## SCIENCE FOR LAWYERS



## Illegal Chemical Warfare By U.S.

inda Greenhouse, who covers the Supreme Court for the *New York* Times, wrote at the end of the last term that the justices "have displayed a new attentiveness to legal developments in the rest of the world and to the Court's role in keeping the United States in step with them." Indeed, courts around the world are making wise decisions about the environment and public health. One question is how long will it be before these developments influence U.S. courts — and the White House. Another is, will the United States respect the rulings of these courts when it affects foreign policy.

The latter question became pertinent last June, after a Colombian administrative court, using the precautionary principle, ordered a stop to the U.S.-sponsored spraying of herbicides to control coca, the plant used to make cocaine. The court wanted the government first to comply with the environmental management plan for the eradication program, and mandated a series of studies to evaluate the effects of spraying on public health and the environment. This followed the Colombian constitutional court order in May to suspend spraying in indigenous territories until the government consulted with the Amazonian people.

For the past three years, aerial spraying under the United States' "Plan Colombia" has been designed to serve twin foreign policy goals: eradicate coca cultivation and eliminate leftist guerrillas. It has cost the United States over \$2.5 billion and employed around 800 American soldiers and mercenaries. But it has cost the Colombians more than

their illicit coca crop, as the powerful herbicide used eradicates everything in its path from corn, beans, and coffee to precious species that provide the backbone of the Amazonian ecology.

The United States has made its own assessments about the safety of the spraying campaign. EPA's evaluation, presented to Congress as part of the State Department's report to Congress last year, was intended to show that the program met the conditions of Title II of the Foreign Operations, Export Financing, and Related Programs Appropriation Act of 2002. That law requires the department to determine that "aerial coca fumigation is being carried out in accordance with regulatory controls required by the Environmental Protection Agency as labeled for use in the United States, and after consultation with the Colombian government to ensure that the fumigation is in accordance with Colombian laws." It also requires that the chemicals used and the manner in which they are being applied "do not pose unreasonable risks or adverse effects to humans or the environment."

However, NGOs, professional societies, and academic scientists presented evidence to Congress that Plan Colombia did not meet the requirements specified in the act and that EPA's assessment was fatally flawed. Specifically, they challenged the "unreasonable risks or adverse effects" standard.

Glyphosate is the herbicide of choice for Plan Colombia, although it appears that an added chemical increases the toxicity of the final formula significantly. My colleague at the Science and Environmental Health Network, physician Ted Schettler, wrote, "EPA's assessment fails to provide information essential for conducting the requested risk assessment. The hazard identification is incomplete because chemical components of the herbicidal formulation are not fully identified. The toxicity evaluation is incomplete because EPA does not provide a comprehensive toxicological evaluation of the components separately and in their final formulation."

Further, "The exposure assessment is incomplete because it is limited by unwarranted assumptions about spraying conditions and routes of exposure. As a consequence, the document provided

by the EPA fails to provide data sufficient for determining the magnitude of the risks of the spray program and whether or not they are 'unreasonable.'"

The Council on Hemispheric Affairs, a non-profit, non-partisan research and information organization, notes that "[EPA] admits only to testing glyphosate in less concentrated forms than those which are currently being applied in Colombia, and to having never tested the chemical compound in total and never in a realistic agricultural context."

The ecological and cultural issues raised are also significant. Linda Farley, American Birds Conservancy science officer, says, "Glyphosate has welldocumented deleterious effects on soil micro-organisms, mammalian life, including humans, invertebrates, and aquatic organisms, especially fish." The Colombian ecosystems contain approximately 10 percent of the world's terrestrial plant and animal species. Farley also noted that, "95 percent of the 75plus threatened species are forest-dependent. Colombia is one of the richest areas in the world in terms of birds diversity."

Even the American Anthropological Association weighed in. It said that State's report did not consider the full range of adverse impacts such as decreased food supplies and displacement. Nor did it address the unique adverse social and cultural effects on the region's indigenous peoples.

In my view, the scientific consensus is that the harm to the indigenous cultures, the ecology, and public health is adverse and unreasonable. Meanwhile, despite fumigating over 240,000 hectares of illicit crops with more than 2 million liters of glyphosate, coca production in Colombia tripled from 1994 to 1999. And despite this failure, and despite the fact that the Colombian Court ruled to suspend the program, the United States is continuing to spray.

Can the U.S. respect the law of other countries, as the *Times* said it is beginning to do? How long will it take for decisions like the Colombian court to actually influence U.S. policy?

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