

Is the precautionary principle guiding law or a political notion?

- *In Norway, the government banned vitamin-fortified cornflakes, because the vitamins may have harmed “susceptible individuals.”*
- *In 2004, the French government banned caffeinated energy drinks, because pregnant women might consume too much caffeine.*
- *A number of European countries have enacted restrictions on genetically modified crops and food, because of alleged uncertainty of their safety and environmental harm.*

All these [regulatory actions](#) have come about because of the application of the “Precautionary Principle,” which at first glance appears to be a clear guiding principle banning actions until risks are removed—but which gets much murkier the closer one examines it.

“It’s also is one of the most troublesome principles because...it can easily be misused to justify irrational, arbitrary, or protectionist government measures, and an ever expanding regulatory regime. This is so because it is obscure what this “principle” requires, and the EU Treaty does not define it,” wrote Belgian law professor Lucas Bergkamp recently.

However, a number of non-government organizations, including those that oppose genetically modified organisms, are staunchly and publicly in favor of the precautionary principle. Greenpeace recently stated this [on its website](#):

The Precautionary Approach gives the benefit of doubt to the environment. It basically reverses the burden of proof and says: ‘If you are in doubt about the consequences of what you intend to do, then don’t do it’. In reality, precaution is simply the application of common sense to effective environmental regulations, allowing protective decisions to be made with greater confidence in the face of inevitable uncertainties and unknowns. So why then would we want to take a different approach to regulating genetically engineered organisms (GEO)? In fact, given how little is known of the effects of GEO on non-target species and the ecosystem as a whole, why would we not want to be still more cautious?

But what does the EU actually say about precaution? What’s the impact of doing nothing? And have there been cases of “false-positives,” in which action was taken against a nonexistent risk?

Here’s what the [European Union says](#) about using the Precautionary Principle:

According to the European Commission the precautionary principle may be invoked when a phenomenon, product or process may have a dangerous effect, identified by a scientific and objective evaluation, if this evaluation does not allow the risk to be determined with sufficient certainty. Recourse to the principle belongs in the general framework of risk analysis (which, besides risk evaluation, includes risk management and risk communication), and more particularly in the context of risk management which corresponds to the decision-making

phase. The Commission stresses that the precautionary principle may only be invoked in the event of a potential risk and that it can never justify arbitrary decisions.

While the EU makes it clear that the precautionary principle is not intended to be the law of the land, a number of scientists and critics have pointed to examples of its misapplication that have resulted in expensive restrictions and/or bans on technologies that posed minimal risk.

The European Environment Agency (EEA) [reviewed 88 cases](#) where misapplication of the precautionary principle resulted in bans or severe restrictions on a low or non-existent risk. The Agency concluded that only four examples constituted a true “false positive”. [Two Danish researchers](#) reviewed the report and developed a number of subcategories for the remaining examples of mistaken false positives: as either real risks; “The jury is still out,” non-regulated proclaimed risks, “Too narrow a definition of risk,” and risk-risk trade-offs.

The EEA report, and the Danes’ analysis, have been criticized by other researchers, who say these examples were correctly labeled as misapplications of the precautionary principle. Some of the effects of using some form of the precautionary principle have included:

- Wheat stem rust, a fungus that once wiped out 40 percent of the spring wheat harvest in the United States, has plagued farmers for centuries. Breeding wheat traditionally to select for resistance genes helped somewhat, but the fungus returned in the 1990s when a new strain was able to overcome resistant wheat. When scientists [discovered the gene that conferred resistance to wheat stem rust](#), its value was obvious. It would now be possible to insert the gene into different wheat varieties to develop high-yielding varieties that were resistant to this devastating disease. Unfortunately, regulatory demands for longer-term studies, coupled with resistance from anti-GMO groups, have made the [regulatory challenges](#) far more expensive and extensive than academic researchers can handle.
- [Golden Rice](#), a variety of rice engineered to produce β -carotene (a precursor to Vitamin A), has been in development for at least 20 years. While resolving Vitamin A deficiency could prevent 500,000 cases of blindness each year worldwide, Golden Rice has yet to be approved for production. According to the Golden Rice Project, *“the present regulatory practice is based on an overzealous interpretation of the precautionary principle, with little room left for risk management. The position at present is that even the slightest hypothetical risk must be tested and might lead to rejection of a registration application”*.
- The International Agency for Cancer Research (IARC) [recently declared](#) red meat to be “probably carcinogenic to humans.” IARC justified this conclusion using studies that “showed limited evidence from epidemiological studies showing positive associations between eating red meat and developing colorectal cancer as well as strong mechanistic evidence.” For processed meats, IARC classified them as “carcinogenic to humans.” Even though, as IARC itself admits, these are evaluations of hazards and not of overall exposure or risks, regulatory agencies are starting to move to restrict or regulate the sale or consumption of red or processed meats, despite the lack of risk-based evidence. Thus, IARC, the EU Commission, and European environmentalists “have promoted a new framework that effectively shifts the subject of evaluation from actual risks to hypothetical hazards,” wrote [former trade official](#) Lawrence Kogan in a monograph for the Washington Legal Foundation

recently.

The precautionary principle started in Germany in the late 1960s, after some evidence was found that air pollution was damaging the environment. However, this evidence did not show a mechanism and wasn't strong enough to show a cause and effect at the time. So, German legislators passed laws to prevent damage anyway, but with the proviso that any regulation be proportional to the potential for harm, and that governments measure the costs and benefits of action, versus the same for not acting. We've learned a lot since then, including better ways to assess real risk. Time to put that knowledge to use.

[Andrew Porterfield](#) is a writer, editor and communications consultant for academic institutions, companies and non-profits in the life sciences. He is based in Camarillo, California. Follow **[@AMPorterfield](#)** on Twitter.