

# Pollution and the Precautionary Principle

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Many international forums have acknowledged the need for a precautionary approach to environmental protection, in recognition of the uncertainties associated with environmental risk assessments due to (1) the complexity and diversity of living ecosystems, and (2) the quantity, diversity, and complexity of chemical compounds entering the environment.

The principle of precautionary action, as applied to environmental pollution, prescribes that appropriate preventative measures are taken when there is reason to believe that substances or energy introduced into the environment may or are likely to cause harm, even when there is no conclusive evidence to prove a causal relation between inputs and their effects. It incorporates four elements essential to its implementation: (1) prevention of potentially harmful contaminants from entering the environment; (2) action to prevent damage before conclusive scientific proof is attained; (3) A shift in the burden of proof to those who would maintain the harmlessness of an activity which is reasonably suspected of potential environmental damage; and (4) Implementation through clean production methods throughout the entire production and product life-cycle.

In the marine environment, the approach which defines allowable limits of toxic materials is ineffectual because it requires that all variables within the receiving environment are known and that impacts can be predicted and monitored. Instead, the precautionary approach directs that potentially harmful materials be reduced and eventually eliminated from discharge into the marine environment. Since this should not result in the contamination of other parts of the environment, the production of toxic products and waste materials should be curtailed through the implementation of clean production technologies. The precautionary approach dictates that persistent toxic materials already in existence be handled in such a way that they are retrievable if they are found to cause environmental harm or if decontamination becomes possible. Further, they should be disposed of in a way that allows effective monitoring of environmental effects. These two requirements will often rule out disposal in marine environments.

The precautionary approach has been incorporated in the following instruments and conferences pertinent to the protection of the environment, including the marine environment: Montreal Protocol (1987/90), UNEP Governing Council (1989), Bergen Declaration (1990), North Sea Ministers Conferences (1987/90), Paris Commission (1989), Nordic Council Conference (1989), Bamako Convention (1991), London Dumping Convention (1991), G-7 Summit (1991), UNCED Agenda 21 (1992), Oslo and Paris Convention for the Prevention of Marine Pollution in the North-east Atlantic (1992). It provides a useful principle for pollution prevention in UNEP Regional Seas Programmes, MARPOL special and particularly sensitive areas, and for other coastal seas.