EARTH SUMMIT

The Biodiversity Treaty: Pandora's Box or Fair Deal?

When the United States last week refused to sign the Convention on Biological Diversity—the so-called biodiversity treaty—at the United Nations Conference on Environment and Development in Rio de Janeiro, the code words for U.S. reluctance were "economic interests." Designed to encourage conservation, the treaty mandates financial incentives for the developing nations. But some of its language, U.S. officials feared, could give developing countries an unwarranted claim over new drugs or foods developed from their wealth of plant and animal species. And that, in turn, could harm biotechnology and pharmaceutical firms at home. But there's no unanimity among government and industry observers about how much mischief the treaty might actually do.

To some biotech analysts, vague and legalistic passages in the treaty open the way to a nightmare scenario of compulsory licensing, in which a biotech firm that develops a product from a native species would be required to grant the right to market the product to the country where the species originated. One passage in particular seemed to raise the specter of compulsory licensing: "Access to and transfer of technology...shall be provided and/or facilitated under fair and most favorable terms, including on concessional and preferential terms where mutually agreed." Says Richard Wilder, a lawyer on the Association of Biotechnology Companies (ABC) patent law committee: "Some countries will use this to mandate or expand compulsory licensing." To other observers, however, the treaty is too vague to be threatening. "The treaty can be no more than a framework that erects a scaffolding of elements that parties can agree to," says Kenton Miller, director of the biodiversity program at the World Resources Institute.

Future interpretation of the treaty might turn it into something much more benign than compulsory licensing, say Miller and others: an agreement that any country is simply entitled to receive a percentage of royalties from sales of a product developed from its genetic resources. And that's something few in the industry would find objectionable. "If you're going to take something, people have to be repaid in kind," says Walter Goldstein, vice president for research and development at San Carlos-based ESCA Genetics Corp. He and others in the biotech and drug industries freely admit that the kind of windfall that Eli Lilly and Co. netted 30 years ago from the rosy periwinkle of Madagascar is a thing of the past. In 1954, Lilly phytobiologist Gordon Svoboda extracted the cancer-fighting alkaloids vinblastine and vincristine from the flower; by the time patents ran out the drug company had rung up hundreds of millions of dollars in sales without ever paying Madagascar a dime.

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No more easy pickings. The rosy periwinkle of Madagascar, source of two anticancer drugs.

To industry lobbying organizations, though, there's a world of difference between fair compensation and a surrender of intellectual property rights to new drugs and other products. Alarmed that the treaty might open the way to intellectual property claims, organizations such as ABC and the Pharmaceutical Manufacturers Association sent letters to President Bush before the earth summit, urging him not to sign the treaty unless the provisions on technology transfer were altered.

Right up until the treaty emerged in final form for the summit on 22 May, U.S. officials lobbied for additional protections for intellectual property, says Jeffrey Kushan, a lawyer in the U.S. Patent and Trademark Office who participated in the final round of treaty negotiations in Nairobi last month. "We all tried hard to get the language, but it was impossible," concedes an administration official. "The best we could do was damage control," he says. To Kushan, who had spent years negotiating the General Agreement on Tariffs and Trade (GATT) and the World Intellectual Property Organization (WIPO)—agreements aimed at increasing patent protection worldwide—certain provisions of the biodiversity treaty "would undercut a lot of what's been going on in GATT and WIPO."

When the U.S. effort failed, some other experts on patent law agree, the United States had no choice but to refuse to sign. The biodiversity treaty is a setback "given the extent to which we've been pushing for strong intellectual property rights," says John Barton, a Stanford law professor. The treaty's language, he says, is "so fuzzy that it [could have] set a precedent for future disputes in U.S. courts." It opens up "a broader possibility for countries to reduce patent protection," agrees Wilder.

Whether the treaty will open a Pandora's box of abuses of intellectual property rights or will simply guarantee developing countries a fair share in potential profits from their species may become clearer over the next few years, as signatories gather to forge specific action plans from the treaty's raw general principles. And even if the United States doesn't have a change of heart and sign the treaty—additional signatories will be accepted for the next year—those plans will likely affect U.S. companies, says Miller. If the treaty is ratified by at least 30 signatory nations, it will lead to a world standard for agreements to develop products from rain forest species—one that U.S. companies may not be able to ignore.

As a nonsigner, fears Miller, the United States might have forfeited its influence over the negotiations. "We are either in the club or out of the club," he says. But Kushan is less pessimistic. "I think there will be great pressure to have us sign," he says. And even if the United States holds firm, he adds, it's likely that the signatory nations will invite U.S. observers to the workshops.

For the U.S. biotech industry, the happiest outcome would be one that favored deals like the one between Merck & Co. and Costa Rica, considered a model agreement by the U.S. biotech industry (*Science*, 22 May, p. 1142). In that agreement, Merck paid $1 million to Costa Rica's National Institute of Biodiversity (INBio) for the right to analyze hundreds of indigenous plant and animal extracts for possible drugs or other commercial products; if Merck does discover a marketable product, it will retain all patent rights but will pay INBio an undisclosed royalty, thought to be between 1% and 3%. Ten percent of the upfront money, and 50% of Costa Rica's share of any royalties, will be invested in conservation in Costa Rica.

Henry Shands, director of germ plasm resources at the Agricultural Research Service, thinks the Merck/INBio model may prevail. "That's the kind of financial mechanism that's highly applauded by developing countries." Countries such as Indonesia and Brazil have already expressed interest in similar agreements, Miller points out. But at this point, the only sure thing under the biodiversity treaty is this: The next rosy periwinkle won't be free.

–Richard Stone