

# The Precautionary Principle and Environmental Governance: *sustainable development, natural resource management and biodiversity conservation*



## TRAFFIC



## ResourceAfrica

A project of  
IUCN - The World  
Conservation Union  
TRAFFIC International  
Fauna & Flora International and  
ResourceAfrica

Precaution – the “precautionary principle” or “precautionary approach” – is a response to uncertainty, in the face of risks to health or the environment. In general, it involves acting to avoid serious or irreversible potential harm, despite lack of scientific certainty as to the likelihood, magnitude, or causation of that harm. Precaution is now an established principle of environmental governance, prominent in law, policy and management instruments at international, regional and domestic level, across such diverse areas as pollution, toxic chemicals, food and phytosanitary standards, fisheries management, species introductions and wildlife trade. The immediate and obvious importance of precaution in the context of natural resource management (NRM) and biodiversity conservation, where impacts can clearly be both serious and irreversible, has been recognised through its endorsement by all major biodiversity-related multilateral environmental agreements (MEAs), as well as myriad policy and legislative instruments at all levels.

However, the meaning and application of precaution is highly contested. Strong sentiments surrounded recent negotiations around the precautionary principle at the Convention on Biological Diversity (CBD) and the World Summit on Sustainable Development (WSSD), and the principle has been at the core of series of disputes in the World Trade Organisation (WTO) arena. Controversy is sparked by the perceived ambiguity or impracticality of the precautionary principle, the potential for its operation to conflict with trade, economic or development priorities, cost implications of its adoption, the wide discretionary leeway it allows decision makers, and the potential for this leeway to allow imposition of particular environmental values or disguise trade-protectionist abuse.

Controversy and dissent is provoked by lack of consensus on the meaning of precaution and guidance on how it should be operationalised. Within the arena of conservation and NRM, the various governance instruments that adopt precaution offer little guidance for its implementation, leaving this development to other processes. In order to underpin and assist such processes, IUCN, TRAFFIC, FFI and ResourceAfrica have launched this international initiative.

### **Precaution in development context**

Developing countries have articulated a range of concerns raised by the precautionary principle, including the potential for uncritical application to conflict with development priorities or access to markets. However, the policy debate over precaution has been largely dominated by corporate and environmental voices from developed countries. Focussing on biodiversity conservation and NRM, this project aims to examine and highlight perspectives and experiences of the precautionary principle from developing countries, and develop “best-practice” guidance that respects the imperatives of both biodiversity conservation and sustainable development.

## **How should precaution be operationalised?**

Applying precaution in NRM and biodiversity conservation is clearly essential. Fundamental uncertainties derive from our fragmentary understanding of species' biology and complex ecosystem dynamics, and abundant stochastic variation in environmental parameters. Uncertainty is not just ecological, but also surrounds the potential impacts of forces such as globalisation and decentralisation, effects of movements of global markets and trade regimes, and the effectiveness and utility of conservation measures such as protected areas, use of incentives, or strict regulatory approaches. Such uncertainty underpins the arguments both of those exploiting resources, who demand evidence that exploitation causes harm before accepting limitations, and those opposing, who seek to limit exploitation in the absence of clear indications of sustainability. So what does precaution mean, and how should it be applied?

This project will explore and examine a range of issues, including the following:

### ***(i) environmental risks vs socio-economic and livelihood risks***

Applying the precautionary principle in order to minimise environmental risks can conflict with economic, livelihood or development priorities. For instance, setting precautionary fisheries catch quotas may have immediate impacts on fishers' income, or setting precautionary harvest levels where elephants are trophy hunted may mean the loss of local livelihoods. Should the precautionary principle be applied to minimise risks to biodiversity, regardless of livelihood and development risks? Or should minimisation of environmental risk be balanced against socio-economic risks? This is a particularly crucial question in the context of sustainable development, where countries may face urgent problems of poverty alleviation with limited resources. Should the level of development of the state involved influence the level of precaution it is expected to apply? And who decides?

### ***(ii) risks of action vs risks of inaction***

Advocates of precaution are sometimes accused of ignoring risks associated with "precautionary" strategies. For instance, management interventions such as prescribed forest burning, or selective wildlife culling in protected areas, are sometimes opposed as non-precautionary, while supporters argue that the "precautionary" strategy raises its own risks of environmental harm. Likewise, some conservationists argue against utilisation or trade of wild species as non-precautionary, in the absence of full scientific certainty regarding sustainable

harvest levels. Others emphasise the conservation problems raised where wildlife cannot "pay its way" and is instead eradicated. When conservation and management choices are between risk and risk, not precaution and risk, how should the precautionary principle be understood and applied?

### ***(iii) short-term risks vs long-term risks***

Precaution is often advocated to avoid immediate or direct risks to biodiversity and living natural resources, in particular risks of degradation, decline or extinction due to overexploitation. However, prohibition of extraction, harvest or trade can also raise longer term or indirect risks, in terms of, for instance, alienating local resource users, reducing or eliminating economic incentives to conserve species, or decreasing political will for conservation. On the other hand, exploitation strategies that do not pose immediate extinction risks to targeted species may raise long term risks of genetic change or disruption of ecosystem functioning. Should application of precaution address both short term (or direct) and longterm (or indirect) risks to biodiversity? How can these be assessed and balanced?

### ***(iv) inconsistent understandings and applications of precaution across different sectors***

The importance placed on precaution, and its practical interpretation, varies widely across diverse biodiversity/resource management sectors. For whales, for instance, the Revised Management Procedure developed by the International Whaling Commission explicitly incorporates uncertainty over population parameters, with risk of overexploitation quantified and kept at a low level. Limitation of catch does not require information demonstrating the need for such limits, in contrast to traditional management approaches for commercial fish. For terrestrial fauna the precautionary principle is often interpreted to mean prohibition of utilisation and trade, whereas for other resources such as non-timber forest products, fisheries or timber this is rarely the case. In a broader context, it has become increasingly evident that some countries adopt widely divergent and self-contradictory stances *vis a vis* the precautionary principle in different policy arenas, such as WSSD, the Kyoto Protocol, the WTO, the CBD and CITES. Such inconsistent understandings of the relevance and application of precaution can promote distrust and allow abuse of the principle, and impede its consistent and equitable application.

### ***(v) scientific and non-scientific technical expertise in risk assessment and risk management***

Scientific knowledge can provide insight into the biological and ecological factors influencing the risk of overexploitation faced by, for instance, a species

or forest ecosystem. However, species and resources are exploited by humans making decisions and resource allocations within specific social and economic contexts. Is there a need for precautionary approaches to NRM and biodiversity conservation to incorporate expertise from non-biological and non-scientific sources such as economics, political science and development studies?

***(vi) implications of precaution for governance and participatory decision-making***

Making decisions on management of environmental risks typically involves making decisions about who bears the cost of demonstrating the safety of a practice, and who bears the burden of any environmental damage caused. Should, for instance, international timber companies be obliged to demonstrate their planned extractive regimes will not cause serious or irreversible harm to watershed protection, biodiversity or soil quality, or does this burden lie with those interests which oppose such practices? And if those who oppose are local stakeholders without the capacity to make such demonstrations, is this equitable? Should those who will bear the costs of damage, in the form of e.g. lost income, loss of incomes or livelihoods from hunting or collecting, be involved in such decisions? Is there scope for greater use of mechanisms, such as performance bonds, in which the cost of environmental harm can be borne by those whose actions cause it?

***(vii) implementing precaution when capacity and resources are limited***

Where application of the precautionary principle is understood as mitigating against adoption of a practice unless it is shown not to cause harm, this may require investment into research at a level which is not feasible for some developing countries, before any utilisation of living natural resources can proceed. For poor countries this may not be feasible or equitable. On the other hand, WTO developments indicate that, in some trade contexts at least, reliance on the precautionary principle may only be held to be legitimate where a very extensive process of risk assessment has been undertaken, which also may be unfeasible for many developing countries. Both these considerations raise the same question: how can the precautionary principle be operationalised when capacity and resources are limited?

***(viii) operationalising precaution through local institutions and management***

Some management regimes may be viewed as inherently precautionary or non-precautionary. At one extreme, open-access resources are particularly susceptible to overexploitation.

National government control of resource exploitation may be subject to economic and political imperatives such as appeasing industry lobbies and maintaining employment and revenue. On the other hand, resource management involving local communities who are, in the long-term, dependent on a resource appears in some cases to lead to sustainable management practices. Is it possible to identify precautionary systems of management? What are the essential factors?

***(ix) the relationship between the precautionary principle and adaptive management***

Adaptive management is a management tool expressly developed to deal with uncertainty. It emphasises provisional, reversible decision-making, with careful monitoring of impacts feeding back to refined decision-making. What is the relationship between the precautionary principle and adaptive management? Some see these as competing approaches, with precaution weighing in favour of "doing nothing" until an action can be shown to be harmless, and adaptive management favouring controlled interventions which increase understanding of the system in question. However, others view adaptive management as an inherently precautionary strategy, as it recognises that in complex systems certainty of outcome is impossible, and seeks to create a dynamic regime capable of responding to unpredictable changes. Proponents view adaptive management as a primary means by which precaution should be implemented at national and local levels in conservation/NRM. Is adaptive management a sound precautionary strategy?

***(x) national implementation practices***

Incorporation of the precautionary principle into national law and decision making on NRM and conservation, by legislation or otherwise, will need to address a number of practical matters. A precautionary regulatory framework needs to address, for instance, the nature of rights to object on precautionary grounds to government decisions, determination of who bears the burden of proof to demonstrate harm or lack thereof, the standards of proof considered acceptable to demonstrate harm or lack, and mechanisms for stakeholder involvement. The burden of proof is often an onerous one, particularly where it falls on a party to conclusively demonstrate lack of harm. Similarly, where procedures for invoking precaution are detailed or extensive, it may have little practical value to those most affected by the risks and uncertainties. Guidance for governments on these points, and realistic data on the impacts of various legislative choices, would greatly improve the chances of effective incorporation of precaution into national level regulation.

**This project: an international process of dialogue, research and policy development**

IUCN, TRAFFIC, FFI and ResourceAfrica seek to explore these issues in greater depth. This project will examine and assess the practical operation and impact of the precautionary principle in NRM and conservation, emphasising throughout perspectives from developing countries. The project includes:

- a detailed situation analysis examining practice and issues in different regions, policy arenas and sectors;
- a website, which will eventually provide on-line information resources to inform and guide operation and application of the precautionary principle ([www.pprinciple.net](http://www.pprinciple.net))
- a dialogue process in developing country regions, comprised of three workshops, tentatively planned for South America,

Africa and Southeast Asia, in 2004, aiming to stimulate dialogue and discussion on these issues between policymakers, practitioners and academics;

- a set of 10-15 case studies focussed in developing country regions, assessing the operation and impacts of the precautionary principle across different sectors, at different levels-from local management to international policy, and in different regions. These will include analysis of the context of application and impacts on conservation, trade and development;
- the development of high profile “best-practice” guidance on the interpretation and application of precaution in a manner that respects both conservation and development priorities.

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*June 2003*