



Agenda Item 5.2  
For decision

**Council**

**CNL(97)21**

***The Use Of The Precautionary Approach  
By NASCO***

## **The Use Of The Precautionary Approach By NASCO**

### **Introduction**

At its Thirteenth Annual Meeting the Council considered a brief report on the Precautionary Approach to fisheries management. The President commented that although the Precautionary Approach is easy to understand it is more difficult to implement as a management tool. The Secretary was requested to prepare a paper bringing forward specific ideas as to how to adopt the Precautionary Approach to all of the work of NASCO.

### **The Precautionary Principle**

It has been reported that the Precautionary Principle originated in Germany as “das Vorsorgeprinzip” designed to control pollution (Nollkaemper, 1991). While it is often assumed to be a new concept, the Precautionary Principle has been the basis of much US environmental legislation since the early 1970s but in recent years it has been formally enshrined in many international agreements to such an extent that it is said to be becoming the “norm” in international law (Bodansky, 1991). The Precautionary Principle “institutionalises” caution although caution is not defined and the extent to which caution should be exercised is not specified (Dovers and Handmyer, 1995). The Precautionary Principle is sometimes confused with the saying ‘prevention is better than cure’. However, most environmental protection regulations are intended to prevent damage where the outcome of an action can be predicted, whereas the Precautionary Principle advocates restraint on development if there is reasonable suspicion of possible damage without waiting for scientific proof, i.e. any decision should err on the safe side (Hay, 1991). The application of the Precautionary Principle therefore involves a shift in the onus of proof from those advocating the protection of the environment to those proposing actions which might damage it (Dovers and Handmyer, 1995).

The Precautionary Principle was defined in the 1992 Australian Inter-Governmental Agreement on the Environment as follows: “where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation” (in Dovers and Handmyer, 1995). This definition introduces the concept that the potential damage should be serious or irreversible and that there is some ignorance of how the systems might be affected. An early example of the application of the Precautionary Principle in an international agreement was the measures taken to protect the ozone layer by reducing emissions of chlorofluorocarbons (CFCs) and other substances. The basis for action was existing empirical evidence of an anthropogenic change in the ozone layer and a theoretical knowledge of the basic mechanisms involved. There was, however, and still is, an incomplete understanding of the large, dynamic system involved (Kelton, 1995). While the Precautionary Principle has been applied to protection of the ozone layer and the reduction of greenhouse gases, global issues clearly of concern to the wellbeing of humanity, it has perhaps been most widely advocated in relation to marine pollution (Nollkaemper, 1991). The concept of the precautionary principle has been broadened from toxic substances, to natural substances (eg nutrients) and more recently to the management of renewable resources including fisheries (Anon, 1997).

## **The Precautionary Approach**

The terms “Precautionary Principle” and “Precautionary Approach” are often used synonymously but the term “approach” implies more flexibility allowing for socio-economic factors to be taken into consideration in its application (Anon, 1997). The Precautionary Approach is perhaps more appropriate for use in fisheries since management errors are unlikely to threaten humanity and in most cases, though not all, the impacts are likely to be reversible (Garcia, 1996). Nevertheless, errors in fisheries management may have serious impacts on the resources and serious social and economic implications.

### **Application by other fisheries bodies**

Principles, by their nature, do not set out the means by which they are to be realised (Nollkaemper, 1991). At a practical level it will therefore be necessary to develop guidelines and such guidelines have been developed on fishery management, fishery research, fishery technology and species introductions in relation to the FAO Code of Conduct for Responsible Fisheries (Anon, 1995).

In these guidelines it is noted that application of the Precautionary Approach to fisheries involves the application of prudent foresight and that it requires *inter alia*:

avoidance of changes that are potentially irreversible

prior identification of undesirable outcomes and measures to avoid or correct them

that corrective measures are initiated without delay and that they should achieve their purpose promptly

that where the impact of resource use is uncertain priority should be given to conserving the productive capacity of the resource

that harvesting should be commensurate with estimated sustainable levels

appropriate placement of the burden of proof by adhering to the requirements above.

A key question in considering the application of a precautionary approach is “how much evidence of environmental harm is necessary to warrant precautionary action?” (Bodansky, 1991). This raises the concepts of the burden of proof and the standard of proof.

In relation to these concepts it has been recognised (Anon, 1995) that:

all activities have some environmental impact and it is not appropriate to assume that these are negligible until proved otherwise;

the Precautionary Approach does not imply that no activity can take place until all potential impacts have been assessed and found to be negligible;

all fishing activity should be subject to prior review and authorization and that management plans should be in place which specify the management objectives and how the impacts are to be assessed, prioritised and addressed;

the standard of proof to be used in making decisions about authorizing an activity should be commensurate with the potential risks to the resource, while also taking into account the expected benefits.

Some formulations of the precautionary approach have gone further however and reverse the burden of proof by not allowing an activity to proceed unless it can be proved to be safe (Bodansky, 1991).

In the case of the UN Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks, implementation of the precautionary approach involves the establishment of stock-specific precautionary “reference points” which correspond to the state of the resource and of the fishery and which can be used as a guide to fisheries management. Two types of reference point are proposed:

“conservation” or “limit” reference points which set boundaries intended to constrain harvesting within safe biological limits within which the stocks can produce maximum sustainable yield.

- “management” or “target” reference points intended to meet management objectives

As the reference points are approached the UN Agreement requires that conservation and management action be taken.

### **Rationale for application of a Precautionary Approach to salmon management**

Although the Atlantic salmon is a small resource compared to many marine species it is highly prized and generates considerable economic benefits throughout its North Atlantic range. It is of social, economic, cultural and ceremonial significance. It is probably unique in being highly valued by those who have no interest in harvesting it. The Atlantic salmon is also an important indicator species in terms of environmental quality and in many river systems where diversity is low it is a key species in terms of fish production. The anadromous life-cycle of the species means that it is exposed to a wide range of pressures in both the freshwater and marine environments and the genetic structure and the small size of many salmon populations means that the resource is particularly vulnerable. Despite the best efforts of management agencies some stocks of salmon have been lost, and others are threatened with loss, throughout its range. In recent years there has been growing concern about the abundance of North Atlantic salmon stocks which appear to have declined as a result of factors which are poorly understood but which have resulted in reduced survival in the marine environment. Many of the pressures on the resource are poorly understood but their effects may be effectively irreversible, for example through the loss of local adaptations, or only slowly reversible. In these circumstances adherence to the Precautionary Principle and adoption of a Precautionary Approach to the conservation and management of Atlantic salmon would certainly seem to be appropriate.

## **Definition**

If NASCO wished to adopt the Precautionary Approach and decided to use the same definition as used in the UN Agreement, managers would exercise more caution when information is uncertain, unreliable or inadequate and the absence of adequate scientific information would not be used as a reason for postponing or failing to take conservation and management measures.

## **Application by NASCO**

The NASCO Convention requires the Organization to contribute “through consultation and cooperation to the conservation, restoration, enhancement and rational management of salmon stocks taking into account the best scientific evidence available to it”. If there were a perfect understanding by the scientists advising NASCO of all the factors influencing the resource it might be argued that there would be no need for a Precautionary Approach.

In most, if not all, fishery science this is not the case and the best scientific advice may involve considerable uncertainty in some areas, or absence of a consensus among scientists or absence of any scientific information. In view of this situation, application of a Precautionary Approach to NASCO’s work would seem to be justified. To take a specific example, the possible genetic damage to discrete wild salmon stocks through interbreeding with escaped farm fish might be a classic example of a situation where damage is feared and would probably be irreversible but where the evidence is not yet clear. There are other areas such as habitat management, introductions and transfers and pollution, etc. where the Precautionary Approach would also have application.

It will be necessary to look at each area of management turn and decide what the Precautionary Approach means in each case. For salmon it is a particularly complex subject and it has not been possible, or desirable, in this paper to develop a specific set of proposals. That process would need a great deal of consultation and the Council may, therefore, wish to consider establishing a Working Group to consider in greater detail how the Precautionary Approach might be applied to NASCO’s work. The terms of reference for such a Working Group might be “To consider how the Precautionary Approach might apply to all aspects of salmon management and to advise the Council of its recommendations before the 15<sup>th</sup> Annual Meeting”.

Secretary  
Edinburgh  
14 May 1997



## References:

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## **USE OF THE PRECAUTIONARY APPROACH IN INTERNATIONAL AGREEMENTS**

### **Rio Declaration on Environment and Development**

Principle 15 of the Rio Declaration on Environment and Development states that “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**

Although the Precautionary Principle is not specifically referred to in the Convention, the Preamble includes the following elements:

“The Contracting Parties:

Aware of the general lack of information and knowledge regarding biological diversity and of the urgent need to develop scientific, technical and institutional capacities to provide the basic understanding upon which to plan and implement appropriate measures;

Noting it is vital to anticipate, prevent and attack the causes of significant reduction or loss of biological diversity at source;

Noting also that where 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 minimise such a threat”.

### **North Sea Conference**

The adoption of the Precautionary Principle was accepted by all the North Sea States at the Second International Conference on the Protection of the North Sea held in London in 1987. This principle allowed for reductions in emissions of pollutants at source even where there is no scientific evidence to prove a causal link between emissions and environmental effects.

At the Fourth International Conference on the Protection of the North Sea, held in Esbjerg, Denmark during 8-9 June 1995 it was agreed that an Intermediate Ministerial Meeting (IMM) on the Integration of Fisheries and Environmental Issues would be held in March 1997 and to establish a Committee of North Sea Senior Officials (CONSSO) to prepare for this meeting. The Ministers also recommended that the Precautionary Principle should be applied in North Sea fisheries management. In preparation for the IMM in 1997 the CONSSO arranged a seminar which was held in Oslo during 9-10 September 1996. This seminar, which placed special emphasis on the North Sea fisheries, had as its aims to:

- i) clarify the different views on the application of the Precautionary Principle to practical fisheries management, and to identify areas of consensus.

ii) discuss the Precautionary Approach in case studies for three different North Sea Fisheries.

In the report from the meeting it is concluded that the Precautionary Approach is considered more flexible than the Precautionary Principle and includes consideration of the socio-economic implications of its application. The Precautionary Principle is regarded as very restrictive and prescriptive and fishing cannot be undertaken in accordance with the Precautionary Principle. The Precautionary Approach may be regarded as a set of practical guidelines on how to deal with uncertainties in fishery management in a responsible way.

In the Statement of Conclusions arising from the Intermediate Ministerial Meeting on the Integration of Fisheries and Environmental Issues, held in March 1997, it is stated that "the Ministers, in the exercise of their political responsibilities, agree that the future fisheries and environmental protection, conservation and management measures, including the management of North Sea fisheries, should be guided by ..... application of a Precautionary Approach to management of living marine resources, set out in the UN Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks and the FAO International Code of Conduct.

#### **Food and Agriculture Organization of the United Nations - Code of Conduct for Responsible Fisheries**

At its Nineteenth Session in March 1991 the FAO's Committee on Fisheries (COFI) called for the development of new concepts which would lead to responsible, sustained fisheries. Following the International Conference on Responsible Fishing held in Cancun, Mexico in 1992 which requested FAO to prepare an international Code of Conduct, the FAO Governing Bodies recommended the formulation of a global code which would establish, in a non-mandatory manner, principles and standards applicable to the conservation, management and development of all fisheries. The Code was unanimously adopted on 31 October 1995.

Under Article 6 (General Principles) of the Code it is stated that 'States and sub-regional and regional fisheries management organizations should apply a Precautionary Approach widely to conservation, management and exploitation'.

In 1995 a Technical Consultation on the Precautionary Approach to Capture Fisheries (Including Species Introductions) was held in Lysekil, Sweden. Guidelines were developed on Fishery Management, Fishery Research, Fishery Technology and Species Introductions to provide support for the FAO Code of Conduct for Responsible Fisheries.

The Technical Consultation concluded that the Precautionary Approach involves the application of prudent foresight and it requires inter alia:

- consideration of the needs of future generations and avoidance of changes that are not potentially reversible;
- prior identification of undesirable outcomes and of measures that will avoid them or correct them;



- that any necessary corrective measures are initiated without delay and that they should achieve their purpose promptly;
- that where the likely impact of resource use is uncertain, priority should be given to conserving the productive capacity of the resource;
- that harvesting and processing capacity should be commensurate with estimated sustainable levels;
- all fishing activities must have prior management authorisation and be subject to review;
- an established legal and institutional framework for fishery management, within which management plans implementing the above points are instituted for each fishery;
- appropriate placement of the burden of proof by adhering to the above requirements.

With regard to the burden and standard of proof it is recognised that:

- all fishing activities have environmental impacts and it is not appropriate to assume that these are negligible until proved otherwise;
- the precautionary approach does not imply that no fishing activity can take place until all potential impacts have been assessed and found to be negligible;
- the precautionary approach requires that all fishing activities be subject to prior review and authorisation; that management plans be in place and that interim management measures should apply until a plan is in place;
- the standard of proof used in decision-making should be commensurate with the potential risk to the resource while taking into account the expected benefits.

**United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks**

This Agreement was opened for signature on 4 December 1995 . While it was not possible to reach consensus on inclusion of the Precautionary Principle in the agreement because of fears that this could lead to a moratorium on fishing a requirement for States to apply a Precautionary Approach was included. Under Article 5 of the Agreement, which deals with general principles, it is stated that in order to conserve and manage Straddling Fish Stocks and Highly Migratory Fish Stocks coastal states and states fishing on the high seas shall apply the precautionary approach in accordance with Article 6. This Article includes the following elements:

- 1) States shall apply the precautionary approach widely to conservation, management and exploitation of straddling fish stocks and highly migratory fish stocks in order to protect the living marine resources and preserve the marine environment.
- 2) States shall be more cautious when information is uncertain, unreliable or inadequate. The absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures.
- 3) In implementing the precautionary approach, States shall:
  - a) improve decision making for fishery resource conservation and management by obtaining and sharing the best scientific information available and implementing improved techniques for dealing with risk and uncertainty.
  - b) apply the guidelines set out in Annex II of the Agreement and determine, on the basis of the best scientific information available, stock-specific reference points and the action to be taken if they are exceeded.

A precautionary reference point is defined as "an estimated value derived through an agreed scientific procedure, which corresponds to the state of the resource and of the fishery, and which can be used as a guide for fisheries management". Two types of precautionary reference point are required - 'conservation or limit' reference points which set the boundaries which are intended to constrain harvesting within safe biological limits within which the stocks can produce maximum sustainable yield and 'target' reference points which are intended to meet management objectives. Under the Agreement, States shall take measures to ensure that, when reference points are approached, they are not exceeded and guidance is given on the measures to be taken by States in the event that they are exceeded. Where a natural phenomenon has a significant adverse impact on the status of straddling fish stocks or highly migratory fish stocks, conservation measures shall be adopted on an emergency basis to ensure that fishing activity does not exacerbate such adverse impacts.

### **Treaty of Maastricht**

"Community policy on the environment shall occur at a high level of protection.....It should be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay".

### **Montreal Protocol on Substances that Deplete the Ozone Layer**

In the Preamble it is stated that "Determined to protect the ozone layer by taking precautionary measures to control equitably total global emissions of substances that deplete it".

### **Framework Convention on Climate Change**

"The Parties should take precautionary measures to anticipate, prevent, or minimise 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 reasons for postponing such measures .....

**Oslo-Paris Convention on Protection of the Environment of the North-East Atlantic**

“The Contracting Parties shall apply ..... the Precautionary Principle, by virtue of which preventive measures are taken when there are reasonable grounds for concern that substances or energy introduced, directly or indirectly into the marine environment may bring about hazards to human health ..... even when there is no conclusive evidence of a causal relationship between the inputs and the effects.”