

GUIDELINES FOR APPLYING THE PRECAUTIONARY PRINCIPLE TO BIODIVERSITY CONSERVATION AND NATURAL RESOURCE MANAGEMENT

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I. INTRODUCTION

The meaning of the precautionary principle

The uncertainty surrounding potential threats to the environment has frequently been used as a reason to avoid taking action to protect the environment. However, it is not always possible to have clear evidence of a threat to the environment before the damage occurs. Precaution - the “Precautionary Principle” or “Precautionary Approach” - is a response to this uncertainty.

The Precautionary Principle has been widely incorporated, in various forms, in international environmental agreements and declarations and further developed in a number of national laws. An element common to the various formulations of the Precautionary Principle is the recognition that lack of certainty regarding the threat of environmental harm should not be used as an excuse for not taking action to avert that threat (See Box 1).

The Precautionary Principle recognizes that delaying action until there is compelling evidence of harm will often mean that it is then too costly or impossible to avert the threat. Use of the principle promotes action to avert risks of serious or irreversible harm to the environment in such cases.

The Principle is based on the recognition that a false prediction that a human activity *will not* result in significant environmental harm will typically be more harmful to society than a false prediction that it *will* result in significant environmental harm.

The Principle therefore provides a fundamental policy basis to anticipate, avoid and mitigate threats to the environment.

There has been much debate about the nature of the concept of precaution, in particular whether it should be accepted as a legal principle in addition to being a sound policy approach. Some have argued against the recognition of precaution as a “principle” of environmental law, which implies a broad obligation to apply precaution in decision-making, in favour of viewing precaution as merely one particular policy/management “approach” to dealing with uncertain threats. While it is undisputed that in an increasing number of specific contexts there are clear

legal requirements to apply precaution, there is an ongoing debate on whether precaution has become part of international customary law. The development of these guidelines has not been shaped by this distinction. The term 'Precautionary Principle' has been used throughout these guidelines for consistency.

Finally, it must be borne in mind that the precautionary principle is generally only relevant where the following elements are present:

- First, in situations where there is *uncertainty*. Where the threat is relatively certain (i.e. a causal link between an action and environmental damage can be established, the probability of occurrence can be calculated, and the damage insured against), measures may also need to be taken. However, these should be seen as *preventive*, not *precautionary* measures; and.
- Second, where there is a threat of environmental damage. Where there is no indication of a threat of environmental harm, the principle will not apply; and.
- Third, where the threatened harm is of a serious or irreversible nature. Where threatened damage is trivial or easily reversible, the principle will not be relevant.

BOX 1: Some examples of different formulations of the Precautionary Principle

Rio Declaration, 1992 Principle 15

In order to protect the environment the Precautionary Approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

Convention on Biological Diversity 1992, Preamble

[W]here there is a threat of *significant reduction or loss* of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat.

Framework Convention on Climate Change 1992, Article 3.3

3. The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost.

UK Biodiversity Action Plan, 1994, para 6.8

In line with the precautionary principle, where interactions are complex and where the available evidence suggests that there is a significant chance of damage to our

biodiversity heritage occurring, conservation measures are appropriate, even in the absence of conclusive scientific evidence that the damage will occur.

Convention on International Trade in Endangered Species of Wild Fauna and Flora, Resolution Conf 9.24 (Rev CoP13)

[T]he Parties shall, by virtue of the precautionary approach and in case of uncertainty either as regards the status of a species or the impact of trade on the conservation of a species, act in the best interest of the conservation of the species concerned and adopt measures that are proportionate to the anticipated risks to the species.

Cartagena Protocol on Biosafety to the Convention on Biological Diversity 2000

The preamble to the Protocol reaffirms the precautionary approach contained in the Rio Declaration. In addition, the Protocol's Objective is based explicitly on the precautionary approach.

Article 1. In accordance with the precautionary approach contained in Principle 15 of the Rio Declaration on Environment and Development, the objective of this Protocol is to contribute to ensuring an adequate level of protection in the field of the safe transfer, handling and use of living modified organisms resulting from modern biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity, taking also into account risks to human health, and specifically focusing on transboundary movements

Earth Charter, para 6: Prevent harm as the best method of environmental protection and, when knowledge is limited, apply a precautionary approach.

a. Take action to avoid the possibility of serious or irreversible environmental harm even when scientific knowledge is incomplete or inconclusive.

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c. Ensure that decision making addresses the cumulative, long-term, indirect, long distance, and global consequences of human activities.

The role of the precautionary principle in the conservation and sustainable use of biodiversity and living natural resources

The Precautionary Principle is of particular relevance and importance in the context of conservation and sustainable use of biodiversity and living natural resources. Species (as well as populations and sub-species) are genetically unique and irreplaceable – their loss is irreversible. Ecosystems vary across a vast range of parameters, and similar ecosystems (whether wetlands, forests, coastal reserves etc) cannot be presumed to be interchangeable, such that the loss of one can be compensated by protection or restoration of another. Further, conservation and sustainable use must deal with a particularly high degree of persistent and largely irreducible uncertainty and complexity.

Application of the Precautionary Principle helps sustain the biodiversity assets and ecosystem services which underpin all societies and economies, and can thereby

contribute to the eradication of poverty; maintenance of a natural and social environment supportive of human dignity, bodily health, and spiritual well-being; and the rights of indigenous peoples to their spirituality, knowledge, lands, resources and livelihoods.

II. THE ETHICAL IMPLICATIONS OF THE PRECAUTIONARY PRINCIPLE IN BIODIVERSITY CONSERVATION AND NATURAL RESOURCES MANAGEMENT

The IUCN has explicitly affirmed the principle of “respect and care for the community of life” and the values of just and sustainable living by its sponsorship and endorsement of *The World Charter for Nature* (1983), *Caring for the Earth: A Strategy for Sustainable Living* (1991), the *Draft International Covenant on Environment and Development* (1995 and 2004), and most definitively, in its endorsement of the *Earth Charter* as “an inspirational expression of civil society’s vision for building a just, sustainable and peaceful world” as well as its recognition as “an ethical guide for IUCN policy” (2004). IUCN has also adopted for itself the vision of achieving “a just world that values and conserves nature”. This is in line with the three interdependent and mutually reinforcing economic, social and environment pillars of sustainable development, as recognised by the United Nations and the IUCN.

In a world of increasing economic and technological globalization, on a planet whose biodiversity and natural systems - upon which civilizations depend - are increasingly jeopardized by human activity, every individual and organization has the responsibility to “respect and care for the community of life” and to take whatever actions are needed to avoid threats to these values.

The Precautionary Principle requires more than careful anticipation, avoidance and mitigation of potential harm from human activities that are already underway or proposed for the future. It requires a forward-looking stance of taking care for the future in the sense of actively preparing, planning and providing for it. It encourages humans to commit themselves to the future of life on Earth by ensuring that evolutionary processes and life-support systems continue to be replenished and that the generations to come enjoy lives of dignity, opportunity and beauty. The Precautionary Principle is therefore a proactive principle that calls on decision-makers to place the powers of scientific inquiry, technological innovation, political decision-making, legislative enactment, economic production and personal vocation in the service of new and creative ways of living that risk less harm to the health of humans and nature, and sustain the viability of the biosphere.

Implementing the Precautionary Principle entails:

(a) humility and restraint, acknowledging human fallibility in the search for certainty, the limits of science, and the tendency to over-reach in the quest for human security and well-being;

(b) assuming the burden of responsibility for our actions, and therefore the need to justify our activities in the light of ethical principles, public accountability, and available knowledge, and not leave this task to others;

(c) promoting democratic processes of practical moral deliberation and decision-making in which citizens consider a plurality of often competing “goods,” and offer reasoned arguments on behalf of preferred courses of action that are fair and equitable for present and future generations;

(d) imagining new ways of living that are more liberating for humans and nature alike, and openly assessing all alternatives;

(e) preserving, at whatever costs are necessary, sufficient genetic diversity and resilient natural systems as will assure the indefinite evolutionary flourishing of life on the planet;

(f) making the necessary transformations in personal, economic and social life that will realize a more just and sustainable future for all.

III. THE GUIDELINES

Scope and target audience

The Guidelines are intended to provide assistance in the application of the Precautionary Principle to the conservation of biodiversity and natural resource management. The term natural resource management (NRM) in the Guidelines refers only to the management of living natural resources. These guidelines have been formulated through focusing on forestry, fisheries, protected areas, invasive alien species, and wildlife conservation, management, use and trade. They may also be relevant to decision-making in other sectors that impact on biodiversity. The primary target audience of the Guidelines is policymakers, legislators and practitioners, but they also aim to create a culture of precaution in all sectors relevant to biodiversity conservation and NRM.

To apply the precautionary principle effectively:

A. ESTABLISH THE FRAMEWORK

Guideline 1: INCORPORATE

Incorporate the Precautionary Principle explicitly into appropriate legal, institutional and policy frameworks for biodiversity conservation and natural resource management.

Elaboration: Application of the principle requires a clear legal and policy basis and an effective system of governance. It also requires the establishment and maintenance of adequately resourced institutions to carry out research into risk and uncertainty in environmental decision-making and natural resource management.

Guideline 2: INTEGRATE

Integrate application of the Precautionary Principle with the application of other relevant principles and rights.

Elaboration Other principles and rights are also relevant to conservation and NRM, including inter-generational and intra-generational equity, the right to development, the right to a healthy environment, and human rights to food, water, health and shelter. These other rights and principles must be borne in mind when applying the Precautionary Principle. In some circumstances these other rights may strengthen the case for precautionary action. In other circumstances, the Precautionary Principle may need to be weighed against these other rights and principles, taking into due account the critical nature of the Principle.

Guideline 3: OPERATIONALISE

Develop clear and context-specific obligations and operational measures for particular sectors and contexts, and with respect to specific conservation or management problems.

Elaboration: The purpose of the Precautionary Principle is to enable action; it does not require that a particular decision should be made or outcome reached. To have conservation impact, it will typically require translation into concrete policy and management measures that are readily understood, that address the conservation problem and that identify actions to be taken in specific contexts. Without these, incorporation of the principle in law or policy may have little influence on practice. However, there is also a need for flexibility: the specific decisions and management or policy measures that it supports may vary over time and with changing circumstances.

Guideline 4: INCLUDE STAKEHOLDERS AND RIGHTHOLDERS

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

Elaboration: Precautionary decision-making involves making decisions where there is uncertainty about the underlying threat. This means that judgments, values and cultural perceptions of risk, threat and required action must play a role. Therefore, it is important to include stakeholders and rightholders and to be transparent throughout the process of assessment, decision-making and implementation. Key stakeholders include those who bear the costs of the potential threat, such as those

who will be impacted by degradation or loss of biodiversity or natural resources, and those who bear costs of precautionary action (if any), such as those whose legitimate use of natural resources will be restricted. Indigenous peoples and local communities often play a very important role in NRM or rely on biodiversity and natural resources, and should be included. They should have the opportunity and resources to represent themselves and their interests effectively, and this should not be precluded by logistical, technical or language barriers. The imperative of including key stakeholders should, however, be balanced against potential conservation costs of delaying a decision.

Guideline 5: USE THE BEST INFORMATION AVAILABLE

Base precautionary decision-making on the best available information, including that relating to human drivers of threats, and traditional and indigenous knowledge

Elaboration: Decision-making situations where the Precautionary Principle is relevant can entail varying degrees of uncertainty, ranging from situations of complete ignorance to those where probabilities can be estimated. The Precautionary Principle nevertheless requires that in any situation, all available relevant information be taken into account, including that relating to human drivers of threats to biodiversity, as well as biological and ecological information. The best available scientific information should be used. In addition, traditional and indigenous knowledge and practices may also be relevant and should therefore be taken into account in decision-making. Efforts should be made to ensure evidence and information is independent, free of bias, and gathered in a transparent fashion. This can be facilitated by ensuring that it is gathered by independent and publicly accountable institutions without conflict of interest. In addition, taking into account multiple sources of information can help minimize bias.

B. DEFINE THE POTENTIAL THREATS, OPTIONS AND CONSEQUENCES

Guideline 6: CHARACTERISE UNCERTAIN THREATS

Characterize the threat(s), and assess the uncertainties surrounding the ecological, social and economic drivers of changes in conservation status.

Elaboration: The threats addressed should include not only direct ones but also indirect, secondary and long-term threats, and the incremental impacts of multiple or repeated actions or decisions. Their underlying causes and potential severity should be assessed, and efforts made to determine what is known and not known, what knowledge can be easily improved and what cannot. There should be explicit recognition of ignorance, areas of uncertainty, gaps in information, and limitations of the predictive power of available methods for detecting and assessing threats. Where threats may interact or be inter-related (e.g. action against one may exacerbate another) they should not be addressed in isolation. However, there is a

need to balance the benefits of delaying a decision to gather more information against the potential threats raised by such a delay.

Guideline 7: ASSESS OPTIONS

Identify the available actions to address potential threats, and assess the likely consequences of these various courses of action and inaction

Elaboration: The principle should guide a constructive search for alternatives and practical solutions, and support positive measures to anticipate, prevent and mitigate threats. The potential benefits and threats raised by available courses of action and inaction should be assessed - these threats and benefits may be of various kinds, from various sources, and may be short or long term. There may be threats associated with all courses of action: often conservation and NRM decisions involve a choice between “risk and risk” rather than between “risk and caution”. In assessing the likely consequences of alternative courses of action and inaction the technical feasibility of different approaches should be taken into account.

Guideline 8: ALLOCATE RESPONSIBILITIES FOR PROVIDING EVIDENCE

Allocate roles and responsibilities for providing information and evidence of potential threat and/or safety according to who is proposing a potentially harmful activity, who benefits from it, and who has access to information and resources

Elaboration: In general, those who propose and/or derive benefits from an activity which raises threats of serious or irreversible harm should bear the responsibility and costs of providing evidence that those activities are, in fact, safe. The information itself should be the best available from a variety of sources (see Guideline 5). However, if this would involve requiring poorer, vulnerable or marginal groups to carry the responsibility and costs of showing that their activities (particularly traditional and/or livelihood activities) do not raise threats, either these responsibilities and costs should be placed on relatively more powerful groups, or financial/technical support should be provided. Moreover, in some circumstances, the different options available will each raise potentially significant conservation threats, in which case the guidance for assessing threats in Guideline 7 is relevant.

C. DEVISE THE APPROPRIATE PRECAUTIONARY MEASURES

Guideline 9: BE EXPLICIT

Specify the precautionary measures being taken and be explicit about the uncertainty to which the precautionary measures are responding.

Elaboration: When decisions are made in situations of uncertainty, it is important to be explicit about the uncertainty that is being responded to, and to be explicit

about the precautionary measures that are being taken. This ensures transparency, and also provides a clear basis for monitoring and feedback to decision-making/management.

Guideline 10: BE PROPORTIONATE

In applying the Precautionary Principle adopt measures that are proportionate to the potential threats

Elaboration: A reasonable balance must be struck between the stringency of the precautionary measures, which may have associated costs (*inter alia* financial, livelihood and opportunity costs), and the seriousness and irreversibility of the potential threat. The degree of uncertainty must also be taken into account in this weighing process.

Guideline 11: BE EQUITABLE

Consider social and economic costs and benefits when applying the Precautionary Principle and where decisions would have negative impacts on the poor or vulnerable explore ways to avoid or mitigate these

Elaboration: Attention should be directed to who benefits and who loses from any decisions, and particular attention should be paid to the consequences of decisions for groups which are already poor or vulnerable. Where the benefits of an existing or proposed threatening activity accrue only to a few, or only to the already powerful and economically advantaged, or are only short-term, and potential costs are borne by the public and communities, by poorer or vulnerable groups, or over the long-term, this argues strongly in favour of increased precaution. If the application of precautionary measures would impact negatively on poor or vulnerable groups in a manner which threatens their economic, social or cultural livelihoods, ways to avoid or mitigate impacts on these groups must be explored. Threats to biodiversity and living natural resources may need to be weighed against potential threats to livelihoods and food security, or resources may need to be invested in compensation or in support for alternative livelihoods.

D. IMPLEMENT EFFECTIVELY

Guideline 12: BE ADAPTIVE

Unless strict prohibitions are required, use an adaptive management approach, including the following core elements:

- monitoring of impacts of management or decisions based on agreed indicators;
- promoting research, to reduce key uncertainties;

- ensuring periodic evaluation of the outcomes of implementation, drawing of lessons and review and adjustment, as necessary, of the measures or decisions adopted;
- establishing an efficient and effective compliance system.

Elaboration: An adaptive approach is particularly useful in the implementation of the Precautionary Principle as it does not necessarily require having a high level of certainty about the impact of management measures before taking action, but involves taking such measures in the face of uncertainty, as part of a rigorously planned and controlled trial, with careful monitoring and periodic review to provide feedback, allowing amendment of decisions in the light of such feedback and new information.

Applying the Precautionary Principle may sometimes require strict prohibition of activities. This is particularly pertinent in situations where urgent measures are required to avert imminent potential threats, where the potential damage is likely to be immediately irreversible (such as the spread of an invasive species), 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 measures at an earlier stage.

As precautionary measures are taken in the face of uncertainty and inadequate evidence surrounding potential threats to the environment, their application should be accompanied by monitoring and regular review, both to examine whether knowledge and understanding of the threat has increased, and to examine the effectiveness of the precautionary measure in addressing the threat. Any new information gained through monitoring and further research or information-gathering can then be fed back to inform further management and decision-making. While in some cases this may lead to the precautionary measure no longer being needed, in others it may lead to the determination that the threat is more serious than expected and that more stringent measures are required.

If meaningful participation by stakeholders/rightholders is ensured throughout the process for implementing the Precautionary Principle, compliance is likely to be higher. The costs of compliance should be borne by the parties with the capacity to do it and at the least cost to society. Customary practices and social structures should be considered and, where appropriate, incorporated into the compliance scheme.

The management programme should be consistent with the available resource-base (monetary and non-monetary). Governments, private organizations, communities and individuals can contribute to this base. In determining this base, managers should consider the relative benefits to the relevant parties. Resources must be employed efficiently and tasks should be supportive of the management programme.

In addition, providing a regime of liability for purely ecological harm, especially in the form of strict liability, so as to act as a deterrent, may be an important mechanism to support the implementation of the precautionary principle.
