The Precautionary Principle: A Fact Sheet

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What is the precautionary principle? A comprehensive definition of the precautionary principle was spelled out in a January 1998 meeting of scientists, lawyers, policy makers and environmentalists at Wingspread, headquarters of the Johnson Foundation in Racine, Wisconsin. The Wingspread Statement on the Precautionary Principle, summarizes the principle this way:

"When an activity raises threats of harm to the environment or human health, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically."

Key elements of the principle include taking precaution in the face of scientific uncertainty; exploring alternatives to possibly harmful actions; placing the burden of proof on proponents of an activity rather than on victims or potential victims of the activity; and using democratic processes to carry out and enforce the principle - including the public right to informed consent. **Is there some special meaning for "precaution"?** It's the common sense idea behind many adages: "Be careful." "Better safe than sorry." "Look before you leap." "First do no harm."

What about "scientific uncertainty"? Why should we take action before science tells us what is harmful or what is causing harm? Sometimes if we wait for proof it is too late. Scientific standards for demonstrating cause and effect are very high. For example, smoking was strongly suspected of causing lung cancer long before the link was demonstrated conclusively - that is, to the satisfaction of scientific standards of cause and effect. By then, many smokers had died of lung cancer. But many other people had already quit smoking because of the growing evidence that smoking was linked to lung cancer. These people were wisely exercising precaution despite some scientific uncertainty.

Often a problem - such as a cluster of cancer cases or global warming - is too large, its causes too diverse, or the effects too long term to be sorted out with scientific experiments that would prove cause and effect. It's hard to take these problems into the laboratory. Instead, we have to rely on observations, case studies or predictions based on current knowledge.

According to the precautionary principle, when substantial scientific evidence of any kind gives us good reason to believe that an activity, technology or substance may be harmful, we should act to prevent harm. If we always wait for scientific certainty, people may suffer and die, and damage to the natural world may be irreversible. **We have lots of environmental regulations. Aren't we already exercising precaution?** In some cases, to some extent, yes. When federal money is to be used in a major project, such as building a road on forested land or developing federal waste programs, the planners must produce an "environmental impact statement" to show how it will affect the surroundings. Then the public has a right to help determine whether the study has been thorough and all the alternatives considered. That is a precautionary action.

But most environmental regulations, such as the Clean Air Act, the Clean Water Act and the Superfund Law, are aimed at cleaning up pollution and controlling the amount of it released into the environment. They regulate toxic substances as they are emitted rather than limiting their use or production in the first place.

These laws have served an important purpose - they have given us cleaner air, water and land. But they are based on the assumption that humans and ecosystems can absorb a certain amount of contamination without being harmed. We are now learning how difficult it is to know what levels of contamination, if any, are safe.

Many of our food and drug laws and practices are more precautionary. Before a drug is introduced into the marketplace, the manufacturer must demonstrate that it is safe and effective. Then people must be told about risks and side effects before they use it.

But there are some major loopholes in our regulations. If the precautionary principle were universally applied, many toxic substances, contaminants, and unsafe practices would not be produced or used in the first place. The precautionary principle concentrates on prevention rather than cure.

How would the precautionary principle change that without bringing the economy to a halt? It would encourage the exploration of alternatives - better, safer, cheaper ways to do things- and the development of "cleaner" products and technologies. Sometimes simply slowing down in order to learn more about potential harm is the best alternative.

It would shift the burden of proof from the public to proponents of a technology. The principle would ensure that the public knows about and has a say in the deployment of technologies that may be hazardous. Proponents would have to demonstrate through an open process that a technology was safe or necessary and that no better alternatives were available.

Is the Precautionary Principle a new idea? The precautionary principle was introduced in Europe in the 1980s and became the basis for the 1987 treaty that bans dumping of toxic substances in the North Sea. It figures in the Convention on Biodiversity. A growing number of Swedish and German environmental laws are based on the precautionary principle.

Interpretations of the principle vary, but the Wingspread Statement is the first to define its major components and explain the rationale behind it.

Will the countries that adopt the precautionary principle become less competitive on the world marketplace?The idea is to progress more carefully than we have done before. Some technologies may be brought onto the marketplace more slowly. Others may be stopped or phased out. On the other hand, there will be many incentives to create new technologies that will make it unnecessary to produce and use harmful substances and processes. These new technologies will bring economic benefits in the long run. Countries on the forefront of stronger

environmental laws, such as Germany and Sweden, have developed new, cleaner technologies despite temporary higher costs. They are now able to export these technologies. Other countries risk being left behind, with outdated facilities and technologies. **How can we possibly prevent all bad side effects from technological progress?** Hazards are a part of life. But it is important for people to press for less harmful alternatives, to exercise their rights to a clean, life-sustaining environment and, when they could be exposed to hazards, to know what those hazards are and to have a part in deciding whether to accept them.

How will the precautionary principle be implemented? The precautionary principle should become the basis for reforming environmental laws and regulations and for creating new regulations. It is essentially an approach, a way of thinking. In coming years, precaution should be exercised, argued and promoted on many levels - in regulations, industrial practices, science, consumer choices, education, communities, and schools.