uncertainty and inadequate or incomplete information. Policy and management must recognise and deal with this uncertainty and inadequate or incomplete information.

This uncertainty and inadequate or incomplete information has been, and is, frequently used as a reason not to take action to protect the environment, particularly when powerful economic interests benefit from the activities threatening the environment. This is a major problem, as frequently it is not possible to have clear scientific evidence of threat before the damaging activity takes place. The precautionary principle can be a powerful tool to confront the use of uncertainty and inadequate or incomplete information as justification for not taking action to protect the environment. It should be widely incorporated into law and implemented through appropriate decision-making, policy and management measures.

It is important to note that as a broad principle, the precautionary principle does not dictate a particular decision or outcome: it is a principle, not a “rule”. As a broad principle, it should not be reduced to “when in doubt, do nothing”. It should not be used as a reason not to take management measures, but as a guide for management.

Application and implementation of the PP is highly context-specific, and the specific decisions and management or policy measures that it supports will vary widely according to circumstances.

Applying the PP should be accompanied by efforts to gather more information and reduce uncertainty, and address uncertainty in management.

**Institutional and policy framework for the application of the PP**

The PP relies for its effective application on a supportive legal, policy, institutional, administrative, procedural and technical framework. Where there are governance problems such as corruption, poor enforcement, low capacity, or lack of inter-institutional coordination, it will be difficult to apply the PP. To overcome these barriers and effectively implement the PP, strategies such as education, training, and investment in enforcement capacity are vital.

In many situations, what is important in conservation terms is not the abstract existence or interpretation of the PP in law, but its implementation in concrete policy and management measures that address the conservation problem.

The PP should be applied within an integrated management and decision-making framework that addresses environmental, social and economic dynamics, as these factors are all linked.

**Participation**

Decisions based on the PP cannot be entirely justified by the available scientific information, as they are made in the face of uncertainty and inadequate or incomplete information. This means that judgements and subjective perspectives of risk must necessarily play a role in decision-making. Participation of stakeholders is therefore particularly important in decision-making involving the precautionary principle. In particular, less powerful groups who may be negatively affected by decisions should be involved.

Typically, different groups have very different perceptions of the role of the precautionary principle and the level of environmental risk they are willing to take. Long-term, sustainable conservation solutions require some degree of consensus to be built between different groups with different

perspectives. This process may take a long time, but precautionary decisions based on the participation of all stakeholders, and the reaching of some level of consensus, are likely to be more stable and sustainable in the long-term.

At national level, all stakeholders should be involved. Indigenous people and local communities often play a very important role in natural resource management and should be included.

### **The PP as a tool for prohibition vs the PP as a tool for management**

Applying the PP will sometimes require strict prohibition of activities. This is particularly important in situations where urgent measures are required to avert imminent damage, where the potential damage is irreversible, where particularly vulnerable species or ecosystems are concerned, and where other measures are likely to be ineffective. This situation is often the result of a failure to apply more moderate precautionary measures at an early stage.

However, the precautionary principle should not be used only in a negative sense, to say “no” to all activities. Prohibitions and bans, although valid options in some cases, may not solve conservation problems or lead to long-term solutions. They can lead to negative impacts, such as increasing illegal activity, making or effective monitoring impossible, as well as undermining livelihoods.

In contexts of management of wildlife and natural resources, the PP can lead to effective management of potentially damaging activities, rather than complete prohibitions. The precautionary principle should guide a constructive search for alternatives, practical solutions and opportunities involving all stakeholders.

There is sometimes thought to be a conflict between application of the PP and use of wild species. While utilisation can cause negative conservation impacts, it can also have beneficial conservation and livelihood impacts. The precautionary principle should not therefore necessarily be interpreted as excluding utilisation.<sup>1</sup>

### **The implementation of the PP in management of natural resources**

Natural systems are complex dynamic entities, and their management must constantly deal with uncertainty and inadequate or incomplete information. It is typically not possible to know the outcome of a management decision with any certainty. Adaptive management is an approach to managing resources under uncertainty and inadequate or incomplete information. It does not require having a high level of certainty of the impact of management measures before taking action, but involves taking management measures in the face of uncertainty and inadequate or incomplete information, with careful monitoring and feedback. Adaptive management will not be appropriate in every context, as some activities or decisions may lead immediately to serious and/or irreversible impacts. However, in most circumstances of biodiversity conservation and NRM, adaptive management is the most appropriate mechanism to implement the precautionary principle.

The PP should be applied in order to achieve conservation of ecosystems, not just species, and is closely linked to the ecosystem approach.

### **PP, socio-economic impacts and equity**

When applying and implementing the precautionary principle in the face of uncertainty and inadequate or incomplete information, attention should be directed to the socio-economic costs and benefits for different groups. These will vary widely in different contexts.

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<sup>1</sup> For the Mexican NGO “COMARINO”, the application of the PP should always exclude the consumptive utilization of endangered species and the search for alternative non-consumptive uses such as ecotourism, whale-watching, etc. In some cases bans and prohibitions may be the only appropriate application of PP and the only solution in the long term, and should not be seen as negative. The main negative impacts on biodiversity are due to utilisation, and aspects such as illegal trade and corruption. These negative aspects should not be related to the PP, but to administrative failures.

In some circumstances applying the precautionary principle will benefit poorer or weaker groups. However, where the costs of applying the precautionary principle are borne by poorer or less powerful groups, or developing countries, equity issues are raised. In these circumstances the socio-economic impacts, including *inter alia* gender issues, of applying the precautionary principle should be taken into account. This might involve making exceptions to precautionary restrictions where good management and sustainability can be demonstrated, or investing resources to support alternative livelihoods. Without this, application of the precautionary principle, where it restricts livelihood options, is likely to be less effective.

### **The PP and other principles**

The PP is closely linked to other principles and rights, such as the principle of prevention, the right to a healthy and ecologically balanced environment, the right to development, liability for environmental damage, inter-generational equity and intra-generational equity. These other principles should be taken into account in the process of decision-making. In case of conflicts between the PP and any of these other principles, this conflict must not be used as an excuse not to apply the PP. The decision-maker should analyse the effects of the application in order to reach a balanced solution.

### **PP at international level**

Different countries have different perspectives on, and strategies for, biodiversity conservation and NRM. Often Northern and Southern countries have different NRM strategies. Different countries' strategies and approaches should be respected in applying the PP.

When considering the application of the PP at international level, either within an international forum or when one country's decision has an impact on another, the principle of common but differentiated responsibility is particularly important, as applying the precautionary principle can carry costs. If developed countries require implementation of the PP by developing countries, this should be accompanied by resources to assist them.

At the international level, when the precautionary principle is applied to conserve the environment in other countries, such measures are likely to be more effective and equitable if carried out in consultation with those states.

### **Science and precaution in decision-making**

Scientific certainty is not possible. In conservation and NRM, decision-makers rarely or never have full scientific certainty before making a decision. On the other hand, usually some information is available. We should be wary of applying the PP to restrict activity where there is no evidence whatsoever of risk.

The PP is not 'anti-science' or unscientific. Rather, its application in decision-making draws attention to scientific uncertainties, gaps in information, and the limits of the traditional scientific method.

When understanding and assessing environmental risk, the traditional scientific method has limitations. While the scientific method emphasises minimising Type I errors (false positives), decision-making must balance the risks of both Type I errors (false positives) and Type II errors. In addition, Type III errors (defining the problem too narrowly) can be made.

Precautionary decision-making in conservation and NRM should incorporate not only formal scientific knowledge, but also traditional knowledge of indigenous and local communities.

Assessing and analysing uncertain threats requires transparent scientific institutions and practice.

In the view of some, the application of the PP requires a new way of doing environmental science in the investigation of uncertain threats, emphasising *inter alia* multi-disciplinary analysis of problems and broad participation in scientific investigation. The PP is closely linked to concepts of "post-normal" science.

## **Risk and uncertainty**

A distinction can be drawn between situations where potential outcomes and their probabilities and magnitudes are well-understood, on the one hand, and situations where uncertainty surrounds some aspect of causation, possible outcomes, the magnitude, scope and likelihood of damage, on the other hand.

The PP offers guidance on dealing with this second situation, when faced by uncertainty and inadequate or incomplete information. Uncertainties faced in conservation and NRM decision-making are not just biological or ecological uncertainties, but derive from lack of information on social/economic factors which will affect the conservation impact of decisions. Application of the precautionary principle should not be restricted to situations of strictly defined “scientific” uncertainty and inadequate or incomplete information.<sup>2</sup>

## **The PP and the burden of proof**

The PP often reverses the burden of proof: when considering where the burden of proof, the cost of bearing the burden of proof, the costs of management, and liability for the threat of environmental damage should be placed, the economic ability of the parties should be considered. Where relatively powerful private interests propose potentially damaging activities, they should bear the burden of proof. Where poorer or less powerful groups rely on activities which pose potential risks, it may be inequitable to place the burden of proof on them. The burden of proof should be borne by the party who is in better circumstances to provide information. This will usually be the party in a stronger economic position.

In the international context, the principle of common but differentiated responsibility is important. If developed, richer countries require developing countries to bear the burden of proof to demonstrate that activities such as use and trade of natural resources does not cause harm, they should share the costs.

This principle is also relevant in the context of trade-related measures used by a country to conserve its biodiversity, such as measures to prevent the spread of alien invasive species. The burden of proof for demonstrating that a species or commodity will not cause damage should be borne by the party proposing the introduction.

Even though the PP may place the burden of proof on one party, all stakeholders have a shared responsibility to act transparently and in good faith in assessing evidence of possible harm. Invoking the PP to reverse the burden of proof should not be used by some groups to avoid constructive engagement.

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<sup>2</sup> COMARINO disagreed with this point of view during the whole workshop. For them, uncertainty as defined in Principle 15 of Rio relates only to the lack of scientific certainty of harm to the environment. The precautionary principle is not inherently related to social, economic, or political uncertainties. Once the premises of the PP are found to apply, the precautionary decision must be taken. Social, economic and political aspects must be taken into account to implement and apply the PP, but NOT to make the decision as to whether to apply the PP. They were explicit that in a Latinamerican context, if all those aspects are taken into account in deciding whether to apply PP, it would never be applied, since economic and social aspects would always count for more than precaution. If all these aspects are taken into account in decision-making the PP will not be reinforced but will be weakened and confused. In a workshop that tries to implement “guidelines” this is most confusing.



## Agenda

### Wednesday March 16<sup>th</sup>

#### **Welcome and Introduction**

Chair: Barney Dickson, Precautionary Principle Project

9.30-10.40 Welcome *Miguel Pellerano, IUCN; Bernardo Ortiz, TRAFFIC*

The Precautionary Principle in Biodiversity Conservation and Natural Resource Management: Uncertainty, Risk, Biodiversity and Livelihoods *Rosie Cooney, The Precautionary Principle Project*

10.30-10.50 *Tea/coffee*

#### **The Precautionary Principle as a Legal and Policy Tool for Conservation**

*Issues for discussion* How has the PP been incorporated into law? How effective has this been in changing practice? What is the impact for biodiversity conservation? How have livelihood needs been affected and/or taken into account in decision-making? Lessons learnt?

10.50-12.30 Marine life, case studies and legislation: case studies from Mexico *Laura Rojas & Yolanda Alaniz, Conservación de Mamíferos Marinos de Mexico (COMARINO)*

Sea turtles conservation: bringing the precautionary principle into practice *Rolando Castro, Centro de Derecho Ambiental y de los Recursos Naturales (CEDARENA) Costa Rica*

The precautionary principle and biodiversity: administrative and judicial decisions in Argentina *Natalia Machain, [Fundación Ambiente y Recursos Naturales \(FARN\)](#) Argentina*

12.30-1.30 *Lunch*

1.30-3.00 The precautionary principle in the conservation of the native forest of Uruguay *Gabriel Caldevilla/Ana Quintillan, State Office for Renewable Natural Resources, Ministry of Livestock, Agriculture and Fisheries/ Department for Farming, State Insurance Bank*

CITES listing, international trade and forest conservation: failure to implement the precautionary principle for the Alerce *Miguel Fredes, Estudio Anselmo Aguayo (abogados), Chile*

3.00-3.20 *Tea/coffee*

#### **Science and Precaution in Decision-making**

*Issues for discussion* Is the precautionary principle compatible with “sound science”? Should application of the precautionary principle require previous scientific assessment of threats? What is the role of science in precautionary decision-making? How can environmental science/scientists contribute to precautionary decision-making?

3.20-5.15 Environmental science and the precautionary principle *Joel Tickner, Department of Community Health and Sustainability, University of Massachusetts Lowell, USA*

### Thursday March 17<sup>th</sup>

## **Implementing the Precautionary Principle in Management and Trade of Wild Living Resources**

### *Marine and coastal resources and biodiversity*

9.00-10.30 *Issues for discussion* The marine context is one of the biodiversity/NRM areas where the precautionary principle has been most widely incorporated into legislation and policy. Why is this? How has it affected on-the-ground management? What are the barriers to implementation? What are the impacts for biodiversity and livelihoods?

The precautionary principle in coastal management and marine fisheries in Ecuador  
*Segundo Coello, Vice-Minister Conservation, Ministry of the Environment*

Patagonian Regional Action Plan for Sharks *Gustavo Chiamonte, División Ictiología, Museo Argentino de Ciencias Naturales, "Bernardino Rivadavia"*

10.30-11.00 *Coffee/tea*

### *Forest and wildlife resources and biodiversity*

11.00-12.30 *Issues for discussion* What are the costs and benefits (economic, environmental, livelihood, health) of applying the precautionary principle, and who bears them? Who participates in precautionary decision-making? How can and should the precautionary principle be translated into management decisions when risks are complex, multiple and uncertain?

The precautionary principle and natural resource management: an economic analysis  
*James MacGregor, International Institute for Environment and Development, UK*

Who benefits from, and who pays the costs, of applying the precautionary principle?  
*Barney Dickson, The Precautionary Principle Project*

Precaution and trade in wild species: conservation of the blue-fronted amazon in Argentina  
*Jorge Rabinovitch, Centro de Estudios Parasitológicos y de Vectores (CEPAVE), Universidad Nacional de La Plata, Argentina*

12.30-1.30 *Lunch*

1.30-2.40 Implementing the precautionary principle in forestry and the timber trade: making "non-detriment findings" for mahogany  
*Gabriel Travisany, Consultant, Nicaragua*

What is the precautionary management practice? Contrasting consequences of caiman management in Colombia and Venezuela  
*Bernardo Ortiz, TRAFFIC-South America, Ecuador*

2.40-3.00 *Coffee/tea*

3.00- 4.30 Panel discussion: *Ernesto Raez, CI, Peru; Victoria Lichtschein, Government of Argentina, Ramon Perez-Gil, Fundación Gonzalo Río Arronte, Mexico*

What are the implications of the precautionary principle for management practices? How can it be translated into operational measures yielding positive benefits for conservation? What are the implications for livelihoods and equity? What are the barriers to implementation?

## **Towards Best-practice Guidance for Applying the Precautionary Principle**

4.30-5.00 Initial development of recommendations for best practice *Introduced by Barney Dickson and Rosie Cooney*

## **Friday March 18<sup>th</sup>**

9.00-11.30 Development of workshop statement setting out recommendations for best practice in applying the precautionary principle

## List of Participants

Name	Organization	Email
Miguel Fredes	Estudio Anselmo Aguayo (abogados), Santiago, Chile	<a href="mailto:miguelforest@yahoo.com">miguelforest@yahoo.com</a>
Ezequiel Santagada	Instituto de Derecho y Economía Ambiental - IDEA, Paraguay	ezequiel.santagada@idea.org.py
Joel A. Tickner	Department of Community Health and Sustainability, University of Massachusetts Lowell, USA	joel_tickner@Uml.edu
Natalia Machain	FARN - Argentina	nmachain@farn.org.ar
Rolando Castro	Cedarena, Costa Rica	rcastro@cedarena.org
James MacGregor	International Institute on Environment and Development, UK	<a href="mailto:james.macgregor@iied.org">james.macgregor@iied.org</a>
Victoria Lichtschein	Coordinadora de Conservación de la Biodiversidad Autoridad administrativa CITES, Argentina	vlichtsc@medioambiente.gov.ar
Ana Maria Quintillan	Banco de Seguros del Estado, Departamento Agronomico, Uruguay	aquintillan@bse.com.uy
Gabriel Caldevilla	Banco de Seguros del Estado, Departamento Agronomico, Uruguay	familiar@adinet.com.uy gcaldevilla@mgap.gub.uy
Yolanda Alaniz	Conservación de Mamíferos Marinos de Mexico--COMARINO	alanizy@yahoo.com
Laura Rojas	Conservación de Mamíferos Marinos de Mexico--COMARINO	aracelir@yahoo.com
Isabel Lapeña	Sociedad Peruana de Derecho Ambiental	<a href="mailto:ilapena@spda.org.pe">ilapena@spda.org.pe</a>
Gustavo Chiaramonte	Division Ictiologia - Museo Argentino de Ciencias Naturales	<a href="mailto:gchiaram@mail.retina.ar">gchiaram@mail.retina.ar</a>
Raul Gavidia	CITES Authority of El Salvador	rgavidia@mag.gob.sv
Ana Cecilia Pena	Government of El Salvador	ceciliap@MARN.GOB.SV

Ramón Pérez Gil Salcedo	Fundación Gonzalo Río Arronte, Mexico	pg7-faunam@laneta.apc.org
Ernesto Raez	Conservation International, Peru	<a href="mailto:eraez@conservation.org">eraez@conservation.org</a>
Segundo Coello	Vice Minister of Conservation Issues, Ministry of Environment, Ecuador	<a href="mailto:s.coello@uio.satnet.net">s.coello@uio.satnet.net</a>
Inez Arroyo-Quiroz	Centro de Investigaciones en Ecosistemas, Mexico	<a href="mailto:diceines@yahoo.com.mx">diceines@yahoo.com.mx</a>
Jorge Rabinovich	Center for the Study of Parasites and Vectors (CEPAVE), National University of La Plata, Argentina	<a href="mailto:jorge@ecopaedia.com.ar">jorge@ecopaedia.com.ar</a>
Pompeyo Ferro	Gobierno regional de Puno – Perú Gerencia regional de recursos naturales y gestion de medio ambiente	poferro@yahoo.com
Gabriel Travisany	Forestry Consultant, Nicaragua	<a href="mailto:gabriel_travisany@eec.com.ni">gabriel_travisany@eec.com.ni</a>
Bernardo Ortiz	TRAFFIC South America	bernardo.ortiz@traffic.sur.iucn.org
Barney Dickson	The Precautionary Principle Project	<a href="mailto:bw.dickson@virgin.net">bw.dickson@virgin.net</a>
Rosie Cooney	The Precautionary Principle Project	<a href="mailto:rosie.cooney@fauna-flora.org">rosie.cooney@fauna-flora.org</a>