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Saving Lives by Rejecting the Precautionary Principle

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Many environmentalists, citing the adage “better safe than sorry,” argue that the “precautionary principle” should govern policy making. By this, they mean that technology should not be used until or unless it can be shown to pose no threat to humans or the environment.

The Politics of Biotechnology. In one form or another, the precautionary principle has been incorporated into domestic European and American legislation and into more than 12 international treaties, beginning in 1987 with the Ministerial Declaration of the Second Conference on the Protection of the North Sea.

Environmental activists have proposed using the principle to frame regulations for numerous sectors of the economy. Most recently, they have targeted genetic engineering and biotechnology aimed at producing harder, disease- and pest-resistant crops. At a United Nation’s Conference held to negotiate the terms of the Biosafety Protocol in Montreal in January 2000, environmentalists maintained that by altering crops researchers were “playing God” — tampering with things beyond human understanding with the potential to cause catastrophic changes to the environment. This view was reflected in a draft of the protocol which, contrary to various free trade agreements, would have allowed countries to prohibit the importation of genetically modified (GM) products even if they had not been shown to

threaten harm. This provision was stripped from the final version, but few doubt that the precautionary principle will influence future negotiations.

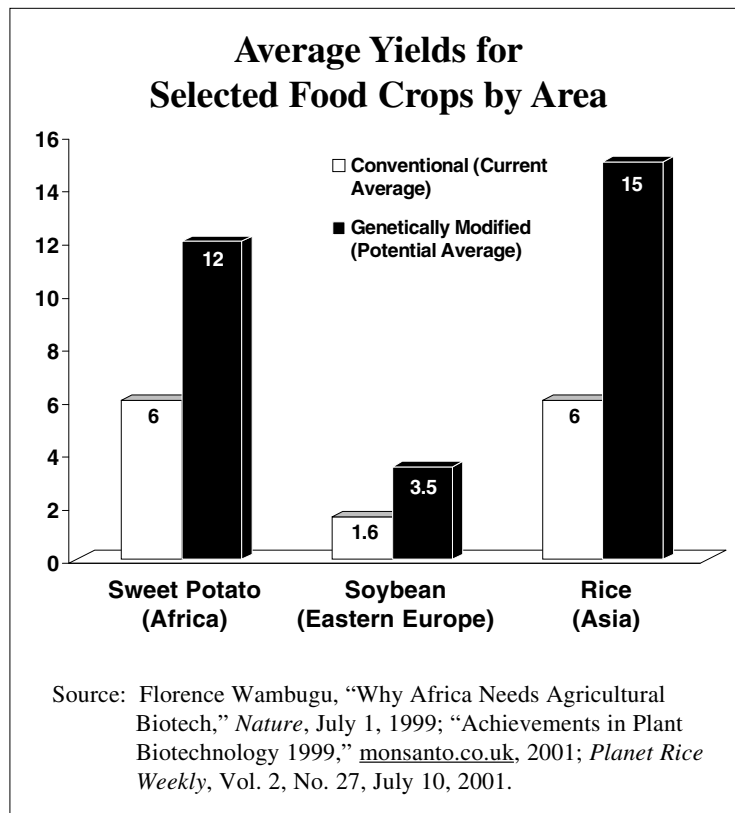
While the principle may sound reasonable in theory, it would be disastrous in practice. One cannot prove a negative. Every food, product and tool poses some risk of harm. Without the use of fire, automobiles, antibiotics, water, salt and chlorine — just to name a few natural and human-created foods, applications and tools — human life would be, in the words of the philosopher Thomas Hobbes, “nasty, poor, brutish and short.” Yet each can harm humans or the environment.

The Science of Biotechnology. At present there is almost no evidence to show that bioengineered crops pose a threat to human health or the environment. Accordingly, more than 600 scientists signed a letter presented to the Biosafety Protocol negotiators arguing that the precautionary approach ignores the very real dangers of going without the new technologies.

They argued that genetically modified crops are the best hope for feeding the world’s growing population and that there

is no scientific reason to believe that the use of biotechnology inherently poses new threats to biodiversity, to other aspects of environmental quality or to human health. Almost every major scientific organization in the nation has reached similar conclusions:

- Biologists from the National Academy of Sciences concluded that there are “no health issues at stake,” and that any environmental threats posed by the use of GM crops pale in comparison to the environmental harm produced by traditional agriculture practiced in developing countries on lands not suited to farming.



- The National Research Council concluded the potential health risks of eating GM crops are the same as those of eating crops that have undergone traditional non-genetic cross-breeding or cell culture techniques.
- The American Medical Association, the World Health Organization, the U.S. Department of Agriculture, the Environmental Protection Agency and the Food and Drug Administration have reached similar conclusions.

The Benefits of GM Foods. Agricultural biotechnology is already improving lives. [See the figure.]

- In Asia, the Rockefeller Foundation has introduced rice genetically altered to contain beta carotene (which readily converts to Vitamin A) and new genes to overcome iron deficiency. This “golden rice” is preventing thousands of cases of childhood blindness and reducing anemia rates among more than two billion women in rice-dependent countries.
- Monsanto has introduced a sweet potato genetically modified to resist the feathery mottle virus. Every year, the virus reduces harvests of sweet potatoes — one of the primary subsistence crops in African countries — by as much as 80 percent. The disease-resistant sweet potatoes can nearly double crop yields. In the short term, this increase could supply half the dietary needs of 10 million Africans.
- Soybeans have been modified to resist Monsanto’s popular herbicide “Roundup,” allowing farmers to spray soybean crops with chemicals that destroy weeds without killing the soybeans. In 1999, these crops in Mexico yielded an average of 175 kilograms per hectare more than conventional soybean crops.
- And in Romania, genetically modified soybeans have increased harvests by 120 percent.

Population Growth Makes Biotechnology Use Urgent. Approximately 800 million people do not currently get nutritionally adequate diets. An estimated 400 million currently suffer from Vitamin A deficiency, including millions of children who go blind each year.

With approximately six million square miles under cultivation — an amount of land equal in size to the United States and Europe — the world currently produces more than enough food to feed the earth’s six billion people. But human population is growing, espe-

cially in countries where people are already malnourished, and will probably plateau sometime in this century at between eight and nine billion. Feeding nine billion people diets similar to those enjoyed by people in industrialized countries will require the production of approximately three times more food by 2050. For example, according to the World Watch Institute, by 2030 China will need to import 200 million tons of grain annually — as much as is now exported by all the world’s countries combined.

If all of the world’s farmers adopted the best modern farming practices with high inputs of fertilizers and pesticides, it might be possible to double, but not triple, current crop yields on the same amount of land.

Alternatively, if we went totally organic, eschewing the use of artificial fertilizers, pesticides and biotechnologies, we would have to double the amount of land under active cultivation. This would be disastrous for wildlife and native plants, as the lands most likely to be converted to agriculture are forests, rangelands and other wildlands in the relatively undeveloped tropics. The tropics, the most biodiverse region on earth, are also where population growth is occurring, and where hunger and malnutrition are most prominent.

There is a third option: the judicious use of biotechnology. “Judicious” implies that authorities are quick to restrict the use of products that are shown to cause harm.

Conclusion. Using biotechnology, we can provide the world’s future population with enjoyable, nutritionally adequate diets. Otherwise we cannot feed the world without unacceptable environmental consequences. Turning our back on lifesaving, welfare-enhancing bioengineered products, when there is little or no evidence that they threaten any harm, would be to irresponsibly condemn millions of people to unnecessary suffering and early deaths.

The precautionary principle does have some utility. In the words of the Social Issues Research Center, in Oxford, England, “If we apply the precautionary principle to itself — ask what are the possible dangers of using this principle — we would be forced to abandon it very quickly.”

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