

## **XI. Who's to Know?**

- **Who's to Know?**

*Arizona Toxics Information  
Program Statement (1996)*

***Mission:** Through advocacy for full public disclosure, public participation and pollution prevention strategies, to help bring about changes in hazardous materials policies and management that lead to the highest achievable levels of protection for public, occupational and environmental health and to long-term sustainability of cultural and natural resources.*

***Goal:** To reduce hazards of toxic and other hazardous materials through direct input to government and industry decision-making, raising public awareness of hazardous materials issues, coordinating with other environmental and public interest organizations, and helping enfranchise exposed and otherwise adversely affected communities and individuals so they have greater control over hazardous materials in their lives and their communities.*

In order to accomplish this mission and goal, we focus on three main activities:

1) **Networking** among individual activists and groups at the local, regional, national and international levels to facilitate the horizontal and vertical flow of information and to encourage groups with different focuses, purposes, resources and influence to recognize common goals and strategies in regard to toxics;

(2) **Data-sharing** to enhance the common understanding of issues among activists, the public and decision-makers at all levels through basic research and through maintenance and development of our toxics database and clearinghouse, including timely communications on issues of concern;

3) **Advocacy** through active membership on a variety of local, state, federal and binational and international bodies, both governmental and non-governmental; by developing timely papers, articles and press releases on pertinent issues; and through providing frequent testimony and comment to legislative and regulatory bodies.

Through talks, articles, media exposure, clearinghouse activities, testimony, public comment and behind-the-scenes negotiations in a wide variety of arenas, ATI addresses a broad spectrum of toxics management and policy issues, including, among others, public and worker right to know; facilities siting and permitting; transportation; waste management; surface and groundwater contamination; hardrock mining; emergency planning; pesticides; and air pollution.

By working cooperatively with other grassroots organizations, as well as directly on site-, process-, media- and substance-specific issues, we are able to bring the perspective of hands-on local experience to state, federal and international decision-making. Conversely, our familiarity with international, federal and state processes allows us to work with individuals and local groups in conceptualizing and articulating their issues and concerns to effectively influence pertinent state, federal and international policy and regulation.

\*

The Age of Information. In 1964, while a grad student in English at Penn State, and a new father, I had a part-time temporary job on campus filing thousands of IBM punch-cards per day in the basement office of one of the administrative departments. In 1982, as a volunteer for the Sierra Club, I was struggling to learn how to use a Realistic<sup>®</sup> word processor from Radio Shack. In 1988, I was tapping away on a Word Star program as part of my job as Hazardous Materials Coordinator and Assistant Director of the Cochise County (Arizona) Emergency Services Department. By 1992, I was in daily touch by email with activists throughout the US and in several other countries.

Not just my own moves but the toxics movement at large, and in particular the Right to Know movement, grew in step with the Internet, born of the Information Explosion (aka Glut) that followed the Third Industrial (or Post-Industrial) Revolution set off during WW II. While its aims and operations were primarily social and political, its essential function was data management—the gathering, sorting, packaging and dissemination of information, animated by time-worn slogans like *Knowledge is Power* and *The Truth Shall Make Ye Free*.

Those, in any case, were the sorts of conclusions I reached in the 90s while ATI's *modus operandi* went from traditional journalistic publicity of pertinent toxics information mostly via snail mail (somewhat on the model of I.F. Stone's *Weekly* and Tristram Coffin's *Washington Spectator*, coupled with a toxics-specific activist-g geared clipping service); to a broad-scale digital dissemination (inspired by Peter Montague's newly-digitized *Rachel's* newsletters); to (given the impetus of emergency response needs) development of user-friendly software to integrate toxics data from sources not usually compatible with each other (suggested by CAMEO and other List of Lists databases).

This was a time when, although various agencies and organizations were developing extensive toxics databases, there was almost no communication between them: not only could DOT not talk to EPA, or EPA to USDA, but within EPA *Clean Air Act* databases couldn't talk to those of the *Clean Water Act*, RCRA or CERCLA. The emergency planning sections of EPCRA (the 1986 *Emergency Planning and Community Right to Know Act*) initiated a paradigm shift, creating along with the *Act's* Toxic Release Inventory (TRI) requirements, an impetus for digital information exchange in the US and, ultimately in the rest of the industrialized world.

\*

As Hazardous Materials Coordinator, my primary responsibility for Cochise County was to develop, with the Local Emergency Planning Committee (LEPC), the hazardous materials response plan required (as were the LEPCs) by EPCRA. Since Cochise County is on the US-Mexico border, an adequate plan required inclusion of the Mexican border communities of Agua Prieta and Naco; our plan became the first US-Mexico binational response plan, and the planning process brought me into renewed cooperation with responders, planners and activists I had come to know and work with through the Douglas smelter campaign.

After the county hazmat plan was written, ATI, in cooperation with the Arizona State Emergency Response Agency, developed a database (the *US-Mexico Border List of Lists*) that gave the public as well as emergency responders interactive access to health, environmental, emergency planning and response information on chemicals in a wide range of state and federal databases.

From then on, until I decided that the millennium's end was a fitting time for me to retire, most of my environmental work was on right to know, a concept integral to the international sustainability movement from the 1972 Stockholm "Conference on the Human Environment" to the follow-up 1992 Earth Summit and an ongoing demand for efforts around the world to bring economic development into harmony with ecological integrity, to bring vested interests into synch with community well-being, to bring civil society into equal standing with business and government in decision-making about matters of common interest.

\*

The Watergate scandal that ended the Nixon administration, the Iran-Contra scandal that shook the Reagan administration, the toxics disasters of Love Canal, Seveso, Bhopal, etc., the government duplicity concerning a variety of aspects of the Vietnam War—all these helped set the stage for bringing the right-to-know principles of the *Freedom of Information Act* (FOIA, 1966) and the *National Environmental Policy Act* (NEPA, 1970) to bear in the toxics arena.

Thanks to an influential network of activists and advocates, the concept of citizen right to know was made explicit in the major US environmental Acts of the 70s and 80s (the NEPA, the *Clean Air Act*, *Clean Water Act*, *Safe Drinking Water Act*, NFMA, FLPMA, RCRA, TSCA, CERCLA, etc.). Inspired by these US precedents, and by the public information principles of the Stockholm Conference and its progeny, another broad loosely-connected association of activists and advocates (including some of the same people) in the early 80s began crafting a bill to bring those principles and precedents together with the information needs of emergency responders. This effort culminated in EPCRA, the most effective and comprehensive public information law yet enacted by Congress.

EPCRA was a landmark in the movement for freedom of information. Its unique feature was the bringing together of requirements for comprehensive facility-specific accounting of hazardous materials releases (in the form of an annual TRI) from a broad range of larger industrial sources, with detailed disclosure (on request not only of fire departments and the like but of any citizen) of hazardous materials used at virtually every facility in the country, regardless of size.

The disaster-prevention provisions of the emergency planning and community right to know sections of the law (as distinct from the TRI sections) resulted to large extent from the efforts of emergency response advocates like Karl Birns (an official from Kansas who was one of the primary authors of the *Act*) who were concerned that environmental laws, even though they dealt with toxics, usually ignored the needs of emergency responders who are routinely among those most-exposed to toxic substances.

Before EPCRA, disaster-related legislation had largely addressed response to natural disasters and had been relegated largely to FEMA (the Federal Emergency Management Agency). EPCRA, on the other hand, focused on manmade disasters and their prevention. One of the most effective tactics in getting the EPCRA bill passed was a graphic presentation to Congresspeople and their aides by Fred Millar from Friends of the Earth, which showed how a typical tankcar spill on one of the relatively unregulated railroad lines passing through Washington could in a matter of minutes kill hundreds of people, including those on Capitol Hill.

\*

Freedom of information and right to know are nearly synonymous in American English and

convey ideas easy to grasp in the US, but not always translatable to other languages or easy to implement in other cultures. To me, they are cognate with freedom of speech and go hand in hand with Jefferson's warning that the Great Experiment would fail unless there were an educated public to keep it going. While the first casualty of war is the truth, and often the first acts of a reactionary government are to restrict information (cf. Reagan restrictions on Government Printing Office and Forest and Range Experiment Station documents, and Trump blackout of certain government websites), it's hard at best to conceive of a modern democracy that does not give at least lip service to the principle of free flow of information.

Building on our experience working together on the Douglas smelter, our local binational emergency response plan, and preliminary drafting of NAFTA, ATI and Enlace Ecológico, an NGO based in Agua Prieta, Sonora, decided to push the envelope a little by conducting the first integrated toxics inventory of facilities in Mexico, which we published in 1994 as the *Border Right to Know Project: The 1993 Northeastern Sonora Pilot Inventories*. The Project included results of two studies, one in the industrial sector (the *maquiladoras*) of Agua Prieta, the other in the agricultural sector (pesticide use on small farms in northwestern Sonora), and was intended to provide incentive for similar citizen toxics studies in other parts of Mexico.

One important point made in our study was that while explicit in US and Canadian laws, in Mexico the constitutional guarantee of *Derecho a la Información* (DALI) is implicit but not spelled out in environmental law. There as elsewhere, *Derecho a Saber*, citizen Right to Know, was a new concept more than a little disconcerting insofar as it gave precedence to civil society's informational rights rather than those of the government or industry. A great deal of my time and energy throughout the decade of the 90s, like that of many other activists, was put into clarifying the distinctions and pointing out the convergences of those terms.

And underpinning all of ATI's RTK activities—culminating in negotiations on the OECD model guide to nations on how to develop a Pollutant Release and Transfer Register (PRTR), the parallel tri-national negotiations on the PRTR and RTK mechanisms being constructed by the Commission on Environmental Cooperation (CEC) sidebar agreement to NAFTA, and the post-Rio international process under auspices of UNEP that led to the 2001 Convention on POPs (Persistent Organic Pollutants), which brought ATI into cooperation with toxics activists from countries around the world—were the principles embodied in *Our Common Future* and *Agenda 21* which had been initially promulgated by toxics activists and NGOs in the “environmental decade” of the 1970s.

I believed then, as I do now, that the concept of right to know, the basic right to freedom of information, is the most powerful tool we have in the always uphill struggle against not only environmental degradation in general and toxic pollution in particular, but in the increasingly difficult struggle against authoritarian corporatist resource-intensive exploitation and control of people and planet.

The passage of FOIA, NEPA, and EPCRA in the US provided a model for similar for and incentive to laws in other countries and helped stimulate the development of the comprehensive right to know REACH program in the EU, which in turn offers a progressive model for further progress in the US and elsewhere. We have an inalienable human right, a democratic right, not to be poisoned and implicit in that are the inalienable rights to know if and how we are or potentially are being poisoned and to stop it in the present and prevent it in the future.

---

After they came down

the dust was everywhere

eyes ears and mouths  
inside and outside

pulverized matter  
through every opening

afflicting exposed tissue  
—sometimes mechanically:

blocking smaller paths  
irritating the flesh

—sometimes chemically:  
inducing anomalies

in cells, chromosomes,  
genes and their functions

biological changes  
subacute to chronic

often unpleasant  
in the extreme

—sometimes, in otherwise healthy  
adults, terminal

—sometimes, in the young  
and unborn, developmental

or transgenerational  
to show up later

dangers Washington knew  
and lied to us about

the EPA on orders  
issued through channels

from the White House  
by way of the CEQ

telling us it's OK  
it's just dust after all

not enough in the air  
to cause significant harm

(and as you can see we  
aren't wearing gasmasks)

the risk is minimal  
(though of course if you have

pre-existing conditions  
you'll want to take precautions)

from "Dust"  
*Mr America Drives His Car*





## Uranium Testing Still Up in the Air after Phoenix Pow-Wow (1979)

Michael Gregory, *Mule Mountain Observer* (14 November 1979)

Cochise County Supervisors Judy Gignac, Marlin Bohmfalk and Tommy Thompson met in Phoenix yesterday with a large group of State, County and City of Bisbee officials and private citizens to discuss the question of public safety and jurisdiction involved in the proposed Phelps-Dodge uranium leaching operation in Bisbee.

The meeting, called by Ron Maxwell of the Cochise County Health Service, included representatives from the Arizona Atomic Energy Commission (AAEC), Dept. of Health Services (ADHS), Corporation Commission (ACC), as well as Mayor Eads and City Clerk Jeff Freudenberg from the City of Bisbee and Deputy Cochise County Attorney David Hunt.

Conspicuously absent were representatives of the Phelps-Dodge Corp., who were also invited.

The meeting, which lasted all afternoon, was designed to determine the answers to three questions: Who has jurisdiction for monitoring radiation emissions? Who has the liability for accidents or other adverse health effects? and What is the nature of health risk to workers and the public?

Only the first of these questions was clearly answered by the get-together. It seems that AAEC, ADHS and the County of Cochise all have jurisdiction to monitor radiation on or off site, and that any of the three can call for testing.

Surprisingly though, it seems that none of the three can afford to do even the basic background testing needed to establish a baseline against which to measure emissions should the proposed leaching operation begin.

The County has been considering a single set of tests costing between \$800-\$1500. While such tests would probably be better than no baseline data at all, according to Darrell Warren of the AAEC, really adequate monitoring would have to be done on a continuous basis for at least a year and would cost in the neighborhood of \$170,000.

Anamax Corporation has been conducting such a monitoring program since January in connection with its proposed uranium leaching operation south of Tucson.

Although not required by the regulations under which the P.S. and Anamax operations were licensed, such company-financed monitoring will be required under new regulations recently sent to AAEC by the federal Nuclear Regulatory Commission (NRC).

While Anamax has chosen to conform to the new standards and in some cases provide even stricter rules, P.D. has taken no similar steps in regard to public safety.

However, the P.D. license for the leaching plant expires on Oct. 31, 1980, and P.D. would be required, whether in operation or not, to conform to the new regulations if it were to be relicensed. One of the new requirements would guarantee a public hearing and a full scale environmental impact statement before a license could be issued.

State officials agreed that radon gas exposed by normal mining operations and dust blowing off the tailings ponds do constitute a serious safety problem. But other questions concerning the

health risks of the proposed leaching and de facto concentrations of radioactive materials in tailings and ponds went largely unanswered. Instead there was a brief and scattered rehashing of the long-range chronic effect of low dose exposure and of the scientific controversy about whether there is such a thing as a no-effect level.

The meeting ended with an exhortation by Dr. John Counts of ADHS for everyone to get involved in the current legislative effort of Gov. Babbitt and the AAEC to reorganize the state agency so that it has adequate funding and personnel to espond to situations such as the one in Bisbee.

## The Spirit of NEPA 20 Years Later: Needs and Opportunities (1989)

Michael Gregory, for the Sierra Club Grand Canyon Chapter, presented to the National Environmental Health Association "Mid-year Conference," Phoenix, Arizona (17 January 1989)

The National Environmental Policy Act (NEPA) is our basic national charter for protection of the environment. It establishes policy, sets goals. . .and provides means. . .for carrying out the policy. Section 102(2) contains "action-forcing" provisions to make sure that federal agencies act according to the letter and **spirit** of the Act"

CEQ regs, 40 CFR 1500.1

Let me start by saying that I am glad to have the opportunity to address this distinguished group. To my mind, one of the most important accomplishments of NEPA has been its fostering of environmental professionalism among resource managers. Some of the best minds in government and industry today are dedicated professionals in the fields of environmental, public and employee protection.

By nature and by training I'm a generalist rather than a specialist. I can't remember a time when I wasn't aware of the basic ecological fact that everything is connected to everything else. Part of the reason that I first became active in environmental politics back in the early 70s, is that NEPA corroborated my views and seemed like something worth standing up for. That perception, which was shared by millions of people on the first Earth Day, is still with me.

Like many other people, I came of age in a regulatory universe dominated by NEPA process. We got our elementary lessons in ecology, environmental science and environmental politics from EPA definitions and standards, executive orders from the White House and early NEPA case law. NEPA has made millions of people in the United States and around the world familiar with basic terms like *ecology*, *pollution*, and *environmental protection*. We never really knew a world without the EPA.

By NEPA I mean not only the Act itself, but all its applications in Resource Management laws (like NFMA/FLPMA) and in all the Toxics Control laws (CAA, CWA, TSCA, RCRA, CERCLA, EPCRA, etc.). And also something that might be called the spirit of NEPA and the potential extension of that spirit into other resource and toxics laws where it hasn't reached yet.

It wasn't until I'd been involved with environmental issues for a while that I discovered large chunks of the environment that were still relatively untouched by NEPA:

- the pesticide industry, e.g.
- the hardrock mining industry
- the nuclear power industry
- and, of course, all those industries outside the United States where even US companies are exempt from NEPA

All the polls seem to show that we are on the verge of a resurgence in environmental activity; environmental protection is a top priority again, and people are willing to pay for it; e.g.:

- CBS/NY Times national poll last July showed that when given a choice in priorities between environmental protection and economic growth, environmental protection won three

to one. A similar question in 1981 came up with a 50/50 split.

- A Gallup poll just before the national elections last October showed that Democrats and Republicans when asked to list the country's top issues, listed federal deficit as #1; #2 was *increasing* (not just maintaining) environmental protection; and #3 was the arms race.

This resurgence will undoubtedly lead to some Congressional fiddling with NEPA laws. I know I should feel better now that we have an environmentalist as President, but nonetheless any attempts at legislative fixes, makes me kind of nervous.

One of the indications that NEPA is so widely supported, is that there have been relatively few attempts to change the basic law. Hopefully, that will not change, and hopefully any fiddling with the NEPA-daughters will be only to reassert basic NEPA principles and extend them into needed areas.

To my mind, there are three such principles:

- A commitment to protect the environment from the adverse impacts of federal actions
- Disclosure/Right-to-Know what the government is doing to further that commitment
- The right to public participation in environmental decision-making.

Before we start tampering with the basic NEPA principles and looking for legislative fixes, we need to look carefully at some of the current threats as well as some of the erosions that have already occurred over the past 20 years. And we need to look carefully at some of the alternatives. NEPA isn't perfect, but it's the best we've got; by comparison with other laws, like FIFRA, NEPA is great.

#### • **Disclosure/Right-to-Know**

Right-to-Know is at the heart of NEPA, and there are four main disclosure requirements:

• ***Plain English*** according to the Council on Environmental Quality NEPA regulations, "environmental impact statements shall be concise, clear, and to the point, and shall be supported by evidence that the agencies have made the necessary environmental analyses." CEQ 1500.2; see also 1500.2-12).

Yet despite this clear directive and several court decisions, federal agencies keep churning out EISs that are basically unreadable to the general public and specialists alike. Cf. Oregon Environmental Council vs. Kunzman II (1985); and Sierra Club v. Froehlike [1973].

• ***Non-abdication*** A government agency may not abdicate their duty to analyze its actions. This is important in pesticide issues: until a series of decisions in the 9th Circuit, agencies like the Forest Service and Bureau of Land Management traditionally had neglected to analyze potential effects of pesticide use on grounds that EPA registration already took care of that. The courts made agencies do their own analysis on the grounds that:

- EPA registration is not a health-based process and therefore is different from NEPA duties

- Agencies cannot ask EPA to do the site-specific analysis required of the agencies themselves (Cf. *OEC v Kunzman I* (1983); *EDF v Hardin* (1971); *SOS v Clark* (1984); *Calvert Cliffs Coordinating Committee v AEC* (1971).

- ***Information discovery/research*** The agency must answer questions if cost is not exorbitant. Cf. *SOS v Clark* (1984).

- ***Worst-Case Analysis*** If cost of research is exorbitant, the agency must do WCA. Cf. *Sierra Club v Sigler* (1983); *SOCATS v Clark* (1983).

## **The Right Not be Poisoned**

A commitment to environmental protection inevitably involves not only a right-to-know, but the right to be protected from the hazards disclosure reveals. NEPA gave birth to the cradle-to-grave tracking concept of RCRA, TSCA, CERCLA, EPCRA, etc. Disclosure is the heart of NEPA and EPCRA is the current state of the art of disclosure.

In a sense, these basic principles of NEPA are extensions into the environmental arena of basic First Amendment protections of life, liberty and the pursuit of happiness. We may not have a right to life without risks, but certainly we can claim a right to a life without unnatural risks, especially those imposed on us against our will by others; and even more particularly, without those unnatural risks imposed on the many for the benefit of a special few.

We have a right to liberty, which in chemical terms means the right to be free from chemical assault and chemical trespass and the personal invasion of our bodies and minds by renegade molecules. Which is to say, we have the right not to be poisoned.

As for the pursuit of happiness, it is a little difficult to have much interest in that pursuit when you know that you and your loved ones and your neighbors and everybody else are being subjected to uncontrolled biochemical experiments.

"We have the right not to be poisoned" is a basic corollary to the spirit of NEPA when we are talking about toxic control laws. And that corollary is a major difference between NEPA-based toxics control laws like the Clean Water Act, Clean Air Act, TSCA, RCRA, CERCLA, and the Community Right-to-Know Act; and a non-NEPA law like FIFRA.

The Clean Air Act, for instance, says that before any economic analysis is done, standards will be set strictly on the basis of health protection. We can argue about what levels of contamination really are protective, about where action levels should be set, but in NEPA law we set the standards without trying to balance economic benefits against health costs. That is not the case with FIFRA, under which EPA registers and sets tolerances for pesticides based on economic considerations first, health second. Without NEPA principles and the spirit of NEPA, laws like FIFRA become mere trade protection acts, having little or nothing to do with environmental protection.

The EPA position on health vs. economics was spotlighted a year or so ago when within the space of a few weeks, first the National Academy of Sciences estimated that some 20,000 cancer deaths a year occur from exposure to certain pesticides on raw agricultural commodities; and then EPA announced that it would continue to allow residues of carcinogenic pesticides on produce.

EPA's rationale for taking that position is indicative of just how far the NEPA process has degenerated into little more than computerized risk assessment games. Over the past 20 years, environmental impact analysis under EPA has become more and more synonymous with risk assessment. The way EPA plays the game in the case of carcinogenic pesticides is to claim that the tolerances are meant to prevent all but a "negligible risk."

*Negligible* is one of those weasel words that like most discussions of environmental risk beg the questions of *Negligible to whom? Who is at risk?* and, ultimately, *Who is expendable?* and *Who benefits from the cancer?* *Negligible risk* is another way of saying *acceptable risk*, and a risk is never a negligible or acceptable to the unlucky victim who proves the exception to the low probability.

As a potential victim myself, I have to say that the risk is not acceptable to me if it means more cancer, or more birth defects. Along with most of the rest of the public, I don't want it in my backyard, or in my lungs, or in my genes.

But the air and water and soil are in everybody's backyard. A significant number of the public believes that EPA should just say "No" to unnatural carcinogens in the environment. Toxics activists often complain about being used as guinea pigs in uncontrolled chemistry experiments in which untested chemicals are released into the environment. The *scapegoat* might be a better metaphor. Acceptable risk is the sin we heap on our victims before driving them out from regulatory protection to die in the desert.

The goal should not be acceptable risk, but zero contamination, zero exposure, zero release or discharge, zero tolerance. Risk assessment is an agency failing, not a problem with the law itself; I could go on for hours about failures of implementation, but there's not time, so I'll just quickly mention a few major problems.

### **Agency/Regulatory Weaknesses**

Many of the problems with NEPA are regulatory rather than statutory, problems with implementation of the laws rather than of the laws themselves. A comprehensive list of regulatory problems would have to include at least:

- Weak or non-existent standards
- Poor enforcement
- Insensitivity to sensitive populations
- Failure to take alternatives seriously, especially non-hazardous alternatives
- Pro-Industry bias
- Narrow scope of impact analysis (e.g., nothing on cumulative effects, nothing on synergistic effects)
- Inadequate economic analysis (including usually: an overestimate costs of compliance by not considering technological innovation developed as a result of technology-driving clauses, and an underestimate public values because they are difficult to quantify)

- Slow clean-up/restoration deadlines (the bureaucratic snail's pace is a major environmental problem, and missed deadlines are one of the major reasons the EPA keeps getting taken to court; the Spirit of NEPA includes something like a speedy trial clause, but without judicial prompting, EPA seems almost unconstitutionally unable to meet deadlines for clean air, or pesticide re-registration, or hazardous waste clean-up or a host of other environmental protection remediation problems. The agency has been

- Slow at setting standards
- Slow at enforcing sanctions against polluters (e.g., cities under the Clean Air Act)
- Slow at restoring degraded lands including restoration of overgrazed rangelands, over-timbered forests and mined lands
- Slow at cleaning up waste sites
  - E.g., EPA is only now getting around to regulating mine wastes under RCRA, whose regulations were promulgated almost a decade ago
  - Only about 1% of known hazardous waste sites have been cleaned up, and as late as 1985, only about 10% of treatment, storage and disposal sites were licensed.
  - Over 10,000 wells in this country have been closed down due to contamination by toxics, and over 50% of those were contaminated by non-point sources of pollution that the agencies have done little or nothing to control.
  - According to the National Academy of Sciences, only about 2% of 65,000 known toxics have been adequately tested; EPA's arduous chemical-by-chemical approach to toxics control is literally nickel-and-diming us to death

There is no question that the EPA is overworked. It's a problem we can all sympathize with. One of the Reagan Administration's most unpopular acts was the slashing of EPA's budget. After three or four EPA administrators, that budget still hasn't been restored to its former level. And the workload keeps building up.

The answer is not to try to stop the regulation, but to fund it at levels where it can be effective regulation. As the polls show, the majority of the public is not afraid to bear the costs of environmental protection.

Agencies like EPA, the Forest Service, BLM often aim for no more than the absolute legal minimum rather than taking the law in its spirit. Shooting for the legal minimum may be a tactic for shortcutting through some of the workload, but to a public that tends to interpret environmental protection laws very broadly, the de minimis tactic is perceived as mere footdragging or sandbagging and as outright failure to uphold the law

Another inappropriate attempt to shortcut the process is agency reliance on gross statistical generalities and armchair analyses rather than site specific field tests. An example of the importance of site specific analysis can be seen in the recent discovery that most of the models for hazmat incidents differ significantly from actual field behavior of the materials.

We see examples of these weaknesses, e.g., in our continuing failure to reach consensus on an

economic model for livestock grazing on public lands; or timber sales; or herbicide use in support of those two programs.

Besides problems with environmental analysis in general, there are also some generic problems with particular agencies where NEPA process is still in archaic stages. • E.g., the Drug Enforcement Agency (DEA) and Department of Defense (DOD) EISs are notoriously bad. Part of the reason the Ft Huachuca drug balloon is called DeConcini's Folly (and less polite terms) by local critics is because the EIS was so perfunctory as to be almost laughable; and because it was so obvious at the public hearings that public objections were not going to have any affect on pre-determined plans.

One of the worst examples of armchair analysis I have ever seen was the Department of Defense EIS on overflights of the B-1 bomber. The EIS was so far removed from reality that it located in Arizona a county that is really in Alaska, and considered impacts on a non-existent Petrified National Forest.

Another of my favorite bad examples is the Bureau of Indian Affairs (BIA) EIS on a proposed city to be built on the Tohono O'Odham reservation southwest of Tucson. The public hearings on the reservation were some of the worst failures to communicate it has ever been my misfortune to observe. I was embarrassed to be an Anglo while the Anglo developers were up front trying through interpreters to buy the desert for a few strings of beads.

### **Public Participation**

Arguably, the most serious problem with NEPA implementation is the continued failure of most agencies to develop effective public participation programs.

NEPA calls for meaningful involvement of the public in the process, but what usually happens is not very meaningful. Most agencies pay lip service to public participation, but it is obvious that most agencies consider involving the public more of a chore than a joyous opportunity. This is understandable: dealing with the public is difficult; public input is not usually professional input; the public is untidy; tardy; ambiguous, and self-contradictory. But the public is the public, and NEPA says that they will be included meaningfully in the process.

Industry often sees the NEPA public participation process as a panacea for dealing with public concern, but that is often as not because the public participation programs of most agencies are part of a regulatory process that is heavily weighted in favor of industry. There is a huge imbalance in resources available to the impacted public compared to what is available to industry, and most agencies abet this imbalance rather than correct it.

NEPA was written with the intent that regulatory agencies would become advocates for public and environmental protection, and the meager public participation programs of the agencies cannot be considered a substitute for such advocacy. If we go back into NEPA, one of the things we should clarify is the advocacy role the agencies are supposed to play.

About 15 years ago, the USFS tried what they called their "Inform and Involve" program and many state /local agencies these days have some sort of program that might be described in those terms. There are some exceptions, but mostly they don't work too well. The state of Kansas Community Right-to-Know program and the Texas Dept. of Agriculture pesticide awareness program seem to be exemplary. And California is leading the way on several kinds of disclosure.

But the usual public involvement effort is minimal, and public information programs minute.



Instead of becoming a tool for broadbased decision- making, public participation has devolved into simpleminded checklists and postcard-sized response forms like the recent mailings from USFS Intermountain Region on scoping for their herbicide program. The way to increase public participation is not to throw EISs and public hearings at people and then expect coherent response. Effective participation depends on public education.

After 20 years, there are still many areas for improvement in public participation, including the following:

- Inadequate public education: more funding and effort need to put into public education
- Slick, meaningless EISs: written primarily to avoid lawsuits, not to inform the public or protect the environment or help the agencies make decisions
- Inadequate opportunities for public input: for many people, all government is a quasi-secret mysterious process and the public input process of most agencies perpetuates this problem; under these conditions, public input is likely to be reactive and highly volatile (e.g., there is a meeting going on in Kingman today demanded by a lot of people who feel outraged that a Union Carbide subsidiary has already been given preliminary approval by state and local governments for a phosphine gas plant before most people ever heard that there was an application
- Another problem is that hearings are often held during working hours, which effectively excludes participation by most of the public
- Another problem is truncated response or comment format: e.g., scoping document on vegetation management currently being circulated by the USFS-Intermountain Region
- Another problem is that usually only a limited number of people are notified that the process is underway; Despite all the attempts to implement public notification procedures, notification usually gets to only a selected few: industry and government usually end up talking to themselves with occasional comment from a token environmental or public interest group who is said to represent the public; for instance, unless you get the Federal Register or a trade journal, chances are you won't know about it. In Cochise County, copies of the Federal Register are almost impossible to find: we usually get them on interlibrary loan from U of A, a process that takes a couple of weeks
- Minimum legal notification requirements are notoriously inadequate: usually only a notice tucked away in the want ads of one paper that hardly ever gets seen by anybody; most people get all their news from TV, and TV doesn't usually carry notice of public comment opportunities.
- Another problem is the limited time allowed for public comment: often the problem is the speed of the process; on the one hand, EPA seems to take for ever to set standards for toxic air pollutants or to impose sanctions on cities that don't comply with ambient clean air standards , but on the other hand, the whole NEPA process sometimes seems to happen far too fast for any meaningful public participation.

In whose interest is the speeding up of the process? The project sponsor. Possibly also the government worker who always has too much to do. But certainly not the general public, which has never had time to read, let alone understand the EIS on the new dinosaur they're building next door. Sometimes it seems that no one (project sponsor, government or least of all the

public) has time for due deliberation.

- Far too often, the NEPA process looks like typical planning and zoning meetings where the declared purpose of the zoning commission is to encourage development. It is more inclined to expedite than analyze. Investment capital doesn't like to be kept waiting.

One reason why we need longer timelines for public comment is that when a 60 or 90 day comment period is set up, and announced only in the Fed Reg or the want ads of the local weekly, there is a lag time between date of notice and date the public sees the notice. My own too-frequent experience is that I'm forever finding out about proposed actions just before or just after comment.

The Arizona State Pesticide Advisory Council is notoriously bad in this regard: Once I finally got on the Council's mailing list for advance notice of meetings, I found that I wasn't much better off than before. I think that in all the years I've been receiving their mailings, only once or twice have I been notified more than 2 days in advance of a meeting. What good does it do me to receive notice of a public comment opportunity if it is going to be open the next day, during working hours, 200 miles away?

Most of the public never hear about environmental decision-making at all or if they do, it is late in the process. Often members of the public do not hear about a proposed action until or just after a public hearing when most of the decisions have already been made by the agency.

But for the public, a great deal of information may be provided at the hearing, and meaningful deliberation and input require study and thinking time. A 5 or 7-day deadline for written comments after a public hearing is entirely inadequate.

The public should be considered an equal player along with government and industry in all negotiations from the very beginning of the process. As soon as government knows about a proposed action, the public should be notified and brought into the planning process.

Another problem is that agencies rely too heavily on large, well-established organizations to represent the public or other respected groups the agencies have found they can talk with easily. E.g., the current attempts to bring the public into the Superfund process: Congress set aside \$50,000 for public input to clean-ups, with up to \$50,000 available for local groups, but the money is only available to well-organized organizations who can wade through the application requirements and whose sole purpose is watchdogging the particular site the grant is aimed at.

The Sierra Club, the Audubon Society, Friends of the Earth, Greenpeace, et al can speak for a very wide constituency, but they cannot be assumed to speak for the public at large. In fact, the large national organizations are often thought of as Uncle Toms by small grassroots groups.

The agencies have yet to figure out a way to involve and listen to the unorganized general public, not just the articulate professional organizations. But NEPA requires that decisions should not be made just by government, industry and an occasional token environmentalist.

### **Erosions/Alerts**

There are two main areas where erosion has been occurring: Executive Office influence and Congressional intervention.

- ***Executive Office influence***

E.g., under Reagan we saw

- the slashing of EPA's budget and appointment of dismantling crews from the Watts-Gorsuch-Lavelle school of environmental protection
- The canceling of several Executive Orders that Carter had issued--I'm most familiar some that restricted use of some of the more toxic pesticides, but I'm sure there were others in other areas
- Downgrading of the President's Council on Environmental Quality (CEQ), which is established by NEPA to act as advocate for environmental protection'

During the last Administration the CEQ's role as advisory body and advocate for the environment was nearly lost; it was used instead as whipping boy for Dept of Justice and probably others I'm not aware of. After Justice lost a series of significant pesticide cases on the basis of CEQ's worst-case analysis regulations, the Department's lawyers put a lot of pressure on CEQ to change the regulations, which CEQ finally did.

- ***Congressional intervention***

The Executive Office isn't the only problem. There have also been Congressional inroads and bypasses, usually for the purpose of giving of pardons to pet projects so they don't have to go through NEPA scrutiny. A particularly flagrant example is the Arizona delegation's recent giveaway of Mt. Graham to the University of Arizona for an observatory complex. The University lobby had complained that the NEPA process being carried out by the Forest Service was taking too long, so the delegation decided to oblige by bypassing the whole thing.

- ***Legislative Fixes***

We need to amend NEPA so that there is real teeth. If environmental analysis shows an environmentally preferable alternative, the agency should be required to adopt that alternative, regardless of the agency's programmatic preference. There is already a model for this kind of requirement in the Highway Act, which requires roadbuilders to show that there is no viable alternative before they significantly impact the historic environment.

- NEPA rules are often too general. E.g., NFMA, has very general language on old growth which has utterly failed to protect old growth; environmentalists have had to go to court to gain "legal specificity." Industry often complains that legislation is too specific, too detailed, to "inflexible", but experience with the Clean Air Act, Superfund, FIFRA and others indicates that when the laws are written very generally, almost nothing gets done
- The laws need to set specific deadlines, specific levels of achievement/goals, specific guidelines for action; and then direct the agencies to enforce those specifics.

One of the things we learned from the Regan Administration is that laws do not drive the budget: For instance, James Watt found that what he couldn't get through Congress or through courts he could get through OMB simply by cutting programs in the budget. Gorsuch & Lavelle played the same kind of role in EPA.

- The laws are going to have to be written in a way that prevents the administration from killing Congressionally-mandated programs
- Restore and increase EPA funding , esp. in research and enforcement

Congress should make sure that agencies are budgeted sufficiently to carry out their jobs. Cuts made under Reagan have never been fully restored. Need to increase funds for EPA in general, especially scientific/ technical staff and enforcement personnel, and for USDA Forest and Range Experiment Stations, which before the last Administration were a primary source of basic research data essential to environmental analysis.

- End chemical-by-chemical approach and provide blanket protections: e.g., No carcinogens
- Restore CEQ to advocacy position
- Direct EPA to exercise its advocacy role

Like all laws, the NEPA daughters are compromises: e.g., they exempt many significant impact sources:

- copper smelters under CAA
- most aspects of oil & gas industries and non-point sources like agriculture and urban runoff are exempt under RCRA
- RCRA also exempts most pesticides and leaves them to FIFRA; but FIFRA does not have NEPA safeguards like RCRA: FIFRA does not provide data on:
  - leaching potential
  - nationwide kinds/amounts/locations of pesticide use
  - a nationwide health effects registry
  - farmworker protection

Statutory exemptions like these get magnified in the regulatory process, esp. at the state and local levels. For instance, groundwater protection rules being proposed under Arizona EQA call for blanket exemptions for several classes of facilities, including all facilities using substances regulated under FIFRA, facilities operating under RCRA interim cleanup permits, livestock feedlot operations, etc.

- Global limits

International escapism is another kind of exemption. NEPA requirements end at the US border, but problems (including those caused by US industries) are global. For example, acid rain, greenhouse effect, ozone layer, ocean dumping, pesticide exports.

Like oldtime Apaches and outlaws, some industries run south of the border to escape regulation. In a sense, that's what the Douglas smelter had done for years: the Clean Air regulations didn't account for all the pollution blowing into Mexico when the wind blew south, so Phelps Dodge was able to meet federal primary health standards even though actual stack emissions were outrageously high.

Export of toxics to other countries is of obvious concern in states like Arizona, where exports may go only a few yards across the international border into Mexico and magically become exempt from NEPA regulation

Hopefully we'll see some legislation that will start to prevent the circle of poison syndrome by banning the export of pesticides and other toxics that are already banned in this country. And hopefully we'll see the export of NEPA regulations along with the export of the hazardous materials, products and practices.

We are beginning to see this need filled by extension of hazardous materials planning through the US/Mexico sister cities (*ciudades hermanas*) program under 1983 Border Environmental Agreement; the maquiladora industry is expected to take the lead in this bi-national effort.

The Emergency Planning and Community Right-to-Know Act seems to me to be the most important development in NEPA law of the past decade or so, and one of the most significant aspects of the law is the implication it has for extension of NEPA principles into foreign countries. We need to see it extended further by putting stiff environmental protection requirements in World Bank procedures.

The US should take a proactive role in implementing of the International Code of Conduct for Pesticide Use and Distribution, another strong right-to-know effort, which so far, the US hasn't joined.

## **Planning for Prevention: Once We Know, Then What? (1991)**

Michael Gregory, presented to the Arizona Association of Community Health Centers and University of Arizona Rural Health Office 1991 Legislative Forum “Arizona Health Care Issues,” Phoenix, Arizona (10 January 1991)

As everywhere in our post-industrialized civilization, toxic substances present a significant and continual hazard in the rural areas of Arizona. As a former Emergency Services Coordinator for Cochise Count—which was about as far away as I could get from what I used to think of as civilization when I left California 20 years ago—I can personally attest to the fact that you can't get away from it. Toxic substances are everywhere: in our air, in our water, in the polar ice caps, in our food and in our very tissues. In my case, I went from the smog of California to the Douglas smelter.

Even though most of our smelters are shut down for the moment, there are still plenty of toxic features of our rural Arizona landscape, including:

- Pesticides and other agricultural chemicals
- Mining, including toxic dust from tailings piles in the air, heavy metals and processing chemicals in the water, and tons of cyanide trucked in for gold leaching operations.
- Utilities, with stockpiles of acids and petroleum fuels and noxious smokestack emissions.
- Warehouses, including auto parts houses and discount stores like K-Mart and Wal-Mart which have large quantities of toxics in small packages.
- Transportation, including rail and truck traffic in all manner of hazardous wastes and other hazardous substances.

Unfortunately, most of these hazardous enterprises are exempt from the major reporting provisions of the one law we have that was meant to address these kinds of problems. the *Emergency Planning and Community Right to Know Act* (EPCRA, or SARA Title III, as it is also known), although it is one of the most revolutionary laws of the past 50 years, was written primarily in response to the Bhopal catastrophe and focuses on the hazards of chemical manufacturing.

But in our rural communities, chemical plants are fortunately few and far between. The more common hazards are from truckloads of hazardous materials passing on major highways through the center of communities like Tombstone, Bisbee and Douglas; or trains carrying a hundred or so tankcars, each one filled with 25,000 gallons of every imaginable toxic chemicals, routinely passing through little towns like Benson and Bowie; or thousands of pounds of toxic pesticides at distributors warehouses in agricultural centers like Wilcox; or thousands of gallons of mixed solvents, pesticides, acids and caustics in auto supply stores and discount stores. (If you have a K-Mart or Wal-Mart in your neighborhood, I strongly recommend that you plan not to be downwind if it catches on fire.)

I don't want to belittle the importance of Right to Know: it speaks to the very heart of our democratic system and, along with health-based standards, is the foundation of all our environmental laws. But Right to Know only goes so far. As a part of our first environmental law, the *National Environmental Policy Act*, (NEPA), our Right-to-Know revealed how badly we

have been fouling our nest and gave us the basic principles of environmental impact analysis so, at least under federal law and in some states (not yet in Arizona), we are required to disclose and analyze the potential adverse consequences of our actions, and compare them to other alternatives before we spend public money getting ourselves in trouble.

The 1986 Superfund amendments, the 1988 OSHA rules, the 1990 *Clean Air Act* amendments and the *Pollution Prevention Act* of 1990, take Right to Know a step further, and require even *private* businesses to disclose the potential hazards of their activities to our communities and our environments. There is no doubt that by letting the public know which 500 American industries dump several million tons of toxics into our environment every year, EPCRA has created a new attitude in environmental politics.

But the point I want to make here is that it's time to take the next step. Disclosure and Right-to-Know can only take us so far. Now that we know what a mess we're in, and know some of the industries primarily responsible for making that mess, what do we do now? EPCRA is essentially a reporting law that plans for accidents. It gives us the Right-to-Know, but it really tells us little that we didn't already know and, furthermore, the only tool it gives us for doing anything about the mess is emergency response. Given current environmental conditions, the disaster response model is in some ways highly appropriate, but it remains an after-the-fact method.

In that respect it is part of the same old command-and-control approach to pollution: the *Clean Air Act*, *Clean Water Act* and other laws of the 70s and 80s did not try to prevent pollution; rather, they presumed that pollution was more or less inevitable and allowed pollution up to a point—which in regulatory terms means they created a self-fulfilling prophecy that industries would pollute the air and water and food up to the regulatory standards of however many parts per million the regulators permitted.

The old system was based on the discredited theory of what is called "the assimilative capacity model," which assumed that the environment could assimilate without undue (or, to use the typical regulatory term, "unreasonable") harm. Now, 20 years after we started implementing assimilative capacity laws, we know that the theory was wrong; under that regulatory system we have continued to contaminate the world, even into the ozonic reaches of the upper atmosphere.

We need to do better than the "make a mess and then pay to clean it up" approach. We need to go beyond just knowing and planning for emergencies. Instead, we need to start planning for prevention.

In the few minutes I have left, I'd like to lay out the minimum components of a comprehensive pollution prevention program that our Legislature, in its wisdom, hopefully will see fit to pass in the very near future. Without at least these minimum components, we end up not preventing pollution, but with business as usual, which in our case means the kind of hazardous waste business that has gotten us into our current mess with ENSCO.

First, we need to take some emergency actions to immediately reduce the hazard. In effect, since we can't evacuate everybody to the moon, we need to plug the leak. This means we should:

1. Ban the use of pesticides that cause cancer, birth defects, nerve damage or other chronic diseases, or that are known to leach into our groundwater.
2. Ban incineration of hazardous waste at the state facility in Mobile, or any other state facility. Incineration only encourages generation of more waste, rather than prevention and

minimization.

3. Ban imports of hazardous waste to the state facility.

Next we need to expand on the good things already in EPCRA. We should:

4. Expand the involvement of local citizens and the authority of local communities in protecting themselves from hazardous substances in our communities.

- Local communities should have not only the Right to Know, but the right to *say no*. Before the state considers giving any kind of a permit to a facility that would be a major user of hazardous substances, the local community should have already done an environmental review of the proposal, including full citizen input, and agreed to let the state consider the permit.

- Representatives of Local Emergency Planning Committees (LEPCs) should sit on the advisory committee to the state Emergency Response Commission, especially representatives from the rural counties. The committee should also include representatives of environmental organizations.

5. Expand the reporting base for kinds of facilities and kinds of substances.

- Instead of limiting detailed reporting on toxic releases to manufacturing facilities, reports should be required from the transportation industry, the agricultural industry, the mining industry, utilities, warehouses and discount stores, and any other kind of facility that has ten or more employees and that uses ten thousand pounds or more per year of any hazardous substance (or less than that threshold amount in the case of particularly toxic substances).

- The list of hazardous substances should be expanded from the 300 or so chemicals now being reported to include hazardous wastes and any other hazardous substance listed under the Clean Air Act, the Clean Water Act, or by the US Department of Transportation, and in general any substance known to cause cancer, birth defects, mutations, nerve damage, immunological disease, etc. In short, if it is toxic or hazardous, it should be on the list.

- Similarly, the state's definition of hazardous waste should make it clear that a hazardous waste is a kind of hazardous substance, and that if a waste is defined as hazardous in any state or territory of the United States, it is also a hazardous waste in Arizona.

6. Expand the emergency planning and response implementation of EPCRA by funding local response units and planning committees.

- Like other programs passed in the Reagan era, EPCRA carried no appropriation for implementing it. Consequently, local emergency planning committees are primarily volunteer organizations with no money for staff, postage or copying. It is no surprise that almost every Arizona county missed the federal deadline for writing and adopting emergency response plans and that we still don't have plans adopted by half or more of them.

- For the same reason, there are no hazardous materials emergency response



teams in the rural counties. If a hazmat incident occurs in an outlying area of a rural county, the state's hazmat team has to come in from Phoenix. If the team doesn't happen to be already busy in another part of the state, that means a minimum of an hour by plane to most parts of Cochise County, and two to four hours for the equipment truck to arrive. But a serious hazmat incident can spread deadly gases throughout a community in a matter of minutes. Meanwhile, the local responders, even if they are on the scene and happen to be trained, do not have equipment to plug the leak and can only draw a circle on a map around the accident site, try to evacuate as many people as possible from the vulnerability zone, and wait for the state to arrive.

7. Expand Right to Know provisions so that any information about a facility is readily available to the public except for trade secrets.

8. Require facilities instead of LEPCs to do the hazard analysis indicating the degree of hazard to the communities and environments at risk from hazardous substances and releases at the facility.

There are a few other improvements that should be made in the existing emergency planning law but, as I said, we have to move beyond creating self-fulfilling prophecies of disaster and get seriously involved with pollution prevention if we are to get at the cause of the problem rather than just working on symptoms. In addition to the above fixes to the state EPCRA, we need to:

9. Require reporting facilities to report not only what hazardous substances they use and what hazardous wastes they generate, but what they are doing and will do to reduce their amounts and toxicities.

7. Require major facilities to write detailed toxic use reduction and waste minimization plans indicating how they will implement pollution prevention methods at every production process at the facility, set goals for cutting toxics use, and report periodically on their success in meeting the goals. The goals and schedules of their plans should be enforceable provisions in any permit they get from the state.

8. Require fees for the generation, treatment, transportation, and disposal of hazardous waste and for the use of other hazardous substances. The fees for hazardous wastes imported into Arizona should be at least as high as the fees that would have been charged for transport, treatment, storage or disposal in the state where they were generated, and the fees should go into a special fund for implementing the state's pollution prevention program.

9. Require the Director of the Department of Environmental Quality to develop that comprehensive hazardous substance management program, including:

a. A goal of 50% reduction in statewide use of hazardous substances by 1999.

b. A goal of maximum achievable reduction in transport of hazardous waste.

c. Periodically updated listings of officially-designated hazardous wastes and other hazardous substances.

d. Proactive technical assistance and public information.

e. A periodically updated list of priority industries or facilities that could most benefit from pollution prevention (including those 50 or 60 that are responsible for 80-90% of

the hazardous waste generated in the state).

f. A periodically updated list of Best Available Demonstrated Reduction Technologies for selected priority facilities and rules for enforcing implementation of those BADRATs where necessary.

g. A prohibition on disposal of hazardous waste that has not been reduced to the extent required under the reduction plans or BADRAT, where applicable,

In closing, I would like to just note again that these are minimum components of an effective program. If we don't put at least these requirements in place, we're not really getting serious about pollution prevention.

## **Border Right to Know Project, Selections (1994)**

Michael Gregory, Gildardo Acosta-Ruiz, Bruce G. Carey, Miguel Angel González, Beth Henson and Ulises Navarro, for Enlace Ecológico and Arizona Toxics Information, (August 1994)

### **I. The 1993 Northeastern Sonora Pilot Inventories**

#### *Foreword*

Explosive growth in the Mexico-US border region over the past two decades has led to increased traffic in hazardous materials with consequent increasing concerns about potential adverse effects of such materials on public, occupational and environmental health. In particular, especially since the North American Free Trade Agreement (NAFTA) process focused so much attention on the border region, there has been a growing call for pollution prevention, clean-up of existing contamination, and disclosure of information on industrial and agricultural use and release of hazardous materials.

The first step in disease, pollution and emergency incident prevention is hazard identification. Although the Integrated Border Environmental Plan (IBEP) issued by the US Environmental Protection Agency (US-EPA) and Mexico's SEDUE (Secretaría de Desarrollo Urbano y Ecología/Agency of Urban Development and Ecology), now replaced by SEDESOL (Secretaría de Desarrollo Social/Secretary of Social Development), recognizes the need for cooperative, binational right-to-know (RTK) programs on the US-Mexico border, and emphasizes the need for public participation, the federal-level plan contains no specific mechanisms and no funding for achieving such programs. Furthermore, the IBEP largely ignores rural areas and hazardous materials use by such rural economic sectors as agriculture, silviculture and mining.

It is generally recognized that due to significant disparity in available resources, data on health and environmental conditions on the U.S. side of the border is more complete than in Mexico. Although data on hazardous materials production, use, transport and release is called for under several Mexican regulations, when such data is submitted it goes to several different local, state and federal agencies on a variety of forms and is not generally available to the public. To date, there has been little data available identifying kinds, quantities and locations of hazardous substances; little or no cradle-to-grave tracking of hazardous waste; little training of workers (particularly agricultural workers) in proper handling of toxics; little effort to identify opportunities for implementing pollution prevention technologies; and, in general, no effective program to address toxics conditions along the border.

In the past few years, a variety of proposals have been forwarded to address these needs through implementing one or another aspect of right-to-know in the border area. Among these have been initiatives by the binational network of non-governmental organizations known as the Border Health and Environment Network (La Red Fronteriza de Salud y Ambiente, A.C./RFSA).

Recognizing that hazardous materials inventories are essential for informing the public of hazards in their midst, for educating facility managers and workers, for providing information necessary to assess and correct existing problems and prevent them in the future; and that such inventories are not just informational but serve as a strong stimulus to action by the public, private and governmental sectors to reduce the hazards disclosed by inventories; the RFSA member organizations, independently and in unison, working with several affiliated organizations and individuals, and with various local and state government bodies, have

proposed RTK programs tailored for the site specific ecological and political conditions of their individual areas.

Each area and set of problems is unique but all share problems common to RTK programs, including the need to develop data, translate the data into usable information, and disseminate the information to the concerned publics. In addition, each faces the difficulties of developing adequate and appropriate political authorities and the technical and financial resources to implement their programs.

This report presents the results of two hazardous materials inventories developed as a single pilot project and carried out by Enlace Ecológico (EECO) with technical support from Arizona Toxics Information (ATI). The agricultural component of the project surveyed pesticide use on small farms in the rural northeastern Sonora communities of Fronteras and Santa Cruz. The industrial component surveyed hazardous materials use and release by maquiladoras in the northeastern Sonora city of Agua Prieta.

Both components of the pilot project were intended to:

- Identify the kinds and amounts of toxics produced and used in the study areas
- Identify the source of the materials, either domestic or imported
- Identify the ultimate destination of the materials and their waste products
- Develop survey forms easily replicable by and useful to citizens and governments
- Demonstrate the feasibility of NGO-government-industry cooperation in developing inventories in the border region
- Demonstrate the practicability of NGOs initiating, designing and conducting inventories with low budgets and small personal computers.
- Gain experience that could be shared with others undertaking similar projects

The pilot project was carried out with the use of three microprocessors and the equivalent of approximately three fulltime employee equivalents for about nine months time, most of which was required for creation and formatting of databases. Of particular note is the cooperative nature of the project. Not only was close collaboration between EECO and ATI essential, but the project could not have been carried out without the cooperation of those being surveyed and, especially for the industrial component, not without the active endorsement of local and state agencies. In addition, it would not have been possible without the encouragement and feedback of our colleagues in other NGOs in both countries, and the specific project support of the W. Alton Jones Foundation. Accordingly, this report is presented to all parties—government agencies, industries, farmers, farmworkers and to other non-governmental citizens organizations—as a possible model for developing binational, cooperative right-to-know programs in other communities.

### ***Right to Know and Sustainability***

The Right-to-Know (RTK; *el Derecho a la Información / DALI*) is one of the fundamental elements of sustainability and, as such, has been recognized in diverse international fora and strongly advocated by such agencies as the United Nations Commission on Environment and Development (UNCED). Recommendations for nations and industries to implement right-to-know programs constitute a substantial portion of Agenda 21, the blueprint for action agreed to by all nations, including Mexico and the US, participating in the Earth Summit in Río de Janeiro in 1992. Indeed, it may be argued plausibly that all other recommendations of Agenda 21 are dependent on successful implementation of RTK.

As the following excerpts of Agenda 21 indicate, in making recommendations for worldwide institutionalizing of RTK, the Earth Summit contemplated both broad and detailed programs, leading to effective reductions in use of and, consequently, in risk from, hazardous materials:

*The broadest possible awareness of chemical risks is a prerequisite for achieving chemical safety. The principle of the right of the community and of workers to know [of chemical] risk should be recognized.*

(Chp. 19.8)

*In sustainable development, everyone is a user and provider of information. . . . The need for information arises at all levels, from that of senior decision makers at the national and international levels to the grass-roots and individual levels.*

(Chp. 40.1)

Under the heading "Information Exchange on Toxic Chemicals and Chemical Risks," Agenda 21 calls for governments with the cooperation of industry to:

*assist in the creation of national chemical information systems in developing countries . . . [and] improve databases and information systems on toxic chemicals, such as emission inventory programmes, through provision of training in the use of those systems.*

(Chp 19.40.a-b)

Under the heading "Establishment of Risk Reduction Programs," Agenda 21 calls on governments to:

- *Undertake concerted efforts to reduce risks for toxic chemicals, taking into account the entire life cycle of chemicals [including] emission inventories.*
- *Adopt policies and regulatory and non-regulatory measures to identify, and minimize exposure to, toxic chemicals by replacing them with less toxic substitutes and ultimately phasing out the chemicals that pose unreasonable and otherwise unmanageable risk to human health and the environment and those that are toxic, persistent and bioaccumulative and whose use cannot be adequately controlled*

(Chp. 19.49.c)

- *Reduce overdependence on the use of agricultural chemicals through alternative farming practices, integrated pest management and other appropriate means*

(Chp. 19.45).

Industry, says Agenda 21, "in the absence of host country requirements," should be encouraged to:

- *Adopt, on a voluntary basis, community right-to-know programmes based on international guidelines, including sharing of information on causes of accidental and potential releases and means of preventing them, and reporting on annual routine emissions of toxic chemicals to the environment.*

(Chp. 19.50.c)

In contemplating the formidable task of actually achieving a sustainable future, the Brundtland Commission report which led to establishment of UNCED and the Earth Summit noted that:

*Promoting sustainable development policies at the national and international levels will require immense efforts to inform the public and secure its support.*

*(Our Common Future)*

In this regard, it is crucial not only that data be available and easily accessible to workers and the public, who are most directly at risk from the problems which accompany unsustainable economic growth, but that those parties be fully involved in the information-gathering process itself and in the subsequent planning for the elimination or mitigation of the hazards inventories bring to light. Guaranteed public access to information is indispensable to the development of social participation, for to the degree that workers and members of a community have appropriate access to information about hazards, they can take protective measures as individuals as well as strengthening the community decision-making process.

### ***Integrated Hazardous Materials Inventories***

The primary instrument for gathering such information is the hazardous materials inventory, the best known versions of which are the Tier 2 Report for Extremely Hazardous Substances and the Toxics Release Inventory (TRI) developed by the US-EPA pursuant to sections 302 and 313, respectively, of the 1986 *Emergency Planning and Community Right-to-Know Act* (EPCRA). More recently, in international discussions, the term of art is coming to be Pollutant Release and Transfer Register (PRTR), in accordance with the Organization for Economic Cooperation and Development (OECD) process for developing guidelines for nations to comply with the Agenda 21 recommendations on toxics inventories.<sup>1</sup>

As a model, the US-EPA's TRI is far too narrow, for it is limited not only to a short list of substances found in high quantities, but it requires reporting of those substances only from manufacturing facilities, excluding non-point sources in general as well as all sources in the utilities, mining, agricultural, governmental, services and other non-manufacturing sectors.

Furthermore, the titles of these existing inventory processes are somewhat misleading. Not only do the terms "extremely hazardous substances," "toxic" and "pollutant" tend to be conceived as mutually exclusive, but individually they are liable to be narrowly construed and, therefore, fail to include all substances of concern. Use of the term "toxics", for instance, has sometimes led to paralyzing debates about the definition of toxicity that devolve into a decidedly unhelpful focus on risk assessment and questions of acceptable risk. The term "extremely hazardous" has been subject to similar debate. Again, it has been argued that the term "toxic" does not include such substances as explosives, the principal hazard of which is not toxicity, in the usual physiological sense of the term.

Similarly, it has been argued that flammables and other substances which, regardless of how

---

<sup>1</sup>While this report was in preparation, it was announced that Mexico has been accepted into the OECD and that the Instituto Nacional de Ecología would begin working with the United Nations Institute for Training and Research (UNITAR) to develop a pilot PRTR program, a process expected to take approximately two years, by the end of which period Mexico would decide whether or not to develop a nation-wide PRTR.

toxic or dangerous they may be in other ways, should not be included in inventories of "pollutants" since they do not necessarily, in a strict sense of the term, pollute. In this regard, it has been argued that a substance can be a "pollutant" only if it is released to the environment in quantities or concentrations above background level and that, therefore, regardless of such matters as cumulative environmental loading or body burdens, inventories should include only substances that are actually released to the environment in such quantities or concentrations, not those which are merely produced, stored or otherwise used or confined within a facility or conveyance.

As non-governmental organizations at the Earth Summit and follow-up meetings have insisted, however, and as the experiences with inventories in those developed nations (e.g., Canada, the Netherlands and the US) that have instituted inventory systems suggests, it is not just release and transfer (including commercial flow) information that is needed, but fully integrated site and facility profiles, including full materials accounting for the kinds and quantities of materials, processed, stored, transported, used and released; as well as the specific modes of management, potential effects on human health and the environment, routine and accidental releases, and waste generation and management. Especially in small communities and developing nations, the terms "toxics" and "pollutant" should be construed in their broadest sense to cover not just substances that exhibit technical toxicity, but those that present other hazards. The inventory should be inclusive, not exclusive, and applicable to the many interrelated purposes of emergency planning and response, disease prevention, pollution prevention and land-use planning.

In short, what is required is an integrated cradle-to-grave profile of the complete life-cycle of each hazardous material present at each site or facility. Such basic data about physical, chemical, radiological and biological hazards must be collected, widely disseminated and easily accessible if citizens are to respond effectively to the increasing contamination of the environment which accompanies unsustainable economic growth.

### ***Public Participation***

The speed at which development can aggravate problems of environmental and human health and the complexity of those problems far surpass the ability of today's governments, acting on their own, to confront and take action to solve and prevent. Rather, it is essential that mechanisms be instituted to facilitate active citizen participation which supports, complements and strengthens the necessary governmental efforts in the search for and implementation of solutions to human health and environmental problems.

For this participation to be effective, communities must be not only informed of health and environmental conditions that could affect them, but be given opportunity to participate in the decision-making processes at all levels concerning these matters. RTK makes conscious and reasoned decision-making possible and helps to marshal public support for governmental efforts to resolve existing and prevent future environmental degradation. It is equally necessary that citizen participation be developed in concert with activities of the private, academic, and governmental sectors of society.

In addition to implementing procedures which allow the identification of each step in the range of operations that involves hazardous materials, an effective RTK program must include specific mechanisms which guarantee public access to the information (including raw data, analytical steps, and calculated results), facilitate active community and worker participation in reducing hazards and risks, and improve the information gathering process itself. The usefulness of this

whole process of obtaining and disseminating information is not limited, however, to the mere transfer of quantitative data, nor to encouragement of social participation (though these two purposes are of the utmost importance); rather, the RTK program can also serve as the basis by which government officials, industry and the community itself discover opportunities for pollution prevention and control, for implementing industrial hygiene programs, for minimizing hazardous wastes, for developing and implementing emergency planning programs, for land-use planning, and for correlating factors of toxics use with conditions of human and environmental health.

For several years, some industrialized countries have implemented RTK programs which have significantly raised public awareness and increased active participation in the analysis of common problems. In Mexico there is no RTK tradition and it is unlikely that significant changes in this respect will occur due to government initiative alone. Neither is it common practice for citizens to work together with government in the solution of common problems, although there have been important advances in this respect in recent years, principally in projects for improving the infrastructure and community services.

Nevertheless, the demand for RTK in Mexico is not new, least of all in regard to concerns about the potential adverse impacts on human health and the environment. As early as 1988, for instance, in an effort to obtain information as to type, quantity and location of hazardous substances present on the Mexico/US border, the Border Ecology Project, a binational nonprofit environmental group based in Bisbee, Arizona, supported by members of Enlace Ecológico, conducted an informal inventory of hazardous substances used by the Agua Prieta maquiladoras. While the inventory's scope was limited, the results obtained clarified, among other things, the lack of a mechanism at any level of government for tracking the use of hazardous substances and the destination of the hazardous wastes generated in the industrial processes.

In particular, the study found an utter lack of evidence that hazardous wastes generated by US-owned maquiladoras in Mexico were being sent to the US for proper disposal, as was required under Annex 3 of the US-Mexico Border Environmental Agreement (La Paz Agreement). These results were distributed to various governmental agencies in Mexico and the US, to civil and academic organizations, to the public in general and to the La Paz Agreement work groups, thereby significantly helping to raise awareness of the need for tighter controls on the management and disposition of hazardous wastes and other hazardous materials in the border region. These issues were prominent in discussions of the parallel agreements to the NAFTA.

More recently, as was made clear in the April 1991 public hearings on the draft binational Integrated Border Environmental Plan (IBEP) that took place in the border cities, implementation of RTK in Mexico was one of the most consistent demands of the public in the border region. While this demand was explicitly recognized by the then head of the Subsecretaría de Ecología de SEDUE, the IBEP document which was finally approved included only generalized statements of need, a promise that "SEDUE and EPA will develop technical cooperation programs in the areas of pesticide misuse control, and farmer/applicator training and dealer training" (IBEP, V-35), and the compromise statements that "SEDUE and the EPA will seek establishment of requirements for public availability of data on emissions and effluents of pollutants and other elements of a right-to-know program in the border area" (IBEP, V-49).

Nonetheless, the demand for RTK in Mexico has gained force through the many analyses of the potential impacts of the NAFTA on health and environment as well as the frequent toxics leaks and spills and other incidents involving explosive and flammable substances in various parts of the country (including the catastrophic explosion in the sewers of Guadalajara in April 1992 and several evacuations in the Ambos Nogales border cities during February 1994).



### *The Legal Framework*

An adequate juridical framework for the effective exercise of RTK still does not exist in Mexico. Although as recently as 1977 freedom of information was incorporated into the Mexican Constitution, the amendment was made as a support to the Article 6 clause on freedom of speech ("the manifestation of ideas will not be the object of judicial inquisition. . . . The right to information is guaranteed"), but was not accompanied by regulations to clearly establish a corresponding obligation of government to provide public access to information. Consequently, laws and regulations on health, environment and civil protection continue to lack adequate provision for establishing effective RTK.

At this time, with the exception of the information contained in the SEDESOL-required *Manifiestos del Impacto Ambiental* or Environmental Impact Reports (EIRs), information on chemical hazards of industrial facilities is not available for public examination and the information in the EIRs is quite limited. Furthermore, since there are no specific mechanisms for public access to available information, disclosure is subject exclusively to the will of government officials. Even in the case of the EIR, the mechanisms for public availability of which are clearly defined in the 1988 *General Law for Environmental Equilibrium and Protection for the Environment* (the *Ley General*) and its regulations concerning environmental impact reports, public access is severely limited, since these documents are available only in the Mexico City offices of the National Ecology Institute (Instituto Nacional de Ecoología) in Mexico City.

Similarly, public access to EIRs submitted under state laws is limited since the documents may be examined only in the state capitols in the offices of the state agencies that require them.

Although it is officially recognized that governmental actions for addressing problems of health and the environment will be insufficient if they do not include public support and cooperation, regulations promulgated pursuant to the *Ley General* envision social participation only by means of inadequate Councils or Committees of Citizen Participation (CCP). While formation of such CCPs is encouraged at federal, state and municipal levels of government, in practice they are typically composed of officials and functionaries of various government agencies, so that public participation takes place only through invitation from the authorities who preside over such councils and committees to selected representatives of civil and private organizations. Other individuals or interested organizations can participate in some of the periodic meetings held by the CCPs, only if they are granted previous authorization by the presiding authority, a requirement that presents a significant barrier to full public participation.

Despite these significant limitations, it must be recognized that since 1991 some legal decrees have been issued which, given adequate regulation, could constitute important advances for RTK in Mexico. For example, the National Program of Civil Protection establishes voluntary citizen participation and wide dissemination of information as two of its fundamental aims. According to this program, citizen consultation is the most desirable way of creating an adequate legal framework for civil protection. Moreover, the National Program calls for the development of a *National and Local Atlas of Risk* to be widely distributed among the general public, with the hopes that the public will "become aware of the hazardous conditions in the region where they live" (Diario Oficial, 29 May 1991, pg. 74), and that voluntary citizen participation in tasks of prevention and disaster control will be encouraged as a priority.

Finally, but no less important, the 1993 Law of Measurements and Standards requires that before a new Official Mexican Standard is adopted, the government must publish the proposed standard in the *Diario Oficial* and allow three months for public comment, and then publish responses to

the comments that were received.

However, despite these initiatives and intentions, the information which currently exists on the kind and quantity of hazardous substances present daily in the Mexican border area, whether as releases or as materials in storage or use, remains insufficient. Such data as is collected, is collected in a fragmented manner and, in general, access is limited to certain government agencies. This fragmentation of what little information is available and the impossibility of public access to it, precludes a thorough evaluation of hazards to the environment and public health, as well as the possibility of attaining the various additional benefits offered by full public disclosure.

On the one hand, information is not available to identify pollution sources precisely, so it is more difficult for governments to make decisions on how to implement effective pollution control measures, and more difficult to identify opportunities for pollution prevention and hazardous waste minimization; on the other hand, the information needed to develop emergency plans to facilitate effective civil protection programs is not available. But above all, the lack of available, accessible information keeps the community from identifying chemical, biological or radiological hazards to which they might be exposed, seriously limiting the public's participation in decision-making and in implementing actions which could reduce or eliminate such hazards.

### ***The Border Health and Environment Network***

In the last thirty years, the Mexican cities which border the US have experienced rapid growth, due in great part to the development of the maquiladora export industry. By mid-1993, dynamic growth in that sector of the economy had made the maquila industries the principal source of Mexico's foreign exchange. The industrial sector, including maquiladoras as well as domestic industry, currently tends to establish ever more specialized plants that incorporate modern technology in the manufacturing process and use an ever greater variety of hazardous materials in ever greater quantities.

This process of industrialization and the accompanying rapid population growth in the border zone have generated strong pressures on the urban infrastructure and generated a complex range of environmental problems and their consequent public and occupational health concerns. As a result, the growth of the Mexican border cities has been characterized, for instance, by chaotic and incomplete urban development, frequently including the proliferation of irregular squatters communities next to industrial plants or in zones reserved for industrial use. At the same time, the economic activity generated by this growth has favored the establishment of a certain type of commercial service and business which stores, uses or expends various hazardous substances.

Similarly, the agricultural sector, impelled by the Green Revolution and increasing dominance of international market systems, has increasingly come to depend on toxic chemical pesticides and fertilizers.

The combination of all these factors—greater use, storage, transport and handling of hazardous substances; the generation of hazardous waste and actual or potential contamination of the soil, water and air; and the interfacing of hazardous materials sites with residential neighborhoods—adds considerably to the potential for serious environmental degradation and, above all, of significant hazard to human health and safety from release to the environment of hazardous wastes and other hazardous materials. As planned short-term industrial growth occurs in the border region, the threat of chemical accidents will also grow, along with the potential for adverse impacts on public, occupational and environmental health.

Based on these and similar considerations, various non-profit organizations and academics in Sonora and Baja California in Mexico and Arizona in the US, interested in encouraging public participation and joint work among all social sectors, in 1992 joined to form La Red Fronteriza de Salud y Ambiente/Border Health and Environment Network (RFSA). Besides EECO and Arizona Toxics Information (ATI), founding member organizations included the Border Ecology Project of Bisbee, Arizona; Comité Civico de Divulgación Ecológico, A.C., of Mexicali, Baja California; and Proyecto Fronterizo de Educación Ambiental, A.C., of Tijuana, Baja California. Among other functions, RFSA serves as a vehicle of communication to facilitate common projects among its members, collect and distribute information on environmental and health aspects to the public and other NGOs and to develop joint responses to national and binational health and the environment issues. The Red Fronteriza has made RTK in Mexico a priority.

In order to identify hazards and to lay the groundwork for more extensive RTK programs, some RFSA organizations have begun projects to develop preliminary integrated inventories in the communities of Agua Prieta, Fronteras, Nogales and Santa Cruz, Sonora and in Tijuana, Baja California. The projects are being designed in response to conditions specific to their individual communities and the availability of resources, but all are conceived with more than one goal in mind: while they are important in the global perspective of advancing toward RTK, locally they can serve as the basis for emergency planning and in more general form, to evaluate various mechanisms of collaboration among the different governmental entities and citizens groups. It was with these considerations in mind, that the 1993 Northeastern Sonora Pilot Inventories were designed and implemented.

## **II. Agricultural Sector Component: Pesticide Use in Two Agricultural Communities of Northeastern Sonora, Mexico, February-November, 1993**

### *Summary*

Findings and recommendations are presented resulting from a survey of pest management practices in two farming communities of northeastern Sonora, Mexico. During the 1993 growing season, twenty-eight small vegetable and fruit farms were surveyed by questionnaire in Fronteras and Santa Cruz to document pesticide-use patterns, to determine information sources on pesticides available to the growers, and to demonstrate the feasibility of citizen-initiated inventories in such agricultural communities.

Pesticide use and non-chemical methods were tabulated according to name, type, crop, date, extent and method of application, target pests and other parameters. Fungicides, herbicides and insecticides were used in the study areas, including a high percentage of some of the most highly toxic active ingredients according to classifications by the Mexican and US governments and the World Health Organization. Some were registered by Mexico and by the US for Restricted Use only. All but one of the twenty-four active ingredients reported were included on the official Mexican list of registered ingredients at the time of the study; three were banned, severely restricted or never registered in the US. Some were used on crops for which they were not registered in either Mexico or the US.

Organophosphate insecticides were the most frequently used type in both study areas. Application rates, with some significant exceptions, corresponded to label instructions and official government recommendations. Most pesticide products used were manufactured and purchased in Mexico; seven of the twenty-four pesticides used in Santa Cruz were purchased in nearby Nogales, Arizona, including the one product not registered in Mexico (phenmedipham) and one of the pesticides registered in Mexico for Restricted Use only (paraquat). Application methods, worker protection, container disposal and other practices were compared to official

Mexican and US recommendations and discrepancies noted, principally in regard to worker protection. Lack of proper protective measures led to two reported instances of acute poisoning from field exposure to cholinesterase-inhibiting insecticides during the study period.

Respondents reported absence of official training programs and written materials on pesticide health and safety issues and on Integrated Pest Management or other use reduction methods. The most frequent sources of information on pesticides were found to be private vendors and neighbors. The inventory did not reveal use or knowledge of pre-pesticide plant protection systems, though some non-chemical practices were used routinely.

Several respondents expressed interest in learning more about non-chemical alternatives. The field investigator distributed written handling and safety information during the growing season and presented one showing of farmworker training videos in each of the study areas. In addition to providing data for a number of planning and right-to-know purposes, the inventory is suggested as a model for conducting pest management inventories in other communities.

### ***Recommendations***

#### ***1. Institute Training and Education Programs***

In order to move toward the pesticide-use reduction goals of Agenda 21 and the International Conference on Chemical Safety, while at the same time limiting costs and providing a high degree of protection for health and the environment, as well as promoting the highest level of agronomic efficiency, it is recommended that appropriate state and federal agencies in Mexico put the Integrated Border Environmental Plan implementation program into effect by:

- a. Instituting pest management training and education programs that emphasize pesticide-use reduction, Integrated Pest Management (including determination of economic thresholds for pests), and non-chemical alternatives (including recognition and use of beneficial insects), as well as safety in the use and handling of pesticides.
- b. Making the training accessible to growers and farmworkers as well as their families and other potentially at-risk community members, to pesticide dealers who have direct point-of-sale access to large numbers of growers and farmworkers, and especially to trainers who can in turn train others at the farm and community level.
- c. Encouraging non-governmental, academic and governmental organizations to cooperate in developing such programs, especially those organizations that have already expressed interest in such cooperative efforts, namely, Enlace Ecológico, La Red de Acción sobre Plaguicidas y Alternativas en México (RAPAM), the World Wildlife Fund, the University of Arizona Agricultural Extension Service, the State of Arizona Department of Environmental Quality, the United States Environmental Protection Agency.
- d. Recognizing the Sonoran State Committee on the Safe Handling and Use of Pesticides as the appropriate body to initiate such programs in Sonora, and enabling the Committee to actively seek out such non-governmental, academic and governmental parties and cooperate with them on border-region programs.

Furthermore, with particular consideration of cost-saving, efficiency and effectiveness in the border area, it is recommended that:

e. In order to establish the recommended programs to assist growers in reducing their dependence on costly and hazardous chemical inputs, the State Committee and other state and federal agencies work with funding institutions like the Border Environment Cooperation Commission (BECC) and North American Development Bank (NADBank) and the World Bank (which in 1992 made a \$150 million Agricultural Technology loan to Mexico and on 9 June 1994 approved another \$368 million for Mexico's Northern Border Environmental Project).

f. The state and federal agencies, in developing training and educational programs, take advantage of the cost-savings to be realized from adapting and disseminating the large body of relevant informational materials that already exist for training and public education purposes, rather than seeking to develop totally new materials.

## ***2. Improve and Expand Data Collection***

In order to better protect workers, communities and the environment nationwide, it is further recommended that SEDESOL, in cooperation with the Sonoran State Committee on the Safe Handling and Use of Pesticides and other appropriate federal, state and local governmental agencies in Sonora and elsewhere, and with NGOs, growers, farmworkers and industry:

a. Initiate a vigorous priority program, in coordination with the Organization for Economic Cooperation and Development (OECD) process on Pollutant Release and Transfer Registers and the United Nations Institute for Training and Research (UNITAR), to establish a national integrated inventory system, including pesticide application data and incorporating to the extent feasible the format and methodology of the present pilot project.

b. Establish oversight programs to assure that hazard information on labels and other private sector materials conforms to official CICOPLAFEST ratings and with Food and Agriculture Organization (FAO) guidelines on good labelling practice for pesticides.

c. Actively seek harmonization of CICOPLAFEST hazard classification system with those of the EPA and World Health Organization (WHO) and actively participate in such programs as that of the Organization of Economic Cooperation and Development (OECD), the WHO and the Intergovernmental Forum on Chemical Safety (IFCS) in order to ensure that harmonized international hazard classification systems reflect actual conditions of pesticide-use in Mexico.

d. Establish and adequately fund a review panel to determine which pesticides used in Mexico may be eligible for inclusion on the UN-FAO Prior Informed Consent (PIC) list, with particular concern for adding to the PIC list any pesticides that cause or significantly contribute to pest resistance or may be disruptive of Integrated Pest Management (IPM) practices and goals.

e. Employ the same panel or establish another one to evaluate private sector compliance with other aspects of the UN-FAO International Code of Conduct on the Distribution and Use of Pesticides.

## ***3. Cooperate with Non-Governmental Organizations***

In order to obtain a better understanding of pesticide-use among growers, especially small growers, and to encourage pesticide-use reduction, it is recommended that appropriate state and federal agencies cooperate with non-governmental organizations and the private sector, to:

- a. Develop farm-specific pesticide-use record-keeping programs, the need for which has been recognized by the US-Mexico Integrated Border Environmental Plan (First Stage 1992-1994) and elsewhere.
- b. Conduct further inventories in these and other communities of the region, and similar communities in other regions, surveying a broader population base and, as appropriate, incorporating the format and methodology of the present pilot project, preferably in active cooperation with growers, farmworkers and health professionals.
- c. Correlate such future inventories with surveys of local health office employees and interviews with growers, farmworkers, and their families in order to obtain any available information on intoxication incidents, disabilities, reproductive anomalies, chronic disease or other adverse health conditions which may be related to seasonal pesticide use.
- d. Carry out monitoring of soil, water and air for pesticide contamination in the vicinity of agricultural communities, and study wildlife conditions in the vicinity of those communities for potential adverse effects, and where appropriate correlate the results of the monitoring efforts with pesticide-use.

5. In particular, it is recommended that as one of its principal tasks, the Sonoran State Committee on the Safe Handling and Use of Pesticides, in order to enhance its efforts with the complementary resources available through a participatory approach, seek out growers and representatives of non-governmental organizations and cooperate with them in developing such record-keeping, inventory and monitoring programs.

### **III. Industrial Sector Component: Hazardous Materials Inventory of Maquiladoras in Agua Prieta, Sonora (1993)**

#### *Summary*

Findings and recommendations are presented from a pilot-scale integrated hazardous materials inventory of thirty-four maquiladoras in the northern border city of Agua Prieta, Sonora, Mexico. Initiated, designed and conducted by local nonprofit citizen organizations with endorsements of the municipal government and the Sonoran state emergency response agency, the inventory was based on facility responses to a questionnaire on the kinds and quantities of hazardous materials stored or otherwise used, including hazardous waste generation, air emissions, and wastewater discharges. In addition, for those substances designated as high hazard by the Secretaría de Gobernación or designated by the US Environmental Protection Agency and US Occupational Safety and Health Administration as subjects subject to reporting and planning under process safety management regulations, the questionnaire requested data on a simple materials balance accounting, including the source of raw materials and the final destination of wastes.

Of the thirty-four facilities contacted, twenty-six responded. Over 75% of the responding facilities reported hazardous materials use. Highest quantities reported were for fuel oils, aromatic hydrocarbon solvents and acids. Although over 50% reported use of High Hazard Substances, none reported use of sufficient quantity to meet Mexican government criteria for designation as a High Hazard facility. Nearly 75% reported generating hazardous waste, most of which was sent to the US for treatment or disposal. Over half reported air emissions,; less than a third reported discharges to public wastewater systems, most of the latter based on significantly incomplete data.

In addition to providing data for a number of planning and right-to-know purposes in the Agua Prieta community, the inventory demonstrated the feasibility of conducting low-cost, citizen-initiated industrial inventories and is suggested as a model for implementing cooperative citizen-government-industry right-to-know projects in other developing areas of the US -Mexico border. Recommendations are made for conducting future inventories and for improving other aspects of hazardous materials disclosure.

### ***Recommendations***

#### ***1. Expand Inventory Scope***

In order to design and implement an effective Emergency Plan for the community, it is recommended that a more complete survey be conducted in the future, compiling data from the eight maquiladora plants that did not respond, extending the scope of the inventory to include other facilities in the industrial and service sectors (such as hardware stores, pesticide distributors, utilities, machine shops, gas distributors, etc.) that use or handle High Hazard Substances.

- a. While for purposes of an initial pilot study, the short Gobernación list of High Hazard Substances was appropriate, it is recommended that future inventories utilize a more extensive list of materials, including at least those subject to reporting in the US pursuant to sections 302 and 313 of the Emergency Planning and Community Right-to-Know Act, as well as known carcinogens, teratogens, immunotoxins, and substances known to cause reproductive or developmental disease. In addition, while it may be appropriate to begin with such limited lists, eventually the national inventory should include all hazardous substances in commerce and conform to guidelines for national Pollutant Release and Transfer Registers developed by the Organization for Economic Cooperation and Development.
- b. Given the potential utility of conducting this type of inventory, it is recommended that inventories incorporating the method and, as appropriate, the format of this pilot (modified as necessary), be conducted in other border cities, such as Nogales and San Luis Río Colorado, Sonora, both of which have important industrial and service facilities.

#### ***2. Improve Reporting Form***

It is recommended that in future inventories the survey form be modified to include necessary information not obtained on the form used in this pilot, and to facilitate the collection, management and analysis of the data. In particular, it is recommended that the form be improved to address the following areas of concern:

- a. In order to avoid errors or confusion in the understanding the type of information requested, the instructions or guidelines for filling out the form must be made significantly clearer. For instance, the instruction sheets could include clarifying illustrations and examples.
- b. Data entry blocks should be provided to facilitate calculation of hazardous material content of mixtures, formulations and commercial products.
- c. Provision should be made in the form for exempting data due to claims of confidentiality, though the quantities and general characterization of the exempted materials (chemical family, physical form, hazard class, fate, etc.) should not be exempted from reporting, and the effect of excluding the material-specific data on materials accounting

should be characterized.

d. A section should be added for entering data on the composition of the hazardous wastes, in order to facilitate comparison with the results of the materials balance. (Adding this data should not be a significant additional time burden for reporting facilities since all generators of hazardous waste already are required to report to SEDESOL the composition of hazardous waste they generate.)

e. Data referring to wastewater discharge and air emissions should be reported as annual totals and correlated with the total hours of annual operation of the combustion equipment. Facilities are also already required to report this information (to SEDESOL and COAPAES, as noted above), so, again, including the data in this survey should not constitute a significant additional burden.

f. Space should be included on the form for identification of pollution prevention opportunities.

g. An initial integrated database, including CAS numbers and other appropriate identifiers, should be created to facilitate data input, organization, analysis and presentation of data on High Hazard Substances, as well as to simplify correlation with other databases on human health and environment.

h. Particularly for purposes of emergency planning, the instructions should require submission of a facility location map and a site plan indicating location at the facility of the reported hazardous materials, with special reference to location of the High Hazard Substances.

### ***3. Provide Training***

a. In order to reduce to a minimum problems of interpretation and to improve the quality of data reported, it is recommended that training sessions be conducted for facility employees before soliciting data for future inventories.

b. In order to improve the design and usefulness of the inventory, and to encourage joint participation in this and other projects concerning protection of health and environment, it is recommended that the development of the modified form and instructions be discussed and analyzed with representatives of industry, civil protection agencies, emergency response personnel, community groups and other appropriate organizations.

### ***4. Institutionalize the Inventory Process***

a. As a measure of safety in contingency and emergency planning pursuant to the Sonoran State environmental protection law (Ley No. 217 del Equilibrio Ecológico y la Protección al Ambiente para el Estado de Sonora), it is recommended that municipal authorities make the submission of complete inventories mandatory for facilities in the municipality.

b. In order to facilitate identification and tracking of hazardous materials, it is recommended that in the future official lists of substances issued for the purpose of environmental regulation or public safety carry commonly-recognized numeric and logical identifying codes, preferably the Chemical Abstract Service numbers, so that identification is not dependent on chemical names or synonyms (which, due to inherent ambiguities, often impede right-to-know efforts).



c. In order to achieve the many social and environmental benefits of right-to-know, it is recommended that SEDESOL initiate cooperative efforts with NGOs, local and state government, industry and international bodies like UNITAR (the United Nations Institute for Training and Research) and OECD (Organization for Economic Cooperation and Development), to incorporate the modified survey form and the integrated inventory process into a vigorous priority program for developing a national integrated inventory system that includes point and non-point sources of releases.

d. In order to further accident prevention efforts, to ease the burden on industries and to facilitate binational emergency planning and response, it is recommended that the governments of Mexico and the US seek to develop a harmonized list of high priority substances comprised, at a minimum, of the Gobernación lists of High Hazard Substances, the US Environmental Protection Agency lists of Extremely Hazardous (EPCRA section 302) Substances and substances subject to Accidental Release Prevention rules (CAA 112[r]), and the list of substances subject to the US Occupational Safety and Health Administration's Process Safety Management rules.

e. In order to facilitate implementation of right-to-know programs in general, and hazardous substances inventories in particular, it is recommended that state and federal agencies work with funding institutions like the Border Environment Cooperation Commission (BECC) and North American Development Bank (NADBank) and the World Bank (which in 1992 made a \$150 million Agricultural Technology loan to Mexico and on 9 June 1994 approved another \$368 million for Mexico's Northern Border Environmental Project).

f. In order to achieve the many social and environmental benefits of right-to-know, it is recommended that SEDESOL initiate cooperative efforts with NGOs, local and state government, industry and international bodies like UNITAR (the United Nations Institute for Training and Research) and OECD (Organization for Economic Cooperation and Development), to incorporate the modified survey form and the integrated inventory process into a vigorous priority program for developing a national integrated inventory system that includes point and non-point sources of releases.

g. In order to further accident prevention efforts, to ease the burden on industries and to facilitate binational emergency planning and response, it is recommended that the governments of Mexico and the US seek to develop a harmonized list of high priority substances comprised, at a minimum, of the Gobernación lists of High Hazard Substances, the US Environmental Protection Agency lists of Extremely Hazardous (EPCRA section 302) Substances and substances subject to Accidental Release Prevention rules (CAA 112[r]), and the list of substances subject to the US Occupational Safety and Health Administration's Process Safety Management rules.

## **Proyecto Fronterizo de Derecho a Saber, Selecciones (1994)**

Michael Gregory, Gildardo Acosta-Ruiz, Bruce G. Carey, Miguel Angel González, Beth Henson, Ulises Navarro, (Agosto 1994)

### **I. Investigación Piloto 1993 Sobre el Noreste de Sonora: Introducción**

#### ***A. El Derecho a la Información (DALI)***

##### ***Importancia del DALI***

El Derecho a la Información es uno de los pilares fundamentales del Desarrollo Sustentable, el cual requiere de una participación activa y consciente de la Sociedad en su conjunto, para atender y resolver efectivamente los problemas que plantea el crecimiento. Para promover esta participación social, es indispensable garantizar el acceso público a la información, facilitando la toma de conciencia ciudadana que le permita enriquecer el proceso de toma de decisiones en asuntos que le son concernientes.

La importancia del DALI como elemento crítico de las políticas de Desarrollo Sustentable, ha sido reconocida en diversos foros a nivel internacional y se promueve ampliamente por organismos tales como la Comisión Mundial para el Ambiente y el Desarrollo entre otros. Particularmente importante, el DALI y su relación con el Desarrollo Sustentable, forman parte sustancial de las recomendaciones de la Agenda 21, surgida de la Conferencia de la Tierra, celebrada en Río de Janeiro en 1993.

Como se indica en los siguientes pasajes de la Programa 21, al formular recomendaciones para la institucionalización de DALI en todo el mundo, la Conferencia de la Tierra contempló programas amplios y detallados, con el fin de reducir eficazmente el uso de materiales peligrosos, y, en consecuencia, reducir el riesgo de materiales peligrosos:

Un requisito indispensable para el logro de la seguridad química es que exista la más amplia comprensión posible de los riesgos que presentan los productos químicos. Se debería reconocer el principio del derecho de la comunidad y de los trabajadores a estar informados

(Cap. 19.8)

En el desarrollo sostenible, cada persona es a la vez usuario y portador de información. . . . La necesidad de información se plantea en todos los niveles, desde el de dirección superior, en los planos nacional e internacional, al comunitario y el individual.

(Cap. 40.1)

#### **c) Cooperación y coordinación en los planos internacional y regional**

Con respecto a "Intercambio de información sobre los productos químicos tóxicos y sobre el riesgo que entrañan los productos químicos," Programa 21 llama por los gobiernos con la cooperación de la industria

*prestar asistencia para la creación de sistemas nacionales de información sobre*

*los productos químicos en los países en desarrollo y facilitar el acceso a los sistemas internacionales existentes. . . . [y] Mejorar las bases de datos y los sistemas de información sobre los productos químicos tóxicos, incluidos los programas de preparación de inventarios de las emisiones, mediante la capacitación en la aplicación de estos sistemas y el suministro de equipo y programas de informática y otros servicios*

(Cap. 19.40.a-b)

Bajo el encabezado "Establecimiento de Programas de Reducción de Riesgos," Programa 21 llama a los gobiernos a:

*Emprender actividades concertadas para reducir los riesgos derivados de los productos químicos tóxicos, teniendo en cuenta el ciclo de vida integral de los productos. Estas actividades podrían abarcar medidas reglamentarias y de otro tipo, como, por ejemplo, la promoción de productos y tecnologías menos contaminantes; la preparación de inventarios de emisiones*

*Adoptar políticas y medidas reglamentarias y de otro tipo para determinar los productos químicos tóxicos y reducir al mínimo la exposición a éstos, sustituyéndolos por otras sustancias menos tóxicas y, en último término, eliminar gradualmente las sustancias químicas que presentan riesgos excesivos o intratables por cualquier otra razón para la salud humana y el medio ambiente y aquéllos que sean tóxicos, persistentes y bioacumulativos, cuyo uso no pueda controlarse en debida forma*

(Cap. 19.49.c)

*En la agricultura, una manera de reducir los riesgos consiste en aplicar métodos de lucha integral contra las plagas que prevean el empleo de agentes de lucha biológica en lugar de plaguicidas tóxicos*

(Cap. 19.45)

*El objetivo del área de programas es eliminar los riesgos inaceptables o excesivos y, en la medida en que sea económicamente viable, reducir los riesgos que presenten los productos químicos tóxicos, empleando para ello un enfoque amplio que prevea una gran diversidad de opciones de reducción de riesgos y adoptando medidas de precaución derivadas de un análisis integral del ciclo de vida*

(Cap. 19.48)

Según la Programa 21, Industria, "en ausencia de requisitos nacionales", se debe alentar a:

*Adoptar políticas y medidas reglamentarias y de otro tipo para determinar los productos químicos tóxicos y reducir al mínimo la exposición a éstos, sustituyéndolos por otras sustancias menos tóxicas y, en último término, eliminar gradualmente las sustancias químicas que presentan riesgos excesivos o intratables por cualquier otra razón para la salud humana y el medio ambiente y aquéllos que sean tóxicos, persistentes y bioacumulativos, cuyo uso no pueda controlarse en debida forma*

(Cap. 19.50.3)

Al contemplar la formidable tarea de lograr realmente un futuro sostenible, la informe de la Comisión Brundtland observó que:

La promoción de políticas de desarrollo sostenible a nivel nacional e internacional requerirá inmensos esfuerzos para informar al público y asegurar su apoyo.

*(Nuestro Futuro Común)*

En el ámbito de los problemas ambientales y de salud pública, su complejidad y la facilidad con que pueden agravarse por efectos del desarrollo, rebasan la capacidad actual de los gobiernos, para, por sí solos, hacerles frente y emprender acciones efectivas de solución y prevención de los mismos. En estas condiciones, es indispensable compensar ésta limitación gubernamental, con una activa participación ciudadana, que apoye, complemente y enriquezca los esfuerzos institucionales necesarios en la búsqueda e implementación de soluciones a esta problemática ambiental y de salud.

Para que esa participación sea efectiva, es necesario que las comunidades estén realmente informadas de los aspectos ambientales y de salud que pudieran afectarles, así como de las decisiones que se tomen a todos los niveles y que pudieran tener alguna influencia sobre estos renglones. En este sentido, el Derecho a la Información posibilita la toma de decisiones en forma consciente y razonada e influye positivamente en lograr el apoyo público a los esfuerzos gubernamentales dirigidos a resolver y preveer el deterioro ambiental. Por otro lado, es igualmente necesario que dicha participación ciudadana se dé en forma coordinada y conjunta con todos los sectores de la sociedad: iniciativa privada, instituciones académicas y de gobierno, organismos no gubernamentales (ONG's), etc.

### ***Inventarios Integrales de Sustancias Peligrosas***

Para promover y lograr la participación ciudadana en el análisis e implementación de soluciones a problemas ambientales y de salud pública, es fundamental que las comunidades tengan la posibilidad de saber cuales son los riesgos que los factores químicos diversos pueden representar para el ambiente y para su salud e integridad física. En la medida en que las comunidades tengan acceso oportuno a la información sobre tales riesgos, podrán estar capacitadas para contribuir eficazmente en su prevención y control, así como para promover las acciones de protección necesarias.

Por ello, el DALI debe garantizar además, la implementación de mecanismos efectivos que permitan identificar todas y cada una de las etapas que intervienen en el amplio espectro de las operaciones relacionadas con materiales o sustancias peligrosas, que puedan tener efectos negativos sobre la población o el ambiente. Igualmente, debe garantizarse el acceso del público a tal información y promover su participación en el diseño e implementación de tales mecanismos de identificación.

Para que la información recabada sea útil, deben identificarse los tipos y cantidades de las sustancias peligrosas que se producen, procesan, transportan, almacenan y los métodos para su manejo y control; los residuos que de ellas se generan, así como su manejo y disposición; la relación de emisiones y descargas en forma rutinaria o accidental y los efectos de todos estos factores sobre la salud y el ambiente.

En síntesis, lo que se requiere es un perfil de cada unidad o establecimiento donde estén presentes este tipo de sustancias. Para que estos perfiles sean completos, además de la información ya señalada, éstos deben incluir la descripción de los sistemas administrativos para la cuantificación y balances de materiales, residuos, emisiones y descargas en cada operación; los procedimientos de control y prevención de la contaminación, así como los planes y programas de protección a los trabajadores y a la población.

Desde hace varios años, en algunos países desarrollados como Canadá, Alemania y Estados Unidos entre otros, se han establecido mecanismos de identificación de riesgos por factores químicos, a través de la elaboración de inventarios de sustancias peligrosas. A partir de la experiencia de estos países con tales inventarios, ha quedado de manifiesto que, el elemento base para la obtención de la información necesaria para la elaboración de los perfiles de riesgo, lo constituye el Inventario Integral de Sustancias Peligrosas, tal y como fué enfatizado por las Organizaciones no-gubernamentales durante las Conferencia de Río, a tal grado que, en la Agenda 21 se incluyeron varias recomendaciones para impulsar en todas las naciones la implementación de este tipo de inventarios, identificados en Río como Inventarios Tóxicos.

Este proceso de obtención de la información básica acerca de los riesgos, no solo por factores químicos sino también biológicos y radioactivos, debe complementarse con los mecanismos que garanticen el acceso público a dicha información, facilitando el camino para que las comunidades participen activamente en la promoción de acciones de control y prevención de riesgos a su salud y al ambiente, así como también en el mejoramiento del proceso mismo de recolección de información. La utilidad de todo este proceso de obtención y disseminación de información, no se limitaría únicamente al aspecto informativo y de promoción de la participación social, resultados estos ya de por sí importantes, sino que además podría servir de base a las dependencias oficiales, a la industria y a las comunidades mismas, para detectar oportunidades de prevención y control de la contaminación ambiental; para elaborar programas de higiene industrial y de minimización de residuos peligrosos y para desarrollar e implementar planes de contingencias, entre otros fines igualmente importantes.

### *El DALI en Mexico*

Desde hace varios años, algunos países industrializados han implementado el DALI, generalmente conocido como el Derecho a Saber por su nombre en inglés, "the Right to Know", lo que ha favorecido fuertemente la toma de consciencia de la población y su participación activa en el análisis de problemas comunes. En México no existe una tradición en relación al DALI y no se espera que ocurran cambios significativos al respecto por iniciativa exclusivamente gubernamental. Tampoco es una práctica frecuente el trabajo conjunto entre gobierno y ciudadanos en la solución de problemas comunes, aunque han habido avances importantes al respecto en los últimos años, principalmente en proyectos de mejoramiento de infraestructura y de servicios comunitarios.

Sin embargo, la demanda por un DALI en México no es nueva, sobre todo en las áreas de salud y medio ambiente. Los primeros esfuerzos que se conocen por obtener información acerca del tipo y cantidad de sustancias peligrosas presentes en la franja fronteriza de Mexico y los EE.UU., se realizaron en el período de 1986-87, con la elaboración de un inventario de sustancias peligrosas utilizadas por la industria maquiladora en la ciudad de Agua Prieta, Sonora. Dicho inventario fué realizado por la organización Border Ecology Project (BEP) de la pequeña población de Bisbee, Arizona, apoyada por miembros de la organización civil no-lucrativa, Enlace Ecologico, A.C. (EECO), de Agua Prieta, Sonora.

Aún cuando la aplicación de la encuesta fué de alcance limitado, los resultados obtenidos pusieron de manifiesto entre otras cosas, la carencia de un mecanismo para dar seguimiento a la utilización de sustancias peligrosas y al destino de los residuos peligrosos generados en los procesos industriales. Estos resultados se distribuyeron a diversas dependencias gubernamentales de Mexico y de los EE.UU., a organizaciones civiles y académicas y al público en general. Particularmente, fueron presentados a los grupos de trabajo de los Acuerdos Ambientales Fronterizos México-EE.UU., conocidos como los Acuerdos de La Paz, contribuyendo a reforzar la consciencia de la necesidad de establecer controles más estrechos en el manejo y disposición

de sustancias y residuos peligrosos a lo largo de la frontera entre los dos países. Estos temas tuvieron una prominente relevancia en la discusión de los acuerdos paralelos al TLC.

Más recientemente, en Abril de 1991, en el resumen de conclusiones de las audiencias públicas celebradas en las ciudades fronterizas de México y Estados Unidos para analizar el Plan Integral Ambiental Fronterizo (PIAF), quedó de manifiesto que la implementación del Derecho a la Información en México en materia de salud y ambiente, fué una de las demandas más consistentes a lo largo de la frontera entre los dos países. A pesar de que este resultado fué reconocido explícitamente por el entonces titular de la Subsecretaría de Ecología de SEDUE, en el documento finalmente aprobado del PIAF solo se incluye el compromiso de que "La SEDUE y la EPA deberán establecer los requerimientos de disponibilidad pública de datos referentes a emisiones y afluencia de contaminantes" en el área fronteriza (PIAF, Primera Etapa 1992/1994, pág. 146). Sin embargo, esta demanda por el DALI en México en materia de salud y ambiente, ha cobrado fuerza a raíz de los múltiples análisis de los impactos potenciales del Tratado de Libre Comercio sobre el medio ambiente y la salud pública de este país. La explosión del drenaje en Guadalajara en Abril de 1992 y los numerosos y frecuentes incidentes de riesgos de explosión por sustancias inflamables en los drenajes y los derrames de tóxicos en distintos puntos del país, son factores adicionales que han venido a reforzar la consciencia de la necesidad de impulsar por diversos medios el DALI en México.

## ***B. Situación Actual***

### ***Descripción del Problema***

En los últimos treinta años, las ciudades fronterizas mexicanas con los Estados Unidos han experimentado un crecimiento acelerado, debido en gran parte al desarrollo de la industria maquiladora de exportación. Caracterizado por ser un sector muy dinámico, al grado de haberse convertido a mediados de 1993 en la principal fuente de divisas para México, muestra en su crecimiento actual una tendencia al establecimiento de plantas cada vez más especializadas, que incorporan modernas tecnologías en sus procesos de manufactura y que utilizan mayor variedad de sustancias peligrosas en cantidades también cada vez mayores.

Este proceso de industrialización y el rápido crecimiento demográfico que le ha correspondido, han provocado fuertes presiones sobre la infraestructura urbana y generado una compleja gama de problemas ambientales con sus consecuentes efectos en la salud pública. Como resultado, el crecimiento de las ciudades fronterizas mexicanas se ha caracterizado por un desarrollo urbano caótico e incompleto, en el que es frecuente la proliferación de asentamientos irregulares aledaños a las plantas industriales o en zonas reservadas para uso industrial. A su vez, la actividad económica generada por este crecimiento, ha favorecido el establecimiento de cierto tipo de empresas comerciales y de servicios, que almacenan, utilizan o expenden diversas sustancias peligrosas.

La combinación de todos estos factores: un mayor uso, almacenamiento, transporte y manejo de sustancias peligrosas; la generación de residuos peligrosos y de contaminantes del suelo, agua y aire y la utilización compartida del suelo urbano por establecimientos industriales y asentamientos humanos, incrementa considerablemente los riesgos potenciales de un marcado deterioro ambiental y sobre todo, de daños considerables a la salud e integridad física de la población, por la eventual liberación incontrolada al ambiente de tales sustancias y residuos peligrosos. De cumplirse los pronósticos de un mayor crecimiento industrial a corto plazo, los aspectos ambientales y de salud pública serán más relevantes y se incrementarán los riesgos de accidentes por factores químicos y sus consecuentes impactos negativos en la población.

La información con que se cuenta actualmente sobre el tipo y cantidad de sustancias peligrosas presentes cotidianamente en las ciudades fronterizas mexicanas y su respectiva liberación, controlada o no, al ambiente, es insuficiente y está organizada de manera fragmentada y por lo general, el acceso a ella está limitado a ciertas dependencias gubernamentales. Esta fragmentación de la poca información disponible y la imposibilidad pública de acceder a ella, impide una evaluación global de los riesgos al ambiente y a la salud pública, así como la obtención de varios beneficios adicionales: por un lado, no se cuenta con los elementos suficientes para identificar cabalmente las fuentes contaminantes, dificultando el proceso de toma de decisiones gubernamentales para implementar medidas efectivas de control de la contaminación, ni facilita la detección de oportunidades para la prevención de la contaminación y la minimización en la generación de residuos peligrosos; por otro lado, no puede utilizarse como base para la elaboración de planes de contingencia que permitieran la implementación de programas efectivos de protección civil; pero sobre todo, impide a las comunidades identificar los riesgos por factores químicos, biológicos y radioactivos a los que pudieran estar expuestas, limitando seriamente su participación en la toma de decisiones e implementación de acciones que pudieran incidir favorablemente en la disminución de tales riesgos.

### *El Marco Legal*

En México aún no existe un marco jurídico adecuado para un efectivo ejercicio del DALI. Apenas en 1977 y para reforzar el respeto a la libre manifestación de las ideas, el DALI fué incorporado al artículo 6to. de la Constitución Política mexicana, sin que a la fecha se cuente con una reglamentación que lo implemente y que establezca claramente la obligación gubernamental de proporcionar información a los ciudadanos y defina con precisión los mecanismos por los cuales éstos puedan obtenerla.

Por consecuencia, particularmente en materia de salud, ambiente y protección civil, las leyes y reglamentos expedidos carecen también de la normatividad adecuada que permita una implementación efectiva del DALI. A la fecha, con excepción de la información contenida en los Estudios o Manifiestos de Impacto Ambiental, cuyos mecanismos de disponibilidad pública están claramente definidos en la Ley General del Equilibrio Ecológico y la Protección al Ambiente y en su Reglamento en Materia de Impacto Ambiental, cualquier otra información relativa a riesgos al ambiente y a la población, no está disponible para consulta pública, ni existen mecanismos específicos de acceso público a ella, dejándose su difusión exclusivamente a criterio de la autoridad competente. Aún en el caso de los Manifiestos de Impacto Ambiental, el acceso público a ellos está seriamente limitado, ya que tales expedientes pueden ser consultados únicamente en las oficinas del Instituto Nacional de Ecología en la Ciudad de México. Al igual que la Ley General, las leyes ecológicas expedidas por los Estados contienen la misma disposición de acceso público a los expedientes de Estudios de Impacto Ambiental en obras o servicios de jurisdicción estatal. En estos casos, la consulta de estos expedientes puede realizarse únicamente en las oficinas de la dependencia estatal que dictamina, limitando, aunque en menor grado, la posibilidad del público de acceder a ellos.

Aunque oficialmente se reconoce que las acciones gubernamentales para la atención de la problemática de salud y ambiental, serán insuficientes si no se cuenta con el apoyo y esfuerzo público, las reglamentaciones respectivas contemplan la participación social únicamente a través de Consejos o Comités de Participación Ciudadana (CPC), cuya formación se promueve a todos los niveles: Federal, Estatal y Municipal. En estos CPC's, integrados con autoridades y funcionarios de diversas dependencias oficiales, la participación social se da mediante representantes de las organizaciones civiles y privadas, a invitación de la autoridad que presida tales Consejos o Comités. Otros individuos u organizaciones interesadas podrán participar en alguna de las juntas periódicas que celebren los CPC's, previa autorización de la autoridad que

los presida.

Con todo, ha de reconocerse que desde 1991 se han emitido algunas disposiciones legales que, de reglamentarse adecuadamente, podrían constituir avances importantes en el contexto del DALI en México. Por ejemplo, el Programa Nacional de Protección Civil establece entre sus estrategias fundamentales, la participación ciudadana voluntaria y la amplia difusión de información. De acuerdo con lo establecido en este Programa, se considera a la consulta ciudadana como la vía más indicada para la adecuación del marco jurídico regulador de las acciones en materia de Protección Civil. Se contempla además como acción prioritaria, la elaboración de los Atlas Nacional y Locales de Riesgos, a los cuales se dará amplia difusión entre la población en general, a fin de que ésta "tome consciencia de las condiciones de riesgos de la propia región en que habita" (Diario Oficial, 29 de mayo de 1991, pg. 74), y se promoverá la participación voluntaria de ciudadanos en tareas de de prevención y control de desastres.

Finalmente, pero no menos importante, la nueva Ley de Metrología y Normalización establece la obligación oficial de publicar para consulta pública, cada proyecto de Norma Oficial Mexicana, estableciendo un período de tres meses para recibir sugerencias de modificación del proyecto, al término del cual, deberá publicarse la respuesta oficial a tales sugerencias.

### ***La Red Fronteriza de Salud y Ambiente***

Fué en base a estas y otras consideraciones similares, que diversas organizaciones civiles no lucrativas e instituciones académicas de Sonora y Baja California en México y de Arizona en los EE.UU., interesadas en promover la participación ciudadana y el trabajo conjunto de todos los sectores de la sociedad, se agruparon para formar La Red Fronteriza de Salud y Ambiente ("La Red"). Entre otros objetivos, "La Red" pretende constituirse como vehículo de comunicación para facilitar proyectos comunes entre sus miembros, recabar y distribuir información de aspectos ambientales y de salud al público y a otras ONG's y desarrollar respuestas conjuntas a agendas nacionales y bi-nacionales sobre salud y medio ambiente, estableciendo como prioridad impulsar la implementación del DALI en México.

Algunas organizaciones de "La Red" han iniciado proyectos de elaboración de Inventarios Integrales de Sustancias Peligrosas y de identificación preliminar de riesgos en las ciudades de Agua Prieta y Nogales, Sonora y Tijuana, Baja California. La pretensión principal de tales inventarios es servir de base como elementos iniciales del DALI. Por el momento, cada uno de estos proyectos ha sido concebido en función de condiciones particulares de las ciudades mencionadas y su profundidad está determinada por la disponibilidad de recursos para realizarlos. Estos proyectos tienen la particularidad de servir a más de un propósito: a la vez que son importantes en la perspectiva global de avanzar hacia un DALI, localmente podrán servir de base para la elaboración de planes de contingencia y en forma más general, para evaluar diversos mecanismos de colaboración entre las diferentes instancias oficiales y los grupos civiles.

## **II. La Componente Agrícola: Uso de Plaguicidas en Dos Comunidades Agrícolas del Noreste de Sonora, México (Febrero-Noviembre, 1993)**

### ***Resumen***

Los hallazgos y recomendaciones que se presentan en este documento son resultado de una investigación sobre prácticas de manejo de plagas en dos comunidades agrícolas del noreste de Sonora, México. Durante la época de cultivo de 1993, se encuestaron a través de un cuestionario,



veintiocho pequeñas granjas de vegetales y frutas en Fronteras y Santa Cruz, para documentar patrones de uso de plaguicidas, para determinar fuentes de información sobre plaguicidas disponibles a los agricultores y para demostrar la viabilidad de inventarios iniciados por los ciudadanos de dichas comunidades agrícolas.

El uso de plaguicidas y de métodos no químicos se tabularon de acuerdo al nombre, tipo, cultivo, fecha, alcance y método de aplicación, plagas blanco y otros parámetros. Se utilizaron fungicidas, herbicidas e insecticidas en áreas de estudio, y se incluyen dentro de estos elementos, un alto porcentaje de algunos de los ingredientes activos más altamente tóxicos que han sido clasificados tanto por los gobiernos de México y EEUU, como por la Organización Mundial de la Salud. Algunos de estos elementos fueron registrados por México y EEUU para Uso Restringido únicamente. Todos excepto uno de los veinticuatro ingredientes reportados se incluyeron en la lista oficial de ingredientes registrados de México al momento del estudio; tres de estos fueron prohibidos, severamente restringidos, o nunca registrados en EEUU. Algunos de estos ingredientes se utilizaron en cultivos para los que no fueron registrados ni en México ni en EEUU.

Los insecticidas a base de organofosfatos fueron el tipo más utilizado en ambas áreas de estudio. Las tasas de aplicación, con algunas excepciones significativas, correspondieron a las instrucciones de las etiquetas y a las recomendaciones oficiales del gobierno. La mayoría de los productos plaguicidas utilizados fueron fabricados y comprados en México: siete de los veinticuatro plaguicidas utilizados en Santa Cruz fueron adquiridos en la ciudad vecina de Nogales, Arizona, incluyendo el único producto no registrado en México (phenmedipham) y uno de los plaguicidas registrados en México para Uso Restringido únicamente (paraquat). Los métodos de aplicación, la protección de los trabajadores, el desecho de envases y otras prácticas se compararon a las recomendaciones oficiales mexicanas y norteamericanas, registrando discrepancias, principalmente con respecto a la protección de los trabajadores. La falta de medidas protectoras adecuadas llevó al reporte de dos instancias de envenenamiento profundo por exposición en el campo a insecticidas inhibidores de colinesterasas durante el periodo de estudio.

Los entrevistados reportaron la ausencia de programas oficiales de capacitación y de materiales escritos sobre salud en relación con los plaguicidas y otros temas de seguridad sobre Manejo Integral de Plagas y otros métodos de reducción de uso. Se encontró que las fuentes más frecuentes de información sobre plaguicidas fueron los comerciantes privados y los vecinos. El inventario no reveló el uso o el conocimiento de sistemas pre-plaguicidas de protección a plantas, aunque se utilizaron rutinariamente ciertas prácticas no químicas. Varios de los entrevistados expresaron un interés por aprender más sobre alternativas no químicas.

El investigador de campo distribuyó durante la época de cultivo, información por escrito acerca del manejo y la seguridad de estos productos y presentó una exhibición de videos de capacitación a agricultores en cada una de las áreas de estudio. Además de proporcionar datos para un gran número de propósitos de planeación y de derecho a saber, se sugiere que la investigación se utilice como modelo para realizar investigaciones de control de plagas en otras comunidades.

Se hacen también recomendaciones para comunicación de peligros agrícolas, capacitación para reducción de uso de plaguicidas y realización de inventarios futuros.

### ***Recomendaciones***

### • *Instituir Programas de Capacitación y Educación*

1. Para poder llegar a las metas de reducción de uso de plaguicidas de la Agenda 21 y la Conferencia Internacional sobre Seguridad Química, y al mismo tiempo limitar costos y proporcionar un alto grado de protección para la salud y el medio ambiente, así como promover el más alto nivel de eficiencia agronómica, se recomienda que las agencias apropiadas tanto estatales como federales de México hagan efectivo el programa de implementación del Plan Integral Ambiental Fronterizo de acuerdo a los siguientes puntos:

- Instituyendo programas de capacitación y educación que enfatizen la reducción del uso de plaguicidas, el Manejo Integral de Plagas (incluyendo la determinación de umbrales económicos para las mismas) y alternativas no químicas (incluyendo el reconocimiento y la utilización de insectos benéficos), así como también la seguridad en el uso y manejo de plaguicidas.
- Proporcionando capacitación accesible a agricultores y trabajadores agrícolas así como a sus familias y a otros miembros de la comunidad que tengan riesgos potenciales, a los distribuidores de plaguicidas que al momento de venta tienen acceso directo a un gran número de agricultores y trabajadores agrícolas y especialmente a los entrenadores que a su vez pueden capacitar a otros tanto a nivel granja como a nivel comunidad.
- Alentando a las organizaciones no gubernamentales, académicas y gubernamentales a cooperar en el desarrollo de dichos programas, alentando especialmente a aquellas organizaciones que ya hayan expresado algún interés en este tipo de esfuerzo conjunto, es decir, Enlace Ecológico, la Red de Acción sobre Plaguicidas y Alternativas en México (RAPAM), el World Wildlife Fund, el Servicio de Extensión Agrícola de la Universidad de Arizona, el Departamento de Calidad Ambiental del Estado de Arizona y la Agencia de Protección Ambiental de los EEUU.
- Reconociendo que el Comité de Seguridad en el Manejo y Uso de Plaguicidas del Estado de Sonora es el organismo adecuado para iniciar dichos programas en el Estado de Sonora, y habilitando que el Comité se ponga en contacto activamente con los grupos no gubernamentales, académicos y gubernamentales y coopere con ellos en los programas de la región fronteriza.

2. Además, y con particular consideración al bajo costo, eficiencia y efectividad en el área fronteriza, se recomienda que:

- Para poder establecer los programas recomendados para ayudar a los agricultores a reducir su dependencia en productos químicos caros y peligrosos, el Comité Estatal y otras agencias estatales y federales deberán trabajar con instituciones que proporcionen fondos tales como la Comisión Fronteriza de Cooperación Ambiental (BECC) y el Banco Norteamericano de Desarrollo (NADBank) y el Banco Mundial (quien en 1992 hizo un préstamo a México de 150 millones de Dólares para Tecnología Agrícola y el 9 de junio de 1994 aprobó otro préstamo para el Proyecto Ambiental Fronterizo del Norte de México).
- Las agencias estatales y federales, en el desarrollo de sus programas educativos y de capacitación, aprovechen los ahorros que se obtienen al adaptar y diseminar el gran número de materiales informativos relevantes que ya existen para propósitos educativos y públicos, en vez de buscar el desarrollo de materiales totalmente nuevos.

• *Mejorar y Extender la Recolección de Datos*

3. Para poder proteger mejor a los trabajadores, comunidades y medio ambiente, además se recomienda que SEDESOL, en conjunto con el Comité para la Seguridad en el Manejo y Uso de Plaguicidas del Estado de Sonora y otras agencias federales, estatales y locales apropiadas en Sonora y otros sitios, y con ONGs, agricultores, trabajadores agrícolas e industria:

- Inicien un programa vigoroso de prioridades, en conjunto con el proceso del Inventario Nacional Multimedia de Emisiones y Transporte de Contaminantes (Pollutant Release and Transfer Registry/PRTR) de la Organización para la Cooperación y el Desarrollo Económico (OCDE) y el Instituto para la Capacitación y la Investigación de la Naciones Unidas (UNITAR) para establecer un sistema nacional integral de inventarios, incluyendo datos sobre la aplicación de plaguicidas e incorporando hasta donde sea posible, el formato y la metodología de este proyecto piloto.
- Establezcan programas de supervisión que aseguren que la información de peligros en las etiquetas y otros materiales del sector privado esté conforme con las clasificaciones oficiales de CICOPALAFEST y con los lineamientos de la Organización para los Alimentos y la Agricultura (OAA) sobre prácticas adecuadas de etiquetación de plaguicidas.
- Busquen activamente la armonización del sistema de clasificación de peligros de CICOPALAFEST con los de la EPA y los de la Organización Mundial de la Salud (OMS) y participen activamente en programas tales como los de la Organización para la Cooperación y el Desarrollo Económico (OCDE), OMS y el Foro Intergubernamental sobre Seguridad Química (FISQ) para asegurar que los sistemas internacionales de clasificación de peligros reflejen las condiciones del uso de plaguicidas en México.
- Establezcan y proporcionen fondos adecuados para tener un panel de revisión para determinar cuales plaguicidas utilizados en México pueden ser elegibles para su inclusión en la lista de Consentimiento con Información Previa (CIP) de la ONU-OAA, con énfasis particular en agregar a la lista de CIP, cualquier plaguicida que cause o contribuya significativamente a la resistencia de plagas o sea destructor de las prácticas y objetivos del Manejo Integral de Plagas (MIP).
- Empleen el mismo panel o establezcan otro para evaluar la conformidad del sector privado con otros aspectos del Código Internacional de Conducta sobre la Distribución y Uso de Plaguicidas de la ONU-OAA.

4. Para tener una mejor comprensión del uso de plaguicidas entre los agricultores, especialmente los pequeños, y para alentar la reducción en el uso de plaguicidas, se recomienda que las agencias estatales y federales apropiadas cooperen con las organizaciones no gubernamentales y el sector privado para:

- Desarrollar programas de registro de uso de plaguicidas en granjas específicas, necesidad que ha sido reconocida por el Plan Ambiental Integral Fronterizo de EEUU y México (Primera Etapa 1992-1994) y por otras organizaciones.
- Conducir inventarios adicionales en estas y otras comunidades de la región y comunidades similares, vigilando una base de población más amplia, e incorporando como es debido, el formato y la metodología de este proyecto piloto, preferentemente en cooperación activa con los agricultores, trabajadores agrícolas y profesionales de la salud.

- Correlacionar dichos inventarios futuros con las investigaciones de los empleados locales de las oficinas de salud y las entrevistas con los agricultores, los trabajadores agrícolas y sus familias, para obtener cualquier información disponible sobre incidentes de intoxicación, incapacidades, anomalías reproductivas, enfermedades crónicas y otras condiciones de salud adversas que pudieran estar relacionadas al uso de plaguicidas por temporada.
- Llevar a cabo monitoreos de suelo, agua y aire para detectar contaminación por plaguicidas cerca a las comunidades agrícolas, y estudiar los efectos adversos potenciales en las condiciones de la vida silvestre en proximidad a aquellas comunidades, y cuando sea apropiado, correlacionar los resultados de los esfuerzos de monitoreo con el uso de plaguicidas.

5. En particular, se recomienda que como una de sus principales tareas, el Comité sobre Seguridad en el Manejo y Uso de Plaguicidas del Estado de Sonora, para aumentar sus esfuerzos con los recursos complementarios que están disponibles a través de un acercamiento participatorio, localicen a los agricultores y a los representantes de las organizaciones no gubernamentales y cooperen con ellos en el desarrollo de dichos programas de registro, inventario y monitoreo.

### **III. La Componente Industrial: La Inventario de Materiales peligros en las Maquiladores de Agua Prieta, Sonora (Agosto 1993)**

#### *Resumen*

Hallazgos y recomendaciones se presentan a partir de un inventario integrado de escala-piloto sobre materiales peligrosos en treinta y cuatro maquiladoras de la ciudad fronteriza nortea de Agua Prieta, Sonora, México. Iniciado, diseñado y realizado por organizaciones ciudadanas locales, sin fines de lucro con aprobación del gobierno municipal y la agencia de respuesta a emergencias del estado de Sonora, el inventario se basó en las respuestas de un cuestionario de parte de las instalaciones sobre los tipos y cantidades de materiales peligrosos almacenados o utilizados de otra forma, inclusive la generación de los residuos peligrosos, emisiones al ambiente, y descargas de aguas residuales vertidos. Además, para aquellas sustancias designadas de alto peligro por parte de la Secretaría de Gobernación o designadas por la Agencia de Protección Ambiental de los Estados Unidos (US EPA) y de la Administración de Seguridad y Salud Ocupacional de EE.UU. (US OSHA) como sujetos sometidos a la presentación de informes y la planificación bajo las regulaciones de administración del proceso de seguridad, el cuestionario solicitó los datos a través una sencilla rendición de cuentas de materiales incluyendo la fuente de materias primas y el destino final de los residuos.

De las treinta y cuatro instalaciones contactadas, veintiséis respondieron. Más del 75% de las instalaciones que respondieron informaron el uso de materiales peligrosos. Las cantidades más altas que fueron registradas eran de aceites combustibles, disolventes de hidrocarburos aromáticos, y ácidos. A pesar de que más del 50% reportaron el uso de Sustancias de Alto Riesgo, ninguna reportó el uso de tal cantidad suficiente para cumplir como instalación de Alto Riesgo según la designación de los criterios del gobierno Mexicano. Casi el 75% informaron la generación de residuos peligrosos, la mayor parte de los cuales fueron enviados a los EE.UU. para su eliminación o tratamiento. Más de la mitad reportaron emisiones al ambiente. Menos de un tercio declararon vertidos a sistemas de aguas residuales públicas, la mayoría de estas últimas basadas en datos incompletos de manera significativa.

Además de proporcionar datos para una serie de planificación y de propósitos de derecho-al-

conocimiento en la comunidad de Agua Prieta, el inventario demostró la viabilidad de poder realizar a bajo costo, inventarios industriales iniciados por ciudadanos y se sugiere como un modelo para la implementación cooperativa ciudadana-con-gobierno de Proyectos Industriales de derecho-al-conocimiento en otras áreas del desarrollo en la frontera México-Estados Unidos.

Se hacen recomendaciones para la realización de inventarios futuros y para mejorar otros aspectos de la divulgación de materiales peligrosos.

### ***Recomendaciones***

#### ***1. Expandir Alcance de Inventarios***

Con el fin de diseñar e implementar un plan de emergencia eficaz para la comunidad, se recomienda un estudio más completo sea llevado a cabo en el futuro, recopilando datos de las ocho instalaciones maquiladoras que no respondieron, amplificando el alcance del inventario para incluir otras instalaciones en los sectores industriales y de servicios (tales como ferreterías, los distribuidores plaguicidas, servicios públicos, talleres mecánicos, distribuidores de gas, etc.) que utilizan o manipulan Sustancias de Alto Riesgo.

a) Por lo tanto que para los propósitos de un estudio piloto inicial, la lista corta de Gobernación de Sustancias de Alto Riesgo fue apropiada, se recomienda que los inventarios futuros utilicen una lista más amplia de materiales, incluyendo al menos los que son sujetos a la presentación de informes en los EE.UU. conforme a las secciones 302 y 313 del Plan de Emergencia y la Ley de Derecho-de-Conocimiento de la Comunidad (EPCRA) al igual que carcinógenos conocidos, teratógenos, inmunotoxinas, y las sustancias conocidas por causar enfermedades reproductivas o del desarrollo. Además, si bien sea adecuada comenzar con tales listas limitadas, con el tiempo el inventario nacional se debería incluir todas las sustancias peligrosas en el comercio, y conformarse a las directrices nacionales para Registros de Transferencia Emisiones de Contaminantes elaboradas por la Organización para la Cooperación Económica y Desarrollo (OCDE).

b) Dada la utilidad potencial de llevar a cabo este tipo de inventario, se recomienda que los inventarios que incorporan el método y, en su caso, el formato de este piloto (modificado según sea necesario), sean realizados en otras ciudades fronterizas así como Nogales, San Luis Río Colorado y Sonora, ambas con importantes instalaciones industriales y de servicios.

#### ***2. Mejorar el Formulario de Presentación de Informes***

Se recomienda que en los futuros inventarios el formulario de la encuesta sea modificado para incluir información necesaria no obtenida en el formulario utilizado en esta prueba piloto, y para facilitar la recopilación, gestión y análisis de los datos. En particular, se recomienda que el formulario sea mejorado para hacer frente a las siguientes áreas de interés:

a) Con el fin de evitar errores o confusión en la comprensión del tipo de información solicitada, las instrucciones o directrices para llenar el formulario deberían hacerse significativamente más claras. Por ejemplo, las hojas de instrucciones podrían incluir ilustraciones aclaratorias y ejemplos.

b) Casillas para las entradas de datos deben ser proporcionadas para facilitar la calculación de contenidos de mezclas, formulaciones y productos comerciales de material peligroso.

c) Se debe consignar en el formulario la exención de datos por reclamos de la confidencialidad,

aunque las cantidades y características generales de los materiales exentos (familia química, la forma física, clase de peligro, destino, etc.) no deben ser exentos de informes, y el efecto de excluir los datos específicos de la contabilidad de los materiales debería ser caracterizado.

d.) Una sección se debe añadir para introducir datos sobre la composición de los desechos peligrosos, con el fin de facilitar la comparación con los resultados del balance de materiales. (La adición de estos datos no debería ser una carga de tiempo adicional significativa para las instalaciones en la presentación de informes ya que todos los generadores de residuos peligrosos ya están obligados a informar a la SEDOSOL sobre la composición de los residuos peligrosos que generan.)

e) Los datos referentes a los vertidos de aguas residuales y emisiones a la atmósfera deberían ser reportados como totales anuales y ser correlacionados con el total de horas de funcionamiento anual de los equipos de combustión.

Las instalaciones están también ya obligados a informar estos datos (a SEDESOL y COAPAES, como se señaló anteriormente), inclusive, incorporando los datos de este estudio, no debiera constituir una carga adicional significativa.

f) Se debe incluir más espacio en el formulario para la identificación de oportunidades de prevención de la contaminación.

g) Una base de datos integrada inicial, incluyendo números CAS y otros identificadores apropiados, se debe crear para facilitar el ingreso de datos, organización, análisis y presentación de datos sobre Sustancias de Alto Riesgo, para poder también simplificar la correlación con otras bases de datos sobre la salud humana y el medio ambiente.

h) En particular, para fines de planificación de emergencias, las instrucciones deberán exigir la presentación de un mapa de ubicación de las instalaciones y un plano de sitio que indique la ubicación de la instalación de los materiales peligrosos reportados, con referencia especial a la ubicación de las Sustancias de Alto Riesgo.

### ***3. Proporcionar Formación***

a). Con el fin de reducir al mínimo los problemas de interpretación y para mejorar la calidad de los datos notificados, se recomienda llevar a cabo sesiones de formación para los empleados de la instalación antes de solicitar datos para futuros inventarios.

b). Con el fin de mejorar el diseño y la utilidad del inventario, y para fomentar la participación conjunta en este y otros proyectos relacionados con la protección de la salud y el medio ambiente, se recomienda que el desarrollo del formulario modificado y las instrucciones serán discutidos y analizados con los representantes de la industria, organismos de protección civil, personal de respuesta de emergencias, grupos comunitarios y otras organizaciones apropiadas.

### ***4. Institucionalizar el Proceso de Inventario***

a). Como una medida de seguridad en la planificación de contingencia y emergencia conforme a la ley estatal de Sonora sobre la protección del medio ambiente (Ley N° 217 del Equilibrio Ecológico y la Protección al Ambiente para el Estado de Sonora), se recomienda que las autoridades municipales se hagan obligatoria la presentación de inventarios completos para instalaciones en el municipio.

b). Con el fin de facilitar la identificación y seguimiento de materiales peligrosos, se recomienda que en el futuro haya listas oficiales emitidas de sustancias con el propósito de la regulación ambiental o la seguridad pública, suelen transmitir códigos de identificación numéricos y lógicos reconocibles en común preferentemente las numeraciones Abstractas de Servicio de Químico (CAS numbers), por las que las identificaciones no se dependan de los nombres químicos o sinónimos (por los cuales, debido a las ambigüedades inherentes, a menudo dificultan los esfuerzos de derecho-a-conocimiento).

c. Con el fin de lograr los muchos beneficios sociales y ambientales del derecho-de-conocimiento, se recomienda que la SEDESOL inicie esfuerzos cooperativos con las ONG, y los gobiernos estatales locales, la industria y los organismos internacionales como el UNITAR (Instituto de las Naciones Unidas para la Formación e Investigación y OCDE (Organización para la Cooperación y Económico de Desarrollo) para incorporar el formulario de encuesta modificado y el proceso de inventario integrado en un programa vigoroso de prioridades para desarrollar un sistema de inventario nacional integrado lo cual incluye las fuentes puntuales y no puntuales de las publicaciones.

d) Para fomentar los esfuerzos de prevención de accidentes, para aliviar la carga sobre las industrias y para facilitar la planificación de emergencia y la respuesta binacional, se recomienda que los gobiernos de México y los EE.UU. procuren elaborar una lista armonizada de sustancias de alta prioridad abarcada, por lo mínimo, de las listas de Gobernación de Sustancias de Alto Riesgo, las listas de la Agencia de Protección Ambiental de Estados Unidos de las Sustancias Extremadamente Peligrosas( EPCRA sección 302) Sustancias y sustancias sujetas a las reglas de Prevención de Vertidos Accidentales (Accidental Release Prevention Rules CAA112 [r]), y la lista de sustancias sujetas a las reglas de Control de Procesos Seguros de la Administración de Seguridad y Salud Ocupacional de EE.UU. / US Occupational Safety and Health Administration Process Safety and Management.

e) Con el fin de facilitar la ejecución de los programas derecho-de-conocimiento en general, e inventarios de sustancias peligrosas en particular, se recomienda que las agencias estatales y federales trabajen con instituciones de financiación, como la Comisión de Cooperación Ecológica Fronteriza ,COCEF y e Banco de Desarrollo de América del Norte, BDAN, y el Banco Mundial (que en 1992 hizo un préstamo de Tecnología Agropecuaria de \$ 150 millones para México y el 9 de junio de 1994 aprobó otros \$ 368 millones para el Proyecto Ambiental de la Frontera Norte de México.

f) Con el fin de lograr los muchos beneficios sociales y ambientales del derecho-de-conocer, se recomienda que la SEDESOL inicie esfuerzos de cooperación con las ONG, los gobiernos locales y estatales, la industria, y los organismos internacionales como el UNITAR de las Naciones Unidas (Instituto para la Formación e Investigación y OCDE (Organización para la Cooperación Económico y Desarrollo, para incorporar el formulario de encuesta modificado y el proceso del inventario integrado en un programa vigoroso de prioridades para el desarrollo de un sistema de inventario nacional integrado el cual incluya las fuentes puntuales y no puntuales de los vertidos.

g) Para fomentar los esfuerzos de prevención de accidentes, para aliviar la carga de las industrias y para facilitar la planificación y respuesta binacional de emergencias, se recomienda que los gobiernos de México y los EE.UU. procuren elaborar una lista armonizada de sustancias de alta prioridad compuesta, por lo mínimo, de las listas de Gobernación de Sustancias de Alto Riesgo, las listas de la Agencia de Protección Ambiental de los E E. UU. de Extremadamente Peligrosas (sección 302 de la EPCRA) Sustancias y sustancias sujetas a las reglas de Prevención de Vertidos Accidentales (Accidental Release Prevention Rules CAA 112 [r]), y la lista de

sustancias sujetas a las reglas de Control de Procesos Seguros de la Administración de Seguridad y Salud Ocupacional de EE.UU. / US Occupational Safety and Health Administration Process Safety and Management.



## **Usefulness of Instituting a National Pollutant Release and Transfer Register (1994)**

Michael Gregory, presented to the Organization for Economic Cooperation and Development “Workshop on National Pollutant Release and Transfer Registers, Brussels (24-26 January 1994)

I want to thank the OECD for the opportunity to address this workshop on National Pollutant Release and Transfer Registers, and the Commission of the European Communities for hosting the workshop.

The right to know about the hazardous substances in our communities, workplaces, and ambient environment is a basic element of sustainability. It includes the right to know about every stage of the toxics life-cycle—including quantities and kinds produced, processed, stored, transported, used and released; as well as the specific modes of management, potential effects on human health and the environment, routine and accidental releases, and waste generation and management. It is not just release and transfer information that is needed, but full toxics facilities profiles, including materials accounting data, waste management data and environmental release data. The primary instrument for gathering such information, as was emphasized by citizens at the Earth Summit in Rio, is the pollutant release and transfer register (PRTR), or toxics inventory.

Such basic data about chemical, radiological and biological hazards must be collected, widely disseminated and easily accessible if we are to effectively respond to the increasing contamination of the environment. The PRTR data are essential for informing the public of hazards in their midst, for educating facility managers and workers, for providing information necessary to assess and correct existing problems and prevent them in the future. However, inventories are not just informational, but serve as a strong stimulus to action by the public, private and governmental sectors to reduce the hazards disclosed by inventories.

It is also crucial that the inventory data not only be available and easily accessible to workers and the public, who are most directly at risk from toxics, but that those parties be fully involved in the inventory process itself and in the subsequent planning for the elimination or mitigation of the hazards inventories bring to light.

It was with these and similar considerations in mind, that in 1992 Arizona Toxics Information (ATI) and Enlace Ecológico, A.C. (EECO), two small, non-profit, non-governmental organizations, embarked on a project to develop two hazardous materials inventories in the border zone between Mexico and the United States.

### ***The US-Mexico Border Environment***

The US-Mexico border zone is defined in the 1983 Border Environmental Agreement as a 100-kilometer wide strip on each side of the 1000-mile long international boundary. Since 1968, over 3000 companies have located in this region, resulting in what the American Medical Association has called a "cesspool" of polluted air, contaminated ground- and surface waters, unsanitary waste dumps, unsafe working conditions and a broad range of health and environmental conditions associated with uncontrolled urban and industrial growth.

The environmental stresses affect both countries but are predominantly felt in Mexico, where the bulk of population and industrial growth has taken place and where resources for response to environmental health problems are most severely limited. This rapid urban and industrial growth, begun under the so-called *maquiladora*, or twin plant, program of the two countries, is

expected to increase under the recently-approved North American Free Trade Agreement, the approval process of which has focused a great deal of attention on the border zone.

Environmental monitoring programs in the border zone are in their infancy. The first monitoring of transboundary water resources (which significantly, was first carried out by NGOs) found industrial chemicals at elevated levels in transboundary aquifers and surface waters. Preliminary monitoring indicates high air toxics levels in some urban areas. Recently, spearheaded by binational coalitions of non-governmental organizations, a number of efforts have begun to measure and mitigate the adverse environmental and human health conditions of the border zone, including strategies proposed at the federal level under the 1992 Integrated Border Environmental Plan (IBEP) and 1993 North American Agreement on Environmental Cooperation (NAAEC). Toxics inventories have been proposed as part of these strategies, but to date no inventories have been initiated by any government.

It is generally recognized that due to significant disparity in available resources, data on health and environmental conditions on the U.S. side of the border is more complete than in Mexico. Although data on hazardous materials production, use, transport and release is called for under several Mexican regulations, when such data is submitted it goes to several different local, state and federal agencies on a variety of forms and is not generally available to the public.

### ***The Border Right-to-Know Project***

In response to some of these conditions, in 1992 the Border Health and Environment Network, a binational coalition of non-government environmental, social and academic organizations, devised a plan to develop right-to-know programs in several communities in the US-Mexico border zone. In December of that year, ATI and EECO implemented the first pilot project of that plan in three northern Sonora communities.

The Border Project included industrial and agricultural components. The industrial component was carried out in Agua Prieta, Sonora, a city of 100,000 population located on the border directly adjacent to the considerably smaller city of Douglas, Arizona (population 9000). This component was designed to gather and disseminate information on the hazardous materials used and routinely released by the *maquiladoras* in Agua Prieta.

The agricultural component of the project was carried out in the communities of Fronteras and Santa Cruz, Sonora (each with a population of less than 5000 and located some 50 and 10 kilometers south of the international boundary, respectively). This component was designed to gather and disseminate information on the pesticides used by small farmers in the study area, and on the available sources of information on pesticide use and associated hazards.

Both components of the pilot project were intended to:

- Identify the kinds and amounts of toxics produced and used in the study areas
- Identify the source of the materials, either domestic or imported
- Identify the ultimate destination of the materials and their waste products
- Develop survey forms easily replicable by and useful to citizens
- Demonstrate the feasibility of NGO-government-industry cooperation in developing inventories in the border region
- Demonstrate the practicability of NGOs initiating, designing and conducting inventories with low budgets and small personal computers.

The project has been successful in all these goals, and has been carried out with the use of three

microprocessors, and the equivalent of approximately three full time employees for about six months time.

### ***The Industrial (Agua Prieta) Component***

Agua Prieta was chosen in part because of its proximity to the offices of the cooperating organizations but, more important, because the small size of its industrial sector and small number of chemicals used by its facilities offered an opportunity to conduct a pilot-scale project focused on developing the conceptual, technical and political means of implementation, rather than on the mechanical aspects of data processing.

In November 1993, with authorization from and in cooperation with the local municipal government of Agua Prieta and the state of Sonora civil protection agency, Enlace Ecológico distributed the survey forms to the twenty-eight *maquiladoras* of the city, without regard to industrial classification or size of operation. The survey was restricted to facilities owned by US corporations because they were the largest industrial plants in the city, and because their corporate management was already somewhat familiar with chemical inventories through compliance on the northern side of the border with reporting requirements under the US *Emergency Planning and Community Right-to-Know Act* (EPCRA). Completed forms from all facilities were submitted less than a month after distribution and are currently being tabulated and analyzed. Results are expected to be ready for distribution within the next two months.

The Agua Prieta survey was designed as a multi-purpose inventory useful not only for emergency planning, but as an initial step towards development of baseline data essential for future assessments of environmental quality and human health, and for consolidated, multi-media oversight by government agencies and non-governmental observers.

Several reporting forms from a variety of Mexican and US programs were considered, including the US-EPA's Form R. It was decided, however, that existing forms were either too narrowly focused (e.g., on only discharges to wastewater systems), or, like the US-EPA's Form R, were too detailed and complex for use by facility personnel who typically had little or no experience in filling out chemical inventory forms. Consequently, a new, relatively simple form was developed which allowed for collection of data on air emissions, wastewater discharge, hazardous waste generation and transport, as well as production, use and storage of virgin materials of concern to emergency planners and responders.

In order to mitigate some of the unfamiliarity of facility managers with the inventory process, it was decided that the list of chemicals attached to the inventory form would begin with the basic list of chemicals already subject to reporting by all industrial facilities under the environmental assessment regulations of Mexico's environmental agency, SEDESOL. Since emergency planning and worker protection were primary concerns of all parties involved, and the principal concern of the Sonoran state authorizing agency, Protección Civil, it was decided to add in the list of 230 chemicals subject to accident prevention regulations under the US Clean Air Act. The combined list includes approximately 300 substances. No threshold quantities were set; the facilities were asked to report any amount of the substances handled.

### ***Project Evaluation***

Preliminary evaluation of the industrial component has indicated the need for several improvements to be incorporated in the next inventory, which is planned for later this year:

- The list of chemicals will be expanded to include at least those on the US-EPA right-

to-know lists and possibly the more comprehensive list (including more than 1000 substances) for which reporting is required under the State of Arizona's Pollution Prevention Program. Corporations operating in Agua Prieta also have plants on the Arizona side of the border and are familiar with the Arizona list. (Although it was recognized at the outset of the project that the original list was far too short to achieve comprehensive information, in consideration of the kinds of light industry participating, the list was felt to be sufficient for purposes of a pilot project. Now that the initial effort has been successful, the expanded list will be more appropriate.)

- More pre-survey work has to be done to identify code and nomenclature for chemicals and waste so the inventory data are more easily harmonized with corresponding data from the United States, where most of the raw materials originate and most of the waste is sent for treatment and disposal.
- More training of facility managers and other employees will be required to improve data quality. Unfamiliarity with terminology and other aspects of the inventory process process resulted in a great deal of incorrect recording and a need for post-submission follow-up. The time and resources put into this effort could be better spent on pre-submission training.
- The survey form needs to be reformatted to include data on pollution prevention and process safety opportunities.
- Increased efforts must be made to inform the public of the project and involve more members of the community in the planning processes.

### ***Recommendations***

Our experience in the Border Right-to-Know Project, as well as previous experience with emergency planning on the US side of the border, suggest several essential elements that must be emphasized if inventories are to be effective:

- They must include both facility-specific, process-specific and substance-specific data.
- In order to provide adequate information for emergency planning, pollution abatement, pollution prevention, land-use planning, worker safety and other needs, they must include detailed throughput information on the whole range of product life-cycles, including in-plant materials accounting data, waste management data, and environmental release data.
- They must not be arbitrarily limited by industrial classification, but should include all facility types handling toxic substances, including, among others, agriculture, mining, utilities, waste incinerators, retailers and government agencies.
- They should include small facilities as well as large, and set low reporting thresholds, especially for low- or non-threshold toxics like carcinogens, teratogens, immunotoxins and neurotoxins.
- The list of chemicals should be comprehensive. Most facilities will have only a few of the list in any case, so the use of a long list does not present much increased burden, yet provides a considerably greater understanding of toxics conditions when aggregate data from all reporting facilities are compiled and analyzed.

- Finally, all data should be broadly available and easily accessible to workers and the public, and full participation of those parties in the inventory process should be guaranteed. Including NGOs as an integral part of inventory programs is likely to be the most cost-effective way to achieve the desired results.

## **References**

- Bailar, John C. et al. 1988. One-Hit Models of Carcinogenesis: Conservative or Not? *Risk Analysis* 8(4):485-497.
- Connett, Paul. 1990. Address on hazardous waste incineration presented to Concerned Citizens South of South Mountain "Fact Forum 1990" (Phoenix, Arizona, 19 October).
- Costanza, Robert and Lisa Wainger. 1990. No Accounting for Nature: How Conventional Economics Distorts the Real Value of Things. *Washington Post* (2 September), p.B3.
- Daly, Herman E. and John B. Cobb, Jr. 1990. *For the Common Good: Redirecting the Economy toward Community, the Environment, and a Sustainable Future*. Boston: Beacon Press.
- Fischhoff, Baruch. 1985. Managing Risk Perceptions. *Issues in Science and Technology* (Fall), pp. 83-96.
- Geiser, Ken. 1990. Toxics Use Reduction and Pollution Prevention. *New Solutions* (Spring), pp. 1-8.
- Ginsburg, Robert. 1990. What's In a Name? Serious Implementation of Pollution Prevention. *New Solutions* (Summer), pp. 54-65.
- Merrell, Paul and Carol Van Strum. 1990. Negligible Risk: Premeditated Murder? *Journal of Pesticide Reform* 10(1): 20-22.
- O'Brien, Mary. 1990. If Not Risk Assessment, Then What? *Journal of Pesticide Reform* 10(1): 2-6.
- Roberts, Leslie. 1989. Is Risk Assessment Conservative? *Science* (24 March), p. 1553.
- Schamadan, James L., chairman. 1990. *Report of the Governor's Hazardous Waste Technical Advisory Committee*. Phoenix, Arizona: State of Arizona.
- Seidel, Sharon. 1990c. Interoffice memorandum from EPA Region IX Toxicologist to Tom Power, EPA IX ENSCO Project Manager (1 May).
- Slovic, Paul. 1990. The Legitimacy of Public Perceptions of Risk. *Journal of Pesticide Reform* 10 (1): 13-15.
- Van Strum, Carol and Paul Merrell. 1990. Dioxin Human Health Damage Studies: Damaged Health? *Journal of Pesticide Reform* 10(1): 8-12.
- Webster, Tom and Paul Connett. 1990. Risk Assessment: A Public Health Hazard? *Journal of Pesticide Reform* 10(1): 26-31.

## **Criteria for Selecting Chemical Species for Pollutant Release and Transfer Registers (1994)**

Michael Gregory, for Arizona Toxics Information, Border Ecology Project, Comité Civico de Divulgación Ecológica, A.C., Enlace Ecológico, A.C., Proyecto Fronterizo de Educación Ambiental, A.C., and Sierra Club, presented to Organization for Economic Cooperation and Development "Second Workshop on National Pollutant Release and Transfer Registers," Ottawa, Ontario, Canada (14-16 June 1994)

The following comments are made on behalf of Arizona Toxics Information (ATI), Enlace Ecológico, A.C. (EECO), Proyecto Fronterizo de Educación Ambiental, A.C., Comité Civico de Divulgación Ecológica, A.C., Border Ecology Project, and the Sierra Club-US. The Sierra Club, with over 600,000 members, is the oldest environmental organization in the United States and has been instrumental in passage and implementation of right-to-know provisions in US environmental law. Border Ecology Project (based in Bisbee, Arizona), Proyecto Fronterizo and Comité Civico (based in Tijuana and Mexicali, Baja California, respectively), Enlace Ecológico (based in Agua Prieta, Sonora) and Arizona Toxics (based in Bisbee, Arizona) are environmental advocacy and policy organization which for the past several years have been actively engaged in cooperative efforts with the other NGOs and with state and local governments, to develop urban and rural inventory programs in the northern border region of Mexico.

Our comments are especially conditioned by our on-the-ground experience in developing these programs.

### ***Goals and Purposes***

*The list of substances chosen for reporting under a Pollutant Release and Transfer (PRTR) system should be determined by the goals and purposes which the PRTR is to serve, which may differ from country to country or region to region. Of the many goals and purposes that have been identified, several are of particular importance and will pertain in any application.*

For instance, the PRTR is an essential tool for characterizing pollutant conditions and trends locally, regionally, nationally and globally. If they are conducted with internationally consistent nomenclature and parameters, PRTRs can provide the means to gather the baseline data needed for effective decision-making by governments and the public on a wide range of issues. For instance, while the OECD process is aimed principally at national PRTRs with an eye to national planning, PRTR data is obviously pertinent to local planning and infrastructure development issues, from land-use allocations to emergency preparedness and response, in the communities where the pollutant sources exist.

Similarly, the PRTR is essential not only for providing corporate accountability, to satisfy worker and public right-to-know what hazards industries present to their communities, and to facilitate regulatory oversight, but it is the basic tool for identifying pollutant use and outputs at the sector, facility and process levels for purposes of prevention planning. Many companies have found that the simple act of lifestyle accounting of pollutants required by the US-EPA's Emergency Planning (EPCRA 302/304) and Toxics Release Inventory (TRI) reports has allowed them to make significant reductions in use and release of pollutants at considerable cost savings. Many companies have undertaken such materials accounting voluntarily for the same reason.

*Most important, and underlying all these, is the goal of protecting and improving public, occupational and environmental health.*

*In order to serve these purposes and achieve these goals, the PRTR system must be comprehensive, consistent, transparent and accessible.*

### ***Precautionary Principle***

In regard to the main topic of this workshop, criteria for selection, we should note at the beginning that to seek criteria for inclusion is in an important sense to ask the wrong question; we should be asking, instead, what are the grounds for exclusion? Or, put another way, before we decide not to include certain substances, we should ask, what pollutants do the public and workers *not* have a right to know about? Agenda 21, the Rio Declaration and the ILO Convention 170 (on Safety in the Use of Chemicals at Work) are very clear that the answer to that question, beyond strictly defined exclusions for confidential business information, is *None*: the public's right-to-know must be very broadly observed. Full transparency is the goal.

It has been argued by some that the PRTR list should be restricted to those chemicals for which we have complete health criteria or toxicological profiles or the like, but listing only that small handful of chemicals or waiting until the studies are in does not do justice to the principle of right-to-know. Most of the studies for substances of concern will not be done for decades, if then. We must constantly keep in mind and be forthright about what we don't know—which is a great deal.

The study of ecological toxicology, for instance, is in its infancy and epidemiological studies proceed only very slowly and after the fact. Current science is only recently beginning to look at the effects of mixtures and the mechanisms of toxicity, only recently finding how very low doses of certain chemicals (e.g., dioxin) may cause or be precursors to, or be associated with other factors, including other pollutants, in the promotion of disease.

It is simply unacceptable to continue to presume that chemicals have human rights, that they should be considered innocent until proved guilty beyond a shadow of a doubt. That is the kind of thinking which has brought us to the present polluted state of the world.

Nor can we limit the scope of the list based on best management practices, on our trust that the best companies will follow the best practices which will, in turn, provide adequate protection. We cannot rely on the expectancy that there will always be proper handling and that effective fail-safe mechanisms will function as planned. In fact, accidents do happen. We need only mention some of the more catastrophic ones like Seveso, Bhopal, Chernobyl. Servo-mechanisms do malfunction. In the field, and even in the lab, not everyone follows label instructions, and even if they do, labels are often out-of-date or otherwise wrong.

The history of chemical management is replete with instances of "safe" chemicals being found—through more testing, through epidemiological studies, and through the natural evolution of science—to be very dangerous. We need only think of PCBs, CFCs, DDT, mercury, radon and diethylstilbestrol, to name a few. And we must bear in mind that we have to deal not only with uncertain science, but with greed and avarice, as the many cases of fraud in testing of chemicals for registration in the United States has shown.

Given these to some extent inevitable uncertainties, *we must allow our selection to be governed not by currently recognized levels of risk, but by the Precautionary Principle*, which, as outlined in Principle 15 of the Rio Declaration, calls for taking the most prudent and protective course in the face of uncertainties. Which is to say, we need to look at potential as well as known problems.

While there may be economic, political or other justifications for delaying regulation of some known or potential pollutants, in regard to simple information exchange such as that facilitated by PRTRs, we should not wait until after the fact of exposure or disease or body counts. We need to take the preventive approach.

### ***Scope***

EPA has estimated that its Toxics Release Inventory (TRI) system accounts for less than 5% of the actual releases of pollutants to the environment in the USA. This is the result of at least three inadequacies in the EPA methodology: a short reporting list, a narrow list of sources required to report and a high reporting threshold. All three of these limitations should be precluded to the extent possible by the PRTR guidelines.

In order to allow for an accurate representation of actual conditions, *PRTRs should include point and non-point sources and all sectoral classifications with the potential to release.* In particular, besides manufacturers (the only sector statutorily covered by the US TRI system), PRTRs should include, at a minimum, the agricultural, energy production, transportation, mining, oil & gas, waste management, governmental and military sectors.

### ***Consistency***

Pollution does not respect national sovereignty or recognize political borders. Similarly, in a world of increasingly liberalized trade, raw materials and products, including saleable wastes, travel more freely from country to country on the international market. In order to track this traffic, to provide accurate lifecycle accounting, to make useful comparisons between sources, and to determine trends, *we must have consistent international nomenclature and coordinated systems for data collection and reporting. In this regard, the development of guidelines for PRTRs can make a valuable contribution to, and should be coordinated with, the ongoing effort to "harmonize classifications and to establish compatible hazard communication systems"* (International Conference on Chemical Safety, Priorities for Action, Programme Area B.1, April 1994).

*PRTRs should collect data on specific pollutants or classes of pollutants with internationally-accepted unique logical and numeric identifiers.* One of the difficulties we found in our Agua Prieta inventory, for instance, and are again finding as we begin developing a program for Tijuana, is the absence of requirements in existing Mexican forms for informants to use unique identifiers for the substances being reported. Typical requirements call only for identification by broad hazard class (corrosive, explosive, flammable, etc.). Since the facilities are not required to use standardized names or numbers, they do not, with the result that it is generally impossible to use the official reports to identify specific pollutants at a given facility with certainty, or to account for pollutant release and transfer at the local, regional or national levels.

*We strongly recommend that Chemical Abstract Service (CAS) numbers be adopted as the international numeric identifier for pollutants and that similar numeric identifiers be adopted for pollutant classes which do not have CAS numbers. In addition, it would be very helpful if a single preferred name were identified from the multiple synonyms many substances now carry.*

### ***Criteria***

*The list should be comprised of specific actual and potential pollutants and classes of pollutants,*



*defined very broadly* as, for instance, in the International Union of Pure and Applied Chemists (IUPAC) definition which (as noted in the IPCS concept paper presented at the Brussels workshop) refers to "any undesirable solid, liquid or gaseous matter in a solid, liquid or gaseous environmental medium."

This broad sense is also captured in the widely-accepted use of the term "dangerous goods," by such bodies as the United Nations Committee of Experts on the Transport of Dangerous Goods (UNCETDG).

These definitions, like those developed under many emergency planning and response programs, appropriately call for identification based on intrinsic *hazard*, not necessarily on *risk*. While matters of vulnerability, exposure and risk assessment are certainly appropriate subjects for disclosure under the right-to-know principle, they are not prerequisite to the broad purposes of the PRTR. Just as we do not need to know all of the intricacies of toxicity in order to prevent disease and pollution, we do not need to know all the complexities of risk in order to flag a substance for further scrutiny.

*Accordingly, the PRTR list should include any substance or class of substances which 1) is known or can reasonably be expected to cause or contribute to acute or chronic adverse health effects in humans or other animals or organisms; 2) is known or can reasonably be expected to cause or contribute to deleterious effects on ecosystem integrity or material welfare of human or non-human habitats or communities; 3) is radioactive, carcinogenic, mutagenic, teratogenic, estrogenic, fetotoxic, immunotoxic, neurotoxic, bioaccumulative, or persistent in the environment; 4) is banned, withdrawn, severely restricted, or unapproved for use in any country or in commerce.*

### ***International and National Lists***

Building lists by criteria tends to be very slow and costly. Building upon previously-accepted lists can save a lot of time and money because the work of screening (and the related debates) has already been done. This is the approach, for instance, that EECO and ATI took in the first section of the Agua Prieta inventory, asking respondents to identify any substances at the facility already familiar from Mexican and US agency (SEDESOL, EPA and OSHA) reporting and planning requirements for highly hazardous and process safety materials.

It is also the approach taken by the State of Arizona's Pollution Prevention Program, which, as passed in a bill principally concerned with hazardous waste, initially required pollution prevention plans from major hazardous waste generators and facilities that used (in the broadest sense of the term) more than the statutory threshold amount of any of some 2000 substances already included on a variety of existing state and federal lists.

The rationale for choosing to establish that list of lists included consideration of 1) time- and cost-savings from adopting established lists; 2) the multiple purposes to which the lists might be put besides those specifically mentioned in the bill (land-use and emergency planning, for instance); 3) the desire to avoid duplication or add unnecessarily to industries' reporting burden; 4) the need to be comprehensive rather than limited to the narrow purview covered by any one or two of the lists; and 5) the ability of petitioners to de-list substances or classes upon a showing that they do not pose a threat to human health or the environment. Those reasons are equally appropriate to the establishment of national PRTR lists.

It has been argued by some that such a list is too long and would add too great a burden on industries, especially those smaller companies that may not know which pollutants they produce.

But this is largely a spurious argument, for most facilities, especially small ones, will have no more than a handful of chemicals to report no matter how long the master list; and responsible care, regardless of the size of a facility, demands that the company know, and let its workers and the public know, what pollutants it brings into the community.

Large chemical companies, which may have more than a few pollutants to report, are also generally equipped to handle the reporting process, and in most cases already track the substances of concern through internal accounting systems as part of good business practice.

*Given these and other related considerations, we recommend that selection of chemical species for PRTRs take place through several progressive stages or phases, beginning with development of Master and Core International Lists by OECD and followed by adoption of the Core List by nations with, as necessary, prioritization and phased-in adoption of that list section-by-section, according to guidelines and schedules developed by OECD, to meet the specific needs of individual countries. We suggest that the stages could proceed as follows:*

- First, in accordance with the 1992 International Labor Organization (ILO) recommendation, a master list should be developed comprised of all substances and all classes of substances already included on any of several internationally-recognized, comprehensive lists, including: 1) the UN Recommendations on the Transport of Dangerous Goods (RTDG), 2) lists developed pursuant to EU Directive 67/548/EEC as amended for the 7th (92/32/EEC), 3) the USA *Toxics Substances Control Act* and Hazard Communication Standard lists, and 4) Canada's Workplace Hazardous Materials Information System and Environmental Protection Act lists. In addition, in order to achieve a truly comprehensive master list of chemicals in commerce, we would recommend that the UNEP International Registry for Potentially Toxic Chemicals (IRPTC) and the UN Consolidated List of Products Whose Consumption and/or Sale have been Banned, Withdrawn, Severely Restricted or Not Approved also be included in the initial compilation.
- Second, this consolidated master list should be screened for those pollutants and classes of pollutants that have CAS numbers or, in the case of classes, other unique identifiers. This screened General List should be the basis for the international PRTR system, with the understanding that all national PRTRs would eventually include this full list.
- Third, in recognition of the differing needs of different nations, and especially the need of some nations to start the PRTR process with a smaller list, this General List could be screened to develop a Core List including, at a minimum, those 1500 or so chemicals which make up 95% of world production, and other pollutants which, although they may be produced in small quantities (e.g., dioxin) or are no longer manufactured (e.g., PCBs), meet any of the various criteria for significant hazard to human health and the environment (toxicity, persistence, bioaccumulativity, severe commercial restrictions, etc.) as enumerated in our comments above.
- Finally, nations should adopt this Core List in its entirety or, based on OECD guidance, in scheduled prioritized stages appropriate to their individual needs and situations.

Appropriate candidates for inclusion on the Core List would be any substances included on other lists or databases (e.g., the US-EPA's lists of regulated air toxics and water contaminants or the UNIDO chemical safety database) or which are the subject of effect-specific documents (e.g., International Agency for Research on Cancer (IARC) monographs, Joint Meeting on Pesticides (JMP) or Joint Expert Committee on Food Additives (JEFCA) toxicological monographs, IPCS environmental health criteria documents, OECD toxicological assessments, or US Agency for Toxic Substances and Disease Registry (ATSDR) toxicological profiles).

## **Public Access to Environmental Information in Mexico and the United States: Issues and Policy Options: Draft for Discussion (1994)**

Michael Gregory, Gildardo Acosta-Ruiz and Laurie Silvan Durazo , presented to the North American Commission on Environmental Cooperation, Montreal, Quebec, Canada (17 December 1994)

### **Contents**

Acronyms Used in this Paper  
Contexts

Scope of issue  
Areas and Range of Concern  
Elements and Obstacles  
Substantive Elements  
Procedural Elements

Points of Access  
Agency Level Access  
*Freedom of Information Act*  
*Ley General del Equilibrio Ecológico y la Protección al Ambiente*  
Public Access to Enforcement Process  
Public Access and Public Participation

Site/Facility/Project Level Access  
Pre-Operating Conditions: Environmental Impact Assessment  
Normal Operating and Post-Operation Conditions  
Single-media Programs  
Multi-Media Programs  
Workplace Environment  
Property Transfer Disclosures  
Natural Resource Management  
Emergency Incident Conditions

Substance/Organism/Product Level Access  
Inter-Agency Level Access

Strategically Integrated Data Management

Recommendations to Improve Information Access Systems  
Integrate data systems  
Focus collection and dissemination efforts according to intended needs and uses of data  
Expand scope of data collection and disclosure efforts  
Standardize collection data, reporting forms, storage systems and access tools  
Enhance public participation  
Improve information dissemination  
Recommendations to the North American Commission

References and Recommended Reading

## Acronyms Used in this Paper

CEMPRA	Clasificación de Empresas de Alto Riesgo/Classification of High Hazard Facilities
CENAPRED	Centro Nacional para la Prevención de Desastres/National Center for Prevention of Disasters
CERCLA	<i>Comprehensive Environmental Response, Compensation and Liability Act</i>
CICOPLAFEST	Comisión Intersecretarial para el Control de Plaguicidas, Fertilizantes y Sustancias Tóxicas/Interagency Commission for Control of Pesticides, Fertilizers and Toxic Substances
CONAGUA	Comisión Nacional del Agua/National Water Commission
COAPA	Comité de Prevención de Accidentes/Committee for Accident Prevention
CPSC	Consumer Product Safety Commission
EPA	Environmental Protection Agency
EPCRA	<i>Emergency Planning and Community Right-to-Know Act</i>
FFDCA	<i>Federal Food Drug and Cosmetic Act</i>
FIFRA	<i>Federal Insecticide Fungicide and Rodenticide Act</i>
FFM	Fideicomiso de Fomento Minero/Mining Development Trust
FLPMA	<i>Federal Land Planning and Management Act</i>
FOIA	<i>Freedom of Information Act</i>
GILS	Government Information Locator System
HAZTRACK	(Reporting system for transboundary movement of hazardous waste between Mexico and the US)
INE	Instituto Nacional de Ecología
LAN	<i>Ley de Aguas Nacionales/National Waters Law</i>
LFD	<i>Ley Federal de Derechos/Federal Rights Law</i>
LFT	<i>Ley Federal del Trabajo/Federal Labor Law</i>
LGEEPA	<i>Ley General del Equilibrio Ecológico y la Protección al Ambiente/General Law of Ecological Equilibrium and Environmental Protection</i>
LGS	<i>Ley General de Salud/General Health Law</i>
LFMN	<i>Ley Federal sobre Metrología y Normalización/Federal Law of Measures and Standards</i>
NEPA	<i>National Environmental Policy Act</i>
NFMA	<i>National Forest Management Act</i>
NOM	Norma Oficial Mexicana/Official Mexican Standard
PNPC	Programa Nacional de Protección Civil/National Civil Protection Program
PROFEPA	Procuraduría Federal de Protección al Ambiente/Federal Bureau of Environmental Protection
RCRA	<i>Resource Conservation and Recovery Act</i>
REPE	Sistema de Control de Manifiestos para Empresas Generadoras de Residuos Peligrosos/Control System for Hazardous Waste Generator Manifests
Salud	Secretaría de Salud/Ministry of Public Health
SARH	Secretaría de Agricultura y Recursos Hidráulicos/Ministry of Agriculture and Water Resources
SCT	Secretaría de Comunicaciones y Transporte/Ministry of Communications and Transportation
SECOFI	Secretaría de Comercio y Fomento Industrial/Ministry of Commerce and Industrial Promotion
SEDESOL	Secretaría de Desarrollo Social/Ministry of Social Development
SEMIP	Secretaría de Minas y Industria Parastatal/Ministry of Mines and Parastate Industry
SINAPROC	Sistema Nacional de Protección Civil/National Civil Protection System

SIRIA	Sistema de Información Rápida de Impacto Ambiental/Rapid Information for Environmental Impacts
SMCRA	<i>The Surface Mining Control and Reclamation Act</i>
SNIFF	Sistema Nacional de Información de Fuentes Fijas/ National Information System for Fixed Sources
STPS	Secretaría del Trabajo y Previsión Social/Ministry of Labor and Social Security
TSCA	<i>Toxic Substances Control Act</i>

## Contexts

Although governments and industries generally have a great deal of environmental information—including, among other information, data on government-owned or -managed natural resources, past and present practices at government-owned or -operated enterprises, health records on government employees, and demographic statistics on populations at large—and although it is generally recognized that providing equitable public access to that information through law, regulation and policy is essential to the recognition, assessment and mitigation of environmental problems, and to public evaluation of such efforts, nonetheless, the information necessary to perform such fundamental tasks often is not easily available to the public.

In recognition of this condition, and of the increasing demand of the public for access to environmental information that is held by governments and industries, the parties to the North American Free Trade Agreement have agreed that one of the principal functions of the Council on Environmental Cooperation shall be to "*promote and, as appropriate, develop recommendations regarding. . . public access to information concerning the environment that is held by public authorities of each Party, including information on hazardous materials and activities in its communities, and opportunity to participate in decision-making processes related to such public access*" (Art.10.5(a)).

The third, sixth and seventh functions of the Council set out in the North American Agreement on Environmental Cooperation are similarly explicit in their concern with promoting public access to information:

*The Council shall cooperate with the NAFTA Free Trade Commission to achieve environmental goals and objectives of the NAFTA by. . . acting as a point of inquiry and receipt for comments from non-governmental organizations and persons concerning these goals and objectives*

*Art.10.6(a)*

*. . . the Council shall. . . consider and develop recommendations with respect to. . . assessing the environmental impact of proposed projects subject to decisions by a competent government authority and likely to cause significant adverse transboundary effects, including full evaluation of comments provided by other Parties and persons of other Parties*

*Art. 10.7(a)*

Indeed, in keeping with the agreement of the Parties to "promote transparency and public participation in the development of environmental laws, regulations and policies" [Art.1(h)] and to "promote pollution prevention policies and practices [Art.1.(j)], a majority of the Council's functions are directly concerned with promotion of or are dependent on public access to information, Of particular note, for instance, are the following:

*The Council may consider, and develop recommendations regarding:*

- a) comparability of techniques and methodologies for data gathering and analysis, data management and electronic data communications;
- b) pollution prevention techniques and strategies approaches and common indicators for reporting on the state of the environment;
- f) promotion of public awareness regarding the environment;
- k) environmental emergency preparedness and response activities;
- m) the environmental implications of goods throughout their life cycles;
- r) eco-labelling.

(Art.10.2)

*The Council shall strengthen cooperation on the development and continuing improvement of environmental laws and regulations by. . .promoting the exchange of information on criteria and methodologies used in establishing domestic environmental standards.*

Art.10.3(a)

These functions and objectives are in keeping with the recommendations of *Agenda 21*, the *Rio Declaration* and the 1948 *Universal Declaration of Human Rights*, which state that:

*In sustainable development, everyone is a user and provider of information. . . .The need for information arises at all levels, from that of senior decision makers at the national and international levels to the grass-roots and individual levels.*

(Agenda 21, Chp. 40.1)

*Environmental issues are best handled with the participation of all concerned citizens. . . . At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities. . . .and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.*

(Rio Declaration, Principle 10)

*Every person has the right to freedom of opinion and expression: this right includes the right to freedom, to hold opinions without interference, and to seek, receive and impart information and ideas through any media and regardless of frontiers.*

(Universal Declaration, Art. 19)

and with the Organization of American States' 1991 *Inter-American Program of Action for Environmental Protection*, which recommends,

*Promotion of a greater environmental awareness as a dimension and omnipresent function of education*

(OAS.AG/RES.1114 (XXI-0/91))

and with the 1991 International Union for the Conservation of Nature's *Draft Covenant on Environmental Conservation and Sustainable Use of Natural Resources*, which calls upon states to:

*collect and disseminate to the public data and information on the environment and the use of natural resources[.] and require that all persons be notified in a timely manner of activities which may significantly affect their environment*

(Art. 10[a],[b] )

Finally, they are also in keeping with the generally-recognized basic purposes of providing public access to information, namely, "to ensure an informed citizenry, vital to the functioning of a democratic society, needed to check against corruption and to hold the governors accountable to the governed" (NLRB v. Robbins, 1978), and comport with the freedom of expression clauses of both the Mexican and US Constitutions:

*Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of people peaceably to assemble, and to petition the Government for a redress of grievances."*

*- US Constitution (First Amendment, 1798)*

*The manifestation of ideas will not be the object of judicial inquisition . . . .The right to information is guaranteed"*

*- Mexican Constitution, Article 6 (as amended, 1977)*

Despite these constitutional guarantees of freedom of expression and universal encouragement for information interchange, public access to environmental information in both countries historically has taken the form of statutory rights to specifically defined information rather than a general right to know, and there is a plethora of obstacles to the free flow of environmental information in and between both countries, some of which are deliberate but many of which are unintentional results of bureaucratization and unintegrated regulatory approaches.

This paper is not intended to be a comprehensive explication of the public access systems in Mexico and the United States, but, rather, a scoping document to identify various points of concern in those systems, to raise policy questions and to suggest possible directions for improvements in some areas and topics for further study in others. After identifying some of the basic elements of and obstacles to public access to information and summarizing current application of the elements in Mexico and United States, it examines certain laws and programs of both countries in order to illustrate how some of the more prevalent obstacles occur; and then, while recognizing the differing cultural, economic and socio-political conditions of the two countries, recommends several steps that might be taken by the parties towards increasing the level of public access to environmental information in the USA and Mexico and, where applicable, throughout the NAFTA region.

Although the paper mentions in passing such relevant legal matters as rules of discovery, standing and judicial secrecy, it does not explore them in depth and, in general, does not enter into issues of jurisprudence; neither does it examine issues of disclosures that may result from oversight by one branch of government upon another; nor does it more than peripherally touch upon such disclosure mechanisms as may be exercised voluntarily by the private sector or by the general public, or by research and academic institutions. Rather, the paper focuses on public access, or lack thereof, to environmental information which is held by, or which, in the interest of human health and environmental protection ought to be held by, the executive branches of the

federal governments of Mexico and the United States.<sup>1</sup>

## Scope of issue

### *Areas and Range of Concern*

Only recently has public disclosure of environmental information been recognized as a priority for governments and industry. The explosion at the Union Carbide plant in Bhopal, India ten years ago shocked people around the world into awareness of the threat of toxic chemicals in our midst and stimulated a wide range of activities, by governments as well as the private and public sectors, intended to 1) prevent hazardous materials accidents, 2) to prepare industries, communities and governments to plan for and respond to accidents, and 3) to discover and disclose the hazards and risks associated with the whole life cycle of toxic substances and other hazardous materials.<sup>1</sup> In Mexico and the US, for instance, several major instruments of use to environmental disclosure were adopted shortly after the Bhopal disaster—including, in the US, the *Emergency Planning and Community Right-to-Know Act* of 1986 (EPCRA); and in Mexico the *Ley General del Equilibrio Ecológico y la Protección al Ambiente* (LGEEPA) (the *Law of Ecological Equilibrium and Environmental Protection*) of 1988 and Programa Nacional de Protección Civil of 1990 (PNPC); and binationally, the 1988 Annex III of the US-Mexico Border Environmental Agreement (the La Paz Agreement).

Such materials are ubiquitous in contemporary society, both as primary articles of commerce and as by-products of those articles and their related industrial processes. Because the proliferation of such materials is an apparently unavoidable component of expanded trade and development, in recent years the promotion of free trade has itself become a vehicle for promoting the concept of free flow of information about their potential adverse effects on human health and the environment.

The concept of a public right to know about chemical dangers is based not only on the belief that

---

<sup>1</sup>It should also be noted that while the topic of this paper makes it almost inevitable that issues proper to the field of information theory will be touched upon, the authors have no expertise in that field, neither are they lawyers, and so they have attempted to avoid the complexities and niceties to be expected in the discourse of semanticists and specialists of information theory, just as they have attempted to avoid other unnecessary jargons. For example, while specialists sometimes use the word *data* to mean quantitative or numeric data in contradistinction to *textual* or *logical* data; and that while keeping some of that numeric connotation the word *data* is sometimes used in a way to distinguish between *data* and *information* (the former being a prior, relatively unmanipulated component of the latter, which latter, in this usage, assimilates or incorporates "pure data," packaging it into more easily digestible form), in this paper (unless other indicate by context), the two words are used as more or less interchangeable singular nouns, as they are in common North American parlance.

<sup>1</sup>The term *hazardous materials* is used throughout this paper in its broadest sense, to include such other terms as *hazardous substances*, *toxic substances*, *extremely hazardous substances*, *toxic chemicals*, *toxics*, *high risk substances*, *pollutant*, *contaminant*, *dangerous goods*, *radioactive materials*, *pesticides*, *explosives*, *flammables*, *corrosives*, *reactives*, *biological hazards*, *hazardous wastes*, *toxic wastes*, etc. It is chosen over approximately equivalent terms like *potentially dangerous substances* because, in English diction at least, it is less awkward; over the term *toxics* because that term, although it is increasingly used in the broader sense, is still widely understood as limited to its more technically toxicological denotations; in addition, the term *hazardous materials* has the advantage of some currency as an all-inclusive category principally due to its use in the field of emergency planning and response.



freedom of information is a valuable civil liberty in an of itself, but on the practical belief in public information as an effective means to protect human health and the environment; a belief that an informed public is better able to protect itself from chemical emergencies as well as from routine releases of wastes and other hazardous materials from governmental and industrial operations; and is better prepared to promote, shape and support government initiatives for protecting health and the environment. This belief in the power of information has been amply justified by the US experience with its Toxics Release Inventory, which has been credited with being directly responsible for significant reductions in the use and release of hazardous materials in the past few years.

But while the Bhopal disaster, global warming, destruction of the ozone layer and other widespread problems have focused international attention on public right to know about pollution and toxics, the topic of public access to environmental information goes well beyond hazardous materials to the larger contexts of environmental protection in general, including resource conservation and preservation, protection of worker and public health, governmental and corporate accountability, and the whole range of social equity issues subsumed under the heading of sustainability.

### *Elements and Obstacles*

In matters of public health dealing with infectious and communicable disease, disclosure has become more or less routine. Outbreaks of disease (e.g., cholera) are followed by more or less rapid public notification of the presence of the disease (hazard identification), the nature and extent of the threat (vulnerability assessment, hazard analysis and, if needed, risk characterization) and guidance on avoiding exposure (prevention). These three basic steps—hazard identification, hazard analysis and prevention—are standard stages of environmental as well as medical disclosure, but whereas disclosure is accepted as a matter of course in the field of emergency medicine, and to a similar extent in the field of emergency planning and response, they are not as yet incorporated routinely into general environmental programs of agencies on either side of the US-Mexico border. This condition is less pervasive in the US, where federal laws for some years have mandated that federal agencies operate in a transparent manner and make their records available to the public, but availability is often a far cry from accessibility, and inaccessibility is often the determining factor in keeping information from the public in both countries.

While several such related terms are commonly used interchangeably, distinguishing among them is useful in an effort to understand some of the cultural and institutional barriers to access. For instance, whereas *access*, *accessibility* and *dissemination* usually imply affirmative efforts by agencies to get information to the public, *availability* connotes a more passive condition, requiring little or no effort on the part of government to involve and actually inform the public,<sup>2</sup> but does imply at least an affirmative obligation on the part of government to generate information. Similarly, the term *public disclosure* does not necessarily imply an active requirement of government beyond minimal notice; it represents an intermediate level of agency

---

<sup>2</sup>Authorities disagree on these matters. Henry Perritt, for instance, would define the term *access* almost as we have *availability*: "It is useful to distinguish among dissemination, disclosure, and access. Dissemination involves affirmative efforts by agencies to get information into the hands of consumers. Access involves no agency activity except in response to specific requests. Disclosure involves an intermediate level of agency effort, putting agency information in a place like a public reading room or an Internet server, where it is easy for persons desiring access to get such access" (Perritt 1994, 96n).

effort. *Transparency* connotes public access to proceedings and decision-making processes of government, and implies procedures such as those required by what are called *open meeting laws* and *sunshine laws* in the United States.

Citizen *right to know* is guaranteed in both US and Mexican law, but while the guarantee is explicit in US laws with access mechanisms specified, in Mexico the concept of right to know is an implicit corollary of the Constitutional *right to information* (Acosta, Carey et al 1994, 1-10) and, therefore, generally lacks specific implementing mechanisms (Carmona 1993, 47-49). One cannot discuss *access* to information without discussing the *content of the data* (i.e., what data is *about*, the kind, quality, amount, etc.) as well as the *management* of the data (i.e., mechanisms of data *collection*, data *analysis*, data *dissemination*, including reporting parameters, analytical models, mechanisms and instruments for collection and distribution, etc.) In short, an effective system for public access to environmental information will address *what* information is accessible; *who* provides it; *how*, *when* and *where* it is provided; and *to whom*, as well as *why*.

These issues raise important policy questions concerning the substantive and procedural components of an information management system. How the questions are formulated and answered will determine the accessibility of the information in the system. If not answered in a way that involves and informs the public, each element may become an obstacle to access.

Among the elements to be considered are the following:

### ***Substantive Elements***

- *Content of information* In the abstract, of course, there is no rational limit to the content of information which pertains to the environment since, broadly speaking, "the environment" includes everything and, as we are taught by the first principle of ecology, "everything is connected to everything else." In practical terms, information searches on environmental matters are typically focused on past, present or potential conditions or determining factors of human health and environmental quality, ranging from particular substances or organisms to social and political activities, and may require attention to one or more aspects of demographic and economic statistics; health and environment monitoring data; resource and substance use; industrial and development processes; records of decision; and other matters of interest.

- *Sources of Data* Data sources, like information content, in theory are infinite. In practice they may be classified as primary and secondary sources. Primary sources are those generated or collected by the government, and include (among others):

- Monitoring/sampling data
- Permit compliance submissions
- Health and safety surveys/audits
- Environmental audits
- Shipping, sales and customs records
- Hazardous materials inventories
- Physical and social science research
- Natural resource surveys
- Economic development prospecti
- Tax and investment records
- Disease and mortality records
- Demographic (e.g., census) data
- Hazard and risk assessments and analyses

Secondary sources are those disclosed by the government, and may include, besides direct transferral of primary source material, such communications as statistical atlases, resource or pollutant inventories, press releases and advisories, public education materials, etc.

- *Scope of Information* The scope of legitimate public requests may range widely in temporal, spatial or socio-political terms, requiring information, for instance, on a particular environmental medium, habitat, site, facility or project; a community, watershed or aquifer; state or province (defined politically or biotically), region or nation or continent. In regard to the issue of extent of public access, when considering the public's *need* for information, and the general *utility* of public information, it is generally more prudent to think in terms of *both and*, rather than *either or*.

Obstacles to public access of environmental information are frequently based on limitations in scope. Thus, in regard to information on hazardous materials, for instance, government collection of data (and, consequently, public access) is typically restricted to a relatively short list of substances, and limited within that list to *quantities* of the substance above a more or less arbitrarily established threshold, or to *use* of the substance at *facilities* above a certain economically defined size, or to a certain *place of occurrence* of the substance (as, for instance, when data collection is limited to certain industrial sectors defined as "major sources" or to geographic areas where exposure to the substance is likely to affect larger numbers of people). *Ancillary information* is also sometimes significant. For instance, as a means of ascertaining a company's technical and ethical reliability, for instance, some states in the US require that applicants for environmental permits disclose their corporate history of environmental law infractions in other states or other countries. Disclosure of poor *environmental performance history* under such so-called "bad actor" laws, provides the public with a valuable mechanism for contesting a company's claims of environmental responsibility and provides the company with a strong incentive for corporate compliance.

- *Exempt Information*

*Security and Privacy* Instruments and mechanisms for assuring public access to information are constrained by the necessity for assuring *personal privacy* and *national security*, and by the privilege sometimes granted to the private sector of withholding from certain information designated as *Confidential Business Information (CBI)* on the grounds that disclosure could expose the source to competitive disadvantage. Unless the exemptions provisions of information access systems are carefully designed to assure the validity of CBI claims in a timely and transparent manner, there can be significant opportunities for abuse of the private sector privilege leading to direct conflict with the public's right to know.

Similarly, abuse of the *national security privilege* can significantly impact freedom of information. In the US, for instance, recent disclosure of previously classified information has revealed that during the Cold War, the federal government deliberately exposed private citizens to radioactive materials in medical experiments without explaining the health consequences to them, and sprayed hundreds of square miles of land (including land across the northern border into Canada) with suspected carcinogens without informing the exposed public before or after the experiments.

In an effort to balance the need for legitimate secrecy with the public's rights to privacy and information, exclusions and exemptions are often coupled with laws to both protect citizens from harmful disclosures about their personal lives, and allow them to discover and if need be correct information that the government or private institutions may hold concerning them. In the US, for instance, the *Privacy Act* allows the public to obtain and require correction of government and

financial institution records concerning their private lives.

*Financial transactions* of corporate entities are often held to have a special confidentiality privilege akin to both individual privacy and national security. Negotiations between governments and lending institutions like the World Bank, for instance, are typically closed to the public.

- *Excluded Information: Judicial Secrecy*

Besides the usual exclusions and exemptions concerned with scope (amount or extent of pollution, economic size or sector, personal privacy, national security, trade secrets, etc.), information may be withheld from the public due to a variety of adjudicatory reasons. Information that would jeopardize an ongoing criminal investigation, for instance, is commonly made unavailable. Although generally regarded as a valid use of exclusionary rules, such an exclusion may become an abuse of access when the instigation keeps information from public scrutiny for an unwarranted length of time to pursue or complete. A variety of exclusions are provided by various laws and programs discussed in this paper.

Two kinds of judicial secrecy of general concern are discussed here: 1) lack of public information about laws and regulations and legal options open for public action; 2) sealing of court records so that, for instance, the public does not have access to opinions and settlements. A third judiciary-related impediment to information, that concerning the lack legal protections for so-called "whistleblowers", the absence of which in effect silences employees of government and industry who might otherwise disclose information to the public, is not examined here.

*Legal options and requirements* A public that does not know its rights cannot exercise them adequately. Just as lack of data about environmental conditions deprives citizens of factual basis for legal action either to force disclosure of the information it wants, or to force compliance of agencies or industry with environmental law, lack of basic information about an industry's requirements under the law, or the options available to citizens, eliminates the procedural basis. The complaint process under Mexico's *General Law of Ecological Equilibrium and Environmental Protection*, for instance (see below, under *Environmental Impact Assessment*), is of little value to citizens unless they are already informed of the legal requirements and actual performance of a facility. Access to information about adjudicatory options for citizen participation in ensuring environmental compliance is especially important when other avenues of access to environmental information are lacking.

*Sealed records* The Editorial Board of the *New York University Environmental Law Journal* noted recently in the introduction to a "Colloquium on the Implications of Secrecy in Environmental Law, that judicial secrecy—"the ability of parties to operate, negotiate, resolve, and remediate environmental disputes without direct accountability to the public, is becoming an accepted part of modern environmental litigation. Litigants increasingly want their settlements stricken from the formal record" (NYU 1993, 187).

Litigation is often a significant source of environmental information. Through the process of "discovery", for instance, litigants can elicit facts from each other in order to present relevant information in court. Discovery can be a rewarding mechanism for the exchange and dissemination of environmental information for, in an open court system, such information is ordinarily part of the official court record which is available to the public. In a time of increasing toxic torts and class action cases about the effects of hazardous materials on workers and the public, pre-enforcement investigations as well as post-trial settlements that lock up the facts presented during trial can have a chilling effect on the free flow information, preventing others

exposed to the same or similar hazards from access to the current state of knowledge about the potential effects of toxic substances, etc.

In efforts to improve access in these matters, some states in the US have recently passed laws, and bills have been introduced in the US Congress, to limit restrictive court orders and confidentiality agreements when such orders would prevent the public from gaining access to information about threats to public health and safety. In addition, the US-EPA has recently begun considering action to make some categories of enforcement records open to the public.

### *Procedural Elements*

Procedural elements of public access involve issues of data collection and distribution, data management, and database maintenance, all of which may enhance or discourage information flow.

- *Collection authority* While lack of technical and financial resources and political will can and do significantly limit governments' capability for collecting environmental data, the most fundamental incapacitating factor is lack of statutory or regulatory authority. To varying degrees, both countries suffer from this lack. The US, for instance, has limited federal authority for protecting groundwater from contamination, or for environmental regulation of hardrock mining. Mexico, on the other hand, pursuant to its Environmental Infrastructure loan from the World Bank, recently undertook to write hundreds of needed environmental regulations and standards within a few years. Even when agency authorities exist, lack of effective enforcement or other oversight and accountability mechanisms (including, for example, authority for one branch of government to oversee another and authority for the public to participate in enforcement processes) can be equally as devastating to informational access.

- *Quality of Information* Issues of information quality and usefulness are closely related to issues of scope. Access to bad information is sometimes worse than no access at all. An effective public access system must address questions like, "How *good* is the data, how accurate, how reliable? Has it been collected through *mandatory reporting*, or has it been supplied voluntarily, and in either case, has it been accepted uncritically by the government from the reporting facility, or has there been some *verification* or *validation* through actual monitoring? Have QA/QC (*Quality Assurance/Quality Control*) protocols been followed in data collection, analysis and reporting (including proper laboratory procedures, *chain of custody* in handling, etc.), or is the information purely anecdotal? Is the *basis of the information* transparent, or is it only "interpreted" information, with no accompanying *raw data* or other means to verify the accuracy or validity of the interpretation? One of the main purposes of providing public access to environmental information is to allow *accountability* of both the government purveyor of information and the government's information source. High quality information demands adherence to a high standard of accuracy, as well as clear disclosure of the *limitations of data* or other aspects of our knowledge. In determining the advisability of proceeding with a proposed action, for instance, it is as important for the public to know what is *not* known about potential impacts as what *is*.

- *Data standardization* Effective mass communication of technical information requires standardized parameters. Public access in both countries and between them is hampered by lack of uniform environmental and access *terminology* among the various governmental units, a difficulty that is compounded by the general public's unfamiliarity with the "scientific rationality" typical of environmental agency decision-making. Although environmental phenomena are not constrained by bureaucratic and political boundaries, the search for information about the environment is frequently stymied by those boundaries because each

agency has its own environmental vocabulary, its own filing system, its own way of looking at things and doing business. At present, for instance, there often is not even agreement among agencies in either country, or among the three countries themselves, on what *name* to use in referring to a given chemical or hazardous waste. Effective access to information requires some inter-agency and inter-governmental standardization or *harmonization* of basic environmental *terms and norms*, including agreement on common *units or parameters of measure and indicators of health and environment* condition; as well as common *identifiers and descriptors* for chemical and biological species; hazardous and toxic waste; specific diseases and public health conditions; ecosystem units; physiographic regions; basin and watershed definitions; and communities and populations, both human and nonhuman.

- *Recipients of information* Like sources and content of data, recipients is an open-ended global concept. While certain groups (governments, medical personnel, workers, news media, planners, etc.) are often thought of as the principal audience for government information, in matters of environment, everyone is in an "interested party," and providing access to public information must be understood as providing access to any individual as well social groupings.

- *Dissemination of information* While access to information is often discussed in terms of documents, *direct oral exchange* at public meetings and hearings is an equally important means of access, and an indispensable mechanism for providing opportunities for public participation and for proving transparency. *Mechanisms for distribution* of documents include hard copy and electronic distribution, both of which are indispensable to public access in a world that includes a diversity of cultures, from traditional to post-modern. In this "Age of Information," in the midst of an "Information Explosion," electronic access is essential so the public can join in and monitor traffic on the "Information Superhighway."

Access to documents is greatly dependent upon their *format*, which involves questions of not only of graphic design and clarity, but such matters as consistency. The information contained in material safety data sheets (MSDSs), product labeling, hazardous waste shipping manifests and hazardous cargo placarding, for example, has been found to be much more accessible if the formats of the documents are standardized so that readers always know to look in a particular location on the document or on the transportation vessel for a particular category of information. Such uniformity of design and placement is especially important under emergency conditions when response time is a matter of life and death. As discussed below under the heading *Strategically Integrated Data Management*, consistency and standardization are a *sine qua non* of electronic access mechanisms.

Active dissemination (as opposed to passive disclosure) requires affirmative outreach through *wide publication* of government studies, accurate, comprehensive and *timely briefings* and press releases for the news media; frequent use of *public service announcements*, information *hotlines*, electronic *bulletin boards* and other *public education* strategies; *seminars*, *videos* and other *training* materials; and, in order to share responsibility and benefit from outside resources, foster *information-based partnerships* with co-implementors (e.g., state and local governments) and with stakeholders, including representatives of the private and public sectors (EPA-IRM 1994, 7).

- *Linguistic/semantic conditions* It is essential to the democratic principles of citizen right to know that information be presented in a manner that facilitates understanding and analysis by the public. Government documents written in esoteric scientific jargon or dense "governmentese" present sometimes insurmountable barriers to the public. Similarly, documents and public meetings that are available only in one language are inaccessible to those who do not read that language, a situation that frequently occurs in both countries in regard to projects involving

indigenous peoples. To be useful, information must be both *readable* and *intelligible*.

- *Conditions of inspection* The conditions under which public inspection of information is allowed is critical. For instance, *lack of privacy* may make a citizen uncomfortable examining portions of a file or document containing sensitive information. And the timeliness of government response to requests for information and the amount of *time allowed* for inspection may be severely limiting factors, especially when documents are lengthy or highly technical. The *fees* charged for locating or copying requested files can be prohibitive to some members of the public. In the US, for instance, access to government information was significantly limited for some citizens when rules of the Office of Management and Budget pursuant to the *Paperwork Reduction Act* of 1980 required that many documents be sold through the National Technical Information Service (NTIS) rather than being available free of charge from the issuing agencies. One of the most limiting conditions of inspection is the *location* of information.

The location of documents and oral proceedings is often highly restrictive, available, if at all, only at offices distant from affected parties and sites, or kept out of reach by arcane bureaucratic procedures. Permitting documents or impact studies, for instance, are often available only at agency offices in state or federal capitols; federally-required environmental impact assessments in Mexico, for instance, are usually available only at the Mexico City office of the regulatory agency, though the facility being permitted may be hundreds of miles away from that office. *Administrative rules* for requesting information may be so demanding that in effect, as citizens often complain about the US *Freedom of Information Act*, they require that in effect, requestors already know the information they are seeking and precisely where it is located in government files. Citizens in most parts of Mexico are effectively denied access to the *Gaceta Ecológica*, *Gaceta Sanitaria* and *Gaceta Laboral* (the monthly publications which contain, among other official information, notice of new environmentally-related regulations), because they are available only at the Mexico City offices of the appropriate agency (SEDESOL, Secretaría de Desarrollo Social, the Ministry of Social Development; Salud, the Secretaría de Salud, the Ministry of Public Health; STPS, the Secretaría del Trabajo y Previsión Social, the Ministry of Labor and Social Security; etc.).

- *Participation* The experience of Mexico and the US during development of the NAFTA has reaffirmed the belief of many that "[e]nvironmental issues cannot be properly dealt with by government alone. Citizen and social organization *involvement* is of the utmost importance to reach effective solutions" (Block 1993, 10347). Public participation in *environmental decision-making* is one of the most important routes of public access to information as well as a *stimulus* to generation of the kind and quality of information needed by the public and decision-makers. Social participation is mandated by Mexico's *General Law of Ecological Equilibrium* and all US environmental laws, but opportunities for meaningful public involvement in environmental decision-making, and active efforts by government agencies to increase involvement, are often inadequate in both countries. Lack of *transparency* and *accountability* are issues raised again and again in criticism of both countries' environmental programs, and citizens in both countries have repeatedly called for public involvement, from the earliest to the last stages of decision-making, as the appropriate means for overcoming those perceived problems.

Access and participation are interdependent needs of the public, for even if the public receives information, about a governmental decision-making process, if the public has no *right to participate* or *provide input* to that process, the value of the information is significantly limited; and conversely, even if the public is given opportunity to participate, if the public does not have appropriate information, the participation cannot be meaningful. Both participation and access require for their satisfaction implementation of such well-known mechanisms as *timely notification*, *opportunity for comment*, *prompt and thoughtful response*, and proactive efforts on

the part of government, to assure *public education* and *worker training*—especially state-of-the-art training of medical personnel and emergency responders, and on-site training of industrial and agricultural workers. In Mexico, draft standards proposed pursuant to the *Federal Measures and Standards Law (Ley Federal sobre Metrología y Normalización)* are the only documents mandatorily made available for public comment.

One of the primary obstacles to public access in both countries, for instance, even when the public does have the right to appeal the denial of a request for information, and even when opportunity for comment is provided, is the *length of time provided for comment*. In the US, for instance, in the US, periods for public comment may as short as thirty days, during which time the interested citizen must find out that a comment period has opened, obtain the material for review, review it, and get comments to the agency; if the material is voluminous or relatively technical or requires considerable background research (as, for instance, in the case of claim for confidentiality), it may well be impossible for even experts in the field to make *meaningful comments*. If a *short comment period* is combined, as is often the case, with *short deadlines* for the public to file appeals, access has for all practical purposes been completely blocked.

### **Points of Access**

Mexico and the United States have fundamentally different legal systems, so it is difficult to compare their respective programs for assuring public access to environmental information. The principal difference may be that the U.S. has a common law tradition, whereas Mexico has a civil law tradition; consequently, the U.S. puts greater reliance on litigation through the judiciary for enforcement, while Mexico relies more on administrative measures.

Furthermore, while the US has many federal laws relating to environment, including distinct statutes for specific environmental media or receptors (e.g., air quality, surface water, drinking water, endangered wildlife species, foodstuffs), for specific locations (e.g., waste facilities, highways, mines and workplaces in general), each with its own provisions for public access to information as well as several laws dealing specifically with access to information; Mexico's centralized legal system has fewer laws and regulatory agencies, with the preponderance of environmental regulation being administered through SEDESOL pursuant to the *General Law of Ecological Equilibrium* and through state environmental agencies pursuant to such other federal laws as the *Labor Law*, *Public Health Law* and *Water Law*.

In both countries, environmental information is held by a wide range of agencies and offices, each of which tends to have its own policies and procedures for information access. In addition to domestic laws and programs, both countries are party to several international agreements (Montreal Protocol, Rio Declaration, Agenda 21, Biodiversity Treaty, etc.) and participants in international organizations (OECD and UNEP, e.g.) that promote enhanced public access to environmental information.

One means of comparison is to look at the two systems in terms of basic types of legal mechanisms for public access to information. In the US, for example, pertinent laws may be classified as general freedom of information laws, right to know laws, and environmental impact assessment laws. Elements of each of these types is found to greater or lesser extent in several US laws, including media- and sector-specific environmental laws.

In Mexico, on the other hand, access issues are usually approached in terms of the constitutional right to information and other human rights provisions of constitutional law, and through specific provisions for social participation, environmental impact assessment and other disclosure mechanisms of the *General Law* (Carmona 1993, 46).



Another means of comparing the public access systems in the two countries, one perhaps more useful from the point of view of citizens seeking access, is to compare their legal instruments according to the levels of inquiry they enable, ranging from the very general (inter-agency and agency level) to the more specific (site, facility or project level), to the very specific (substance, organism or product level).

### *Agency Level Access*

In Mexico, public access to environmental information depends principally on Article 6 of the federal Constitution, which broadly states that the right to information is guaranteed. The Mexican *General Law of Ecological Equilibrium* specifically refers to access of information only in regard to public consultation on environmental impact appraisals and public complaints of noncompliance before environmental officials. Recently, public access has opened considerably with implementation of the *Federal Measures and Standards Law of 1992 (Ley Federal sobre Metrología y Normalización* which provides for 90-day public comment periods on proposed standards (Normas Oficiales Mexicana/Official Mexican Standards).

In the US, the most general instrument for public access to government information is the *Freedom of Information Act* of 1966, as amended (FOIA), which was adopted principally to broaden the narrower disclosure provisions of the *Administrative Procedures Act* (APA). (The APA, through a number of specific practices, requires federal agencies to operate in a transparent manner that encourages public participation, prohibits them from making "arbitrary and capricious" decisions and requires that they provide a written record of facts supporting their actions. Several so-called "sunshine laws" and "open-meeting laws" providing for transparency at the federal and state levels are patterned on the APA.)

FOIA requires all executive branch agencies of the federal government and government-controlled corporations (e.g., US Postal Service) to make all documents in their possession, with certain exceptions, available to the public. FOIA creates a presumption that government must disclose information, subject to certain exceptions, and attempts to provide a practical mechanism by which the public may exercise its broad constitutional rights of inquiry while protecting the equally strong constitutional guarantees of privacy. The federal court has affirmed that citizens have the right to information under FOIA for any reason, with no showing of relevancy required.

Unless specifically exempted by the statute, or superseded by another statute, FOIA requires disclosure of all "agency records" on three kinds of information 1) certain documents such as rules and procedural norms must be published in the Federal Register; 2) final opinions and statements of policy must be made available for public inspection or copying, or published and made available for sale; and 3) other documents must be made available to any member of the public upon specific request.

In order to provide public notice and guidance, FOIA requires that two categories of information be automatically disclosed: first, it requires notification through publication in the Federal Register of basic government information such as agency organization, structure, functions, substantive rules and general policy; and second, that agencies must routinely make available for public inspection such materials as final opinions from the adjudication of cases, specific policy statements and certain administrative staff manuals. The federal court has held that failure to comply with these two basic disclosures can invalidate related agency actions.

FOIA contains citizen suit provisions that allow citizens to sue an agency in federal court for failure to comply with the law in regard to a legitimate request. For instance, if an agency doesn't

respond to a request within ten working days (which may mean as little as acknowledging receipt and stating an expected time when the requested information will be provided), or if the agency denies the request, a requester may file suit within specified time limits (generally, a 6-year statute of limitations).

- *Obstacles to access under FOIA* FOIA sets a broad definition of confidentiality which, especially in combination with restrictions under the Privacy Act and the now-expired *Paperwork Reduction Act*, has allowed industries and government to withhold a great deal of information, thereby hampering the free flow of information and access to it. FOIA provides for exemptions to disclosure if the information requested falls into any of nine broad categories, including "non-final" opinions; national security documents; personnel and medical files disclosure of which would constitute an invasion of privacy; ongoing criminal investigation materials; certain inter- or intra-agency memoranda or letters, etc.

All federal agencies in the US have specific procedures for implementing FOIA, and the decision of whether or not to deny a request for information is discretionary with the agency. A denial will ordinarily be on the grounds that the request clearly falls within one of the nine exemption categories, but may depend more or less on the agency interpretation of the statute. For instance, because the statute does not precisely define basic terms like "record" and "trade secret," there is some uncertainty about how a given agency will interpret the terms in response to a request, an uncertainty that has frequently enabled industry and government to invoke this exemption to withhold environmental information and has generated costly and time-consuming litigation.

FOIA provides for charging of fees for a) costs of searching for documents, b) "direct" cost of analyzing documents to decide if they should be disclosed, and c) duplication costs. If an agency cannot provide the documents at a nominal cost, it must explain why not. Fee waivers are provided generally if the information is to be used for non-commercial purposes.

Since FOIA puts the burden on the public to identify and demand disclosure of the required information, its value to the public is somewhat limited. For instance, agency interpretations of the statutory requirement that requests "reasonably describe" the information sought, has led to citizens complaints that they must already know the information they are seeking before they can request the information in a form that the agencies will accept. This burden is one of the reasons citizens suits often use FOIA in combination with single-media environmental laws like the *Clean Air Act* and *Clean Water Act*, most of which contain specific information collection and dissemination provisions that supersede FOIA and are more restrictive in allowing exemptions.

### ***Site/Facility/Project Level Access***

In regard to environmental information, most US laws are more specific than FOIA, focusing on sites, facilities or projects rather than agencies. Regulatory activities in both countries tend to focus on these specific areas of activity and to collect information about them in terms concerning either *pre-operating conditions*, *normal operating* or *post-operation conditions*, or *emergency incident conditions*.

- *Pre-Operating Conditions* Environmental Impact Assessment: Perhaps the easiest point of comparison between the public access systems of the two countries is the environmental impact assessment (EIA) process for proposed projects. Environmental impact assessments (or *reviews*, *appraisals*, or *analyses*, as they are variously called) are universally recognized as important instruments for providing public access to environmental information. The Rio Declaration, for instance, calls upon nations to require EIAs for any activities "likely to have a significant adverse impact on the environment" (Rio, Principle 17). The essential components of

EIAs are also generally agreed upon. For instance, the United Nations Environment Programme's *Goals and Principles of Environmental Impact Assessment* calls for an EIA to disclose descriptions of the proposed activity and the potentially affected environment; alternatives to the proposal; mitigation measures; uncertainties and gaps in knowledge about the impacts; an estimation of cross-border effects; impartial examination of the information; opportunity for comment by the public, government agencies and experts; adequate time to consider comments; and an official record of written decisions (UNEP 1987, Principles 4,6-9). The Organization for Economic Cooperation and Development (OECD 1979, 1985) and other international bodies have set out similar lists of EIA characteristics.

The primary US law requiring environmental impact assessment is NEPA (*National Environmental Policy Act* of 1969). NEPA relies on procedural process rather than substantive standards to fulfill its purposes. NEPA requires federal agencies to evaluate, in consultation with the general public and other agencies, and to disclose, the potentially significant environmental effects of proposed federal agency actions. If the proposed action is considered "major", NEPA requires preparation of an extensive Environmental Impact Study. For less than major actions, a lesser document (e.g., an EA— Environmental Assessment) may be prepared.

The process of preparing the less intensive EA is similar to that for the full EIS, with involvement of the public being required only to the extent "practicable", a requirement that leaves a great deal of discretion to the agency, though simply making the final EA available is seldom considered sufficient involvement.

The focus of NEPA ranges from very broad projects (like nationwide forestry or rangeland management programs) to the site specific (a particular road construction project or mine proposed to be built on public lands). The pre-project information disclosed by NEPA-required impact studies must consider impacts to the full spectrum of environmental factors (air, water, soil, biological resources, human and biotic communities, resource depletion, contamination, demographic and economic conditions and trends, etc.) and can provide invaluable information about the environment at project sites for a wide variety of planning purposes.

Because NEPA contemplates a wide use of the data discovered during the impact study, the implementing regulations set detailed requirements for collection, analysis, presentation and dissemination. The assessment must disclose potential environmental impacts, possible mitigation measures, compliance with other federal laws, and consideration of a range of reasonable alternatives to a proposed action (including the alternative of no action). The analysis must also consider potential cumulative impacts resulting from the proposed action when added to other past, present or reasonably foreseeable future conditions or actions.

Regulations also require that the information provided be of high quality, based on state-of-the-art analysis methods, that the analysis address potential impacts incomplete or unavailable information and other uncertainties, that the information be communicated clearly in a manner understandable to the public, and that the rationale behind impact estimates be displayed in the assessment documents.

Under NEPA, an agency contemplating a major action must comply with certain other laws that require the agency to consult with other agencies, and to disclose and consider the official opinions of those agencies regarding potential impacts, as well as their recommended mitigation procedures. For instance, pursuant to the *National Historic Preservation Act* the agency must consult with the applicable state Historic Preservation Office concerning protection of cultural resources and with the Fish and Wildlife Service concerning threatened and endangered species pursuant to the *Endangered Species Act*.

Recognizing that "to the extent that access to information is restricted. . . democratic participation is restricted" (Bass and Plocher 1989, 437), NEPA requires public notification at the outset of the EIS process, opportunity for public participation (generally, "issue-scoping" meetings in the vicinity of the planned action), and opportunities for public comment on both the draft and final EIS. The US system puts great weight on this public disclosure and involvement, requiring that scoping meetings are preceded by a public Notice of Intent (NOI) to initiate the EIS and that the agency must publicize the availability of the draft EIS, provide a copy to any person, organization or agency that requests one, actively solicit comments on it from appropriate state and local environmental agencies, Indian tribes potentially affected and the general public, and hold public meetings or hearings when there is substantial interest or controversy about the proposal, or when requested by another agency with jurisdiction over the action.

Partly because it applies only to agencies of the federal government and not to projects of private parties (except insofar as such projects are undertaken under federal auspices, with federal funds, etc.), NEPA does not require that an agency act on the basis of disclosed information to curtail or modify a proposed action. Rather, NEPA assumes that agencies informed with the disclosures, and given the added incentive of pressures provided by an informed public, will act wisely and responsibly to protect human health and the environment. By optimizing the interchange between agency and public at the predecisional stages, the US process gives an agency the opportunity to shape its final project in a way that addresses and (as appropriate) accommodates public concerns, and thus may serve to avert or mitigate future conflicts.

An important part of NEPA in this regard is the requirement for agencies to respond to public comments received during the scoping and draft EIS stages. This requirement is typically met by publication in the final EIS of a summary of the scoping comments and reproduction of the public's written comments on the draft along with the agency's formal written response. The agency must circulate the final EIS to any person, organization or agency that requests one, and to any party that commented on the draft. Written public comments on the final EIS, as well as documentation of the agency's project development process, are also available to the public. If the agency decides to take action on a proposal, it must prepare and publish a *Record of Decision* and make it available to the public.

- *Obstacles to access under NEPA* In general, NEPA requires very broad disclosure but provides for certain FOIA-like "Categorical Exemptions" and for other exemptions if information is unavailable or too costly to find, for instance. Controversy occurs around agency interpretation of terms like *significant impact* and questions about what levels of hazard and risk an agency must disclose.

The primary Mexican environmental law is the *General Law on Ecological Equilibrium and Environmental Protection* of 1988 (*Ley General del Equilibrio Ecológico y la Protección al Ambiente*, or LGEEPA), which requires that prior to beginning construction, new private or government sources of potential "ecological imbalance," or sources planning major modifications which may cause such imbalance, must prepare environmental impact assessments (*Manifiestos de Impacto Ambiental* or MIAs) which are to be reviewed by either state or federal authorities. Depending on the potential degree of impact, SEDESOL may require a "general", "intermediate" or more detailed "specific" environmental impact study.

In the case of an activity which is specified by LGEEPA as an activity subject to the environmental assessment requirements, but which the applicant believes does not have significant potential for adverse environmental impact, or is not expected to exceed the limits

permitted by the Official Mexican Norms for releases to air, water or soil, the agency requires submission of a less-intensive Prevention Report (*Informe Preventivo*), which the agency then uses as the basis for determining if an MIA will be required and, if so, at what level.

In the case of certain activities considered highly dangerous (large construction sites or industrial facilities, for instance, or those using certain "high hazard" substances beyond designated threshold amounts), LGEEPA also requires the source to prepare a separate risk analysis (*Estudio de Riesgos*) in order to minimize and plan for accidents.

The types of projects automatically subject to federal EIAs include federal public works projects; hydroelectric projects; public highways; oil, gas and coal slurry pipelines; the chemical, steel, paper, sugar, beverage, cement, automobile and electrical industries; mineral and non-mineral mining and refining industries; federal tourism developments; hazardous waste facilities; and forestry projects. State and municipal environmental assessment laws may pertain to additional types of activities. At present, 29 Mexican states have environmental laws, all with provisions for MIAs.

Like NEPA, the LGEEPA requires the EIA to disclose potential environmental impacts, possible mitigation measures and compliance with other federal laws. Unlike NEPA, the Mexican law does not require consideration of a range of reasonable alternatives to a proposed action, nor consideration of potential cumulative impacts (though the reviewers are not prohibited from considering these).

Again unlike NEPA, the EIA process under the LGEEPA couples pre-construction environmental assessment with a permitting procedure under which SEDESOL upon review of the EIA, must approve, reject or request modification of it. If approved (with or without modifications), the EIA becomes the basis of emissions licenses, wastewater discharge permits and one or more of a variety of hazardous waste generation and handling authorizations. The operating conditions set by the agency include reporting requirements and may provide for monitoring and inspections to demonstrate compliance.

The agency also issues operating licenses to existing facilities that submit applications without preparation of an EIA; based on consideration of several factors, these facilities may be requested to submit a risk analysis, or both, depending on the type of operation.

Although public participation is recognized by the LGEEPA (cf. Art.33 and Title V), citizen involvement is not required in the preparation of EIAs, but only for public comment on conditions of the final document. When an environmental assessment is completed and approved, a notice is published in the federal *Gaceta Ecológica* (Ecological Gazette) and the assessment is made available to the public once project conditions have been set. The public is not notified or consulted during this initial conditions-setting phase. Upon publication of the notice, any individual may request SEDESOL to consider additional conditions, which may be difficult for the agency to impose if the applicant has already begun construction or operation with full agency authorization. In order to review the actual document, the citizen must travel to the agency's office in Mexico City.

Although LGEEPA does not require public participation in the preparation of EIAs, SEDESOL is currently circulating (pursuant to Chapter V Article 18 of LGEEPA) a National Environmental Plan containing national environmental criteria for development. The National Plan is intended to guide land use, zoning and public works to protect ecosystems and other natural resources, and includes criteria for identifying potential natural reserves and ecological regions. Some states are also developing environmental plans parallel to the federal plan which require public involvement prior to plan finalization..

- *Obstacles to Access under LGEEPA* As discussed above, LGEEPA presents several impediments to public access to information, including difficulties in obtaining access to enforcement proceedings; lack of public notification and public participation in the pre-decisional phases of the EIA process; lack of access to risk analyses conducted outside the EIA process; restriction of the EIA requirements to projects proposed or proposing modifications after 1988 (thereby excluding information about facilities in existence prior to that date, which include some of the most polluting sources); and providing only a single repository for EIA documents, in Mexico City, making them effectively unavailable to citizens living in remote locations. In addition, allowing only after-the-fact public comment compounds the problem of having the EIA prepared by the applicant in relative secrecy where the discretionary choices that determine the assessment's outcome are not open to public scrutiny and, due to the mathematical complexities of risk analysis, not easily discovered by a reviewer after the fact.

- *Public Access to Enforcement Process*

Neither NEPA nor LGEEPA allows for a private cause of action. In the US, plaintiffs wishing to take action against an agency for failure to comply with NEPA may have recourse to citizen suit provisions of several environmental laws or, more usually, to the broad remedies of the *Administrative Procedures Act*.

The LGEEPA does not provide for citizen suits either to compel the agency to comply with its own requirements, or to assure the adequacy of disclosures in an environmental impact appraisal, or to modify its EIA conditions; neither does it provide the opportunity, as most US environmental laws do, for citizens to compel an agency to disclose a facility's noncompliance, or to compel the agency to take judicial action against a facility. Mexican citizens have available two other courses of redress. Under the LGEEPA, a citizen may file a complaint (*denuncia popular*) with SEDESOL for acts or omissions which produce ecological imbalance or injury to the environment in violation of the Law. SEDESOL must undertake an investigation of such a complaint and respond to the complainant within 30 days about the results of the investigation and what actions, if any, the agency has taken to correct the situation.

Legal experts in Mexico disagree about whether or not LGEEPA entitles citizens to copies of the agency's investigative reports (Block 10348n), but in practice they are generally not made available.

Citizens who claim personal injury or property damage may also request SEDESOL to issue a "technical opinion" on the matter; if issued, such an opinion carries evidentiary weight in the event of a court case, so parties affected by an out-of-compliance operation might use the technical opinion as evidence in a suit against the violator. The complaint and technical opinion processes are carried out at the administrative level.

Citizens dissatisfied with the results of an agency investigation, or the way its is conducted, or the failure of the agency to pursue an investigation, may consider other legal avenues. For instance, they may choose to claim that the government's action or lack of action constitute a violation of human rights under one or more of the articles of the Constitution dealing with natural resources (Art. 27), public health (Art.4), ecological balance (Art. 27,73) or other appropriate articles (Carmona 1993, 49). If they are successful, they may win a hearing resulting in a non-binding advisory opinion by a human rights commission. As another alternative, they may choose the highly unusual course of reporting the agency to the federal Comptroller, who, under unusual circumstances, may require redress in some form from the agency.

More likely than either of these alternatives, the citizen may choose either to file a civil suit, or

may claim that the agency has violated his or her constitutional right, and commence an "*amparo*" action for constitutional remedy. Both these kinds of judicial recourse are typically difficult for citizens seeking redress on environmental matters because Mexican courts have customarily required proof of individual harm and have not allowed standing to plaintiffs representing "collective" or "diffuse" (i.e., "class action") interests like environmental protection (though LGEEPA Art. 189 would appear to clearly allow for such collective action for the purpose of reorienting "the relationship between society and nature" (Carmona 1993, 50).

In effect, Mexican civil law tends to bar efforts at judicial redress by the same citizens who are allowed to bring administrative complaints under LGEEPA. Furthermore, LGEEPA, like some US environmental laws, also discourages citizens from seeking judicial redress because it does not provide for reimbursement of legal costs to successful litigants.

- *Public Access and Public Participation*

In both countries, final decisions, project development and project implementation are left to agency discretion, which seeks to balance information gained during the EIA process with management goals and objectives.

While neither country requires Prior Informed Consent of affected citizens, and both rely to greater or lesser extents on pressure of public opinion in conditioning project development, the US system, by mandating opportunity for informed public involvement at the crucial pre-decisional stages of a project and official written agency response to that comment, has the advantage of direct public input which may provide the agency with additional information on potential impacts, mitigative measures, alternatives, etc. which the agency's own scoping and analysis may have missed, and with more or less articulated statements of concern which the agency may be responsive to in its final decision.

Such solicited, structured, pre-decisional input from the public is likely to be not only a more reliable source of information for the agency than less formal efforts to gauge the general public's opinion(s), but may avoid expensive (or otherwise undesirable) public disapproval at a later stage of the project.

Public participation in the EIA process has the benefits of 1) building credibility for the project and the process, 2) identifying issues brought forward from a diversity of opinions and expertise, 3) enhancing public understanding of the project's technical aspects, 4) minimizing delays, and 5) achieving better decisions. Active participation of the public, which brings cultural and political rationales to the process, is often the only way an agency can ameliorate the impact of scientific rationales on public decision-making processes.

***Normal Operating and Post-Operation Conditions:***

- *Single-media Programs*

In both the US and Mexico, environmental regulation for normal business operations are carried out through permitting processes. In Mexico, for the most part these permits are issued by SEDESOL pursuant to the *General Law of Ecological Equilibrium*. Under LGEEPA, a single operating permit may require compliance and reporting in regard to several environmental media, although in practice the agency has focused on air emissions and hazardous waste. In the US, environmental regulation is carried out pursuant to several single-media environmental laws, each with its own permit systems, most of which, like LGEEPA, require facilities to monitor

their pollution releases, keep records of monitoring data and other pollution-related activities, and make that site- or facility-specific information available to the government. The laws are usually implemented through permitting processes, which usually mandate public participation in setting permit conditions and public access to compliance records.

Self-monitoring and record-keeping laws are indispensable to government enforcement programs because the government does not have the resources to monitor all regulated industries and activities. Similarly, public access to compliance data allows the public to supplement the government's oversight and enforcement role, by helping to identify regulated industries that are violating the laws and by encouraging the government to take action, as well as by publicizing the situation so that the industry may be pressured by public opinion into correcting its violations. Effective inspection programs, including authority for unannounced inspections, are an essential component of self-monitoring systems. Some states in both countries have established procedures for members of the general public to accompany state inspectors in order to assure transparency and facilitate public education about pollution control or prevention technologies and enforcement procedures.

- *Water Quality*: The US *Clean Water Act* of 1972, as amended (CWA), which requires public notification and availability of permitting documents and opportunity for public hearings during the process of permitting discharging facilities, is in many ways the US model for disclosure in such other self-monitoring laws as the *Clean Air Act*, which governs emissions of air pollutants; the *Safe Drinking Water Act*, which regulates drinking water suppliers; the *Surface Mining Control and Reclamation Act* (SMCRA), which requires reporting of clean-up activities at certain mining sites; the *Emergency Planning and Community Right-to-Know Act* (EPCRA), which requires facilities to report the stock and releases of several hundred hazardous materials; and the *Toxic Substances Control Act* (TSCA), which requires manufacturers (including importers), processors and distributors of toxic substances to report a wide variety of information on the health and environmental effects of their products.

In Mexico, LGEEPA and the *National Water Act* of 1992 (*Ley de Aguas Nacionales*, LAN) set the framework for control of water pollution, which is administered through four agencies: SEDESOL/INE, the Ministry of Public Health, the Ministry of the Navy (Secretaría de Marina) and the National Water Commission (CONAGUA or CNA, the Comisión Nacional de Agua), a decentralized autonomous office of the Ministry of Agriculture and Hydraulic Resources (SARH, the Secretaría de Agricultura y Recursos Hidráulicos).

While new discharging facilities are required to have permits, the requirement for existing facilities may range from permitting to registration to various special conditions required by the regulatory agency. The LAN requires CONAGUA to regulate discharges that have potential to contaminate surface waters, including impoundments and wells that may contaminate groundwater. LGEEPA authorizes SEDESOL/INE to set standards for discharges and to regulate discharges which contain hazardous wastes or other hazardous materials. The Ministry of the Navy is responsible for controlling pollution in marine waters and discharges from mobile sources, and the Ministry of Health is in charge of drinking water purity. The LAN authorizes state and local agencies to regulate discharges into urban sewer systems.

The same federal agencies are responsible for setting water quality standards and criteria: CONAGUA establishes designated uses of bodies of water; SEDESOL/INE establishes discharge limits and effluent standards to protect water quality and aquatic ecosystems.

LGEEPA requires SARH and SEDESOL, in cooperation with the Ministry of Public Health (Secretaría de Salud) and local jurisdictions, to establish water quality monitoring programs and



report instances of significant contamination to CONAGUA. CONAGUA, in turn, keeps hardcopy records of the monitoring data and data from discharge permit reports. Although opportunities for public comment are required prior to promulgation of water quality standards, there is no apparent legal requirement, nor systematic voluntary effort, for public disclosure of effluent monitoring data.

● *Air Quality* Air quality is regulated in the US pursuant to the *Clean Air Act Amendments of 1990* (CAAA), which provide for extensive self-monitoring and reporting by permitted sources of emissions of six "criteria pollutants" (carbon monoxide, sulfur dioxide, nitrogen dioxide, ozone, particulates and lead) as well as emissions of any of 189 "air toxics" on list written into the law. The CAAA also provides for specific tracking of emissions that contribute to acid rain and (pursuant to the Montreal Protocol) those that contribute to destruction of stratospheric ozone.

Mexico collects air emissions data under several programs and maintains several air quality databases, the principal ones being the National Inventory of Greenhouse Gases maintained by SEDESOL's National Ecology Institute (Instituto Nacional de Ecología, INE), and the National Information System for Fixed Sources (Sistema Nacional de Información de Fuentes Fijas, or SNIFF), also maintained by INE. SNIFF was begun in 1992 (and a year later in the Mexico City area) in order to collect reported materials accounting data on major fixed facilities. As discussed above, INE issues operating licenses to new or modified facilities that have satisfied the EIA requirements, and to existing facilities that submit applications without preparation of an EIA. Facilities licensed by INE are required to submit annual reports to INE detailing their air emissions and describing their production processes. The reported data is collected by INE under the SNIFF program. Some industries, including those considered to be "micro-industries," may be exempted from the reporting requirements).

Although originally intended to be a multi-media database, SNIFF currently contains data, including throughput data, only on sources of criteria air pollutants (particulates, carbon monoxide, nitrogen oxide, sulfur dioxide, and total hydrocarbons, including volatile organic compounds [VOCs]) from the metropolitan area around Mexico City and reporting sources in some states.

For the past few years, in cooperation with research and academic institutions, SEDESOL and the Health Ministry, have collected monitoring data from 59 cities in Mexico pursuant to the National Air Quality Program, and in November 1994, the agencies published draft ambient air quality standards. In the past few months, SEDESOL/INE has begun two monitoring programs in certain border cities, one for particulate matter and the other for air toxics. Once these monitoring programs are established, they will become the responsibility of the first the states, then the municipalities.

● *Hazardous Waste* The two principal hazardous waste programs in the US are CERCLA (*The Comprehensive Environmental Response, Compensation, and Liability Act* of 1980, popularly known as the "*Superfund*") and RCRA (the *Resource Conservation and Recovery Act* of 1976). CERCLA is primarily concerned with the identification, prioritization and clean-up of the nation's thousands of hazardous waste dumps and requires that information be made available on the existence of dumps and threats they pose to human health.

RCRA is primarily intended to regulate hazardous and municipal waste storage, treatment and disposal facilities, which it does through a CWA-type permitting system. It is pursuant to RCRA that EPA develops the official federal list of hazardous wastes, as well as the identifying

characteristics, testing criteria, treatment and disposal standards, uniform handling and shipping procedures, and other regulations. RCRA directs EPA to establish, in cooperation with the US Department of Transportation, a national "cradle to grave" tracking system for hazardous waste, the major feature of which is the *Uniform Hazardous Waste Manifest*, which must accompany all shipments of hazardous waste in the US. The Uniform Manifest identifies the waste by name, characteristic and number, and provides other chain of custody information on amount, source, intermediate place and method of treatment, and place and method of disposal.

SEDESOL collects data on hazardous waste through a number of programs and stores the data in several databases. Under the federal Record System on Hazardous Waste Generators, begun in 1993 and known as REPE, Mexico stores data from the *Hazardous Waste Generator Manifests (Manifiestos de Empresas Generadoras de Residuos Peligrosos)*, which includes identity of generator, description of the waste, generation process, and disposal method.

HAZTRACK, the reporting system for the transborder movement of hazardous waste, begun in 1992 pursuant to Annex III of the *US-Mexico Border Environmental Agreement (La Paz Agreement)* is a database of information from declarations of transboundary movements of hazardous waste between the Mexico-US border by the maquiladora industry. The State Delegations of SEDESOL/INE in Tamaulipas, Nuevo Leon, Coahuila, Sonora, and Baja California have access to the system and are responsible for getting the data into it.

The information on the variety of manifests and other hazardous waste reports collected by INE is to become the basis for a comprehensive hazardous waste database that would integrate the information reported in the different shipping papers, manifests and other declarations required by the LGEEPA, including identity of generators, chemical characterization and quantification of wastes, and management methods (including treatment, recycling, and disposal).

In addition to domestic programs, both Parties are signatories to the Basel Convention which calls for verification of environmentally-sound treatment and disposal of imported hazardous wastes, and both Parties have committed in the *La Paz Agreement* to develop a site discovery program to disclose location of hazardous waste sites along the Mexico-US border.

- *Multi-media Programs*

Over the past quarter century since the advent of the environmental movement, the growth of environmental science has converged with a growing awareness of the global dimensions of environmental problems to create a movement away from the single-media approaches that characterized early efforts at environmental protection, in favor of multi-media approaches that attempt to consider problems and their solutions in terms of broad contexts such as watershed and ecosystem protection, environmental justice, sustainable development and pollution prevention. Although the EPA has taken the lead among US agencies in fostering this new perspective, and has begun the complicated process of redirecting the agency's programs from single-media to multi-media focus, it has done so only after somewhat belated recognition that the single-media focus has so decentralized and narrowly focused the agency's programs that it has painfully acknowledged that in many ways it cannot adequately carry out its mission to protect human health and the environment (EPA-IRM 1994). Mexico's relatively new environmental program has the advantage of being able to by-pass many of the dead ends the single-media approach has led EPA into, and move forward instead directly into a multimedia regulatory system.

The main vehicle for EPA's move toward a multi-media approach has been *The Emergency Planning and Community Right-to-Know Act* of 1986 (EPCRA), which goes beyond the regulatory model of single-media laws in several ways in requiring that particular sites or

facilities make information available to the government and citizens on the kinds and amounts of hazardous materials they store, handle, process, release to the environment or otherwise use. Although the statute names only private businesses, presidential Executive Orders have extended applicability to federal agencies, including defense facilities.

Section 313 of EPCRA requires the EPA to conduct an annual Toxic Release Inventory (TRI) of approximately 654 listed "toxic chemicals" released to the environment by manufacturing operations that have ten or more employees and manufacture 25,000 lbs/yr or more or "otherwise use" 10,000 lb./yr or more of one of the toxic chemical. In 1992 (the most current inventory data available), some 23,600 facilities were subject to reporting, and nearly 3 billion pounds of the 368 chemicals then listed were reported as released to the environment, including 197 million pounds of known or suspected carcinogens. Many of the listed chemicals are not regulated by the agency under any other program but nonetheless must be reported.

In addition to release amounts, the TRI requires detailed substance-specific information on amounts emitted to the air from fugitive, non-point and point (e.g., stack) sources; discharges to a stream or to a public wastewater sewage system; and released as hazardous waste to underground injection, offsite treatment facilities (e.g., recycling or incineration), and disposal (i.e., landfills or surface impoundments).

EPCRA Section 313 adds significant procedural strengths to US public disclosure law, especially in regard to restrictions on claims of confidentiality, by requiring strict substantiation, including a showing at the time when a claim is submitted that claimed trade secrets really are secret, that there is a provable competitive harm which would result from disclosure and that the substance in question is one which a competitor could readily reverse-engineer. If a manufacturer is exempted from disclosing the identity of a substance, he or she must nonetheless report his or her own identity, the general physical and chemical character of the substance, and the amount released, thereby, in an important sense, allowing the public to "know what it doesn't know."

The law provides heavy penalties and citizen suit opportunities for facilities that do not comply with the TRI requirements.

The Toxic Release Inventory has been one of the few great success stories in environmental regulation in the US, and a testimony to the power of information to achieve change. It has been widely credited by the private, public and government sectors with reducing releases of toxic chemicals by millions of pounds each year, even though the law itself does not require reductions or implementation of pollution prevention practices. Rather, the successes have been achieved through citizen action resulting from public awareness.

The activation of the public may be the Act's greatest success, in shifting responsibility for environmental protection from the government alone to a shared responsibility of government and the public, and leading decision-makers in all sectors to the recognition that information "itself has become an instrument of policy, identifying new concerns, and providing citizens a greater degree of participation in environmental policy making. Access to information—at first haphazard, then reluctantly guaranteed, then actively encouraged—has expanded the concept and practice of democracy by promoting greater public accountability" (Sarokin and Schulkin 1991, 176).

- *Obstacles to access under EPCRA 313* There is a downside to the EPCRA success story, however, for while the law has been undeniably effective in demonstrating "the ability of information to dramatically promote and empower initiatives by the toxics community" (i.e., by industry and the public) (GAO 1994b, 54), nonetheless it is not very *efficient* from either an

engineering or public policy standpoint, in that they are often achieved only through a process of confrontation or threatened confrontation with the public concerned with high total release numbers. A good deal of the confrontation could be avoided if the TRI included facility throughput/materials accounting data, which would allow both plant managers and the public to cooperate on achieving pollution prevention at specific points in the process.

Furthermore, the important improvements in accessibility achieved by EPCRA Section 313 are significantly offset by the scope of the inventory, which exempts or excludes:

- a) most sources of toxic chemicals (e.g., such major sources as utilities, agriculture, hazardous and municipal waste incinerators, mining, transportation and agriculture);
- b) large "below-threshold" amounts of the listed toxic chemicals at manufacturing facilities
- c) millions of pounds of non-listed hazardous materials, including known carcinogens (e.g., benzo[a]pyrene), ozone-depleting substances, most pesticides, and others
- d) data on peak releases, which are generally a better indicator of actual exposure than the required annual figures
- e) facility-level throughput/materials accounting data which are more likely to be of use to industries in planning for source reduction and other pollution prevention efforts than end-of-pipe release figures
- f) process-specific use information that can be used to track pollution prevention progress.

The last two points are particularly significant in regard to the pollution prevention purpose of EPCRA and the *Pollution Prevention Act* which was appended to it in 1990. Until recently, the TRI could not disclose which of many possible materials management practices actually account for how reported reduction in releases were achieved; that is, simple end-release reporting cannot distinguish between reductions achieved by activities that occur before pollutant production (e.g., toxics use reduction and other source reduction methods) from those less desirable reductions that occur after pollutants are produced (e.g., incineration, off-site recycling or other treatment and waste minimization methods) and generally do not *prevent* pollution but merely shift it in another form to a different environmental medium. Consequently, the TRI could provide no particular data showing how cutting in-process pollution might coincide with cost-saving increases in production efficiency, and help convince an industry to practice, or the public to promote, source reduction rather than end-of-pipe methods (Hearne and Aucott 1992).

Furthermore, end-of-pipe reporting, unlike materials accounting, can mask significant toxics use reduction so industries are not given credit when they deserve it. For instance, a company might entirely eliminate the use of a carcinogenic substance in its production process, but even though the carcinogen no longer appears in its product, and the public, consequently, is no longer exposed to it, if the substance was not previously used in large enough quantity, or if it is still used on-site for other production processes, the reduction will not show up in TRI totals. Similarly, significant reductions in in-process releases of a given substance (e.g., repair of leaky valves) may be masked by simultaneous increases in overall plant production (with corresponding increases in use of the given substance), so again the facility's actual pollution prevention accomplishment would not be disclosed in the annual report of overall plant releases. Conversely, a plant may be credited with pollution prevention activities when, in fact, lower release figures are solely due to drops in production.

In order to gain information useful to plant managers and the public in determining exactly where pollution prevention opportunities exist, end-of-pipe release information must be supplemented by information on engineering mass balance or materials accounting. While mass balance is far more precise, it is also much more complex and costly and, as explained by a special committee of the US National Academy of Sciences, generally unnecessary for pollution prevention purposes (NAS 1990). The basic components of materials accounting include data on a) how much of a given substance comes into a plant, b) how much is produced on-site, 3) what the starting and ending annual inventory amounts are, 4) how much is consumed in-process, and 5) how much leaves the site in or as product.

Pinpointing opportunities for pollution prevention requires even more specific data on releases and consumption at particular points in an industrial process; while such information is required by some states in the US (New Jersey and Massachusetts, for example), proposals to require such information in the TRI have been challenged by industry as violating confidentiality.

In the past two years, US-EPA has begun to address some of these obstacles. For instance, as noted above, the agency's draft rule nearly doubling the number of toxic chemicals subject to reporting became final less than a month ago. The agency has also proposed expanding the range of reporting facilities to include more than manufacturers. In addition, new reporting requirements pursuant to the *Pollution Prevention Act* include disclosure of quantitative data on non-product outputs (NPO) such as the amount of a toxic chemical entering any waste stream prior to recycling, other treatment, or disposal. The new report forms also require calculation of a production index to indicate the annual change in ratio between non-product and product outputs.

While these changes go a long way toward making the TRI a useful tool for promoting pollution prevention, further improvements are still needed. For instance, although the new forms require industries to indicate by a checkoff if their pre-treatment reduction was achieved by product substitution, it does not require identification or quantification of the substitute, so there is no way to for the agency or the public to know if the substituted substance is actually less toxic or if its use in other facilities or industries might be economically attractive. Furthermore, because EPA, in order to protect what industries have claimed is confidential business information requires disclosure only of an index based on a ratio of various production figures, rather than disclosure of actual units of production, and allows sales figures to substitute for actual production values in calculating the index, the final TRI may well not accurately reflect impacts of production fluctuations on source reductions.

In recent months the agency has been considering further changes that would require more thorough materials accounting in order to disclose the detailed basis for pollution prevention that plant managers need but which is not provided by the TRI in its present form. In addition, the agency is considering requiring reporting of occupational and community demographic data to indicate worker and public exposures, and linking TRI to facility performance by including data in the inventory on facility cross-media regulatory compliance, a step which may help compensate for the agency's shrinking enforcement budget by sharing enforcement responsibilities even further with the public.

Pursuant to the *General Law of Ecological Equilibrium*, PROFEPA (Procuraduría Federal de Protección al Ambiente/Federal Bureau of Environmental Protection), INE's sister agency and the enforcement arm of SEDESOL, conducts a nationwide environmental audit program of industrial facilities classified as high-hazard (CEMPRA, Clasificación de Empresas de Alto Riesgo/List of High Hazard Facilities). Under this program, PROFEPA collects data from inspection reports as well as information voluntarily reported by the facilities, with guidance from the agency.

The agency expects the program to take approximately ten years to complete, with about 250 audits conducted each year. The database currently contains information from about 400 facilities. Each facility audit is expected to result in a plan of action detailing how the company will address environmental problems identified through the audit, including the amount of investment and implementation schedules. Although CEMPRA information is not directly available to the public, it is part of the emergency planning database used to develop SINAPROC and the National Civil Protection Program (discussed below).

In addition to the PROFEPA program, since 1988, SEDESOL/INE has been compiling biannual multimedia reports in an effort to compile a comprehensive overview of environmental conditions. The reports cross-reference data on watersheds and air basins, location of hazardous waste generators, distribution of industrial sectors and other environmentally-related information. Although previous reports have been distributed only among other government agencies and selected users, the upcoming *Biannual Reports on Environmental Quality*, now in press, will be available for sale to the public.

Since 1985, INE has also maintained the System for Rapid Information on Environmental Impact (SIRIA, Sistema de Información Rápida de Impacto Ambiental), more as a tool for analysis and risk modeling than as a database. However, SIRIA contains information on 3,500 to 4,000 projects that have been permitted by SEDESOL under the EIA procedures. The database is not open to the public.

- *Obstacles to access under the PROFEPA audits program* Because audits under the PROFEPA program are voluntary and the data confidential, there is no mechanism for validation or other means of public accountability. Information regarding PROFEPA audits, as well as information resulting from routine inspection, is restricted from public access. In the case of investigative reports resulting from public complaints, industries can claim confidentiality; since the law contains no criteria for substantiating a claim, they are routinely granted, except in Nuevo Leon, where as noted above, members of the public and claimants are invited to accompany the authorities on inspections under terms of the Ecological Covenant (*Pacto Ecológico de Nuevo León*) between the citizens, government and industries of the state (Carmona 1993, 54). Furthermore, even though the PROFEPA program audits are carried out by SEDESOL-registered consultants in compliance with the agency's *Terms of Reference for Environmental Audits*, the audit system is not designed for database entry, so the information is not accessible electronically and is not integrated with other data collections within or outside the agency.

- ***Workplace Environment Laws***

Access to information about the workplace environment is generally provided in the US by the *Occupational Safety and Health Act of 1970 (OSHA)* and in Mexico by the *Reglamento General de Seguridad e Higiene en el Trabajo* promulgated by the Secretaría del Trabajo y Previsión Social (STPS, the Ministry of Labor and Social Security).

*The Occupational Safety and Health Act* and various standards promulgated pursuant to it, requires employers to maintain and make available to workers and the government records of worker exposure to hazardous substances and information about the substances themselves. The *Access to Employee Exposure and Medical Records Standard* of 1980 requires employers to keep employee medical records for three to five years and gives workers the right to obtain copies of their own records as well as copies of studies that have monitored chemicals in their workplace or similar workplaces. The *Hazard Communication Standard* of 1981, discussed below under *Substance/Organism/Product Level Access*, provides information on specific

hazardous substances.

OSHA requirements are more or less replicated by sector-specific laws like the *Mine Safety and Health Act* (MSHA). Mexico has ratified several International Labor Organization (ILO) Conventions on miner health and safety (e.g., Conventions 123 and 124 [1965]).

In Mexico, the workplace environment is regulated by the Ministry of Labor and Social Security (STPS, the *Secretaría del Trabajo y Previsión Social*) pursuant to the *Federal Labor Law* (*Ley Federal del Trabajo*). The Ministry's *General Regulation on Health and Safety* requires that employers inform workers about health and safety hazards presented by toxic substances in the workplace. Mexico has ratified several ILO conventions on workplace safety and health; in 1993-1994, for example, the Ministry adapted criteria from the 1985 *Convention 161* into 44 Official Mexican Standards (NOMs), specifying health and safety requirements, including training of workers in the handling of hazardous materials, placement of hazard warnings, use of Material Safety Data Sheets, etc. Facilities with 300 or more workers are required to have a corporate physician on-site, who performs annual or biannual medical examinations of all employees; the examination records must be maintained on-site as long as the workers are employed at the facility. In addition, federal Ministry of Health (*Secretaría de Salud*) requirements call for each facility, with several exemptions, to state in writing how the facility is in compliance with requirements of the Ministry's health permit (*Licencia Sanitaria*).

- ***Property Transfer Disclosures***

In order to protect the buyer and provide an incentive for environmental clean-up, some states in the US prohibit sale of real property unless potential environmental liability (hazardous waste on-site, groundwater contamination, etc.) is disclosed in the property deed, and federal properties transferred to private parties pursuant to the federal *Privatization Act* must disclose environmental liabilities as well. Similarly, some states prohibit sale of controlling interest in certain classes of industrial companies unless the company is free of environmental liabilities or has a state-approved clean-up plan and the buyer has been notified of the liabilities. US federal law requires sellers of securities and stocks to disclose assets and liabilities of the properties and the question of whether or not such disclosure applies to environmental liabilities is currently a hot topic of debate in some US legal circles.

- ***Natural Resources Management***

In the US, forests, rangelands, fisheries and other biological resources found on federal lands are managed by land management agencies such as the Department of Agriculture (USDA) and Department of Interior (USDI) which, through various divisions (e.g., USDA-Forest Service, USDI-Bureau of Land Management [BLM], USDI-National Park Service [NPS]), manage specific resource-uses (e.g., wilderness, forestry, livestock grazing, wildlife). These agencies usually operate pursuant to agency-specific statutes (e.g., USFS under the *National Forest Management Act* of 1976; BLM under the *Federal Land Planning and Management Act* of 1976) in cooperation with such resource-specific agencies as the USDI-Fish and Wildlife Service, which are responsible for implementing resource-specific laws (e.g., the *Endangered Species Act*).

Each of these agencies must manage its resources in compliance with single-media environmental laws like the *Clean Water Act* and *Clean Air Act*, and each has its own information access conditions in general conformance with the *Freedom of Information Act* (FOIA) and the *National Environmental Policy Act* (NEPA).

In Mexico, forestry and grazing are managed by SARH and fisheries are managed by the

Ministry of Fisheries (Secretaría de Pesca) according to environmental standards promulgated by SEDESOL pursuant to LGEEPA, which also authorizes SEDESOL to establish management rules for wildlife, including threatened and endangered species, and for ecological preserves.

While both Parties have laws governing physical and legal access to federally-held mineral deposits (e.g., the US *Mining Law of 1872* and Mexico's *Mining Law of 1975*), neither has an environmental protection law specific to hardrock mining, nor an adequate information infrastructure for collecting, analyzing and disseminating environmental information about this important economic sector.

In the US, hardrock mining is regulated under applicable single-media laws (CWA, CAA, RCRA, CERCLA, etc.) and, when on public lands, by the applicable federal land management law (NFMA, FLPMA, etc.). Unlike hardrock mining, coal mining in the US is regulated by a specific agency—the USDI-Office of Surface Mining (OSM)—pursuant to a specific law, the *Surface Mining Control and Reclamation Act of 1977* (SMCRA). SMCRA applies to both private and public lands and requires coal-mining companies to comply with a range of environmental protection and disclosure standards.

Like other resource-use activities on public lands, coal and non-coal mining are subject to information access procedures of NEPA and FOIA. Neither is subject to the EPCRA Section 313 TRI requirement, but both are subject to the EPCRA Section 311/312 emergency planning reporting provisions, insofar as operations handle Extremely Hazardous Substances above Threshold Planning Quantity.

In 1990, Mexico amended Article 27 of the Mexican Constitution and regulations under the 1975 *Regulatory Law of Constitutional Article 27 on Mining Matters* to allow foreign control of hardrock mines. Previously, Article 27 had established that all mineral resources were the inalienable property of the Mexican nation, to be exploited only by individuals or persons incorporated under Mexican law and granted concessions by the executive branch of the federal government (Sanchez-Mejorada 1992, 823-824).

Whereas the 1975 law had limited foreign participation in Mexican mining companies to 49%, the 1990 amendments allowed 100% foreign control of hardrock mining concessions through the newly-created Mining Development Trust (FFM, Fideicomiso de Fomento Minero). In 1992, under impetus of a \$345 million World bank loan intended to further encourage foreign investment in mining, Mexico decreed a new hardrock mining law (similar to the US *1872 Mining Law*) addressing physical and financial access to public mineral reserves. As in the US, mining is subject to several laws and agencies. For instance, a foreign company proposing to open a hardrock mine must be registered with SECOFI (Secretaría de Comercio y Fomento Industrial/Ministry of Commerce and Industrial Promotion), file a claim with SEMIP (Secretaría de Minas y Industria Paraestatal, Ministry of Mines and Parastate Industry) and prepare an "Informe Preventivo" for SEDESOL. The approval process is designed to take approximately 90 days from application to permit.

- *Emergency Incident Conditions*

In the US, several related laws and programs create a network of emergency planning and response mechanisms, each of which is tied in one way or another to the National Response Center operated by the U.S. Coast Guard, which, pursuant to mechanisms established by the *National Oil and Hazardous Substances Contingency Plan (NCP)* and reiterated in several laws (including, for example, *EPCRA Section 311/312*, *CERCLA Section 103*, the *Clean Water Act Section 311(b)(5)*, and *RCRA*), receives notice of hazardous materials emergency incidents from



throughout the country. Among other response teams, the NCP establishes a Public Information Assist Team to complement the local authorities' informational capabilities at an incident site. Pursuant to Annex III of the *US-Mexico Border Environment Agreement*, the National Response Center is involved in assisting the binational Joint Response Team and associated response personnel on emergency incidents within the 200km. border zone along the international boundary separating the two countries.

In the course of developing response plans for hazardous materials emergencies, Local Emergency Planning Committees (LEPCs) established in communities throughout the US pursuant to Sections 311-312 of the *Emergency Planning and Community Right-to-Know Act*, produce inventories of federally-listed Extremely Hazardous Substances (EHSs) stored or otherwise used at facilities and sites in their locales. LEPCs members are required by law to be drawn from at least fourteen categories representing a broad cross-section of their communities and including, among others, representatives of local government; emergency responders; health or environmental workers; community groups; print and broadcast media; transportation personnel; and owners and operators of local businesses where the substances of concern are located.

Although the LEPCs in theory should be a model mechanism for community empowerment, and have become so in some communities (Gregory 1992, 166) in general they have failed to live up to their promise, for the most part because the law does not provide for their funding. LEPCs were originally intended to help inform the public of routine as well as emergency hazardous materials conditions in their communities as a means of encouraging federal pollution prevention policy, but this function has been widely neglected by EPA, by state emergency response commissions and, consequently, by most LEPCs.

EPCRA dovetails with the emergency reporting requirements of CERCLA in requiring facilities to immediately report spills of hazardous and extremely hazardous substances in amounts over certain federally-established Reportable Quantities to the LEPC, to a corresponding state-level committee, and to the National Response Center. In addition, the facilities must make annual reports to the LEPC, to local fire departments, and to the state committee, the location and maximum amount of Extremely Hazardous Substances at site during the reporting year, if the amount is above federally-established Threshold Planning Quantities (TPQ). The LEPCs and local fire departments are not constrained by the law in this respect, however, and are authorized to require reporting of any amount of substances on site.

Unlike Section 313 of EPCRA, which requires reporting only from the manufacturing sector, Sections 311-312 make no exceptions for size or kind of facility. In addition to compiling inventories of sites and substances, LEPCs are also authorized to develop hazard analyses for facilities, indicating the probable worst-case scenarios that could result from accidents at facilities in the community. All information gathered by the LEPC is required to be accessible to the public. Although facilities may claim confidentiality for a substance, they must disclose its identity at the request of local medical personnel who may need the information in case of a medical emergency caused by a release from the site.

*Section 112(r) of the Clean Air Act Amendments of 1990 (CAAA)* requires facilities to prepare accident prevention and process safety management plans to protect workers and the public for a list of highly hazardous air pollutants, including developing detailed hazard analyses showing the effects on the environment and local community in the event of an accident at the facility. The plans are available to the public. In addition, the CAAA establishes an Chemical Safety and Hazard Investigation Board to evaluate facility accidents in order to determine causes of accidents and provide a basis for industry-wide prevention measures.

Following the 1985 Mexico City earthquake, Mexico established its National Civil Protection System (SINAPROC, Sistema Nacional de Protección Civil). Administered by the Ministry of Governmental Affairs, SINAPROC includes the National Center for Disaster Prevention (CENAPRED, Centro Nacional para la Prevención de Desastres), which is in charge of research, training and dissemination of information regarding emergencies. CENAPRED maintains a laboratory for modeling and monitoring seismic activity and other edaphic dynamics. CENAPRED also maintains an anecdotal file of spills, leaks, explosions and other industrial accidents cross-referenced by region and type of substance. The database is not open to public access but data from it is reported in the *National Atlas of Risk*.

SINAPROC also includes a National Communications and Information Center that with satellite communications capability for nationwide emergency broadcasting. The various functions of SINAPROC are coordinated through the National Civil Protection Program (PNPC, Programa Nacional de Protección Civil), which is administered by an interagency National Council for Civil Protection comprised of nine federal Ministries in cooperation with state and municipal civil protection councils and academic and research institutions throughout the country. Among the fundamental goals of PNCP are enhancement of voluntary citizen participation in the program, including development and wide distribution of national-, state- and local-level *Risk Atlases*. In 1993 the agency published national technical guidance for the implementation of local municipal contingency plans under SINAPROC, and generally disseminates information on risk classification and response procedures for natural and hazardous materials emergencies.

Facility-level emergency planning in Mexico is coordinated through the National Accident Prevention Program, under which COAPA (Comité de Prevención de Accidentes, Accident Prevention Committee, comprised of several government agencies, including INE, PROFEPA, CONAGUA, etc.) requires high hazard companies to design a plan for accident prevention and emergency response. This process requires the production of a risk study to be checked by COAPA to see if accident prevention programs are sufficient to address identified risks. The information about accident prevention programs and emergency plans that results from each company's participation in the process is, at present, not loaded into any database. The plan is not available to the public.

*CEMPRA (Clasificación de Empresas de Alto Riesgo/ List of High Hazard Enterprises)* is a computerized database begun in 1991 by PROFEPA to store data on facilities that handle more than the designated Reportable Quantity of certain substances classified as "high hazard" by the Secretaría Gobernación (Ministry of the Governmental Affairs). Data on the facilities is collected through the PROFEPA audits discussed above, and by state and local governments, primarily for emergency planning purposes. CEMPRA information is fed into the National Civil Protection System designed to "identify, gather and process information regarding evaluation and analysis of potential environmental risks posed by construction or industrial activity, and submitted to the appropriate authorities."

### ***Substance/Organism/Product Level Access***

The focus of some laws is even more specific than sites or facilities, requiring that information be made available on particular products or chemicals. In the US, for example, some laws address only one product or species or category of substance (e.g., the *Refrigerator Safety Act*, the *Wild Horse and Burro Protection Act*, the *Bald and Golden Eagle Protection Act*, the *Flammable Fabrics Act*, the *Virus-Serum-Toxin Act*). Others address broad classes of substances or biota (e.g., the *Federal Insecticide, Fungicide and Rodenticide Act*, the *Migratory Bird Treaty Act*, the *Endangered Species Act*, the *Marine Mammal Protection Act*).

Such laws are often particularly concerned with defining characteristics, properties and proper

management procedures. The *Comprehensive Environmental Response, Compensation and Liability Act*, for example, requires the US Public Health Service's Agency for Toxic Substances and Disease Registry (ATSDR) to prepare detailed Toxicological Profiles of substances found at hazardous waste dumps listed by EPA as national priority sites for cleanup, and the *Federal Food, Drug and Cosmetic Act* (FFDCA) requires testing and labelling to disclose hazards in those products.

Health and environmental standards for release and exposure to hazardous materials are set in both countries by a variety of agencies, including (in the US) the Department of Labor, the Department of Health and Human Services, the Nuclear Regulatory Commission, the Department of Transportation and the EPA; and (in Mexico) the Ministry of Labor, the Ministry of Public Health and SEDESOL. While environmental standards in the US are set by EPA according to differing parameters required by many laws, Mexico has recently consolidated its process for setting Official Mexican Standards (Normas Oficiales Mexicana) under one statute, the *Federal Standards and Measures Law* of 1992 (LFMN, *Ley Federal sobre Metrología y Normalización*).

The standards-setting process under the LFMN establishes uniform procedures, including cost-benefit analysis, for establishing new and re-promulgating existing norms (instrument calibration, equipment certification, measurement and verification techniques, etc.). The law requires that draft standards be made available through the *Diario Oficial* and appropriate *Gaceta* for a 90-day public comment period, and that final standards be similarly published. In addition, established environmental standards are now available to the public in CD-ROM format under the title *Compendio de Normas Oficiales Mexicana en Materia Ambiental* available through the recently-established Office of Information and Environmental Technology Outreach at the Technological Institute (ITTESM) in Monterrey, Nuevo Leon.

The greatest exposure of the environment to hazardous substances is not from direct releases at fixed facilities but exposure from dispersal of the materials as and in articles of commerce. While EPA's TRI reports about 3 billion pounds of hazardous materials released directly to the environment from certain fixed facilities each year, corporate sales records indicate many times that amount distributed throughout the world packaged as consumer goods. "The largest data gap in the type of information available" about toxic substances, concerns their "free flow. . .in commerce" (Muir 1994).

Nearly all pesticides are released to the environment at the end-point of use, for instance, yet data on these releases are largely non-existent. Although neither country does much to track hazardous materials in articles of commerce, so there is very little data outside corporate sales offices on consumer use and the potential exposure to the public at that end-point, nonetheless, to varying degrees both countries acknowledge the threat to consumers from products encountered in daily life by requiring manufacturers to assure the safety of their commercial products and by requiring product labelling.

Product labels and labelling, available at point of sale or point of potential exposure, can be used to disclose a wide variety of information, including health hazards, safe handling instructions, potential environmental effects, nutritional information, fuel efficiency and other matters of consumer interest. Several laws in both countries address labeling content, but neither country as yet has attempted to take full advantage of the opportunity product labeling offers to inform the public, and thereby protect human health and the environment, from hazardous contents of consumer goods. In Mexico, the Ministry of Public is currently reviewing the labeling requirement for commodities that may contain toxic or hazardous substances and has proposed to require more specific identification, proper handling procedures, etc.

For some time, Mexico's Ministry of Communications and Transportation (SCT, Secretaría de Comunicaciones y Transporte) has required shipments of hazardous cargo to be placarded in accordance with the United Nations international hazard coding system for dangerous goods in transport, and the US Department of Transportation, pursuant to the *Hazardous Materials Transportation Act* requires equivalent placarding.

In addition, both countries require shipments of hazardous materials and hazardous waste to be accompanied in transit by shipping papers which disclose various hazardous characteristics of the materials and thereby serve as a kind of labeling. Similarly, both countries require that hazardous waste shipments be accompanied by descriptive manifests. SCT has recently issued regulations on transport of hazardous waste and other hazardous materials and is in the process of issuing Official Mexican Standards that will contain requirements to harmonize Mexican and US requirements even more.

Each year in the US, the deaths of and estimated 29,000 people and the injuries of some 33 million others are associated with consumer products. The *Consumer Products Safety Act* of 1972, as amended (CPSA) was enacted to help reduce the number and severity of those incidents. The Act is implemented by the *Consumer Products Safety Commission (CPSC)*, which has authority (through the Flammable Fabrics Act, the Federal Hazardous Substances Act, the Poison Prevention Packaging Act and the Refrigerator Safety Act; and based on data about accidents and injuries gathered from such sources as the National Electronic Injury Surveillance System [NEISS] maintained by the Injury Information Clearinghouse) to ban, recall or require manufacturers to modify products the Commission finds pose an unreasonable risk to public health or safety.

The CPSC has jurisdiction over most products found in or around consumers' homes (with the exception of food, drugs and cosmetics, most of which are regulated by the Food and Drug Administration), and the CPSA requires manufacturers of those products to notify the CPSC whenever they obtain information that a product they distribute "create an unreasonable risk of serious injury or death."

In part because a major portion of CPSC's program is public education, the agency maintains a relatively high standard of transparency. Except for standard confidentiality restrictions like trade secrets, CPSC data, like the NEISS database, is generally accessible to the public. However, the CPSA prohibits the Commission from releasing information to the public that would specifically identify a manufacturer, without first giving the manufacturer the opportunity to comment on the accuracy of the Commission information and on the fairness of releasing the information; no other federal health and safety agency in the US is constrained by such a requirement. The CPSC's experience on informing the public about product hazards and safety has shown that consumer education can be an effective tool in helping the public protect itself through product choice in the marketplace as well as through education about safe use and maintenance of consumer products.

- *Obstacles to access under CPSA* Although the CPSA requires manufacturers to report potential safety problems with their products to the CPSC, the agency receives only about 200 reports a year, a number that obviously does not reflect the thousands of products put in commerce each year. Furthermore, although the law contains a "bad actor" provision, it does not require that they notify the agency upon loss of a suit regarding safety of their products, but only after the loss or settlement of several suits; thus even irresponsible companies with poor safety records may continue production without bringing their infractions to the Commission's or the public's notice.

Pursuant to the *Occupational Safety and Health Act*, the OSHA Hazard Communication

Standard of 1981, as amended, requires employers assess the hazards of substances in the workplace, make available to employees information about those hazards, including copies of Material Safety Data Sheets (MSDS) on products, train workers in the safe handling of the substances they work with, and label containers, packages and storage tanks to identify the hazardous substances contained and signal the nature of their hazards.

The MSDS is a valuable source of information to the public as well as to workers. OSHA requires manufacturers to provide MSDSs for their products and vendors selling those products, as well as businesses using them, are required to make the MSDSs available to customers and employees. Although MSDSs are geared toward worker health and safety, they contain a great deal of information about the hazardous ingredients of products that is of interest to the general public (information on emergency medical procedures, for instance) and, in effect, act as extended labelling and an effective source of public information. For this reason, EPCRA builds on OSHA by requiring that businesses make the MSDS for any hazardous substance in their facility, including in articles of commerce, available to the public on request.

In November 1994, Mexico's Ministry of Labor and Social Security issued a draft Official Mexican Standard (NOM) on Hazard Communication very similar to the US standard; in addition to reiterating the previous Mexican MSDS requirement, the new NOM adopts the HMIS (Hazardous Materials Identification System) and NFMA (National Fire Protection Association) uniform hazard identification and labelling systems used in the US.

*The Toxic Substances Control Act* of 1976 (TSCA) authorizes EPA to require reporting of information on toxic substances through eight reporting tracks from anyone who "manufactures [or imports], processes, or distributes in commerce or proposes to manufacture [or import], process or distribute in commerce any chemical substance or mixture." The first track (Section 4) authorizes EPA to require testing and reporting of test results on health and environmental effects; the second (Section 5) provides for establishing a toxics inventory; the third (also Section 5) requires Premanufacture Notification of various data and approval of EPA before a substance is placed in commerce; the fourth (Section 8[c]) requires companies to keep records of even allegations that a substance might cause adverse health and environmental effects; the fifth (Section 8[d]) requires that EPA be provided with copies of any health and safety studies a company knows of or should know of; the sixth (Section 8[e]) requires within 15 working days of obtaining any information that reasonably supports a conclusion that a "a chemical substance or mixture. . . presents a substantial risk of injury to health or the environment," the company report that information to the agency; the seventh and eighth (Section 12-13) require exporters and importers (who, for the most part, the law treats as manufacturers) to provide EPA with written pre-shipment notification and testing data, which (in the case of exports) the agency in turn makes available (through the State Department) to the receiving country, along with a summary of regulatory actions EPA has taken in regard to the substance(s).

Section 6 of Title I and Titles II and III of the Act provide for regulating of specifically-designated toxic substances (including, among others, PCBs, asbestos, hexavalent chromium, CFCs, dioxin (TCDD), metalworking fluids, and radon).

Under TSCA, EPA may require a broad range of information about specific substances, including reports on health and environmental effects, worker exposure, production quantities and disposal practices. Companies are required to report such information about substances before they are put in commerce, and may be required to submit such data on existing substances. If a chemical poses a significant risk of harm from cancer, gene mutations, birth defects, or unreasonable risk to health or the environment, TSCA authorizes EPA to regulate the use of the harmful chemical through such actions as banning the chemical or requiring warning labels on the chemical or products containing the chemical when they are sold, but except for

PCBs and asbestos, the agency has almost never used its TSCA authority to ban or place stringent restrictions on use of a substance, at least in part (according to the agency), because the agency has not defined the terms *significant* and *unreasonable* for the purpose of implementing TSCA (GAO 1991, 2, 15).

Updated every four years beginning in 1986, the TSCA inventory contains information on identity and production volume of some 70,000 substances reported by 4000 facilities, with about 14,000 new substances added to the inventory in the last two reporting cycles.

- *Obstacles to access under TSCA* Although it is generally recognized that "the public's ability to participate in government reviews of specific products is utterly dependent on access to information, specifically the experimental data underlying assessments of risk" (Rissler and Mellon 1990,29), TSCA does not require public disclosure of results from the chemical testing the law requires of manufacturers. The most comprehensive available databank on flow and effects of specific chemicals in commerce, is largely rendered inaccessible—even to other federal and state agencies—due to broad exclusions and to exemptions granted under relatively unrestrictive definitions of confidentiality.

For new chemicals, for instance, EPA is supposed to publish in the Federal Register the chemical's identity, what it is to be used for, how many people would be working with it and exposed, how it would be disposed, what the proposed volume of use is, and what kinds of toxicity data the manufacturer or importer has submitted. But because TSCA allows a broad claim of confidentiality about a substance, and the agency (due to lack of resources and other reasons) usually has not ruled on the validity of claims unless and until a petitioner requests the information, manufacturers routinely have claimed all or most of the required information as confidential; so EPA's published disclosures typically have said something like, *Chemical Identity: confidential; Volume: confidential; etc.* (Warren 1993, 298). Under TSCA, a company may claim as confidential even the very health and environmental information it has been required to submit because it indicates the substance may pose a substantial threat to health or the environment.

In addition to broad exemptions under the confidentiality rules, TSCA also exempts certain classes of manufacturers, processors and distributors from disclosure requirements on the basis of their size as determined by either annual production figures or gross annual sales volume. Based on a complicated scheme of eligibility categories, exemptions may be granted to firms that produce anywhere from several hundred to several tens of thousands of kilograms of a substance yearly, or whose annual sales range from a few million to \$30 million. The TSCA inventory exempts several classes of substances, including polymers, inorganics, microorganisms, naturally-occurring substances, impurities and byproducts and non-isolated intermediates.

Even without the hundreds of confidentiality claims it has granted, access to information that should be available under TSCA is significantly limited because despite EPA's broad authority to require reporting of health and environmental data on the 70,000 substances in its inventory, the agency has received health and environmental results on only a handful of substances, has assessed only a few of the test results it has received (GAO 1991, 15).

Furthermore, as noted above, TSCA does not require health and environmental data on substances as or in articles of commerce, or reporting to the inventory toxic substances imported in such articles, so there is no equivalent free flow information to match the free flow of the substances.

In the past two years, partly in relation to the five-year reauthorization schedule that brought

TSCA to the attention of Congress again in 1994, EPA has been reviewing the law's confidentiality provisions and has recently proposed several changes in policy. In this regard, the agency has indicated that it intends to increase public participation and public access to information under TSCA, reduce the number of what it has called "legally inappropriate" claims of confidentiality. Among other actions, for instance, the agency recently clarified that "health and safety data is . . . entitled to confidential treatment if, and only if, the disclosure of the data would result in the disclosure of a chemical process, or chemical proportion in a mixture," and is considering requiring senior management officials to sign confidentiality claims, requiring "up front substantiation" of some claims (EPA-OPPTS 1994a, 3).

In regard to the inventory, the agency is considering a number of improvements through its TSCA program alone or through linkages with its TRI program, including: expanding the scope to include inorganics and data on end-use of substances, increasing frequency of reporting to every year or every two years, and adding a sunset provision so confidentiality exemptions which have been granted must be resubstantiated periodically or be withdrawn (EPA-OPPTS 1993).

In the US, pesticides are primarily regulated by EPA under the *Federal Insecticide, Fungicide, and Rodenticide Act* of 1947, as amended (FIFRA). Strictly speaking, FIFRA is not an environmental law, but a law originally passed as a trade-protection measure to protect competitiveness in the pesticide industry, then amended to add environmental and human health protection provisions. FIFRA requires manufacturers of pesticides to conduct health and safety testing of their products before they can be registered for use.

The Environmental Protection Agency determines whether products will be registered based on risk-benefit analysis. If the product is to be used on food or animal feed, the manufacturer must also present extensive information to support a "food tolerance" for residues, pursuant to the *Federal Food Drug and Cosmetic Act*. Monitoring programs for pesticide residues is carried out by the Food and Drug Administration (a division of the Department of Health and Human Services) and the Department of Agriculture.

FIFRA requires label disclosure of the identity and percentage of certain ingredients ("active ingredients"), hazard rating, safe handling and emergency procedures, and related information. The law also requires training in approved handling techniques for some categories of applicators, and authorizes the EPA to require that some categories of applicators (e.g., "commercial" agricultural applicators) keep records of applications of certain kinds ("restricted use") of pesticides.

- *Obstacles to Access under FIFRA* Access under FIFRA is in many ways indicative of issues encountered in trying to access information in older, non-environmental laws. Its barriers to access are significant, especially barriers in regard to dissemination and scope. For instance, prior to the agency's decision to register or grant tolerances, which may take several years from the time of application due to (among other factors), the complexity of technical material, the data supplied by applicants is not available to the public. Once the product is registered, the public may review the data, but because the product is allowed to be sold upon registration, the public and environment may be exposed to considerable exposure during that period, especially since it may take the public as long or longer than the agency to review the information.

Once a product is registered, FIFRA requires that certain health and environment information be made available to the public, but the law allows for broad claims of confidentiality, so that significant information is not required on pesticide labels and is not available to through other means, except when the information is shown, often through lengthy court processes, to be "necessary to avoid or lessen an imminent and substantial risk of injury to the public health."

Even if information may be disclosed, a requestor may be subject to additional requirements to protect the competitiveness of multinational pesticide manufacturers. Before the information is made available, for instance, the requestor must agree to allow the EPA to supply her or his name to the pesticide registrant, and may require the requestor to sign an affirmation that she or he is not employed by a multinational corporation and that the information will not be used for competitive purpose.

The confidentiality clause of the law is particularly directed toward so-called "inert ingredients," those substances added to a formulation (to improve application, dispersal, handling, etc.) which are determined by the registrant not to be responsible for the pesticidal properties for which the product is being registered. Inert ingredients may constitute 99% or more of a given formulation, may be biologically active by themselves or in combination with other ingredients, and sometimes are more toxic than the active ingredients or in combination with an active ingredient produce a substance more toxic than either ingredient by itself. Yet FIFRA prohibits disclosure of "the details of any methods for testing, detecting, or measuring the quantity of any deliberately added inert ingredient. . . or discloses the identity or percentage quantity of any deliberately added inert ingredient."

In Mexico, pesticide standards are primarily set by CICOPALFEST (Comisión Intersecretarial para el Control de Plaguicidas, Fertilizantes y Sustancias Toxicas, the Interagency Commission for Control of Pesticides, Fertilizers and Toxic Substances), a body created by Presidential Decree in 1987, comprised of representatives from SEDESOL, SARH, SECOFI (the Ministry of Commerce and Industrial Promotion) and Salud (the Ministry of Public Health), who decide by consensus whether or not to register a pesticide for use and what residues to allow on food. The Commission does not conduct health and environment studies on the pesticides but, because most pesticides used in Mexico are imported, the Commission relies principally on research from countries of origin (including the US), the FAO *Codex Alimentarius* and other international compilations such as the IRPTC (the UN Environmental Programme's *International Register of Potentially Toxic Substances*) and the World Health Organization *Recommendations on Classification of Pesticides*. In addition, each member of the Commission may request an applicant for registration of a pesticide to provide information needed by the agency to determine whether or not to approve registration.

CICOPALFEST publishes an annual *Official Catalog of Pesticides* which contains a list of registered pesticides; a list of pesticides which are banned or allowed only restricted use and purchase (i.e., only by a trained applicator carrying written government authorization); a description of the official Mexican hazard classification system and hazard rating for each of the registered pesticides and their legal formulations; identifies legal residue tolerances on approved crops; and specifies pre-harvest reentry intervals.

Enforcement of pesticide application and residue standards on vegetable crops is the joint responsibility SARH and the Ministry of Public Health pursuant to the *Ley Federal de Sanidad Vegetal* of 1994 (*Federal Plant Sanitation Law*), which incorporated parts of the 1974 *Ley de Sanidad Fitopecuaria* (Plant Sanitation Law); regulation of the manufacture and formulation of pesticides is the responsibility of SECOFI; in all cases, environmental protection in regard to pesticide use is the responsibility of SEDESOL, pursuant to the Law of Ecological Equilibrium. The Ministry of Public Health has proposed standards for pesticide residues in foods other than vegetable crops.

In addition to domestic laws and regulations on pesticides, both Parties are members of the World Health Organization (WHO) and the Organization for Economic Cooperation and Development (OECD), which have issued compatible guidelines for hazard classification and



labeling of pesticides. In addition, both countries are party to the United Nations Environmental Programme *London Guidelines for the Exchange of Information on Chemicals in International Trade* United Nations Food and Agriculture Organization (FAO) *International Code of Conduct on the Distribution and Use of Pesticides*, both of which instruments bind the Parties to the principle of Prior Informed Consent (PIC), which calls upon nations and industries to disclose the health hazards posed by certain highly hazardous pesticides and other dangerous materials in commerce.

The FAO *Code of Conduct* also includes international standards for dissemination of health and safety information to workers and the public, for truth in advertising, and other issues raised by international traffic in pesticides (FAO 1990). The FAO has reported widespread noncompliance with the Code, including the PIC provisions (FAO 1993), and for the past several years, pesticide distributors in Mexico have actively disseminated information about some aspects of the *Code* in the heavy export agriculture regions of that country.

### *Inter-Agency Level Access*

Recently, the US President's Office of Management and Budget (OMB), has proposed a new program, to be known as the *Government Information Locator System* (GILS), which would facilitate public access to government information by establishing a kind of electronic card catalogue (the "GILS Core") containing brief bibliographic descriptions of records, publications, databases and other information available at several executive agencies.

OMB's proposed GILS would not be a way to access government data, but only a way to find out where some information is located within the federal government system. The GILS would not provide much help in finding out how to actually access the information it does locate, but would refer users to an agency phone number or e-mail address to call for further information. While the GILS as proposed would be a significant first step toward a comprehensive access program, it falls far short of the comprehensive system recommended by the task force of experts charged with recommending the design of the program to OMB (Christian 1994) and is of interest principally as an indication of how much more useful it could be than what it is proposed to be.

As the comments on the OMB's draft proposal from the task force and others indicate, what the GILS could and should be is a decentralized user-friendly program allowing anyone with a modem to move freely from the main GILS locators and associated information services to any particular agency's locator system and back again in one session; or to move from the agency locators into the agency files; or, as they say in computerese, to interconnect and interoperate with any GILS server, allowing free access to public information throughout the federal government.

• *Obstacles to Access in the proposed GILS* A listing of some of the obstacles to access in the OMB proposal also indicates what an integrated government access program might be. In terms of scope, besides altogether precluding actual access to records, the OMB proposal would apparently restrict even its locator function by:

- making inaccessible and unidentifiable government information created by or held by federal contractors, as well as information from agencies to contractors
- making inaccessible and unidentifiable information sent between agencies
- limiting information holdings to those already on "automated records systems," thereby excluding "electronic mail and word processing systems," where a great

deal of agency information is already stored and more can be expected to be stored as use of electronic systems increases

- limiting the number and size of agency entries (up to 1000 entries per agency of 1000 words each ) will not adequately cover all government information, given the fact that the US government is the largest generator and disseminator of information in the world.

Public participation in the OMB proposal would be severely limited:

- As proposed, the GILS makes no provision for access by low-income, non-commercial users. Direct access to the GILS Core would be provided only through the Internet, so those with no Internet access would be forced to rely on intermediaries whether or not the intermediaries are available and affordable to them.
- Although the OMB proposal calls for creation of an advisory board to evaluate the GILS and make recommendations for enhancing the system to meet user needs, as proposed the board would be comprised entirely of federal government employees with no representatives from the public.

One of the most disappointing aspects of the OMB proposal is its failure to take advantage of present opportunities to provide for a more accessible, integrated government information system, or to provide any vision or guidance for the development of one in the foreseeable future. The current proposal:

- Provides no requirements or guidance on consistency in abstracts or keywords or standardization of terms in agencies' thesauri to assist the agencies in writing the GILS "card catalog" descriptions, so finding information on the same topic across agencies will be next to impossible; furthermore, the lack of standardization and integration, and apparent lack of interoperability among agencies will make it difficult to impossible for the agencies themselves to identify and locate information created, collected and maintained in and for other agencies, or to become familiar with other agencies' automated information systems
- Provides no requirement or guidance for individual federal agencies to establish their own GILS once they have provided aggregated descriptions of their holdings to the GILS Core
- Provides no guidance or requirement for updating the GILS entries, so the system could become quickly out of date.

Although the draft OMB proposal falls far short of its potential, the GILS could become a major tool for facilitating public and inter-agency access by beginning the process of integrating government information holdings, and go a long way towards fulfilling the vision of the *National Environmental Policy Act*, which directs "all agencies of the Federal Government" to "utilize a systematic, interdisciplinary approach which will insure. . .the integrated use of the natural and social sciences and the environmental design arts in planning . . .in decisionmaking which may" impact the environment.

### **Strategic Integrated Data Management**

Despite passage of NEPA in 1969, such intra- and inter-departmental integration has been conspicuous in its absence in US environmental programs, which have instead continued to

develop with little cross-fertilization or common goal; regulatory agencies have tended to continue to see their jobs more as issuing permits than protecting the environment; paperwork (which, required both by agencies and by the public, tends to become an end in itself) has continued to become voluminous and redundant; and adverse environmental impacts have continued to be recorded more often than prevented.

The problem is not confined to the US. Agencies, offices and funding of environmental protection programs throughout the NAFTA region are often narrowly focused on a single environmental medium, resource or sector, with little or no inter-office, cross-media, or trans-sectoral consideration or coordination. In addition, there frequently exists a bureaucratic, functionary, "pencil-pusher" culture within agencies that is geared towards collecting and processing data rather than toward sharing and otherwise using it strategically to address existing problems and prevent new ones.

The limited usefulness of data, while often a policy problem, is frequently merely organizational, a conceptual and/or technical incompatibility of informational systems. For instance, some of the key hazardous materials databases at EPA are:

AIRS	Aerometric Information Retrieval System
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CICIS	Chemicals in Commerce Information System
CORR	Chemicals on Reporting Rules
DOCKET	Enforcement Docket
FINDS	Facility Index System
IRIS	Integrated Risk Information System
NHATS	National Human Adipose Tissue Survey
PCS	Permit Compliance System
RCRIS	Resource Conservation and Recovery Information System
TRI	Toxic Release Inventory
TSCAIDB	Toxic Substances Control Act Inventory Database

In Mexico, SEDESOL's information bases include:

BDNDAAR	Base de Datos Nacional de Descargas Autorizadas de Aguas Residuales
CEMPRA	Clasificación de Empresas de Alto Riesgo
HAZTRACK	Sistema para Reportar Movimiento Transfronterizo de Residuos Peligrosos entre Mexico y el Estados Unidos
INGI	Inventario Nacional de Gases Invernadero
REPE	Sistema de Control de Manifiestas de Empresas Generadoras de Residuos Peligrosos
SIRIA	Sistema de Información Rapida de Impacto Ambiental
SNIFF	Sistema Nacional de Información de Fuentes Fijas

These and other databases are a tremendous resource, and contain materials that could and should be integrated and made accessible (e.g., through an "enhanced GILS"), first intra-agency (among EPA's many single-media offices); then inter-agency (so that EPA databases could interface, for example, with those of USDI's many natural resource offices (e.g., the US Geological Survey, the Fish and Wildlife Service, the Bureau of Mines, the National Oceanic and Atmospheric Administration; the new National Biological Survey); then with outside information sources like the international Man and the Biosphere program, UNEP's International Register of Potentially Toxic Chemicals (IRPTC) or the World Bank's project assessment files.

But as it stands now, although EPA and SEDESOL have recently made great strides toward unilaterally integrating their data resources, for the most part the systems still can't "talk to each other" or to the systems of other agencies, either domestically or binationally; they do not interface, do not have interoperability capability with each other, and are even more "incomunicado" with international databases. Furthermore, many of them are unavailable or inaccessible to the public in any way; or, when they are available, it is often only through complicated, discouraging pathways.

As several recent papers have indicated, unless data is managed strategically, with particular goals in mind, the data-collection process tends to become mere bureaucratic bean-counting and the data itself fragmented and lost in a maze of office files. Although such data may be available to the public, and in some cases even accessible, it is often not particularly apt for the purpose of protecting health and environment except indirectly, insofar as such data (under EPCRA, for instance) by its *implication* "have helped industry to identify problems and target actions and have given the public an opportunity to learn about problems and become involved in their solutions" (GAO 1994b, 54).

This lack of an integrated informational infrastructure in the "bureaucratic organizational culture" has created a serious impediment to accessibility and fostered a number of practices and conditions that hinder rather than help environmental protection. As noted above, for example, the US TRI insofar as it collects and publicizes only release data, is not particularly useful (or useful only in a roundabout way) for achieving source reduction. Similarly:

- Because there is no overall strategy for *use* of the data, or the data is collected only for a narrowly-defined purpose (such as use exclusively by the collecting agency), the database is often incomplete or otherwise inadequate for use by the public and for assessing environmental conditions, which are usually complex, multi-dimensional and cross-media in nature (e.g., the *kind* of information collected for contaminated discharges from a wastewater treatment plant, may be of little use in determining a strategy for reversing degradation of a watershed);
- Because there is no overall strategy for *use* of the data, the format in which it is received, stored and disseminated is not standardized as to units of measurement; or unique identifiers (of chemical species, ecosystems, etc.); or indicators of environmental quality (contamination, resource depletion, ecosystem integrity, etc.); so that information is not easily transferable among programs, sectors, or governments (e.g., reports of *solvent* consumption are of little use in calculating the specific chemical hazard posed by storage, transport or other use of the chemical-bearing solvent);
- Because there is often no strategic *use* for the data collected, reports tend to be filed (or piled) in the offices of regulatory bodies where they do little more than gather dust and take up room;
- Because there is no cross-agency integration to provide standard assessment methodologies, hazard communication is often inconsistent (and therefore ineffective);
- Because the audience for information is often considered to be only the collecting agency or the reporting entity (industries, facilities, local governments, etc.), the information even when compiled for publication is often lost in technical, governmental or sectoral jargon that is incomprehensible to the affected public;
- Because the perspective of each office tends to be only its own function and domain, with little or no strategic purview, there is often too little effort put into developing partnerships between government and the public or between government and the private sector that might

considerably lower government costs, adverse environmental impacts, and citizen skepticism;

- Because there is little or no interaction with the public or operations-level personnel of the private sector, agencies often consider public education or industry technical assistance programs non-germane to the agency function, even though such outreach programs may have potential for greatly reducing the burden on government and on the environment; and,

- Because each agency defines and requires its own report, private sector and local or state government reporters are burdened with a bewildering array of often redundant (and sometimes contradictory) forms and deadlines that works against the best efforts at environmental cooperation and environmental protection on the continent.

In both the US and Mexico, the reporting burden can be considerable, with facilities required to report to several agencies under several laws, regulations and programs. In Mexico, for instance, a given facility may be required routinely to file all of the following reports with SEDESOL:

- A Hazardous Waste Generator declaration (Manifiesto para Empresas Generadoras de Residuos Peligrosos)
- A Declaration of Delivery, Transportation and Reception of Hazardous Waste (Manifiesto de Entrega, Transporte y Recepción de Residuos Peligrosos)
- A Biannual Report of Hazardous Waste Shipped for Recycling, Treatment, Incineration or Disposal (Reporte Semestral de Residuos Peligrosos Enviados a Reciclo, Tratamiento, Incineración o Confinamiento)
- A Biannual Report of Hazardous Waste Received for Recycling or Treatment or Disposal (Reporte Semestral de Residuos Peligrosos Recibidos para Reciclo, Tratamiento, Incineración o Confinamiento)
- A Monthly Report of Hazardous Waste Disposal in Landfills (Reporte Mensual de Residuos Peligrosos Confinados)

In addition, the facility might also be required to file the following reports with other agencies:

- An annual air emissions report with the federal or state environmental agency
- An annual (or as determined by CONAGUA) wastewater discharge report with CONAGUA or the state or municipal water administration agency
- A health permit report with the Secretaría de Salud

In the US, the burden on reporters can be even greater. For instance, a single facility may routinely have to submit all of the following reports to EPA and, in some cases, to state agencies as well:

- Emissions inventories, hazard analyses and accident prevention audits all under the *Clean Air Act*
- Discharge and waste product inventories under the *Clean Water Act*
- Extremely Hazard Substance and Toxic Chemical release inventories under the *Emergency Planning and Community Right-to-Know Act*

- Premanufacture health and ecological testing data under the Toxic Substances Control Act and Federal Insecticide, Fungicide and Rodenticides Act
- Hazardous Substance inventories and handling plans under the *Emergency Planning and Community Right-to-Know Act* and *Occupational Safety and Health Act*
- Contingency plans for emergency response under the *Resource Conservation and Recovery Act*
- Hazardous waste inventories and minimization audits under the *Resource Conservation and Recovery Act* and *Pollution Prevention Act*
- Hazardous materials and hazardous waste export and import lists under the *Toxic Substances Control Act*, the *Resource Conservation and Recovery Act*, *Federal Insecticide Fungicide and Rodenticide Act*, and *Export Administration Act*

In addition, facilities typically are required by their insurance companies to submit health and safety audits containing similar information, and the facilities may also have to make reports to various other federal, state or local agencies.

These various reports are often redundant and duplicative. Even worse, the data thus collected, while useful for descriptive or bookkeeping purposes, is often not very useful for purposes of protecting human health and the environment.

In part, of course, the problem is due to a lack of resources and a simply mechanical inability of underfunded agencies to cope with the explosion of environmental information that has been developed in the past few decades. But in large part, the problem is a fragmented regulatory scheme which tends to consider environmental information in terms of narrow bureaucratic requirements rather than overall strategies to protect human health and the environment. In either case, the current situation is characterized by unharmonized systems within and between NAAEC countries (and between NAAEC parties and the rest of the international community), with a severe lack of cross-media capability and relatively haphazard national/binational information infrastructure.

Instead of integrated information systems, we have fragmentation; instead of cross-media capability, we have one medium and one chemical-at-a-time regulation; instead of data use, we get data collection; the situation discussed above, in which TRI collects data on release but not process-use or end-use, is characteristic of our environmental information systems in general. Earlier this year, two reports were issued addressing the information management problems of the US federal government and suggesting remarkably similar ways of correcting them. The first, issued in May by the US Comptroller General, addressing the federal government at large, found that "federal agencies have not kept pace with evolving management practices and skills necessary to (1) precisely define information needs, and (2) select, apply, and control changing information technologies" and that "strategic information management (i.e., managing information and technology to maximize improvements in mission performance)" would be crucial to achieving "results-oriented management" (GAO 1994a, 3,8). On a more hopeful note, the Comptroller also found that "solutions to seemingly intractable, complex information management problems do exist" (GAO 1994a, 3), primarily through development of strategic, integrated data management systems.

The second report, from a special task force focusing on EPA's information data management system found that the "single-media approach has resulted in a lack of coordination and

incompatibility among information systems which makes comprehensive analysis of environmental information difficult. . . [and] a fragmented approach to managing the Agency's information. . . [so that] EPA has not identified and does not collect adequate data to measure environmental quality or trends in environmental quality" (EPA-IRM 1994, 2). Concluding that the traditional, fragmented, single-media regulatory management of information will not support the agency's mission to protect human health and the environment, and that "EPA will fail to implement its guiding principles unless it moves to a more comprehensive approach to managing the Agency's information resources" (EPA-IRM 1994, 1-2), the task force noted that "information provides the critical link to integrate programs, empower stakeholders to accurately identify, manage, and prevent environmental problems, and promote environmental successes" (EPA-IRM 1994, 4).

Although these reports specifically address the US situation, their recommendations are applicable to agencies in both countries and, in some respects, to binational and trinational data management as well. Implementing the recommendations will require agencies to take re-evaluate their current data management situation and redirect management, as appropriate, in the following four areas.

- *Strategic Use of Information Resources*

The purposes for collecting and disseminating information include protecting public, occupational and environmental health; promoting sustainability; facilitating source reduction and other forms of pollution prevention; enhancing public participation; satisfying the public's right to know; regulatory compliance verification; etc.

In order to achieve those purposes, information must be used to establish environmental priorities, identify goals and environmental indicators, allocate resources, and measure environmental results, instead of being treated merely as a byproduct of program efforts or as a program tracking mechanism. Information must be used to identify and prioritize hazards, and focus information collection activities where efforts are likely to lead to the greatest hazard and risk reduction.

In order to support agency efforts, the public and private sectors need to be shown that the information collected is useful to their needs, so agencies need to reach out to both sectors and use the information collected to demonstrate environmental improvements, as well as to educate the sectors in environmental protection concepts and behaviors.

Besides using information to improve environmental enforcement, the agencies must use their information resources to educate and enlist business support for programs and for development of environmentally sound technologies.

- *Active Use of Information to Empower Partners*

Protection of human health and the environment requires cooperation from all sectors. Federal governments need to foster information partnerships with the other sectors in a variety of areas, including a) letting all publics know what information is available and providing easy access to it, including disclosure of sources, limitations and intended use; b) developing diverse information dissemination methods to enable the public to be full environmental partners, such as hotlines, public libraries, Internet, facilitated searches, bulletin boards, on-line access, and broadcast services; c) minimizing the burden on data providers; d) cooperating and sharing information with states, local governments, non-governmental organizations and other decision-makers; and e) presenting data in user-friendly and user-oriented ways that provides both hard-copy and electronic access and that supports analysis and public understanding.

- *Integrated Information Infrastructure*

As noted above, lack of integration is particularly devastating to public access. To become useful information, data must be standardized (i.e., be packaged in common vocabularies, numeric and logical identifiers, indicators of environmental condition, uniform formats, etc.) and databases merged. Failure to do so results in lack of inter-agency, inter-governmental and inter-sectoral access; i.e., the status quo.

Integration requires agencies to define data requirements and data gaps in the existing decentralized data inventories, prioritize data needs, improve information collection to fill identified gaps (including expanding scope as appropriate to include additional environmental and public health data, demographic data, economic data, etc.), and consolidate reporting requirements where feasible.

In recent years several unsuccessful bills have been introduced in Congress that would mandate integration of data from the many programs and offices within, and in some cases, outside EPA, including a proposal for creation of a Bureau of Environmental Statistics. Partly in response to such Congressional efforts, EPA has taken the lead among US agencies in developing agency-wide public access to its information.

Because it has fewer existing databases and its environmental program is relatively new, Mexico has the opportunity to move directly into an integrated data system and thereby avoid some of the deadends that US agencies have been led into by non-strategic, single-media data collection. In fact, Mexico appears to have already begun that process with the consolidation of environmental and natural resources programs under a new Ministry as announced during the inauguration of President Zedillo earlier this month. In addition, the ease with which intersecretarial commissions can be established under Mexican law, provides an additional opportunity to integrate information resources from different agencies.

A step-wise approach to integration may be appropriate, and an easy first step may be a joint binational pilot project on the Mexico-US border where many cooperative programs have already been initiated. For example, development of a binational watershed database could be a particularly useful objective of an ongoing binational program addressing problems of a transboundary surface water such as that shared by the Tijuana-San Diego areas. Similarly, a relatively simple first step toward a substance-specific database could be a pilot cradle-to-grave tracking project for transboundary traffic in particular substances such as heavy metals or pesticides.

- *Establishing an Effective Information Resources Management Organization*

While each Party must develop its own internal information management organization, the North American Commission itself is ideally situated to become the central organ for developing a strategic integrated data management infrastructure binationally and trinationally, and for encouraging unilateral development of such systems by each Party.

### **Recommendations for Improving Information Access Systems**

Integrated data resource management is a necessary corollary to economic integration. The key step to enhanced public access to environmental information is the establishing of a comprehensive integrated information infrastructure (nationally, binationally and trinationally, as appropriate) to support strategic use of information in protecting human health and the environment. Integral and essential to this step is the need to empower the public to participate



fully in the process of information collection, management and use.

While the following recommendations reflect the emphasis in all three countries that has been placed on public access to information about pollutants and other hazardous materials, they are not limited to that concern; and while some of these recommendations address one or another Party specifically, suggesting improvements that could be made by applying lessons learned through the experiences of one party to problems in another, in many instances the recommendations may be applicable to both or all three Parties, and may be implemented bi- or trinationally as well as unilaterally.

As discussed above, certain recent unilateral initiatives by the two parties have begun to address some aspects of the recommendations made in this paper. Mexico, for instance, in cooperation with state governments, has begun compiling an atlas of environmental risks and designing a pilot national hazardous materials inventory in cooperation with the United Nations Institute for Training and Research (UNITAR), and has initiated a national environmental plan containing environmental protection criteria for guiding development throughout the nation. In addition, on December 1st, while this paper was in the final stages of preparation, in connection with the inauguration of President Zedillo, Mexico announced a major consolidation of environmental and natural resource programs, creating an opportunity to better integrate data and functions. In the US, the EPA has floated several proposals for expanding the scope of its TRI and TSCA programs and for linking the two more closely, with an eye to improving public access to the data they contain. In addition, the EPA has taken steps to make agency information resources accessible to the on-line. The Parties are to be commended for taking these initiatives and encouraged to complete them. The following recommendations are intended to complement and enhance their efforts in these matters.

Similarly, binational task forces and work groups for the past several years have been addressing harmonization of standards for certain materials and processes; of hazardous waste classification and standards for its transportation, treatment and disposal; of emergency planning and response procedures, and other matters. In these cases, the Parties are again to be commended and encouraged to systematize and expedite their work and open their deliberations to public participation.

An effective system for assuring public access to environmental information in the NAFTA region requires that each of the Parties improve its own system to achieve equal or very similar degrees of development and work cooperatively to identify the best parts of each Party's system, adopting them nationally as appropriate.

### ***1. Integrate data systems***

While recognizing that absence of information in many areas of environmental concern is a serious problem, perhaps the most significant obstacle to the public's access to environmental information is the absence in both the US and Mexico of integrated government data management systems.

- It is recommended that the Parties, unilaterally and binationally, develop an integrated environmental data system using a phased approach, beginning by cross-linking existing databases and generating new data as needed to fill in gaps.
- The integrated system should allow inter-agency, inter-Party and citizen access, and facilitate coordination of data collection and analysis efforts among all levels of government.

***In regard to hazardous materials:***

Recognizing that Principle 10 of the *Rio Declaration* affirms that "each individual shall have appropriate access to information that is held by public authorities, including information on hazardous materials and activities in their communities"; and that the three Parties have agreed to "promote pollution prevention policies and practices" (NAAEC, Art.1.[j]), it is recommended that the Parties:

- Using the existing hazardous materials inventory systems in Canada (the National Pollutant Release Inventory [NPRI]) and the US (the Toxics Release Inventory [TRI], Emergency Planning [Tier Two], and Toxic Substances Control Act databases) as a base, promptly establish mandatory national, strategic integrated hazardous materials reporting and disclosure systems that are geared toward accident, exposure and pollution prevention.

Further recognizing that integrating by such data elements as facility, respondent, chemical, environmental media, economic class and other demographic factors, health effects, natural resource use, energy input, and regulatory compliance is critical to environmental, occupational and public health protection, it is recommended that the Parties:

- Establish a coordinated inter-agency and inter-Party database with data from the existing files of the various agencies dealing with human health and the environment, programming the systems so that the information can be used to identify specific problem areas and to identify opportunities for pollution prevention. For example, the programs might be used to correlate hazardous materials use and release data with human exposure data, disease incidence and mortality data, water contamination data, etc.; and that,
- The Commission encourage unilateral efforts by the Parties to move towards these goals, including specific encouragement of US-EPA efforts to link its TSCA and TRI programs, and Mexico's efforts to develop a national Pollutant Release and Transfer Register.

## ***2. Focus collection and dissemination efforts according to needs and uses of data:***

Recognizing that prominent among the many uses for environmental information are protection of human health and the environment, enhancing public participation, providing means for government accountability, satisfying the public's right to know, and otherwise promoting sustainable development, it is recommended that the Parties:

- Use their information resources to identify environmental priorities, including current and impending environmental threats and burdens; and
- Redirect their data collection and dissemination programs to provide information most of use in correcting preventing problems in those priority areas.

## ***3. Expand scope of data collection and disclosure efforts***

Recognizing that a comprehensive, integrated environmental information system must incorporate data from a wide range of disciplines, policies, natural systems and human activities, including but not limited to demographic and economic statistics, consumption patterns, public and occupational health conditions, industrial and development processes, natural resource and substance use, fish and wildlife populations, energy use, industrial processes, and enforcement data, it is recommended that the Parties:

- Develop their integrated environmental information systems inclusively rather than exclusively; and that,

***In addition, in regard to hazardous materials:***

- Building on the existing Toxics Release Inventory (TRI) and Toxics Substances Control Act Inventory in the US, the National Pollutant Release Inventory (NPRI) in Canada, and the pilot Pollutant Release and Transfer Register (PRTR) being developed in Mexico, establish a comprehensive, integrated, regional hazardous materials data collection and disclosure system, including:
  - Mandatory reporting, on a standardized report form, from the full range of sources about the whole life-cycle of hazardous materials, including:
    - All economic sectors handling or releasing hazardous materials
    - Point and non-point sources
    - All hazardous materials (chemicals, explosives, corrosives, biological agents, bioengineered organisms, radiological materials, hazardous wastes, etc.)
    - Peak release as well as total annual release figures
    - Process-use and end-use data
    - Facility-level throughput and materials balance data (how much of a given substance comes into a plant, how much is produced on-site, what the starting and ending annual inventory amounts are, how much is consumed in-process, and how much leaves the site in or as product)
    - Process-specific use information
    - Pollution prevention opportunities and efforts; and that
    - Enhance current emergency planning efforts in the border zone between the two countries by developing state-of-the-art response capability systems in border communities, including information and communication software providing comprehensive hazardous materials referencing, and by requiring regulated facilities to immediately report compliance violations; and that
    - Establish monitoring programs to validate reported releases and require reporting entities to keep monitoring records, which are open to inspection by the government and the public, and require timely notice when the reporting facility is out of compliance; and that
    - Establish region-wide cradle-to-grave tracking systems for traffic in hazardous materials, including but not limited to raw materials, process chemicals, hazardous waste, and consumer products and other articles of commerce.

***Furthermore***, recognizing that accuracy of reported data is essential in any information system, and that accuracy cannot be reliable on trust and voluntarism but is dependent on methodical validation and verification, it is recommended that the Parties:

- Require timely validation of reported data, including (where applicable) sampling, monitoring, agency and third party inspections

- Require penalties for reporting false data

***and, in regard to hazardous materials,***

- Require timely notice when facilities are out of compliance with norms
- Establish standardized chain of custody criteria harmonized throughout the region.

***Furthermore,*** recognizing that one of the most corrupting influences in database development is information excluded due to claims of confidentiality, it is recommended that the Parties strictly limit grounds for confidentiality claims to protection of national security, personal privacy, and trade secrets, and that the Parties:

***In regard to confidential business information, the Parties:***

- Require claimants to substantiate confidentiality claims at the time the claim is submitted, including demonstration that:
  - disclosure of the information is likely to cause unreasonable competitive harm to the claimant;
  - the information is not readily available through any other government or private source, including news media articles, public corporate reports or mandatory disclosure under another federal, state or local statute;
  - the information has not been disclosed to any other person except the government and others bound by confidentiality agreements, and that reasonable measures have been taken by the claimant to ensure the confidentiality of the information; and that
- Require the substantiation document to be signed a by high-level official of the firm making a claim that the claim is valid;
- Require that agencies review previously granted claims according to these criteria and that the time be limited during which information may be claimed as confidential without resubstantiation according to these criteria;
- Require penalties of industries making false claims of confidentiality;
- Authorize Parties to the Agreement, as well as states and provinces to have access to information claimed as confidential upon demonstration that they have a legitimate need for the information to protect human health and the environment and can adequately protect the information against unauthorized disclosure;
- So that the public may "know what it doesn't know" (i.e., so it may know at least in general what kind of information is being withheld), establish a list of common data elements that are never to be considered confidential, including:
  - Name of claimant
  - Trade name of process, if applicable
  - Kind and degree of potential impacts
  - Precautionary, mitigative and emergency measures; and

***In addition, in regard to judicial secrecy:***

- Establish mechanisms to disclose the environmental performance and regulatory compliance history of individuals and corporations conducting or attempting to conduct activities with potential to adversely impact the environment anywhere in the NAFTA region
- Prohibit sealing of court records in matters that affect public, occupational and environmental health

***In addition, in regard to hazardous materials, it is recommended that the Parties:***

- Disallow bars to disclosure concerning information about extremely toxic substances, and the parties should clarify that the following categories of information are never confidential:
  - Identity of persons reporting or using hazardous materials
  - Trade name of substance
  - Chemical, radiological or biological class
  - Physical, radiological, chemical and biological characteristics
  - Health and environmental effects
  - Chemical and physical form and amount (to be produced, in commerce, on site, etc., depending on reporting venue)
  - Commercial use(s)
  - Safe handling procedures
  - Emergency medical measures to be taken in the event of exposure
  - Precautionary, mitigative and emergency measures to be taken in the event of a release
  - Kind and degree of potential impacts
  - The effect of excluding such information on the materials accounting of a facility or site

***Standardize collection data, reporting forms, storage systems and access tools***

Recognizing that to be workable, an integrated environmental information system must be built on common vocabularies, access procedures, and other standardized mechanisms; and in order to facilitate data input, transfer, analysis and utilization; and to reduce burden on industry and government caused by multiple reporting requirements; it is recommended that:

- The integrated environmental database or system of databases the Parties establish, be kept updated and employ systematic interdisciplinary language, including harmonized codification, numeric and nomenclatural identifiers for common data elements such as indicators of environmental condition, industrial categories and processes, specific substances and organisms, ecosystems, etc.; and that

- The system be based on a distributed systems approach employing such standards and software as Standard Query Language (SQL) and Open Systems Interface (OSI) and their contemporary progeny; and that

- Basic components of the system include an Environmental Information Resources Directory (EIRD) to identify available government information sufficiently to facilitate access to it; and an Environmental Data Element Dictionary (EDED) of standard terms, definitions, codes, etc. so that information holdings within and across agencies and governments are accessible through common pathways; and that

- The system allow for decentralized inter-agency and public access, including secondary gateway access, and that it be affordable to the general public.

***In addition, in regard to hazardous materials, it is recommended that the Parties:***

- Establish a regionally harmonized reference list of:
  - Biological species and hazardous wastes identified by commonly-recognized numeric and logical identifying codes
  - Chemical-specific reportable substances identified by commonly-recognized numeric and logical identifying codes, preferably the Chemical Abstract Service numbers and IUPAC names, and consisting of, at a minimum:
    - The regulated substances of each nation
    - The two Gobernación lists of High Hazard Substances
    - The US-EPA list of Extremely Hazardous Substances (EPCRA § 303)
    - The US-EPA list of Toxic Chemicals subject to Toxic Release Inventory and Pollution Prevention reporting (EPCRA § 313)
    - Substances subject to the US-EPA Accidental Release Prevention rules and the US Occupational Safety and Health Administration's Process Safety Management rules (CAA 112[r])
    - Substances subject to reporting pursuant to Canada's National Pollutant Release Inventory system
    - Pesticides classified as Hazard Class 1, 2 or 3 by any of the three parties or by the World Health Organization
    - Potentially harmful bioengineered organisms
    - Radioactive materials

***5. Enhance public participation***

Recognizing that effective government requires transparent operations and participation of the public and private sectors; and in order to most effectively take advantage of the resources and other benefits offered by the public's involvement in environmental decision-making; and in

order to overcome the insularity incurred by what is sometimes called "the government culture," it is recommended that the Parties:

- Develop programs to effectively involve the public and private sectors in the design and development of strategic environmental data management systems by:
  - Implementing procedures to assist the public in identifying what kind of information is available, where it is available, in what form it is available, etc., and otherwise facilitating access to it
  - Aggressively pursuing information-based partnerships with co-implementors (e.g., state and local governments) and stakeholders, including the private sector and the general public
  - Improving notification procedures to assure that the public receives timely notice of any environmental decision-making process underway or to be initiated
  - Increasing opportunities for comment at all stages of decision-making, especially the pre-decisional stages
  - Providing public comment periods that realistically consider the time needed by citizens to review and respond meaningfully to government proposals

***In regard to Access to Enforcement Information:***

- Provide public access to enforcement proceedings and opportunities for private right of action in all areas of environmental concern when government fails to respond to information requests or fails to enforce its own laws, including
  - providing clear standing for citizens to effectively appeal or rectify government decisions and compel government action against environmental offenders; and
  - providing standing for citizens of either Party to take action to protect human health or the environment in the other Party's courts
- Restrict grounds and scope of judicial secrecy, including barring the sealing of records concerning terms of settlements of appeals or suits involving matters that may adversely affect public, occupational or environmental health
- Publicize environmental compliance of companies along with publication of data on the companies' use and release of hazardous materials
- Encourage Mexico to clarify that the broad interpretation of standing allowed citizens under that Party's administrative complaint process will be carried forward to civil proceedings to allow the same individual or group that has exhausted administrative remedies to pursue a civil claim on behalf of the environment without a strict showing of individual harm.
- Open site inspections to include participation of citizens from neighboring communities, in order to enhance public education concerning operations of industry and regulatory agencies, as well as enhance credibility/accountability of agency

***6. Improve information dissemination***

Recognizing that availability does not necessarily translate to effective access, it is recommended that the Parties:

- Provide for user-friendly on-line electronic access to government records
- Provide electronically and publish in hard-copy, a directory of files and other sources of environmental information they hold, along with a clear procedures for access
- Provide for decentralized repositories of public documents for public comment (e.g., in the state and locale where projects occur)

***In addition, in regard to hazardous materials:***

- Require and actively enforce effective pesticide handling and safety training and education programs for farmers, farmworkers and potentially at-risk members of farming communities, with an emphasis on pesticide use reduction, Integrated Pest Management, and non-chemical alternatives (including recognition and use of beneficial insects)
- Require and actively enforce effective workplace hazardous materials training programs for industrial workers
- Provide for effective product labeling of consumer goods to disclose contents, proper handling (use, storage, disposal, etc.), dangers to health and environment, etc.

***7. Recommendations to the North American Commission***

Recognizing that a central function of the North American Commission is the oversight of environmental protection efforts in the NAFTA region and promoting public access to information about such efforts, it is recommended that the Commission:

- Take the initiative in establishing itself as the central organization for developing a strategic integrated environmental data management infrastructure in the region, and for encouraging unilateral development of such systems by each Party;
- Establish region-wide Environmental Information Office
- Initiate a study to determine the current situation in NAFTA countries in regard to public access to information, identifying current mechanisms and their effectiveness as well as obstacle and opportunities for enhancement;
- Convene a panel of experts, to study, through pilot demonstrations where appropriate, means of establishing harmonized strategically integrated environmental data management systems among the Parties, including exploration of basic alternatives in terms of data architecture, distribution channels and other issues concerning technology development and policy;
- Establish a task force to identify data standardization needs and options for establishing a regional environmental data management system to enhance public access to environmental information in the region;
- In cooperation with NOAA, SEDESOL and other agencies participating in existing binational programs for correcting environmental problems in the transboundary Tijuana



River watershed, initiate a pilot project to develop a binational integrated environmental database;

- In cooperation with SEDESOL, the US Bureau of Mines and other agencies as appropriate, initiate a project for cradle-to-grave tracking of traffic in heavy metals or pesticides across the Mexico-US boundary, as a pilot project to develop an integrated binational hazardous materials database;
- Convene a review panel to investigate and report on implementation of Prior Informed Consent (PIC) procedures and other provisions of the UN-Food and Agriculture Organization's *International Code of Conduct on the Distribution and Use of Pesticides*, and to recommend which pesticides used in the region may be eligible for inclusion on the PIC list, with particular concern for adding to the PIC list any pesticides that cause or significantly contribute to pest resistance or may be disruptive of Integrated Pest Management (IPM) practices and goals;
- Convene a review panel to determine if hazard information on pesticide labels and labeling in the NAFTA region conforms to Food and Agriculture Organization (FAO) guidelines on good labeling practice for pesticides;
- Convene a review panel to determine if hazardous materials emergency planning and response capability in the NAFTA region conforms with United Nations APELL recommendations.
- Support efforts of the Parties to establish integrated environmental data systems these recommendations by providing encouraging funding through the North American Development Bank, the World Bank, etc.

## References

- Jean Acquatella. 1994. *Primer reporte, Concepto y alcance del Proyecto Piloto de Implementación del Inventario PRTR, y Levantamiento de la Estructura Legal, Administrativa y Técnica actual de México relacionada con la Implementación de este Inventario*. México, D.F., Sedesol/INE-UNITAR.
- Gildardo Acosta-Ruíz, Bruce G. Carey, et al. 1994. *Border Right-to-Know Project: The 1993 Northeastern Sonora Pilot Inventories*. Agua Prieta, Sonora and Bisbee, Arizona: Enlace Ecológico and Arizona Toxics Information.
- Gary D. Bass and Alair MacLean. 1993. Enhancing the Public's Right-to-Know about Environmental Issues. *Villanova Environmental Law Journal* 4(2): 287-321.
- Gary D. Bass and David Plocher. 1989. Strengthening Federal Information Policy: Opportunities and Realities at OMB. *Software Law Journal* 3(3):413-459.
- Gary D. Bass and David Plocher. 1991. Finding Government Information: The Federal Information Locator System (FILS). *Government Information Quarterly* 8(1):11-32.
- Susan Perkoff Bass. 1993. Information Access Mechanisms in the U.S. In, Fundación Mexicana para la Educación Ambiental, et al., *Primera Reunion de Norteamerica sobre Derecho Ambiental, Phase II* (Tepotzotlán: FMEA), pp. 57-66.
- Greg M. Block, "One Step Away from Environmental Citizen Suits in Mexico," *Environmental*

*Law Reporter* 23(1993):10347-10353).

María del Carmen Carmona. 1993. Alternatives Available in the National Legislation of the Region. In, Fundación Mexicana para la Educación Ambiental, et al., *Primera Reunion de Norteamerica sobre Derecho Ambiental, Phase II* (Tepotzotlán: FMEA), pp. 44-55.

Eliot Christian. 1994. *The Government Information Locator Service (GILS): Report to the Information Infrastructure Task Force, May 2, 1994*. Washington, DC: Office of Management and Budget.

Commission on Environmental Quality, Quality Environmental Management Subcommittee. 1993. *Total Quality Management: A Framework for Pollution Prevention*. Washington, DC: Executive Office of the President.

Jacqueline B. Courteau and Nancy Lilenthal. 1991. *Toward a More Informed Public: Recommendations for Improving the Toxics Release Inventory*. NY: Inform.

Environmental Law Institute 1993. *Information Access Mechanisms: Collecting and Disseminating the Information Necessary for Environmental Protection*. Washington, DC: ELI.

William Futrell. 1993. Proceedings, Public Access and Judicial Review: A Viewpoint from the United States. In, Fundación Mexicana para la Educación Ambiental, et al., *Primera Reunion de Norteamerica sobre Derecho Ambiental, Phase II* (Tepotzotlán: FMEA), pp.15-24.

Michael B. Gerard. 1994. The Dynamics of Secrecy in the Environmental Impact Statement Process. *New York University Environmental Law Journal* 2: 279-291 (March 1994).

Gretta Goldman and Sarojini Rengam. 1988. *Problem Pesticides, Pesticide Problems: A Citizens' Action Guide to the International Code of Conduct on the Distribution and Use of Pesticides*. Penang, Maylasia: International Organization of Consumers Unions and Pesticide Action Network.

Michael Gregory. 1992. Environment, Sustainable Development, Public Participation, and the NAFTA: A Retrospective. *Journal of Environmental Law and Litigation* 7: 99-173.

Peter Hernon and Charles R. McClure. 1986. *Federal Information Policies in the 1980's: Conflicts and Issues*. NY: Ablex.

International Conference on Chemical Safety, Stockholm, Sweden, 25-29 April 1994. Final Report. 1994. UN Doc., E/CN.17/1994/19, IPCS/ICCS/94.8.

Christopher M. Johnson. 1992. *Defining the Context of the Right to Information*. San Francisco: Sierra Club Legal Defense Fund.

International Union for the Conservation of Nature. 1991. *Draft Covenant on Environmental Conservation and Sustainable Use of Natural Resources*. UN Doc. A/CONF.151/PC/WG.III/4.

Massachusetts Institute of Technology, Center for Technology, Policy and Industrial Development. 1993. *The Encouragement of Technological Change for Preventing Chemical Accidents: Moving Firms from Secondary Prevention and Mitigation to Primary Prevention*. Cambridge, Mass: MIT.

Warren Muir. 1994. Testimony on Reauthorization of the Toxic Substances Control Act before

the United States Senate Committee on Environment and Public Works, Subcommittee on Toxic Substances, Research and Development (17 May 1994).

National Labor Relations Board v. Robbins Tire & Rubber Co., 437 U.S.214, 242 (1978).

National Research Council, Committee to Evaluate Mass Balance Information for Facilities Handling Toxic Substances. 1990. Tracking Toxic Substances at Industrial Facilities: Engineering Mass Balance versus Materials Accounting. Washington, DC: National Academy Press.

New York University Environmental Law Journal Editorial Board. 1993. The Implications of Secrecy in Environmental Law: Colloquium Introduction. *New York University Environmental Law Journal* 2: 187-190 (March 1994).

Organization for Economic Cooperation and Development. 1979. *The Assessment of Projects with Significant Impact on the Environment. OECD Recommendation C(79)116 (May 8, 1979).*

Organization for Economic Cooperation and Development. *Environmental Assessment of Development Assistance Projects and Programs. Recommendation C(85)104 (June 20, 1985).*

Organization for Economic Cooperation and Development. 1992. *Guiding Principles for Chemical Accident Prevention, Preparedness and Response: Guidance for Public Authorities, Industry, Labour and Others.* Paris: OECD.

Henry H. Perritt, Jr. 1993. *Alternative Approaches to Disseminating Federal Information. In., Agenda for Access: Public Access to Federal Information for Sustainability through the Information Superhighway.* (In press, Washington, DC: Bauman Foundation).

Neil A.F. Popovic. 1993. The Right to Participate in Decisions that Affect the Environment. *Pace Environmental Law Review* 10(2): 683-709 (Spring).

Tom Riley, ed. 1986. *Access to Government Records: International Perspectives and Trends.* Bromely, England: Chatwell-Bratt).

Jane Rissler and Margaret Mellon. 1990. Public Access to Biotechnology Applications. *JAN Natural Resources and Environment* 4(29): 1-6.

Rockwell International. 1989. *Maquiladora/Twin Plant Hazardous Waste Management Handbook.* Dallas, Texas: Rockwell International Network Transmission Systems Division.

Anne Rowley. 1994. Mexico's Legal System of Environmental Protection. *Environmental Law Reporter* 24: 10431-10448 (August 1994).

Rodrigo Sanchez-Mejorada Velasco. 1992. Foreign Investment in Mining in Mexico. *St. Mary's Law Journal* 23: 821-839.

David Sarokin and Jay Schulkin. 1991. Environmentalism and the Right-to-Know: Expanding the Practice of Democracy. *Ecological Economics* 4:175-189.

Secretaría de Gobernación. 1990. *Plan Nacional de Protección Civil, 1990-94.* México, D.F.: Protección Civil.

Slater, Courtenay. 1982. U.S. House of Representatives, Hearing before a Subcommittee of the

Committee on Government Operations, *Federal Government Statistics and Statistical Policy* (3 June 1982).

United Nations Environment Programme. 1987. *Environmental Law Goals and Principles, Environmental Impact Assessment*. U.N. Doc.UNEP/Z/SER.A/9.

United Nations Environment Programme. 1989. *London Guidelines for the Exchange of Information on Chemicals in International Trade, amended 1989*. Geneva: UNEP.

United Nations Environment Programme. 1994a. *Informal Consultation on a Code of Ethics on the International Trade in Chemicals, Fourth Session*. UN Doc., UNEP/PIC/CONS.2/4/3 (Geneva, 7-8 April 1994).

United Nations Food and Agriculture Organization. 1985. *Guidelines for the Disposal of Waste Pesticide and Pesticide Containers on the Farm*. Rome: FAO.

United Nations Food and Agriculture Organization. 1990. *The International Code of Conduct on the Distribution and Use of Pesticides (Amended Version)*. Rome: FAO.

United Nations Food and Agriculture Organization. 1993. *Analysis of Government Responses to the First Questionnaire on the International Code of Conduct on the Distribution and Use of Pesticides*. Rome: FAO.

United States Environmental Protection Agency, Office of Pollution Prevention and Toxics. 1993. *Chemical Use Inventory (CUI) Discussion Paper*. Washington, DC: EPA (20 December 1993).

United States Environmental Protection Agency, Information Resources Strategic Planning Task Force. 1994. *Using Information Strategically to Protect Human Health and the Environment: Recommendations for Comprehensive Information Resources Management*. EPA 270-K-002 (August 1994).

United States Environmental Protection Agency, Office of Pollution Prevention and Toxics. 1994a. *Final Action Plan: TSCA Confidential Business Information Reform*. Washington, DC: EPA (20 June).

United States Environmental Protection Agency, Office of Pollution Prevention and Toxics. 1994b. *Issues Paper: Expansion of the Toxics Release Inventory (TRI) to Gather Chemical Use Information; TRI-Phase 3: Use Expansion*. Washington, DC: EPA (6 September).

United States General Accounting Office. 1991. *EPA's Chemical Testing Program Has Not Resolved Safety Concerns*. GAO/RCED-91-136.

United States General Accounting Office. 1993a. *EPA Cannot Ensure the Accuracy of Self-Reported Compliance Monitoring Data*. GAO/RCED-93-21.

United States General Accounting Office. 1993b. *EPA Toxics Substances Program: Long-Standing Information Planning Problems Must Be Addressed*. GAO/AIMD-94-25 (November 1993).

United States General Accounting Office. 1994a. *Executive Guide: Improving Mission Performance through Strategic Information Management and Technology* (GAO/T-AIMD-94-115 (May)).

United States General Accounting Office. 1994b. *Toxic Substances Control Act: Legislative Changes Could Make the Act More Effective*. GAO/RCED-94-103.

United States Office of Management and Budget. 1994. *Draft OMB Bulletin: Establishment of Government Information Locator Service*. Washington, DC: OMB.

Wallman, Katherine K. 1988. *The Statistical System Under Stress: Framing an Agenda for Success (Working Paper)*. Washington, DC: Council of Professional Associations on Federal Statistics (12 August 1988).

Warren, Jacqueline M. 1993. Problems Encountered with Confidentiality Bars on Toxic Substances: Disclosure Imposed by Federal Environmental Statutes. In, Colloquium on the Implications of Secrecy in Environmental Law. *New York University Environmental Law Journal* 2: 292-299.

Working Group on Community Right-to-Know. 1993. Good, Better, Best: Three Types of Data for Toxic Chemical Inventories. *Working Notes on Community Right-to-Know* (May-June), p. 2.

World Health Organization, International Programme on Chemical Safety. 1994. *The WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification, 1994-1995*. Geneva: WHO-IPCS.

World Health Organization, International Programme on Chemical Safety. 1994. *Benefits of Pollutant Release and Transfer Registers. Draft report*. Geneva: WHO-IPCS.

World Wildlife Fund. 1993. *The Right-to-Know: The Promise of Low-Cost Public Inventories of Toxic Chemicals*. Washington, DC: WWF.

## Public Interest Science and the Myth of Objectivity (1995)

Michael Gregory, presented to the Environmental Institute Workshop, "Science: Its Uses and Abuses When Setting Public Policy," Washington, D.C. (9 May 1995)

*[Disclaimer: Although the following remarks focus on abuses of science in setting public policy, misconceptions in the collective consciousness concerning the role of science and scientists, and failures of some members of the scientific community to practice their profession in service to the public good, these remarks should not be construed as a denigration of the legitimate uses of science; or of the natural, longstanding and overwhelmingly beneficial alliance between most scientists and the public; or as a condemnation of science itself. Rather, these remarks, delivered to an audience comprised principally of scientists and public interest attorneys, were intended to clarify some of the current psycho-social obstacles to public interest science and suggest some steps that might be taken to eliminate or mitigate such obstacles.]*

If on the one hand it's difficult to talk about the uses of science in public policy without flogging the obvious and platitudinous, in some ways it's almost too easy to talk about the abuses. We are all too familiar with examples like the lack of complete data being pushed as an excuse for not regulating; or the hoodwinking of our communities with the obverse deception, that there can be such a thing as "complete knowledge" if we just wait long enough for "sound science" to find the answers ("sound science" being, again, a euphemism for not regulating); or the blatant lies about safe clean energy, the safety of pesticides, the safety of incinerators, all based on twisting the meaning of "safe"; or the flummoxing of the public with the gobbledegook and newspeak of risk assessments; or the deliberate bamboozling of just about everybody with statements about how "there are no studies to prove. . ." as though body counts, and not precaution and prevention, were the appropriate basis for regulation. And of course the real horror stories of science perverted into the service of war and terror for making chemical and biological agents, tools of torture and atom or neutron bombs.

The list could go on, covering more sins of omission and commission, one instance after another where the civil rights of citizens, the right not to be poisoned, the right to a healthful environment, are violated by misuse of science to skew public policy.

As an organization involved in the analysis of technical data and policy and the translating of it to the public and to decision-makers in various governmental and non-governmental stations in various countries, Arizona Toxics comes across abuses of science like these on a daily basis. Listing them and giving examples is a useful exercise, but after giving a few more bad examples I'd like to spend the rest of my time exploring some of the causes behind the abuses and some of the reasons why community and environmental activists sometimes have fundamental problems even with good science, and how some of those problems might be eliminated or mitigated by better policy. But first, a few more abuses for the list:

- laboratory fraud
- cooked impact statements and analyses
- defining study protocols to research only certain facts
- pretending that the impacts of individual chemicals, facilities or projects can be adequately discussed as isolated phenomena
- using selective data to conveniently leave certain facts out of reports
- knowingly using inappropriate statistical analysis and modeling formulas
- substituting economic for biological indicators
- implying that the scientific validity (i.e., proper methodology) of a study constitutes objective truth of the results (even though other equally valid studies may produce

- contradictory results)
- relying on inappropriate sampling procedures for the type of exposure involved (for example, taking blood samples at Superfund sites for solvents long after exposure when it is almost certain no trace of the chemical will show up, thereby assuring a finding of no significant impact).

A variant of that last abuse occurred in Tucson a few years ago when dozens of school children and staff were sent to the hospital after malathion from a man spraying his rose bushes down the street was highly volatilized in the desert heat and picked up by the school's ventilating system. The local hospitals, on advice from the poison control center, did some testing for cholinesterase levels, but found no abnormal levels and did no follow-up testing—which means the testing was basically worthless since normal cholinesterase levels vary so widely among individuals that the effect of exposure to low doses can only be determined by sequential sampling to see the specific patterns in the exposed individual. The failure to do follow-up sampling was due not only to incompetence, but to the well-known "scientific" opinion that malathion is a relatively "safe" pesticide toxic only in large doses, and only an acute problem. Consequently, we (and the victims) have no idea what delayed or chronic effects might be showing up from the malathion itself, from the so-called inert ingredients of the formulation (presumably xylene) or from the highly toxic contaminants and degradation products (e.g., malaaxon).

The presumption that substances should be considered innocent until proved guilty is one of the most virulent contaminants in toxics policy, closely related to the presumption that dilution is the solution to pollution. Implicit in those presumptions is the belief in a toxicity threshold, a no-adverse-effect level, when all we really have for most substances is a no *observed* adverse effect level, usually due to a lack of data—often because of a refusal to get the data and a policy decision by government not to require it or (e.g., in the case of EPA's TSCA database) a failure to release what data there is. The pervasive presumption of no harm in toxics policy is indicative of how scientific uncertainty, with the help of industry lobbyists, is routinely translated into political indecision and inaction, in effect acting as a bar to legal remedy, protecting the status quo, and leaving the burden of scientific uncertainty on the public and the environment.

The practical effects of policies that use scientific uncertainty to maintain the status quo is that people end up getting used as guinea pigs. One of the more glaring recent examples that I'm aware of is the proposal by the California Department of Health Services to repeat the spraying of Los Angeles residents with malathion for medfly control even though the studies on health effects for that kind of application haven't been done, arguing to EPA that they would use studies of people exposed to the spraying to fulfill the research needs for registration.

One of the reasons so many citizens become plaintiffs (when they don't resort to apathy, absolute cynicism or street action) and, incidentally, why protecting the right to citizen suit is so important these days—is that the rules of evidence in our legal system, insofar as they are more open to weight-of-evidence approaches in showing causation, tend to be more reasonable, more protective of human and civil rights and the environment, and much more responsive to the public's need for timely dispute resolution than the slow search for scientific proof and the regulatory processes more or less based on it. Empirical science, contrary to some opinion, is not "a collection of 'facts' [but] an indeterminate body of working assumptions" (Carnegie 5); it can never prove anything beyond a shadow of a doubt because all the evidence is never in. It is, at most, a tool for regulators and judges to use in policy and legal decisions which, by their very nature, must consider ethical and social as well as scientific information.

The effects of low dose exposure is one of the main science policy issues floating around today, but to my mind and, I think, to many citizens like me who are neither lawyers or scientists, all those fine hairs are pretty much beside the point because the main issue is not one of science but

of civil rights that goes well beyond questions of harm and effect to exposure itself. One of the main abuses of science has been the convincing of policymakers that a little exposure is ok, as though individuals have no right to be free from exposure to industrial waste products in the first place, regardless of harm or potential harm. It's harm enough having the stuff in your face and lungs and tissue, no matter what it does, or scientific opinion may think it does, beyond that initial insult. While I would agree that most policymakers probably don't need much convincing to forego zero discharge regulation, it's also true that the science community has not done much to disabuse policymakers of their unwarranted belief that their policies regarding low-dose exposure are protective of health, the environment and civil rights.

### *Mr Peepers and Dr Strangelove*

One of the most significant contributions of science in the 20thC has been the theory of "quantum interconnectedness" developed by Niels Bohr and Werner Heisenberg and Heisenberg's corollary "uncertainty principle," a dual concept which informs much of western culture's persistent concern with relativity and uncertainty, and which, insofar as it postulates that the basic constituents of matter and the phenomena involving them cannot be understood as isolated entities but only as components of an integrated whole, provides an analog in modern physics to the basic principle of ecological science first developed a little over 100 years ago and summed up neatly by John Muir as "everything is hitched up to everything else."

These two ideas—*unity in diversity* and *cognitive uncertainty*—are at the heart of contemporary debates about the role of science in public policy and the public perceptions behind them, as they have been, in one incarnation or another, at least since the Ionian School began expostulating on the nature of Nature, the principle of Universal Order, and the role of rationality in knowledge.

Another perception that has taken hold in the popular imagination during this same period is that of science as the premier secular religion. That perfect blend of rational and empirical thought which Francis Bacon extolled as the essence of the *New Work* has become, in effect, one of the very idols of the theatre he inveighed against. We generally argue on a less enlightened plane than Bacon and his contemporaries, but many of the issues are the same, stemming from the same or similar abuses that knowledge has always been subject to when put to service in the marketplace and courtroom.

There is some truth to the allegation that the general public doesn't understand beans about science. For most people modern science has become a cognitive black hole. Not only has the information explosion given us too much to absorb (especially in the life sciences) but the kinds of information and ways of thinking are often so far removed from common sense that the lay public is forced into a marginalized or alienated position in regard to science—either rejecting it directly through cynicism or anti-scientific doctrines or various kinds of mental avoidance behavior; or, at the other extreme, by embracing what we don't understand through a kind of leap of faith into scientism—an addiction to scientific or, more usually, scientific ideas which dismisses as nonsense (i.e., as heresy) any thought that can't be verified by uptodate scientific knowledge, and which believes science (not the kind generally practiced at the present time but "good", "sound" science) will save us from superstition, pluralism and other evils that beset our decadent society.

This ambivalence towards science and scientists permeating our culture has serious implications for public policy. As Gerald Holton, Harvard physics professor and long-time editor of the journal of the American Academy of Arts and Letters put it some 30 years ago (Holton 219), "Of the influences that shape man's actions, none is more powerful than the images we carry in our heads [and] our images of science vastly affect the relationship between science and society." Not only do these images affect the scientist and science profession directly, by determining



"levels and sources of financial support [and] the quality and quantity of instruction offered [but also] the goals scientists set for themselves" and the degree to which "scientific activity can be an integrated part of our culture."

Today, about 150 years after the term *scientist* was first coined to describe the increasing numbers of practitioners in the many new fields of scientific endeavor, the image of the scientist vacillates in the popular imagination between, on the one hand, Mr Peepers and Mr Wizard and, on the other, Dr Frankenstein and Dr Strangelove—from benevolent provider of magic bullets to the evil purveyor of what Marc Lappé has called "the death sciences" of chemical-biological warfare (Lappé 96). Alongside our 50's-style visions of automatic gadgetry in a disease-free utopia are TV clips of DES babies, exploding spaceships, napalmed villages and Hiroshima.

In one mirror of our collective schizophrenia, Einstein is a folk hero, a high priest or pop icon of the secular religion right up there with Newton and his apple, Ben Franklin with his kite, and Archimedes in his bathtub—with the significant difference that unlike the earlier heroes, the public really hasn't a clue what Einstein really said. In fact people generally think his theory of relativity says just the opposite of what it does, and use it to justify a moral, ethical and intellectual relativism that Einstein would have found repugnant. But as with any folk hero, who he was or what he actually thought or did is not particularly important; Einstein is revered simply for being a recognized genius, laughed at lovingly for his crumpled sweatshirt and the other humanizing, mostly imaginary foibles that the folk imagination attributes to him—all in all, with his wild white hair, not far removed from the Wizard of Oz himself.

Scientists themselves are not immune to the dominant cultural stereotype. In the face of the rat race that has produced so much research fraud, professional back-biting and production-line laboratory environments, for instance, it's surprising how many scientists still cling, consciously or unconsciously, to the archaic image of the independent, highly-principled but often misunderstood and lonely genius diligently pursuing pure science in an ivory tower conveniently provided by an anonymous (or at least reproachless) benefactor or benefactress with no strings attached.

This high-tech equivalent of the Marlboro Man is as firmly embedded in the collective psyche of the scientific subculture as it is in our parent culture at large. And it's one of the basic considerations in our toxic communities where technical people sent to address the toxics problems are expected to interface with citizens whose basic distrust of science and technology, for obvious reasons, is likely to run a little deeper than it does in the relatively uncontaminated neighborhoods where our scientists and technicians live. The ivory tower attitude doesn't play well in these communities because it's a little too hard to distinguish from the arrogance toward the lay citizen displayed by all too many well-to-do representatives of science, and the distrust is particularly likely to become antipathy or outrage in the current hyper-awareness in our communities of the prestige and privileges accorded in our society on the basis of caste, class, color and gender.

### ***The Myth of Objectivity***

A similar problem arises when some scientists and their apologists claim that professionalism precludes their being concerned with such matters, that moral and ethical judgments are anathema to the objectivity that is the hallmark of science. Despite the obvious contradictions (most apparent in the collaboration of "pure science" in development of the Nazi death camps and other crimes against humanity—radiation testing in the US during the Cold War, for instance), a vocal subset in the scientist subculture clings to the myth of objectivity and refuses to look at the moral and ethical context of their actions as if their research can be objective or pure when it is conducted in a corrupt system or institution for immoral, unethical or deranged

purposes.

Objectivity may be the last refuge of the scientific scoundrel, one more replay of the old parable about the shepherd who claims he protects his sheep from wolves and disease out of love, when he really is only saving them for market. As was pointed out several years ago in relation to the use of napalm, Agent Orange and other chemical and biological weapons in Vietnam, "It is the scientist who has provided America with its advanced technology. But as long as he continues to believe that his professional standing prevents him from making moral judgments on the political implications of his work, he is doomed to be a technician in the service of military pragmatism" (Lappé 116). In today's world of transnational corporate power, we might better say, military and market pragmatism.

While some scientists, for whatever reasons, may choose not to see such contradictions, the public is not so blind—especially the underprivileged public in our low-income and minority communities where the moral and ethical effects of government and corporate institutions are a major concern and daily topic of conversation. In these communities, which are widely seen as the heart and soul of the grassroots, it is widely understood that politics generally has much more than science to do with causing and cleaning up their problems, and that ethics and morality *should* be at the core of public policy. Under these conditions, the claim of the scientist to objectivity is very likely to be seen as more taurine dropping from the ivory tower and just another expression of the elitist attitude such communities recognize as part of the problem.

The myth of objectivity is central to many policy debates and bears a little more examination. At least two basic functions of science are dependent on objectivity: topical analysis and critical vigilance. Both are adversely affected by the real world context in which contemporary science, far from the ivory tower, has become just one more form of labor for hire. In this real world, as the geneticist Joshua Lederberg explained some 25 years ago, "the project orientation of research support buys a scientist's time in order to accomplish a prespecified and negotiated task. So long as such projects are not too closely supervised, much critical and creative work is still possible with their indispensable support. The universities have, however, reached a state of such abject dependence on project funding that their academic freedom is in serious jeopardy" (Lederberg 130).

The situation within industry labs tends to be even less conducive to independent thinking, of course, and in the years since Lederberg issued that warning the prospects for critical vigilance have become much worse. In the real world it is not a far step from absence of critical vigilance to lack of objectivity—and when coupled with the more or less inevitable moral failure implicit in "science for hire," we are almost bound to be faced with the perverted science manifest in development of not only such products as chemical-biological warfare agents and food crops genetically altered so they can withstand not pests, but heavier applications of pesticides, but with such mundane market-oriented matters as planned obsolescence and junk for conspicuous consumptive consumerism. Only in the most ironic sense can the term "pure science" be applied to such research.

Nonetheless, some scientists cite their fear of corrupting "the purity of scientific truths" (ASLM 8) and the "integrity of science" (Bertin and Henifin 8) as their reason for not coming to the defense of public health and the environment in court cases. In *Daubert v Merrell Dow*, for instance, a case that directly addressed the use of scientific evidence in courts of law, some prominent scientists and scientific associations contended that judges and juries cannot understand complex technical issues; that a jury of "peers" is not made up of peers at all, in the sense that a "peer review" panel is, and, therefore, "cannot fully appreciate" (ASLM 7) the nature of technical evidence. While there is some merit in this argument, it's also highly reminiscent of medieval clergymen claiming that they should be tried only in ecclesiastical rather than civil

courts.

Not only is this concept of scientific "peerage" highly elitist, but even if there were such a thing as "pure" science, since the current state of our technological culture provides almost instant commercial and military applications of research, the ivory tower is not as far from the marketplace and battlefield as it used to be and this rush to market and arms has serious implications for the image of science and scientists. Under such conditions, "moral and political neutrality becomes, in effect, a means of diverting attention from glaring social evils" (Goodman 249).

Furthermore, even if objectivity were possible in such a context, quests for "The Truth" tend to fall a little flat in a society like ours that by and large believes truth is a pragmatic process or progress without any particular end point, a society that has largely identified science with technology and scientists with technicians, engineers and educators.

In addition, while a sizable portion of the public (including some legislators) want to believe in magic bullets and final solutions, in our pluralistic society the very idea of *Truth* sounds vaguely undemocratic to many people, especially under conditions that bring home as a grim reality the dictum that "one man's truth is another man's poison." Like many other classical ideals, in our time the notion of *Truth* itself has fallen victim to both the general dumbing-down and the post-modern nihilism of a general populace which, simultaneously afflicted with a serious case of short-term memory loss and strongly suspecting that there is no capital-T Truth to be found, tends to get intellectually lost in "the free marketplace of ideas [where] all opinions, true and false, are [perceived as] equally valuable to society and equally worthy of promulgation" (Himmelfarb, 536), their respective values being determined mostly by the effectiveness of their advertising and, to a lesser extent, by the tangible goods put into the hands of the consumer. The right of the L. Gordon Liddy's of the world to spit out their venom unfortunately means that many people will be infected by it.

The scientific community, of course, is not solely to blame for the fact that science has become increasingly abstruse and esoteric at the same time that our educational system is breaking down, or for the vagaries of market-driven politics, or for the aberrations of the popular imagination. But the scientific community can be blamed for not doing much to correct this situation, not taking special efforts to compensate, not undertaking extensive outreach programs to inform and involve the broader community in scientific issues and goals, not establishing programs to send interns and journeymen into the field to work with communities in solving real life problems.

As Freeman Dyson of the Princeton Institute for Advanced Study said in a recent issue of *The American Scholar*,

Of course we [scientists] are not alone responsible. But we are more responsible than most of us are willing to admit. We are responsible for the heavy preponderance of toys for the rich over necessities for the poor in the output of our laboratories. We have allowed government and university laboratories to become a welfare program for the middle class while the technical products of our discoveries take away jobs from the poor. We have helped bring about a widening split between the technically competent and computer-owning rich and the computerless and technically illiterate poor. We have helped bring into existence a post-industrial society that offers no legitimate means of subsistence to uneducated youth. And at the same time we have subsidized university tuition for children of professors so that the academic profession is gradually converting itself into a hereditary caste (Dyson 524).

## **Reinventing Science Policy**

Dyson goes on to suggest that "what is needed is a major commitment of scientific resources to the development of new technology that will bring our derelict cities and derelict children back to life" (Dyson 525). In general I think most of us could agree that rehabilitation should be a goal, but how to get there is an issue. I suspect, for instance, that Dyson's faith in technological fixes is misplaced, part of the same old problem. While technology undoubtedly will play a major role, in many, maybe even the majority of cases, what's needed most is not the technological products of science, but the scientist's own creative intelligence coupled with political will.

Similarly, a recent article in the *American Journal of Public Health* calls for renewed attention to and increased funding for disease prevention research, arguing that "the American public would be better served and more cost-effective if there was a focus on public health principles and practices in decision-making" (Goldstein 481). While most of us can probably agree with that, I would argue that a policy for more and better disease prevention research must be coupled with policies that achieve disease and pollution prevention on the ground, not just in the laboratory—which means preventing primary exposure through toxics use reduction. Such an application of the public health Principle of Prudence is particularly important in regard to persistent bioaccumulative toxics which, as organizations like US-Canada International Joint Commission have repeatedly said, once they are manufactured cannot be kept out of the environment and our bodies. The only way to prevent exposure and disease in such cases is to stop their production in the first place and clean up existing deposits.

There is a natural connection between the basic goal of science—to know nature—and the public's right to know, and in a culture like ours, increasingly dominated by science, its products and their purveyors, the public is in dire need of scientific knowledge and assistance from its practitioners. But not all scientific knowledge is to the point. For the most part, for instance, the public does not care or need to know exactly how few molecules of methyl-ethyl badstuff it takes to kill or maim us or our progeny; we really would much rather have the time and money spent on preventing the possibility of exposure and disease in the first place.

Somehow we have to get the idea of public interest science, science as public service, back into our public policies and get public interest scientists into our communities. That's a tall order requiring nothing less than a turnaround of the sold-to-the-highest-bidder structure of our contemporary science community. In closing, I'd like to offer a few suggestions about how that process might get started, at least in regard to toxics policy:

- Our universities should, for instance, require ethics courses and hands-on public service as part of the science curriculum
- Professional scientist societies like the American Association for the Advancement of Science should require continuing public interest service and education of its members like the American Bar Association requires of lawyers
- Public interest organizations should develop public interest scientists and analysts as they have developed public interest attorneys

And in the meantime, and as an incentive to the academic and professional communities, the government should take some specific steps to get public interest science into the field. For instance,

- Congress and the Executive Branch should own up to the obvious connection between pollution prevention and disease prevention and fund them in conjunction

- ATSDR (the Agency for Toxic Substances and Disease Registry) should be given independent agency status so it can perform health assessments that are not inconclusive by design and that will produce toxicological profiles of chemicals free from the constraints of EPA (Environmental Protection Agency) and CDC (Centers for Disease Control) pursestrings
- EPA should fund technical interns for toxic communities who, unlike consultants hired under the Superfund Technical Assistance Grants (TAG) program, would work not just for communities but with them, to empower them by joining science with community needs
- Government funding for scientific research should include public interest service requirements
- ATSDR and EPA should provide grants to private universities and hospitals where personnel have expertise in community toxics exposure, rather than just to state level agencies and universities
- Government scientific review and advisory panels at EPA, NAS (National Academy of Science), NSF (National Science Foundation) and other bodies, including those having influence on research grants from those agencies, should be opened to public participation and public scrutiny to assure that public needs are considered
- The Public Health Service should put more resources into training practitioners to recognize exposure problems and place the trained personnel in disease prevention clinics in toxics communities for surveillance and treatment
- EPA should rapidly integrate its internal databases and interface them with those of other agencies to allow multi-media examination of toxics sources and impacts.

And finally, and, I admit, less probably,

- EPA should put an abrupt end to the abuses of business confidentiality under TSCA (the *Toxic Substances Control Act*) and open its TSCA database to the public
- EPA should put the resources it now spends on risk assessment into prevention, including a serious commitment to zero discharge and the banning of persistent bioaccumulative toxics
- EPA, FDA, USDA, USDI , USDL (Food and Drug Administration and US Departments of Agriculture, Interior and Labor) and other agencies should pursue an aggressive policy of replacing the economic biases in their standards in favor of public, occupational and environmental health protection, and
- EPA and the public interest community should make it a priority to get data out on the Internet so that the public can access it it easily and make its own informed judgments and take action to protect itself as needed.

### ***References***

ASLM. American Society of Legal Medicine, *amicus* brief submitted in *Daubert v. Merrell Dow*, quoted in Bertin and Henifin, p.8.

Joan A. Bertin and Mary S. Henifin. *Scientists Talk to Judges: Reflections on Daubert v. Merrell*

Dow. *New Solutions* (Spring 1994), pp.3-16.

Carnegie Commission, *amicus* brief submitted in *Daubert v. Merrell Dow*, quoted in Bertin and Henifin, p.5.

Freeman J.Dyson. Science in Trouble. *The American Scholar* (Autumn 1993), pp. 513-525.

Bernard D. Goldstein. The Need to Restore the Public Health Base for Environmental Control. *American Journal of Public Health* 85 (4):481-483 (April 1995).

Paul Goodman. Can Technology Be Humane? ed. Martin Brown, *The Social Responsibility of the Scientist* (NY: Macmillan, 1971), pp.247-265.

Gertrude Himmelfarb. Liberty: One Very Simple Principle? *The American Scholar* (Autumn 1993), pp.531-550.

Gerald Holton, "The False Images of Science," eds., Richard Thruelsen and John Kobler, *Adventures of the Mind from the Saturday Evening Post*, Third Series, (NY: Random House, 1963), pp.217-233.

Marc Lappé, "Biological Warfare," ed. Martin Brown, *The Social Responsibility of the Scientist* (NY: Macmillan, 1971), pp.96-118.

Joshua Lederberg, "Food Additives," ed. Martin Brown, *The Social Responsibility of the Scientist* (NY: Macmillan, 1971), pp.121-130.

## **On BECC Confidentiality Procedures and Regulation (1995)**

Michael Gregory and Nicola Zeuner, presented to the Border Environment Cooperation Commission (25 September 1995)

Following are the comments of Arizona Toxics Information on the draft BECC "Procedures and Regulation. . .Regarding Disclosure and Confidentiality of Information" which was posted on BECCNET 6 September 1995. We have recommended below some specific emendations to improve the draft language, however, the main problem with the draft—namely, the absence of criteria by which the Manager is to make his determination concerning validity of confidentiality claims—cannot be corrected by word smithing. Unless such criteria are added to the procedures and regulation, the General Manager will be given nearly complete discretion to accept or deny claims of confidentiality in utter secrecy, in complete violation of the public's right to know and of applicants' right to equitable consideration.

### **I. General Recommendations**

In general, as noted in the background paper on "Public Access to Environmental Information in Mexico and the United States" we prepared with Enlace Ecológico and Proyecto Fronterizo de Educación Ambiental for the North American Commission on Environmental Cooperation last year, the criteria should "balance the need for legitimate secrecy with the public's rights to privacy and information."

Furthermore, while it is generally recognized that certain classes of information may be held confidential (such as "national security documents, personnel and medical files disclosure of which would constitute an invasion of privacy, ongoing criminal investigation materials," etc.), exemptions from disclosure for private businesses or "trade secret" information on the grounds that disclosure would put the business at a competitive disadvantage in the marketplace require a high degree of scrutiny. Again, as noted in our NACEC paper, "[u]nless the exemptions provisions of information access systems are carefully designed to assure the validity of [Confidential Business Information] claims in a timely and transparent manner, there can be significant opportunities for abuse of the private sector privilege leading to direct conflict with the public's right to know."

Current US law (the *Emergency Planning and Community Right to Know Act* of 1986 [EPCRA]) provides significant restrictions on claims of confidentiality regarding hazardous materials which should be adapted to the BECC criteria, including strict substantiation that claimed trade secrets really are and have been treated as secret, that there is a provable competitive harm which would result from disclosure. In addition, if a manufacturer is granted exemption from disclosing the identity of a substance, that manufacturer must nonetheless report his or her own identity, the general physical and chemical character of the substance, and the amount released, thereby, in an important sense, allowing the public to "know what it doesn't know."

Furthermore, although a facility may claim confidentiality regarding identification of a particular substance, identity of the substance must be made available at the request of local medical personnel who may need the information in case of a medical emergency caused by a release from the site. Similarly, under the US Toxic Substances Control Act (TSCA), the Environmental Protection Agency procedures state that "health and safety data is. . .entitled to confidential treatment if, and only if, the disclosure of the data would result in the disclosure of a chemical process, or chemical proportion in a mixture" which would cause competitive harm to the claimant.

We strongly recommend that criteria be added to the procedures and regulation providing such general protections of the public's right to know, including the following:

1. Requiring claimants to substantiate confidentiality claims at the time of application, including demonstration that:

a. disclosure of the information is likely to cause unreasonable competitive harm to the claimant;

b. the information is not readily available through any other government or private source, including news media articles, public corporate reports or mandatory disclosure under another federal, state or local statute;

c. the information has not been disclosed to any other person except the government and others bound by confidentiality agreements, and that reasonable measures have been taken by the claimant to ensure the confidentiality of the information.

2. Authorizing the BECC to share information claimed as confidential with federal, state and local government upon demonstration that they have a legitimate need for the information to protect human health and the environment and can adequately protect the information against unauthorized disclosure.

3. So that the public may "know what it doesn't know" (i.e., so it may know at least in general what kind of information is being withheld), establishing a list of common data elements that are never to be considered confidential, including:

a. Name of claimant

b. Environmental performance and regulatory compliance history of individuals and corporations comprising the entity applying for certification

c. Trade name of processes to be used

d. In regard to hazardous materials to be present or used or released (including raw materials, process chemicals, emissions, discharges, products, hazardous wastes, etc.):

- (1) Chemical, radiological or biological class
- (2) Physical, radiological, chemical and biological characteristics
- (3) Kind and degree of potential health and environmental effects
- (4) Chemical and physical form and amount (to be brought, used or produced on, or released from, the project site)
- (5) The destination of releases
- (6) Safe handling procedures to be employed
- (7) Emergency medical measures to be taken in the event of exposure
- (8) The effect of excluding such information on the materials accounting of the project

e. Precautionary, mitigative and emergency measures to be taken in the event of a hazardous materials release or other emergency incident

4. In regard to materials designated as "high-hazard" substances by the Mexican government



or "extremely hazardous substances" by the US government, no claims of confidentiality should be allowed.

In addition to the above general protections of the public's right to know, we suggest the following specific modifications of the draft language.

## II. Specific Emendations

### ARTICLE III.

(a) In the last sentence, change to "Such information shall be TREATED AS THOUGH confidential pending review AND DETERMINATION by the General Manager."

(c) The phrase "any other applicable law" is quite vague; it is not clear, for instance, if the term "law" is to be construed narrowly (i.e., referring strictly to state and federal legislation), or more broadly to include administrative actions having the force of legislation (e.g., "administrative law"), or if it also includes judicial acts, regulations, local ordinances, etc.

(d) The final clause ("and shall not make public that it received such a request or application") sets an improper restriction on the public's right to information; the BECC should notify the public of applications *as they are received*; if an application is withdrawn for any reason, the public should then be notified of the withdrawal in a timely fashion.

(f) The final clause of the first sentence ("provided that the Board of Directors shall not review a particular decision more than once") improperly limits the right of citizens to information and the ability of the Board to act on new information. Citizens should have full opportunity to present reasons for review to the Board, and the Board should be able to review any prior action based on new information presented. The clause should be deleted.

(g) The public should be notified if and when an appeal is received by the BECC, as well as of any decisions by the BECC regarding the appeal.

## **On Interim BECC Procedures and Regulations Regarding Public Notice and Comment Procedures (1995)**

Michael Gregory and Nicola Zeuner, presented to the Border Environment Cooperation Commission (18 October 1995)

Following are the comments of Arizona Toxics Information on the 12 October 1995 interim "Procedures and Regulations of the BECC Regarding Public Notice and Comment Procedures on Project Applications." For your convenience, in the interest of saving time, we are faxing this to you and mailing you a hardcopy. We are also posting a copy on BECCNet.

In considering these comments, please note that while we appreciate your establishing interim procedures and regulations, we still strongly object to certifications being made by the BECC before final procedures and regulations have been adopted through a full public review and comment process, and wish to make clear that our comments should in no way be construed as condoning the BECC's actions in certifying two projects at the 28 September 1995 Board meeting in Brownsville or the announced intent "to certify" another at the 15 November 1995 "special" Board meeting in El Paso.

(This continued insistence of the BECC in pre-judging applications, as documented in the 17 October 1995 announcement of the 15 November meeting which states that "the primary focus of the meeting will be TO CERTIFY the El Paso, Texas Wastewater Reclamation and Reuse Project" [emphasis added], makes a mockery of the Commission's public participation and project evaluation processes, and is an insult to those members of the public who have put in so much time and effort over the past two years trying to make the BECC an effective, legitimate institution. With the BECC continuing to display such blatant unconcern about public input, it is difficult for the public to justify continued support or interest.)

In effect, these interim procedures and regulations constitute a draft and do not satisfy the requirement of the enabling US-Mexico Agreement that final procedures and regulations be in place prior to project certifications. In this regard, we reassert that the certifications made at the Brownsville meeting were illegitimate, and we strongly urge that the BECC not repeat that error by rushing to judgment on another project in November. It is imperative that the public be offered every opportunity to fully review these projects in light of the certification criteria, and that the public's informed consent be received before the Board makes a decision on certifications.

In regard to the specific draft, in the following comments, our recommended changes to the draft language are typed in CAPITAL LETTERS, including the proposed Article VI, Procedures For Public Comment which we recommend be added because (as the introductory paragraph of the draft recognizes) Part I, Article II, Section 4(2) of the Agreement requires that the BECC "establish procedures. . .providing members of the public reasonable opportunity to comment . . .on all applications for certification received by the Commission."

### **ARTICLE II: PUBLIC NOTICE OF SUBMISSION OF PROJECTS**

II(a): The General Manager of the BECC shall publish every month AND SHALL POST ON THE INTERNET THROUGH BECCNET a listing. . .during the PRECEDING thirty days. THE listing shall indicate those projects FOR WHICH a Step I application HAS BEEN SUBMITTED during the PRECEDING thirty days. . .the official name, ADDRESS(ES) AND PHONE NUMBER of the applicant, THE NAME OF THE COMMUNITY TO BE BENEFITED AND THE TYPE OF PROJECT.

II(b): The listing referred to in subpart (a) OF THIS ARTICLE shall be sent BY POST OR ELECTRONIC MEANS UPON PUBLICATION TO PERSONS WHOSE NAMES ARE LISTED ON AN OFFICIAL MAILING LIST MAINTAINED by the General Manager or his designee for such purposes AND UPON REQUEST TO OTHER PERSONS.

II (c): THE OFFICIAL MAILING LIST REFERRED TO IN SUBPART (b) OF THIS ARTICLE SHALL CONSIST OF NAMES AND ADDRESSES OF PERSONS WHO HAVE REQUESTED THAT THEY BE SENT SUCH INFORMATION ON A REGULAR BASIS.

#### ARTICLE III: PUBLIC NOTICE OF PROJECTS PENDING FOR CERTIFICATION

III(a): A LIST AND SUMMARIES OF ALL PROJECTS THAT MAY BE SUBMITTED TO THE BOARD OF DIRECTORS FOR CERTIFICATION SHALL BE PUBLISHED AND POSTED ON THE INTERNET THROUGH BECCNET AT LEAST NINETY DAYS PRIOR TO THE BOARD MEETING AT WHICH THE PROJECTS MAY BE SUBMITTED.

III(b): THE SUMMARIES REFERRED TO IN SUBPART (a) ABOVE SHALL CONTAIN, FOR EACH PROJECT, A LIST OF APPLICATION MATERIALS AND PUBLIC COMMENTS RECEIVED BY THE BECC, CATEGORIZED TO INDICATE HOW THE MATERIALS CORRESPOND TO BECC STEP II CERTIFICATION CRITERIA.

#### ARTICLE IV: PUBLIC NOTICE OF PUBLIC MEETINGS ON PROPOSED PROJECTS

IV(a): The General manager shall publish. . . . FOR EACH PROJECT IDENTIFIED, such notice shall STATE the project NAME, the time and place of the public meeting OR MEETINGS, AND THE NAME, ADDRESS(ES) AND PHONE NUMBER WHERE FURTHER INFORMATION ON THE MEETING OR MEETINGS MAY BE OBTAINED.

#### ARTICLE V: PUBLIC ACCESS TO PROJECT INFORMATION

V(a): The original project applications, WRITTEN PUBLIC COMMENTS AND SUMMARIES OF ORAL PUBLIC COMMENTS shall be kept on file. . .and subject to confidentiality restrictions, shall be available for public inspection during normal business hours. IF PORTIONS OF AN APPLICATION ARE WITHHELD AS CONFIDENTIAL, A DESCRIPTION OF THE KIND OF INFORMATION BEING WITHHELD SHALL BE MADE AVAILABLE WITH THE NON-CONFIDENTIAL PORTIONS.

V(b): A COPY OF THE PROJECT APPLICATIONS, WRITTEN PUBLIC COMMENTS, ORAL PUBLIC COMMENT SUMMARIES, AND, WHERE APPLICABLE, A COPY OF THE DESCRIPTION OF CONFIDENTIAL PORTIONS WITHHELD, SHALL BE MADE AVAILABLE AT A PLACE OF CONVENIENT PUBLIC ACCESS IN THE COMMUNITY WHERE THE PROPOSED PROJECT WOULD BE.

V(c): PAPER copies of NON-CONFIDENTIAL PORTIONS of applications AND PUBLIC COMMENTS SHALL be available by POST. The first ten pages of PAPER COPIES PER PROJECT of any request shall be provided free OF CHARGE, ADDITIONAL pages may be obtained at a REASONABLE FEE NOT TO EXCEED \$0.5 US per page. Project summaries presented to the Board of Directors prior to certification AND BECC PROJECT SUMMARIES REFERRED TO IN ARTICLE III ABOVE SHALL be available to the public without charge BY POST AND AT THE SAME LOCATIONS AND TIMES AS THE APPLICATIONS. COPYING FEES MAY BE WAIVED FOR ORGANIZATIONS AND INDIVIDUALS FOR WHOM PAYMENT WOULD CONSTITUTE AN ECONOMIC HARDSHIP.

## VI. PUBLIC COMMENT PROCEDURES

VI(a): THE PUBLIC SHALL BE ALLOWED AT LEAST NINETY DAYS AFTER THE PUBLICATION AND POSTING OF PROJECT SUMMARIES REFERRED TO IN ARTICLE III ABOVE TO REVIEW AND COMMENT ON PROJECTS. PUBLIC COMMENT MAY BE RECEIVED BY POST, ELECTRONICALLY VIA INTERNET OR FAX, OR ORALLY AT A PUBLIC BOARD MEETING. THE BECC BOARD OF DIRECTORS OR THE GENERAL MANAGER MAY EXTEND THE REVIEW AND COMMENT PERIOD AS NEEDED TO FACILITATE INFORMED PUBLIC PARTICIPATION.

VI(b): FOR EACH PROJECT SUBMITTED FOR CERTIFICATION, THE BOARD OF DIRECTORS SHALL PROVIDE, AT NO FEWER THAN TWO PUBLIC BOARD MEETINGS, INCLUDING THE MEETING AT WHICH THE BOARD IS TO VOTE ON CERTIFICATION FOR THE PROJECT, AN AMOUNT OF TIME ADEQUATE TO ALLOW ALL MEMBERS OF THE PUBLIC PRESENT AT THE MEETINGS WHO WISH TO COMMENT, TO DO SO.

VI(c): THE BOARD OF DIRECTORS SHALL NOT CERTIFY A PROJECT UNLESS OPPORTUNITY FOR PUBLIC COMMENT REFERRED TO IN SUBPART (b) ABOVE HAS BEEN MADE AVAILABLE AT AT LEAST ONE PUBLIC BOARD MEETING PRIOR TO THE BOARD MEETING AT WHICH THE PROJECT IS CERTIFIED.

VI(d): WRITTEN PUBLIC COMMENTS AND SUMMARIES OF ORAL PUBLIC COMMENTS RECEIVED BY THE BECC SHALL BE KEPT ON FILE AND MADE AVAILABLE WITH PROJECT APPLICATION MATERIALS ACCORDING TO THE PROCEDURES ESTABLISHED IN ARTICLES III AND V ABOVE.

VI(e): NO MORE THAN FIFTEEN DAYS PRIOR TO A MEETING AT WHICH THE BECC BOARD OF DIRECTORS IS TO VOTE ON CERTIFICATION OF A PROJECT, THE GENERAL MANAGER SHALL PROVIDE THE BOARD AND THE PUBLIC WITH A WRITTEN RESPONSE TO ALL PUBLIC COMMENTS ON THAT PROJECT RECEIVED WITHIN THIRTY DAYS OF THE MEETING. THE RESPONSE SHALL BE ORGANIZED TO INDICATE HOW THE PUBLIC COMMENTS CORRESPOND TO BECC CERTIFICATION CRITERIA.

## **NGO Statement on Procedures for Public Notice and Confidentiality (1995)**

Michael Gregory, submitted to the to the Border Environment Cooperation Commission, El Paso, Texas (15 November 1995)

### **I. Public Notice and Comment Procedures on Project Applications**

We recommend that BECC adopt the following concepts for the Procedures on Public Notice and Comment:

- BECC should be culturally and regionally sensitive in its notification procedures, e.g. the BECC staff should identify and communicate orally with community leaders.
- BECC must announce its intent to consider a project for certification 62 days prior to the Board meeting at which certification will be considered. At this time, all BECC Fundamental Criteria should be met (or assurances should be made that all criteria will be met prior to the meeting at which certification will be considered). Conditional certifications shall only be made under extremely rare circumstances, so that the integrity of the BECC Guidelines and Criteria document is preserved.
- written public comments shall be submitted no less than 15 days prior to the Board meeting.
- the General Manager will publish a written response to all public comments received on each project 5 days prior to the Board meeting.
- the General Manager should have the opportunity to postpone consideration of a project for certification if the BECC staff determines they do not have sufficient time to read and respond to all the public comments on that project.
- the General Manager shall publish every 30 days a public notice consisting of
  - all Step I applications which have been submitted within the previous 30 days
  - all Step II applications received within the previous 30 days, including, for each project, an updated list of supporting documents and received written public comments available at the BECC office.
  - a summary for each project.
- the mailing list maintained by the BECC for all notification purposes shall include news media.
- a complete copy of all application materials, including public comments, should be easily accessible in the project location community beginning 62 days before the project is to be considered for certification, and should be continuously updated as new materials are received by the BECC.
- time to receive oral comments on projects should be provided for on the agenda of the BECC Board meeting prior to the one at which the project is considered for certification, in order to give the Board and the staff reasonable time to digest the comments and consider them for their deliberations.

- all public comments must be filed with the project materials at the BECC office (and, therefore, in the project location community as well).
- to allow reasonable opportunity for comment, the Board should not consider more than four projects for certification at one meeting.

## **II. Procedures and Regulation regarding Disclosure and Confidentiality of Information**

We recommend that BECC adopt the following concepts for the Procedures on Confidentiality:

- any information called for in the BECC Fundamental Criteria must be disclosed.
- trade secrets such as intellectual property or proprietary information may be designated as confidential information.
- the General Manager must seek the advice of the BECC's General Counsel regarding what constitutes a properly designated trade secrets.
- Information about the identity, amount and concentration of a substance released by a project cannot be held confidential.
- If information has been designated as confidential, the BECC shall inform the public about such a decision and describe the general character of that information, so the public may "know what it doesn't know."
- the 62 day public comment period discussed above cannot begin until all issues of confidentiality have been resolved.

## **On the BECC 20 December 1995 Revised Procedures for Disclosure and Confidentiality (1996)**

Michael Gregory and Nicola Zeuner, submitted to the Border Environment Cooperation Commission (11 January 1996)

Following are the comments of Arizona Toxics Information on the revised Procedures for Disclosure and Confidentiality distributed December 20. Unfortunately, a number of essential recommendations from both the November 15 NGO Statement as well as from ATI's comments did not make it into the revised version.

In the following, rather than explaining concepts again, the exact language we suggest is inserted into your draft and our comments are reduced to a minimum. Suggested language is inserted in CAPS, language we recommend be deleted in <DELETE:> and brief explanatory comments in [[double square brackets]].

### **BORDER ENVIRONMENT COOPERATION COMMISSION**

#### **PROCEDURES REGARDING DISCLOSURE AND CONFIDENTIALITY**

##### **ARTICLE I: SCOPE**

Recognizing that Chapter I, Article II, Section 4(1) of the Agreement Between the Government of the United States of America and the Government of the United Mexican States Concerning the Establishment of a Border Environment Cooperation Commission and a North American Development Bank (Agreement) ensures, to the extent possible, public availability of documentary information on all projects for which a request for assistance or an application for certification is made; and RECOGNIZING THE PARTIES' COMMITMENT MADE TO PROVIDING CITIZENS WITH ACCESS TO INFORMATION CONCERNING THE ENVIRONMENT IN PRINCIPLE 10 OF THE RIO DECLARATION; AND

Mindful that Chapter I, Article III, Section 10(a) of the Agreement prohibits the Commission from making public information with respect to which a Party has notified the Border Environment Cooperation Commission (Commission) that public disclosure would impede its law enforcement; that Chapter I, Article III, Section 10(b) of the Agreement requires that the Commission establish regulations to protect from disclosure business or proprietary information and information the disclosure of which would violate personal privacy or the confidentiality of government decision-making; and

Noting that Chapter I, Article III, Section 10(c) of the Agreement permits a party that requests assistance or submits an application to the Commission to request that information contained therein be designated confidential by the Commission, and may request an advance determination from the Commission as to whether such information is entitled to confidentiality pursuant to Chapter I, Article III, Section 10(b); and that if the Commission determines that such information is not entitled to confidentiality pursuant to Section 10(b), the party may withdraw its request or application prior to further action by the Commission; and that upon withdrawal, the Commission shall not keep a copy of the information or make public that it received such a request or application;

Affirming that it is the policy of the Commission that, unless clear and compelling reasons exist to designate information confidential, information in possession of the Commission will be available for disclosure to the public;

The Board of Directors of the Border Environment Cooperation Commission adopts the following Procedures:

## ARTICLE II: DEFINITIONS

(a) Business or Proprietary Information. Trade secrets or commercial or financial information (not voluntarily released) that is privileged or confidential, the disclosure of which would be reasonably likely to cause substantial harm to the competitive position of the party.

(b) Trade Secret. A secret, commercially valuable plan, formula, process or device used for the making, preparing, compounding or processing of trade commodities, and which is the result of either innovation or substantial effort.

### (¶) TYPES OF INFORMATION THAT SHALL NOT BE DESIGNATED CONFIDENTIAL:

(1) INFORMATION (A) THE DISCLOSURE OF WHICH IS IN THE INTEREST OF PUBLIC HEALTH, PUBLIC SAFETY OR THE PROTECTION OF THE ENVIRONMENT; AND (B) THE PUBLIC INTEREST IN THE DISCLOSURE CLEARLY OUTWEIGHS IN IMPORTANCE ANY MATERIAL FINANCIAL LOSS OR PREJUDICE TO THE COMPETITIVE POSITION OF THE PERSON WHO PROVIDED THE INFORMATION OR ON WHOSE BEHALF IT WAS PROVIDED.

(2) THE FOLLOWING CATEGORIES OF INFORMATION ON ANY SUBSTANCE RECOGNIZED AS HAZARDOUS OR DANGEROUS BY THE INTERNATIONAL LABOR ORGANIZATION OR THE UNITED NATIONS ENVIRONMENT PROGRAM:

(A) GENERAL DATA ON USES OF A SUBSTANCE;

(B) SAFE HANDLING PRECAUTIONS IN RESPECT OF A SUBSTANCE;

(C) RECOMMENDED METHODS FOR DISPOSAL AND ELIMINATION OF A SUBSTANCE;

(D) SAFETY MEASURES TO BE TAKEN IN CASE OF ACCIDENTS INVOLVING A SUBSTANCE;

(E) PHYSICAL AND CHEMICAL DATA THAT DO NOT REVEAL THE IDENTITY OF A SUBSTANCE;

(F) SUMMARIES OF (I) HEALTH AND SAFETY DATA, INCLUDING PRECISE FIGURES, UNDERLYING DATA AND EPIDEMIOLOGICAL STUDIES, (II) STUDIES OF OCCUPATIONAL EXPOSURE TO A SUBSTANCE, AND (III) TOXICOLOGICAL, CLINICAL AND ECOLOGICAL STUDIES OF A SUBSTANCE.

[[The above categories are based on those listed in Part II of the Canadian Environmental Protection Act.]]

(G) INFORMATION WHICH IS REASONABLY AVAILABLE TO THE PUBLIC THROUGH OTHER SOURCES OR WHICH MAY BE DETERMINED BY STANDARD REVERSE ENGINEERING PROCEDURES. [[This category is based on exclusions to confidentiality of the US Emergency Planning and Community Right to



Know Act.]]

(3) INFORMATION OF ANY KIND ON SUBSTANCES TO BE PRESENT AT OR RELEASED FROM A PROJECT FACILITY WHICH ARE DESIGNATED AS “HIGH-HAZARD” SUBSTANCES BY THE MEXICAN GOVERNMENT [[i.e., the “List of High Hazard Substances” and the “List of Flammable Substances” published by the Secretaría Gobernación in the Diaria Oficial of 28 May 1990 and 4 May 1992, respectively, or as amended]] OR DESIGNATED AS “EXTREMELY HAZARDOUS SUBSTANCES” BY THE UNITED STATES GOVERNMENT [[i.e., substances listed by the Environmental Protection Agency pursuant to sections 302-304 of the federal Emergency Planning and Community Right to Know Act]].

(c) In construing Article II(a) and (b) of these Procedures, the Commission may consult, but not be bound by, relevant domestic legislation, and administrative or judicial precedents or decisions. THE COMMISSION SHALL BE GUIDED BY THE AVAILABLE STATE OR FEDERAL STANDARD WHICH PROVIDES THE GREATEST DEGREE OF PUBLIC DISCLOSURE.

#### ARTICLE III: PUBLIC ACCESS TO INFORMATION

(a) The Commission shall not make available to any person or organization outside the Commission, excepting consultants, information designated confidential under these Procedures, any other Commission procedures, or pursuant to the Agreement.

(b) All information not designated confidential shall be available to the public at Commission Headquarters in Ciudad Juarez, Chihuahua, Mexico, during normal business hours AND ACCESSIBLE TO THE PUBLIC IN THE PROJECT LOCATION COMMUNITY.

(c) Copies of documents not designated confidential shall be available to the public by mail or by photocopying at Commission Headquarters. Copies of the first ten pages of any particular request (e.g., file on project application for certification) shall be free. Copies of additional pages shall be available at \$.05 per page. PROVISIONS SHALL BE MADE FOR WAIVER OF FEES TO NON-PROFIT ORGANIZATIONS AND TO PRIVATE CITIZENS FOR WHOM PAYMENT OF FEES WOULD CONSTITUTE ECONOMIC HARDSHIP.

(d) Requests for information shall be processed by the Commission in the order received.

(e) If a document contains both confidential and non-confidential information, the confidential information shall be deleted and the non-confidential portion made available to the public.

#### ARTICLE IV: REQUEST FOR CONFIDENTIALITY DESIGNATION

(a) A party who requests assistance or submits an application to the Commission may request that the Commission designate as confidential, in accordance with Chapter I, Article III, Section 10(b) of the Agreement, all or part of the information provided by the party. The party must provide sufficient supporting information justifying the requested confidentiality designation.

(b) Supporting information under Article IV, Section (a) of these Procedures shall include:

(1) clear identification of exactly what information (e.g., page and paragraph) the party requests be designated confidential;

(2) clearly stated justification for each category of information for which a confidentiality designation is requested including, if the information is claimed to be business or proprietary information under Chapter I, Article III, Section 10(b) of the Agreement, how the information is reasonably likely to cause substantial harm to the competitive position of the party;

(3) ~~[[DELETE: assurances]]~~ A SHOWING that information for which a confidentiality designation is requested is not otherwise available to the public, including through news media articles, public corporate reports or mandatory disclosure under federal, state or local statutes; and

(4) ~~[[DELETE: assurances]]~~ A SHOWING that, for information for which a confidentiality designation is requested, reasonable measures have been taken to protect the confidentiality of the information.

(c) Pending review and determination by the Commission, including the Board of Directors, information for which a confidentiality designation is requested shall be designated confidential.

#### ARTICLE V: RESPONSE TO REQUEST FOR CONFIDENTIALITY DESIGNATION

(a) Within thirty days of receipt of a request for confidentiality designation, the General Manager, or his or her delegee, in consultation with the General Counsel, shall determine whether the information, in whole or in part, shall be designated confidential. The General Manager, or his or her delegee, if necessary to fully and fairly assess the requested confidentiality designation, may request additional information from the party or from other sources, including national or sub-national governments.

(b) The party requesting a confidentiality designation shall be informed of the determination of the General Manager, or his or her delegee, by certified mail, return receipt requested, or by facsimile.

(c) In exceptional circumstances (e.g., awaiting more information from the party or from other sources), the General Manager, or his or her delegee, may take over thirty days to make a determination on the requested designation.

(d) If the General Manager, or his or her delegee, determines that information for which a confidentiality designation is requested will not be designated confidential, and so notifies the party requesting the designation, the party may withdraw its request for assistance or application prior to further action by the Commission, or may withdraw from its request for assistance or application only the particular information for which a confidentiality designation was requested. Upon a withdrawal of a request for assistance or application, the Commission shall not keep any copy of the information and shall not make public that it received such a request or application.

#### ARTICLE VI: APPEALS

(a) A person or organization whose request for documentary information pursuant to Chapter I, Article II, Section 4(1) of the Agreement is denied by the Commission may appeal to the Board of Directors by submitting in writing a clear statement of the reasons why it believes the Commission's denial was in error. The appeal must be addressed to the Board of Directors, in care of the General Manager, within thirty days of the denial by the Commission. Appeals may also be taken, in the same manner and within thirty days following a statement in the

monthly Commission publication announcing a confidentiality designation, by persons or organizations.

(b) The party requesting a confidentiality designation may appeal to the Board of Directors any determination of the General Manager, or his or her delegee. The appeal must clearly state the reasons why the party believes the determination was in error. The appeal must be addressed to the Board of Directors, in care of the General Manager, within thirty days of certified mail receipt of the determination of the General Manager, or his or her delegee.

(c) In conformity with Article 14(b) of the Rules of Procedure of the Board of Directors, appeals shall be submitted to the Board of Directors in both official languages of the Commission.

(d) The Board of Directors may refuse to accept an appeal under Article VI(a) or (b) of these Procedures if:

(1) the appeal is manifestly frivolous; or

(2) the Board of Directors has already ruled on an appeal on the same subject matter, and no new supporting information is produced.

#### ARTICLE VII: PUBLIC STATEMENT REGARDING CONFIDENTIAL INFORMATION

(a) If all or part of information for which a confidentiality designation is sought is designated confidential by the General Manager, and there is no appeal, or an appeal is taken and the Board of Directors makes a determination that all or part of the information shall be designated confidential, the Commission shall make available to the public a statement of the nature of the confidential information and the reasons for the confidentiality designation.

(b) Before issuing a public statement pursuant to Article VII(a) of these Procedures, the General Manager shall first notify the party requesting the designation.

(c) The public statement issued pursuant to Article VII(a) shall be in the Commission monthly publication.

#### ARTICLE VIII: OTHER CATEGORIES OF INFORMATION PROTECTED FROM DISCLOSURE

(a) The Commission shall not make public information if the Government of the United States of America or of the United States of Mexico notifies the Commission that public disclosure of the information would impede its law enforcement.

(b) The following information shall be not be made public unless otherwise designated by the General Manager or the Board of Directors:

(1) Internal Commission documents relating to Commission personnel, including performance reviews and other personal information;

(2) Internal, predecisional communications of the Commission prepared for Commission decisionmaking, including all attorney-client communications or attorney work product material.



## **Environmental Information Needs on the US-Mexico Border (1996)**

Michael Gregory, presented to the Border XXI Binational Public Meeting Nogales, Arizona (12 July 1996)

*An informed public is the necessary basis of both democratic society and sustainable development. The three most pressing environmental information needs on the US-Mexico border continue to be the need for 1) comprehensive, integrated, public inventories of toxics storage, use, release and transfer by border industries; 2) effective training for managers and workers, including farmworkers, in toxics use reduction and other forms of pollution and disease prevention; and 3) public education about and participation in the legal and regulatory framework, and the related decision-making processes, that control or fail to control toxics use and release in our region.*

These were the main needs identified by residents of border communities during the NAFTA debates and they continue to be the main needs today, despite NAFTA, and the Integrated Border Environmental Plan, and the La Paz Agreement, and the Good Neighbor Board, and the Commission on Environmental Cooperation, and all the other federal-level negotiations, cooperations and machinations.

Like pollution prevention, management and development of information resources is a cross-cutting activity that must be addressed and implemented in all border issue areas; and while the achievements and objectives outlined in the Draft Framework Document are both important and necessary, they tend to be infected with a sometimes unwarranted academic or governmental sluggishness and often fail to get to the heart of the matter.

That tendency may be compounded if the vision and objectives of the Border XXI program are not clarified and actively pursued over the coming months, for although decentralization and devolution of authority to local and state levels can have many benefits, it also carries the very real danger of fragmentation; lack of consensus on fundamental principles, definitions and priorities; loss of focus; redundancy; and dissipated or disappeared, funding. These dangers are especially acute in the relatively intangible area of information resource management.

*What the public, both the border public and the public at large, most needs is accessibility and additional resources—technical, informational and financial, in order to effectively participate in the many decisions at all levels about how toxics will be managed in our communities and region.*

Border XXI should be a means for providing these resources. We recommend that the next iteration of the Framework Document incorporate the following objectives, which are not meant to replace those laid out in the draft document, but to complement them in order to better meet the immediate and pressing needs of those of us who live and breathe here on the border.

- *First, governments and industries should disclose the existing environmental data they already hold.*

The most effective and cost-effective means to pollution prevention is public information, but a great deal of site-specific and pollutant-specific data already exists in government files that has not been made available to the public, including data submitted by companies pursuant to legislative and regulatory requirements, such as permit compliance data, monitoring records,

pollutant release and storage data, worker health and safety records, environmental impact reports, etc.

In addition to such data held by governments, many companies maintain files containing a great deal of pertinent information that has not been required by governments, including insurance audits, worker health and safety reports, production and distribution records, process efficiency records, etc. Much of this information is essential to the government and the public trying to identify the hazards in our communities, as well as to anyone trying to promote or practice effective pollution prevention.

Governments should make both the information in their own files and pertinent additional information held by companies available to and accessible to the public, and should provide opportunities for participation of the informed public in all decisions being made about the hazardous materials in and being released and transferred from our communities—for example, providing opportunity for comment on proposed permits.

You can't build trust in an atmosphere of secrecy, but a great deal of the information held by governments and firms is now kept from the public on the basis of unreasonable, overly-broad trade secret policies and procedures that directly contradict the public's right to know. These so-called "confidential information" practices should be carefully scrutinized and reformed to limit trade secrecy only to those matters of information the disclosure of which would clearly and demonstrably cause unreasonable competitive harm to the company. The US Emergency Planning and Community Right to Know Act provides a globally-recognized high standard for proof of confidentiality claims, and this standard should be adopted for all hazardous materials sources on the border.

The Final Framework Document itself should be more forthright in describing the kind of environmental information already known about the border. For instance, in the section on Enforcement and Compliance Cooperation, the document gives a lengthy synopsis of efforts to promote "voluntary compliance through environmental auditing" (III.45) among US-owned maquiladoras, and the Pollution Prevention section cites production of a "video to assist maquiladoras' compliance through voluntary auditing" (III.32), but compliance with *what* is not specified, and what kinds of information the governments have collected through this "on-going" process is not disclosed.

(While we believe that such "voluntary" reporting is never very satisfactory since there is no way to verify its accuracy or completeness, or to ensure that it will be provided in a format that allows comparison with other data, nonetheless we strongly believe that information gathered with public funds such as those spent on this on-going tri-lateral and multi-state project, should be available to the public.)

- *Second, governments should generate and disseminate new data to fill the gaps in existing databases.*

Such gaps include, for instance, data on location and contents of unlisted toxic waste sites; environmental impacts of mines (an area not even mentioned in the draft document section on Natural Resources); soil and groundwater contamination from, and human exposure to, agricultural and non-agricultural use of pesticides; correlation of environmental conditions with identified human and environmental health concerns, etc. The monitoring projects listed in the Draft Framework Document for the most part fail to address these information needs.

Furthermore, hundreds of new facilities have gone into operation in our border communities since passage of NAFTA, and for most of them we don't have even the most basic information

about the kinds and amounts of hazardous materials they use, store and release. And many of them, just like before NAFTA, are US companies that are moving into Mexico precisely because they want to be subject to less reporting and regulation. (I can think of one company in my own county, for instance, that just the other day announced that rather than comply with the very minimal local reporting requirements for getting a special use permit in Naco, Arizona, would move south, and that company's president says he is confident that they will be able to go into production in the very near future a few blocks across the line in Naco, Sonora.)

We strongly recommend that no new facility be allowed to open in the border region without full disclosure to the community of its toxics use, storage, release and transfer.

While the objective of initiating a *Registro de Emisiones y Transferencia de Contaminantes* (RETC) "in Mexico and developing common information dissemination procedures and compatibility between" the RETC and the US *Toxics Release Inventory* (as projected by the Draft Framework Document under the heading of Pollution Prevention, III.34) is certainly welcome and necessary, the agencies should go well beyond that. On the US side, EPA, as well as state and local agencies, should begin at once to collect data from border facilities in accordance with the newly-expanded list of chemicals and proposed expanded list of industries subject to TRI reporting, and should make the TRI findings available in Spanish and English. Similarly, INE should considerably expand the scope of the pilot Querétaro RETC to match that of the TRI and work with state and local entities in Mexico to implement the improved RETC in our border communities, also making the results of those inventories available to the public in Spanish and English.

While we applaud the recent action of some Nogales maquilas in providing chemical storage data to the Santa Cruz County emergency response agency, we insist that the information should be made public. Again, people have a right to know what hazards they are being exposed to.

Similarly, both countries should go well beyond just encouraging "industrial facilities to make [information on and inventories of ] use and storage of chemicals. . .available to local response officials," as projected in the Draft Document objectives for Contingency Planning and Emergency Response (III.36); governments on both sides of the border should use their existing authority to require industries to report that information, and it should be made available not only to emergency planners and responders, but to land-use planners and to the general public who live in the communities where the chemicals are used and stored and are most at risk from potential releases of those chemicals.

In addition, both countries should intensify efforts to track and reduce transboundary traffic in hazardous materials. While the recent decision of the US Customs Service to finally begin enforcing at the Nogales port of entry the existing laws and regulations it has more or less ignored for years is a step in the right direction, and the long-promised HAZTRAKS system is finally starting to come on-line, neither effort goes far enough in either involving the public or in promoting reduction in shipments of hazardous cargo.

- *Third, the two countries should establish binationally standardized data collection, storage and dissemination protocols, including compatible or easily-convertible database languages so that linkages can easily be made among different systems.*

The current information situation is chaotic, and though a great deal of progress has been made in the past two years, a great deal needs to be done and could be done, especially if EPA and SEMARNAP were to make greater efforts to involve the affected public in managing the

information resources.

For example, the EPA Key Indicators Initiative referenced in the Draft Framework Document has correctly identified the need to develop “comprehensive linkage capability” and a system that will provide “accurate, uniform facility information” and “consolidated facility identification information...with unique identifiers”; but while this is a necessary step, it does not go far enough. The Border XXI cooperators should move rapidly to provide linkages not just be for “facility” information, but for border environmental information in general including, especially, linking toxics use and release and ambient monitoring information with information on regional health and pollution conditions. The Border Health Data Infrastructure project mentioned in the Environmental Health section of the document, for instance, should be closely linked with various hazardous materials and pollutant release databases.

Not only should all substantive data be made available on-line through the Internet, but the metadata, including the structure of the databases, should be available as well, so the public can use its own resources to make the systems talk to each other. A major goal of all of us working in the field of border environmental data management is to develop a common set of data elements: that is a massive job and we can move toward it a lot more quickly if we provide the public with the informational resources necessary to work as equals alongside the governmental and academic researchers.

Another very useful step would be to provide funding to include public representatives to participate on an equal footing in the Environmental Information Resources Working Group, (and the other working groups, for that matter) so the role of the public does not continue to be passive reception of plans and ideas from the top down. Again, we should be working in partnership, not on totally separate tracks and certainly not in the hierarchical structure we now have.

- *Fourth, funding and other resources should be made available to build the capacity of local governments and non-governmental organizations to access electronic information resources.*

Access to environmental information resources increasingly requires access to electronic technology, and groups on both sides of the border are increasingly in need of funding to purchase and set up computer hardware and software, and then to use the new technology effectively. Funding for this kind of community-level technology transfer should be made available, including providing hardware and software for these groups, and providing the essential on-going technical assistance for keeping up with the rapid changes in technology.

The cost of such technology transfer could be significantly lowered—and, at the same time, a significant contribution could be made to waste minimization through recycling—if the Border XXI agencies were to work with the electronics industry to have older, but still useful, computer equipment which is now being discarded (and causing a considerable solid waste problem) refurbished and made available to border organizations free or at cost.

- *Fifth, as part of an intensive binational environmental education program to inform and involve the public, EPA and INE should have all data on storage, use, release, transfer and potential effects of toxics in the border region translated into useful (i.e., easily accessible) information and disseminate it widely—including a) on the Internet, b) through on-the-job worker health and safety and pollution prevention training programs, c) through hands-on integrated joint training for land-use and emergency planners in state and local agencies, and d) at walk-in environmental information centers in border communities—and should simultaneously provide information on the laws, regulations, standards, policies and other*



*components of toxics decision-making processes, and opportunities for public participation in them.*

Without such a broad public education in the hazards associated with toxics found in our region, and without both the legal, technical and financial opportunities for managing them, meaningful public participation is impossible; and without meaningful public participation, effective long-term pollution and disease prevention will not happen. And without those three basic inter-related components—right to know, public participation and pollution prevention—there cannot be sustainable development.

## **Necesidades para la Información Ambiental en la Frontera México-Estados Unidos (1996)**

Michael Gregory, comentarios hechos durante la Reunión Pública Binacional Frontera XXI, Nogales Arizona (12 de julio de 1996)

*Un público informado es la base necesaria de ambos la sociedad democrática y el desarrollo sustentable. Las tres necesidades para la información ambiental más apremiantes en la frontera México-Estados Unidos siguen siendo las necesidades de 1) inventarios comprensivos, integrados, y públicos del almacenamiento, uso, emisión, y traslado de materiales tóxicos por las industrias fronterizas; 2) capacitación eficaz para gerentes y obreros, incluyendo a trabajadores agrícolas, en la reducción del uso de sustancias tóxicas y en otras formas de prevención de contaminación y enfermedades; y 3) educación y participación del público en el marco legal y regulatorio, y en los procesos relacionados con la toma de decisiones que controlan o dejan de controlar el uso y la emisión de sustancias tóxicas en nuestra región.*

Estas son las principales necesidades identificadas por los residentes de las comunidades fronterizas durante los debates TLC y siguen siendo las necesidades principales hasta hoy, apesar del TLC, del Plan Integral del Ambiente Fronterizo, del Consejo de Buenos Vecinos (Good Neighbor Board), de la Comisión para la Cooperación Ambiental, y de todas las otras negociaciones, cooperaciones, y maquinaciones.

Como la prevención de la contaminación, el manejo y desarrollo de las fuentes de información es una actividad global que hay que atenderse e implementarse en toda la gama de temas fronterizos; y aunque los logros y objetivos delineados en el Borrador del Documento Base (Draft Framework Document) son importantes y necesarios, tienden a sufrir de la lentitud, a veces injustificable, de lo académico y gubernamental y muchas veces no llegan al meollo del tema.

Esta tendencia puede agravarse si no se aclaran y persiguen la visión y objetivos del program Frontera XXI durante los meses venideros, porque aunque la descentralización y devolución de autoridad a los niveles locales y estatales traen muchos beneficios, también conllevan el auténtico peligro de fragmentarse; la falta de consenso sobre principios, definiciones y prioridades fundamentales; la pérdida de un enfoque; la redundancia; y la financiación derrochada o desaparecida. Estos peligros se acentúan especialmente en el campo relativamente intangible del manejo de la información.

*Lo que más necesita el público, tanto el público en la zona de la frontera como en general, es la accesibilidad y recursos técnicos, informadores, y financieros adicionales para participar eficazmente en la toma de muchas decisiones a todos los niveles sobre cómo se manejarán las sustancias tóxicas en nuestras comunidades y en nuestra región. Frontera XXI debe ser un medio para proveer estos recursos. Recomendamos que la próxima versión del Documento Base incorpore los siguientes objetivos, que no se proponen para reemplazar los del borrador, sino para complementarlos para cumplir mejor con las necesidades inmediatas y apremiantes de quienes vivimos y respiramos aquí en la frontera.*

- *Primero, los gobiernos e industrias deben divulgar los datos ambientales que ya tienen.*

El medio más eficaz y económico para la prevención de la contaminación es la información pública, pero ya existe en los archivos gubernamentales gran cantidad de datos sobre sitios y contaminantes específicos que no se han hecho accesibles al público, incluyendo datos entregados por empresas conforme con los requisitos legales y reglamentarios. Estos incluyen

datos sobre el cumplimiento de las condiciones de permisos, documentación de monitoreo, datos sobre la emisión y almacenamiento de contaminantes, documentación sobre asuntos de salud y seguridad de trabajadores, informes del impacto ambiental, etc.

Aparte de los datos ya en manos de las autoridades, muchas empresas mantienen archivos que contienen mucha información pertinente que los gobiernos no requieren, incluyendo revisiones de compañías aseguradoras, informes sobre la salud y seguridad de los trabajadores, documentación sobre producción y distribución, documentación sobre la eficacia de los procesos, etc. Mucha de esta información es esencial para el gobierno o el público en sus esfuerzos por identificar los peligros en nuestras comunidades, como lo es también para cualquier persona o entidad que pretende promover o practicar la eficaz prevención de la contaminación.

Los gobiernos deben hacer accesible y disponible al público tanto la información de sus propios archivos como la adicional información pertinente en manos de las empresas, y deben crear oportunidades para la participación del público informado en todas las decisiones acerca de los materiales peligrosos en nuestras comunidades. Por ejemplo, deben dar la oportunidad de hacer comentarios sobre peticiones de permiso.

No se puede fomentar la confianza dentro de un ambiente de secretos, sin embargo se priva al público de gran parte de la información en manos de gobiernos y empresas a raíz de políticas y procedimientos irracionales y demasiado amplios que tratan de proteger los secretos comerciales, y que chocan con el derecho a saber del público. Se debe examinar a fondo y reformar estas prácticas llamadas de "información confidencial" para tratar únicamente de información que, si fuera divulgada, clara y demostrablemente causaría daños injustificables a la competitividad de la empresa. La Ley de Respuesta a Emergencias y Derecho a Saber de la Comunidad (EU) establece rigurosos criterios, globalmente reconocidos, para que una empresa pueda gozar de la confidencialidad. Estos criterios se deben adoptar para todas las fuentes de materiales peligrosos en la frontera.

El Documento Base Final debe ser más directo al describir el tipo de información ambiental ya conocida sobre la frontera. Por ejemplo, en la sección sobre Cooperación en el Cumplimiento, el documento proporciona una larga sinopsis de los esfuerzos para promover el "cumplimiento voluntario a través de la revisión ambiental" (III.45) entre las maquiladoras propiedad de EU, y la sección sobre la Prevención de la Contaminación menciona la producción de un "video para promover el cumplimiento de las maquiladoras por medio de la revisión e información voluntaria" (III.32), pero no se especifica con qué se va a cumplir, y no se ha divulgado qué clase de información han obtenido las autoridades con este proceso "continuado".

(Aunque creemos que esta forma de informar "voluntaria" no es nunca muy satisfactoria ya que no hay manera de verificar la precisión ni la comprensión, ni de asegurar que se la proporcione de manera que permita la comparación con otros datos, todavía creemos firmemente que la información recogida con fondos públicos, como los gastados en este proyecto tri-lateral y multi-estatal, deben estar a la disposición del público.

- *Segundo, los gobiernos deben generar y distribuir nuevos datos para rellenar los vacíos de las bases de datos existentes.*

Estos vacíos incluyen, por ejemplo, datos sobre la ubicación y contenido de sitios no alistados de desechos tóxicos; el impacto ambiental de minas (campo que ni se menciona en la sección del borrador sobre Recursos Naturales); contaminación del suelo y del agua subterránea y exposición humana a raíz del uso agrícola y no agrícola de plaguicidas; correlación de las condiciones ambientales con temas conocidos de salud humana y ambiental, etc. Los proyectos

de monitoreo alistados en el Borrador del Documento Base, en su mayoría, no atienden a estas necesidades de información.

Además, cientos de nuevas instalaciones han iniciado sus operaciones desde la aprobación del TLC, y para la mayoría no tenemos ni la más básica información acerca de los tipos y cantidades de materiales peligrosos que usan, almacenan, y emiten. Y muchas, igual que antes del TLC, son empresas estadounidenses que se trasladan a México precisamente porque quieren estar sujetos a menos revisión y reglamentación. (Sé de una empresa en mi propio condado, por ejemplo, que apenas el otro día anunció que en vez de hacerse cumplir con los requisitos bastante mínimos locales de proporcionar información al gobierno para poder conseguir un permiso de uso especial en Naco, Arizona, iban a trasladarse más al sur, y el presidente de dicha empresa dice estar seguro que van a poder iniciar la producción muy pronto tan sólo a unas cuadas de distancia en Naco, Sonora.)

Recomendamos enfáticamente que no se permita ninguna instalación nueva en la región fronteriza sin la completa divulgación a la comunidad de sus usos, almacenamiento, emisiones, y traslados de materiales tóxicos.

Aunque el objetivo de iniciar un Registro de Emisiones y Transferencia de Contaminantes (RETC) en México y de desarrollar procedimientos comunes para la distribución de información y de compatibilidad del RETC con el US Toxics Release Inventory -TRI- (como se proyecta el Borrador del Documento Base bajo Prevención de la Contaminación, III.34) es bienvenido y necesario, los organismos deben hacer mucho más. Desde el lado de los EU, la EPA, y otros organismos estatales y locales, debe empezar de inmediato a recoger datos de las instalaciones fronterizas de acuerdo con la nueva lista ampliada de sustancias químicas y la proyectada lista ampliada de industrias sujetas a informar bajo el TRI, y deben hacer disponibles los resultados de estos inventarios al público en español e inglés.

Aunque aplaudimos la reciente acción de algunas maquilas de Nogales de proveer datos sobre el almacenamiento de sustancias químicas al organismo de respuesta a emergencias del Condado de Santa Cruz, insistimos que se debe divulgar la información al público. Una vez más, el pueblo tiene el derecho de saber los peligros a los que están expuestos.

De igual manera, los dos países deben ir más allá de simplemente animar a las "instalaciones industriales a hacer disponible [información sobre y inventarios del] uso y almacenamiento de sustancias químicas a los oficiales locales de respuesta" como se proyecta en los objetivos del Borrador para la Planificación para Contingencias y Respuestas a Emergencias (III.36); los gobiernos de ambos lados de la frontera deben usar su autoridad actual para obligar a las industrias a informarles de esta información, y no se la debe divulgar únicamente a los planificadores y cuerpos de respuesta sino a los planificadores del uso del suelo y al público en general que vive en las comunidades donde se usan y se almacenan las sustancias, y por tanto, son los que corren más riesgos en caso de emisiones de dichas sustancias.

Además, los dos países deben intensificar sus esfuerzos por seguir y reducir el transporte transfronterizo de los materiales peligrosos. Una reciente decisión de la Aduana estadounidense de finalmente empezar a hacer cumplir, en la puerta de entrada de Nogales, las leyes y los reglamentos que básicamente ha ignorado durante años es alentador, y el esperado sistema HAZTRAKS finalmente se está poniendo operacional. Sin embargo, ninguno de estos esfuerzos hace lo necesario en términos de involucrar al público ni para promover la reducción de cargamentos peligrosos.

- *Tercero, los dos países deben establecer la colección de datos, y protocolos de almacenamiento y distribución (incluyendo lenguajes de bases de datos compatibles o de*

*fácil conversión) normalizados de forma binacional para que se pueda efectuar enlaces entre distintos sistemas.*

El sistema informacional actual es caótico, y aunque se ha logrado muchos progresos en los últimos dos años, hay que hacer más, y se podría hacer más, especialmente si la EPA y la SEMARNAP se esforzaran más para involucrar al público afectado en el manejo de los recursos informacionales.

Por ejemplo, la "EPA Key Indicators Initiative", a que se hace referencia en el Borrador del Documento Base, ha identificado correctamente la necesidad de desarrollar "una capacidad comprensiva de enlace" y un sistema que proporcionará "información uniforme y precisa sobre las instalaciones" e "información consolidada de identificación de las instalaciones ... con elementos identificadores únicos"; pero aunque esto es un paso necesario, no es suficiente. Los que cooperamos bajo Frontera XXI debemos actuar rápidamente para proveer enlaces, no únicamente para información sobre "instalaciones", sino para información ambiental fronteriza en general, incluyendo, especialmente, enlaces de información sobre usos y emisiones de sustancias tóxicas y del monitoreo del ambiente con la de condiciones regionales de salud y contaminación. El proyecto "Border Health Data Infrastructure" mencionado en la sección Environmental Health del documento, por ejemplo, se debe enlazar con varias bases de datos de materiales peligrosos y de emisiones de contaminantes.

No sólo se debe hacer disponibles todos los datos relevantes por Internet, sino también los "métadatos", incluyendo la estructura de las bases de datos, para que el público pueda usar sus propios recursos para hacer con que los distintos sistemas se "hablen" entre sí. Una meta principal para todos nosotros que trabajamos en el campo del manejo de datos ambientales en la frontera es la de desarrollar una colección de elementos de datos en común: es una tarea inmensa y nos podemos acercar hacia ella mucho más rápidamente si proporcionamos al público los recursos informacionales necesarios para trabajar como iguales al lado de los investigadores gubernamentales y académicos.

Otro paso muy útil sería el de proporcionar financiación para incluir representantes del público para que participen como iguales en el "Environmental Information Resources Working Group", (y por cierto, en otros grupos de trabajo) con el fin de terminar con el papel del público de recibir pasivamente los planes e ideas siempre desde arriba. Otra vez, debemos trabajar en conjunto, no por vías separadas y claramente no dentro de la estructura jerárquica que tenemos ahora.

- *Cuarto, se debe hacer disponibles la financiación y otros recursos para aumentar la capacidad de los gobiernos y de las organizaciones no gubernamentales de tener acceso a los recursos informáticos.*

El acceso a los recursos informacionales sobre el ambiente cada vez más requiere el acceso a la tecnología electrónica, y grupos en ambos lados de la frontera se ven, cada vez más, necesitados de fondos para comprar y montar sistemas informáticos, y luego de usar la nueva tecnología eficazmente. Los fondos para este tipo de transferencia de tecnología al nivel de la comunidad deben hacerse disponibles, incluyendo proporcionar los aparatos y el "software" a estos grupos y también la asistencia técnica esencial y continuada para mantenerse al día con los rápidos cambios en la tecnología.

Se podría bajar significativamente el costo de esta transferencia de tecnología, y, al mismo tiempo, efectuar una contribución significativa a la minimización de los desechos por medio del reciclaje de componentes electrónicos usados (que están causando un problema de desechos sólidos considerable), pero todavía útiles, si los organismos de Frontera XXI se pusieran de acuerdo con la industria electrónica para adquirir equipamiento restaurado.

- *Quinto, como parte de un programa intensivo para la educación ambiental en la zona de la frontera para informar e involucrar al público, la EPA y la INE deben hacer traducir todos los datos sobre almacenamiento, uso, emisión, traslado, y potenciales efectos de las sustancias tóxicas en la región fronteriza en información útil (o sea, de fácil acceso) y distribuirla ampliamente— incluso a) por Internet, b) por programas de capacitación en el lugar del trabajo que tratan de la salud, la seguridad, y la prevención de la contaminación, c) por proyectos integrados y prácticos conjuntos para planificadores del uso del suelo y para emergencias al nivel estatal y local, y d) por centros informativos ambientales que pueden visitar los residentes de las comunidades fronterizas— y deben, al mismo tiempo, proporcionar información sobre las leyes, reglamentos, normas, políticas y otros componentes de los procesos de la toma de decisiones en el área de las sustancias tóxicas, y proporcionar otras oportunidades para la participación del público en estas decisiones.*

Sin amplia educación del público acerca de los peligros asociados con las sustancias tóxicas encontradas en nuestra región, y sin las oportunidades legales, técnicas, y económicas para manejarlas, la participación pública efectiva es imposible; y sin esta participación, no habrá prevención efectiva de la contaminación ni de las enfermedades. Y sin estos tres componentes básicos e interrelacionados—derecho a saber, participación pública, y prevención de la contaminación—no puede existir el desarrollo sustentable.

## **Public Access to Environmental Information on the US-Mexico Border (1996)**

Michael Gregory, presented to the West Texas Regional Poison Center, Second Annual Binational Conference Addressing Concerns in Toxicology and Environmental Health: "Toxicology Has No Borders," El Paso, Texas (6 September 1996)

Public access to information is an essential component of a free society, of public participation and of sustainable development. In addition, public access to environmental information has been shown in many instances to be a most effective incentive for pollution prevention. In the US, for instance, millions of pounds of pollutants each year for the past few years have been kept out of the environment not because of any regulatory requirement, but simply because right to know laws have given people information about what pollutants were being used and released in their communities. And because it is an effective means to pollution prevention, access to information is also a very effective means to disease prevention.

Since the chemical disaster at the Union Carbide plant in Bhopal, India, there has been an increasing demand for right to know worldwide, and in the past few years there has been an increasing number of right to know initiatives in the US-Mexico border region. (Useful lists of such border initiatives are contained in two US-EPA publications: the June 1995 *Compendium of EPA Binational and Domestic U.S./Mexico Activities* and the June 1996 *US/Mexico Border XXI Program Draft Framework Document*.)

Whether we look at access in terms of information technology, as a matter of civil or human rights, as an issue of political economy, or from another perspective, as soon as we start to discuss it in relation to the border region, one of the immediate facts we must deal with is the major differences in Information Culture of the two countries.

What I would like to do in the next few minutes is discuss some aspects of those two cultures as they appear in current access conditions and initiatives in the border region—especially in the western border where ATI does most of its work, and especially initiatives undertaken as cooperative projects between local governments and non-profit public interest groups, including Arizona Toxics. (I've attached a list of selected ATI current activities on right to know to the written copy of my talk which is available on the table.) My talk is broken into four sections:

- Access in General
- Access on the US Side
- Access on the Mexican Side
- Access Inbetween.

### ***Access in General***

Before we look at the regional aspects of the problem, some definitions of terms and contexts may be in order. First, although the phrase "Access to Environmental Information" takes in a very wide scope, I will focus on access in its commonly limited sense of worker and community right to know about hazardous materials they may be exposed to.

Second, I use the term *hazardous materials* in its broadest sense, as synonymous with the terms *toxics* and *dangerous goods*, and inclusive of such other (often more legally limited) terms as *hazardous substance*, *hazardous waste*, *toxic chemical*, *extremely hazardous substance*, *pollution* or *pollutant* or *contaminant*, *pesticide*, etc.

Third, the concept of *Access to Information* encompasses a wide range of *access points*

throughout the cradle-to-grave hazardous materials lifecycles. These points lie within the purviews of a variety of agencies, institutions and firms, and they involve several kinds or classificatory levels of things we may want information about. For instance, we may want to access information about 1) specific substances, organisms or products; 2) specific facilities, sites or incidents; 3) specific ecological or geographical regions; or 4) we may want to access the aggregated data held by a government or international agency or agencies, a business or business sector, a university, or even a whole government or the Internet.

Fourth, the data universe is so large, the options in cyberspace so many, and life so short, that information searches, if they are to be very useful, must be restricted to satisfy strategic ends. Workers and the public generally are looking for information at the first two levels, a specific substance or product that occurs at a specific geographic location. Practically speaking, most people don't care how little of Substance XXX it takes to kill us or deform our babies; they usually just want answers to a few basic questions like *Is this stuff necessary? And if not, why is it still here? And if it is, necessary for what? for whose benefit? And are they going all out, sparing no expense, to make sure it doesn't cause harm?* Risk assessment is rarely of practical concern except to someone looking for a way to push pollution to some limit, rather than eliminate as much as possible. What is of concern to most people is intrinsic hazard and prevention.

Finally, while many of the right to know initiatives naturally focus on emergency planning and response in order to address the most immediate and catastrophic threats to our communities and environment, emergency concerns pertain to only one aspect of the hazardous materials lifecycle; pollution and disease prevention require more comprehensive, integrated information.

Given those parameters, *Access to Information* must be understood to go well beyond mere *availability* or *disclosure* of data in order to provide for an active flow of information, including effective mechanisms for data collection, entry, maintenance, analysis, dissemination and other tasks of data management. In this sense, *Access to Information* at a minimum includes the following aspects:

- **identification** as specific chemicals at specific sites of the generation, receipt, storage, use, distribution and hazard of both raw and process materials, as they occur in both primary production and as secondary or waste products
- **characterization** of the physical, chemical, biological and radiological make-up of materials, their intrinsic hazards and their associated risks, and of the capability and plans of firms and communities for managing them
- **labeling** of products to identify hazardous constituents (such as additives and pesticide residues in food or solvents in paints), and labeling of hazardous cargo (by such means as shipping papers, vehicle placarding and hazardous waste manifests)
- **testing** in lab and field of the properties of materials, including acute and chronic toxicity, leachability, persistence, bioaccumulativity, corrosivity, reactivity, and other physical, biological or radiological hazards
- **tracking** of hazardous materials from cradle-to-grave, including tracking of products in commerce and waste or degradation products in the environment
- **monitoring** to determine the extent of environmental contamination in air, water, soil and biological receptors, including vegetation, wildlife and ourselves



- **linking** of commercial and environmental tracking and monitoring data with community health data
- **training and education** of workers and the public about the kinds, amounts and whereabouts of materials they are potentially exposed to and the hazards such materials pose to human health and the environment; about how to prevent exposure and injury from both routine and emergency releases; and about the tools they can use to help find the information they want.

*An adequate, effective right to know program* means opening access at all these points and others, in order to give us the information we need to protect ourselves, the environment, and future generations.

### ***Access on the US Side***

The United States began with the fundamental assumption, as stated by Thomas Jefferson, that a democratic society depends on an informed public, and the Information Culture developed from that premise over the past 200 years has resulted in an elaborate structure of laws and regulations seeking to guarantee both the public's right to know and the individual's right to privacy.

Under this system, in theory at least, behind the desire for Access to Information lies the concept of Freedom of Information—and both ideas to varying degrees are built into the regulatory framework of health and environmental protection on the northern side of the border.

This is not to say, of course, that in the US everything is smooth and perfectly transparent and that the public can easily find everything it wants to know about hazardous materials and environmental contamination. There has been some progress during the past twenty-five years, beginning with passage of disclosure laws like the *National Environmental Policy Act* and the *Clean Water Act*, but there are still huge data gaps and the public is still kept in the dark for the most part about the environmental hazards we are exposed to and, consequently, is largely excluded from effective participation in the decision-making processes that determine the kind and extent of such exposures.

For instance, EPA's Toxic Release Inventory (TRI), developed under the *Emergency Planning and Community Right to Know Act* of 1986 (EPCRA) and generally recognized as the most extensive right to know program in the world, is estimated by EPA itself to report less than 5% of the annual environmental releases and transfers of toxic chemicals in the US. This low figure is not surprising when we realize that of the 650,000 to a million chemicals in commerce, only 50-100,000 are generally recognized as hazardous (by EPA and OSHA, e.g.), and that even under the newly-expanded TRI rules only about 600 of these are subject to reporting, and those only when they're released or transferred in amounts of 10-25,000 pounds or more, and only if they're released or transferred by that small handful of industries EPA classifies as manufacturers.

Our lack of information is caused by a number of factors, including, of course, that frequently cited culprit, lack of resources; but frankly, I think the resource problem is highly overrated in a society that can afford to give millions of dollars a year to people so they can move little balls back and forth across playgrounds.

Besides resources, we have to recognize that science often does not work as fast as technology and that given the pace of technological development, we are often forced to face twenty-first century toxics with twentieth-century information—and in some cases, information and tools far more outdated than that. The study of ecological toxicology, for instance, is in its infancy

and epidemiological studies proceed only very slowly and after the fact. Current science has only recently begun to look at the effects of mixtures and the mechanisms of toxicity, only recently finding how very low doses of certain chemicals (e.g., dioxin) may cause or be precursors to, or be associated with other factors, including other pollutants, in the promotion of disease.

In addition, we are finding (increasingly so as traffic picks up on the Information Highway) that many of the barriers to access result from inadequate information technology and the technical complexities of data collection, aggregation, comparison, interpretation and dissemination. And often they are merely inadvertent obscurities resulting from simple inexperience in the handling of multivariate data sets.

Even within a single agency like EPA, data exchange is sometimes next to impossible because the agency's various databases, for any number of technical reasons, simply cannot talk to each other. And that problem is, of course, greatly compounded when one agency or one country tries to talk to another, or when the public tries to tap into any of the existing government data sources.

But even more important in many cases than these technical difficulties, is a widespread countervailing Subculture of Secrecy which exists in symbiotic relationship with lack of political will and feeds on such attendant barriers to access as apathy, inertia, incompetence and elitism; on deference to high-powered lobbyists and attorneys who, in pursuit of narrow self-interest promote slow enforcement, bad science like risk assessment and such truly twisted notions as the one that says chemicals, like people, should be considered innocent until proved guilty. Many of the more profound gaps in our basic research programs and databases are clearly the result of deliberate attempts to obfuscate and otherwise delay the spread of information.

This resistance to access and transparency may be clearly seen in the trade secrecy policies of our regulatory system, under which polluting industries, simply by claiming it as Confidential Business Information (or CBI, as it is known in the trade), can legally withhold from the public (and, in many cases, from government) vast quantities of information concerning the existence, disposition and the health, safety and environmental effects of thousands of hazardous materials that they produce and distribute. Rather than being the legitimate protection of competitive enterprise that it was intended to be, too often CBI has become a scam to avoid the costs of disease and pollution prevention.

For instance, the largest database in the world on the health effects of chemicals, is the one maintained by the US Environmental Protection Agency (EPA) pursuant to the *Toxic Substances Control Act* of 1976 (TSCA). The TSCA database contains information on over 70,000 toxic substances in commerce submitted by their manufacturers. Yet, due to CBI policies at EPA, most of that information is not available to the public.

The history of chemical management is replete with instances of "safe" chemicals being put into commerce and then being found to be very dangerous. We need only think of PCBs, CFCs, DDT, mercury, lead and diethylstilbestrol, to name a few. TSCA was passed twenty years ago to help prevent that kind of problem, but thanks to CBI and the Secrecy Subculture it thrives in, less than 1% of the substances in commerce have been adequately tested and the results of most of the tests that have been done are not available to the public.

Confidential Business Information is bad enough in itself, but its effects are compounded because it helps generate a self-perpetuating syndrome in which the less people know about the effects of hazardous materials, the less they can do to remedy the problems, including the

problem of secrecy itself. Consequently, in the US Congress and state legislatures in the past couple of years we have seen some of the strongest attacks in history on freedom of information and the public's right to know (including bills calling for self-audit privilege, dismantling of the TRI, mandatory cost-benefit analysis to the point of gridlock, destructive pennywise budgets for research and regulation, etc.—attacks led by the industries that use and release toxic substances).

### *Access on the Mexican Side*

Many of the worst characteristics of the Subculture of Secrecy hold sway in Mexico too, where not only environmental law, but the idea of a right to know are very recent developments. When coupled with the extreme lack of financial resources that Mexico suffers, the Secrecy Subculture leads to a severe lack of data about hazardous materials conditions in Mexico in general and the border in particular.

The Mexican Constitution provides for a Right to Information (*Derecho al Información*) but that is understood much more narrowly than the more recent term, Right to Know (*Derecho a Saber*), which so far has gained no legal footing in Mexico, though for the past few years civil associations and academic institutions in Mexico have been building a climate that may in time lead to legislative recognition for at least some of the principles of right to know.

The main impetus for such change, like the impetus for adoption of environmental law in Mexico a few years ago, and for the current expansion of the environmental regulatory framework, has been influence from the international community. International laws and conventions tend to have more force in Mexico and less developed nations than they do in the US, and that has been the case, for instance, with the 1987 Brundtland Commission report on sustainable development as well as its successor, the 1992 Earth Summit held in Rio de Janeiro and the consensus statements on right to know by the more than 178 nations (including all three NAFTA parties), that participated in the Summit.

The Brundtland Commission report, *Our Common Future*, says that *Promoting sustainable development policies at the national and international levels will require immense efforts to inform the public and secure its support*. And Agenda 21, the Earth Summit's so-called "Blueprint for the Future," in addressing the dangers of toxic chemicals says that *The principle of the right of the community and of workers to know [of chemical] risk should be recognized* (Chp. 19.8). Similarly, Principle 10 of the Rio Declaration calls upon states to *facilitate and encourage public awareness and participation by making information widely available*.

These and similar international directives have had a direct effect on the recent implementation of the most advanced official right to know project of the Mexican federal government, the centerpiece of which was the running in the state of Querétaro in late 1995 and early 1996, of a pilot Pollutant Release and Transfer Register (PRTR, *Registro de Emisiones y Transferencias de Contaminantes*, or RETC), a variant of what in the US is known as the Toxics Release Inventory (TRI).

Based on guidelines for PRTRs developed by the Organization for Economic Cooperation and Development (OECD) in response to the Rio Declaration and Agenda 21, and with some input from NGOs from Mexican border states, the pilot national register gathered a wide range of previously unavailable data about a hundred or so hazardous materials at a number of industrial facilities in Querétaro.

Final results of the inventory have not been published yet, but Mexico has been considering repeating the RETC or an improved version of it in Querétaro and possibly implementing it in

other states, so the pilot may become a valuable precedent for other data collection efforts in Mexico, including in the border region. The North American Commission on Environmental Cooperation (CEC), for instance, as well as SEMARNAP, the Mexican environmental agency, have received requests to conduct an RETC in the Tijuana area as part of the UNEP Global Programme of Action to protect marine environments from Persistent Organic Pollutants (POPs).

The first step in disease, pollution and emergency incident prevention is hazard identification, and widespread implementation of an expanded RETC would clearly be a major step toward right to know. But many other changes in Mexico's Information Culture would also need to be made in order to provide full public access.

For instance, in the US one major source of environmental information and one of the most interactive fora for public participation in environmental decision-making is provided by the permitting process facilities are required to go through in order to obtain permission to operate. Generally speaking, most state and federal environmental laws north of the border require that permitting be carried out transparently, with notification to, scrutiny by and input from the public. The kinds and amounts and handling conditions of hazardous materials at permitted facilities are public information, and public participation often leads to significant modifications of permits and plans prior to their final approval by government agencies.

In Mexico, this essential ingredient of right to know does not exist; permitting information is considered to be solely within the purview of the regulatory agency, and data submitted by the company or otherwise gathered by the agency is generally considered to be Confidential Business Information, public disclosure of which may be considered a violation not only of agreements between the industry and government, but of law.

The same may be said of another major means of environmental disclosure, the Environmental Impact Assessment (EIA) process. EIAs (known in Mexico as MIRs, or *Manifiestos del Impacto Ambiental*) have been recognized worldwide as an invaluable tool for environmental decision-making. In the typical US version, the Environmental Assessment (EA) or Environmental Impact Study (EIS) is an elaborate process involving mandatory detailed analysis and disclosure of the potential impacts of proposed actions and of credible alternative actions, and requiring public notification and opportunity for public comment on the draft before adoption and implementation of the final document. Federal courts have ruled that the EIS must disclose assumptions and data gaps and other uncertainties and their influence on the assessment's characterization of potential impacts.

Until recently, Mexico's federal EIA requirements were among the most progressive, requiring a wide array of industries, before they began operations, to file descriptive reports on expected emissions and discharges. The Mexican requirements in some ways were more stringent than those of the US federal EPA, which require environmental impact statements only for federal projects, or projects involving federal funds.

In one major respect, however, the US program is much stronger, in that it requires that all EIAs be given full public disclosure and that opportunity be provided for public input. In Mexico the EIA process, like the facility permitting process, is generally closed to the public; the information is exchanged only between the government and the facility. Furthermore, Mexico has recently severely limited its program, so that far fewer facilities are now required to submit EIAs.

Because Mexico's environmental protection and environmental information programs are comparatively new and changing rapidly, there is reason to hope that the country can quickly

overcome some of these problems while at the same time avoiding many of the problems of redundancy, incompatibility, etc. that have plagued the US. Meanwhile, public access to information remains severely restricted south of the border.

### *Access Inbetween*

Despite the promise of NAFTA and the post-industrial information explosion, what we know about hazardous materials in our communities, workplace and general environment, continues to be far less than what we don't know, and what we don't know is answers to the basic journalistic questions of who, what, where, when, how much and why.

Hundreds of new facilities have gone into operation in our border communities since passage of NAFTA, and for most of them we don't have even the most basic information about the kinds and amounts of hazardous materials they use, store and release. And many of them, just like before NAFTA, are US companies moving into Mexico precisely because they want to be subject to less reporting and regulation.

Significant as these data gaps are for the urban-industrial sector, we have even less information on the more rural sector, including, for example, location and contents of unlisted toxic waste sites; environmental impacts of mines; soil and groundwater contamination from, and human exposure to, agricultural and non-agricultural use of pesticides. And in both rural and urban settings, there is an extreme poverty of information on potential links between environmental conditions and identified human and environmental health problems.

Despite these shortcomings (and to some extent because of them), in some ways we have a better chance in the border region to answer some of those questions than we do in the interior of either nation because negotiators in the binational arena are not necessarily bound to the limitations of their respective countries; they can, given political will, without violating principles of sovereignty, choose the best of both systems to create a new and exemplary information environment.

The best opportunity for opening access on both sides of the border is at the local/municipal/municipal level where decisions can sometimes be made without the high-level politics of compromise and rhetoric that characterize so many international talks at the federal level. At the local level, cooperative government-NGO projects offer a chance to apply local expertise to locally-understood problems, and state and local agencies may be able to take advantage of the current decentralization programs of both federal governments.

For example, one of the most successful areas of binational cooperation has been emergency planning and response, a field that is quintessentially tied to local issues and conditions. It's a field that offers communities a relatively easy starting point for the process of opening access, and consequently has benefitted from several recent improvements in right to know. Most apparent has been the continual improvement in hazardous materials training for emergency responders on both sides of the border; we now have a much-better trained responder community than we did a few years ago. (We still don't have anywhere near enough equipment for those responders to use, but that is another, sadder, story.)

Several emergency planning and response initiatives are underway in the Arizona-Sonora border area. One of the most recent is the binational Border Response Action Team, comprised of several response agencies, NGOs and academic organizations, who are working on joint planning and response issues, including the disclosure to local authorities of transboundary shipments of hazardous materials by truck and rail and monitoring to determine the extent of contamination resulting from leaks and spills of materials at transportation sites along the

border.

But the Secrecy Subculture obtrudes even in regard to emergency planning. In the Ambos Nogales region, for instance, the Maquila Association recently provided the Santa Cruz County emergency response agency with some hazardous materials data on some of the maquilas on the Mexican side of the line, but only after eliciting a promise from the agency that the data would not be made public. Similar arrangements have been made between facilities in Baja California and the Alta California emergency planning agencies.

Even if the public were allowed access to the available emergency planning and response information, however, that would be only a small part of what is needed. Emergencies do not occur in a vacuum, but are part of a context that includes the whole hazardous materials lifecycle. What is needed are integrated hazardous materials planning and data management systems that couple emergency planning and response with other concerns like land-use planning and community health.

That was the intent of the Border Right to Know Project conducted in 1993 by ATI and Enlace Ecológico, an *asociación civil* based in Agua Prieta, Sonora. To the best of my knowledge, the only publicly available, site-specific hazardous materials information on facilities on the Mexican side of the border is still the integrated toxics inventory of Agua Prieta maquilas conducted as part of that project. That inventory was innovative in several ways, including the fact that it was conceived and carried out by non-profit public interest groups; it was made possible by the full cooperation of local and state authorities; its results were made accessible to the public; and it integrated emergency planning and response data with data on raw materials, in-plant use, routine releases, and other materials accounting information.

That integrated, open access approach is also the basis of a project we expect to start soon in the Ambos Nacos area. Building on a year-long dialogue that ATI facilitated between state and local land-use planners from both sides of the Sonora-Arizona border, the Naco Toxics Data Management Project will develop a hazardous materials inventory of the area and incorporate it into a system of data management, linked to the Cochise County GIS, for both land-use planning and emergency planning purposes.

Current border right to know efforts run the gamut from such hands-on data collection projects to training projects (like the series of workshops for small businesses and communities on combined pollution prevention-right to know themes that ATI has been conducting in cooperation with the City of Nogales and other communities), to relatively pure information theory projects (like our compilation of a *Toxics Data Dictionary* and *Border Toxics Reference List* for use in the Tijuana River Watershed GIS).

I hope this quick overview has given you some idea of the range of efforts to expand public access to information on the border, and that it will be helpful to you in your own efforts. In closing, I would like to bring to your attention one more particularly important right to know initiative, and one that is seriously threatened. The Border Environment Cooperation Commission (BECC), which was established by the NAFTA countries to certify border-area environmental improvement projects for funding by the North American Development Bank (NADBank) and others, has provided one of the most promising opportunities for expanding right to know in the border region.

Over the past two years, the BECC has significantly improved the Information Culture in the border region by developing a certification process that incorporates innovative and progressive public participation procedures and, most importantly, by developing, through that public participation process, a set of Criteria which applicants must meet before their projects

can be certified.

Among those Certification Criteria is a requirement that applicants conduct and submit and obtain approval of an environmental impact assessment for their projects. The EIAs submitted to satisfy this requirement provide the only means citizens, governments and the BECC and NADBank themselves have of determining the potential environmental effects and sustainability of proposed projects. But at its meeting in Juarez later this month, the BECC Board of Directors will be considering a proposal to drop the EIA requirement on the grounds that since an EIA is not always required by either US or Mexican law, it should not always be required by the BECC.

If adopted, this proposal will gut the BECC's public participation program and seriously set back the progress the institution has made toward promotion of sustainable development in the border region. Killing the EIA requirement will represent a major victory of the Secrecy Subculture the BECC and others have been struggling against.

Hopefully, rather than backsliding into the mire of non-disclosure, the BECC Board of Directors can be convinced to re-affirm its commitment to transparency and will further the vision of the border as an area where we can escape the bonds of the old Secrecy Subculture and allow environmental protection and sustainable development to move beyond the walls that limit public access on either side of the line by helping to create a new binational Information Culture based on Freedom of Information, Right to Know and the best examples of transparency from both nations.

## **Acceso Público a la Información sobre Medio Ambiente en la Frontera México-Estadounidense (1996)**

Michael Gregory, presentado en la Segunda Conferencia Anual Binacional del West Texas Regional Poison Center sobre Aspectos de Toxicología y Salud Ambiental, "La Toxicología no tiene Fronteras," El Paso, Texas (6 de septiembre de 1996)

El acceso del público a la información es un elemento esencial de una sociedad libre, de la participación ciudadana y del desarrollo sustentable. Además, se ha comprobado que el acceso público a la información sobre aspectos ambientales en muchos casos es uno de los más efectivos incentivos para prevenir la contaminación. En los Estados Unidos, por ejemplo, durante los últimos años se han podido eliminar del medio ambiente millones de contaminantes no porque lo exijan los reglamentos, sino simplemente porque las leyes sobre el derecho a la información le han brindado a la población información respecto a qué contaminantes se usan y emiten en sus comunidades. Y dado que esta es una medida efectiva para prevenir la contaminación, el acceso a la información también constituye una efectiva forma de prevenir enfermedades.

Desde que se presentó el desastre químico en la planta de Union Carbide en Bhopal, India, ha habido una mayor demanda de información a nivel mundial, y en los últimos años, ha aumentado la cantidad de iniciativas sobre el derecho a la información en la región fronteriza México-Estadounidense. (En dos publicaciones de la EPA aparece una relación de dichas iniciativas. Las publicaciones son: *Compendium of EPA Binational and Domestic U.S./Mexico Activities*, publicado en junio de 1995, y *U.S./Mexico Border XXI Program Draft Framework Document*, publicado en junio de 1996).

Ya sea que vemos el acceso en términos de tecnología informativa, como un asunto de derechos civiles o humanos, como una cuestión de economía política, o desde otra perspectiva, en cuanto empezamos a abordar el tema y su relación con la región fronteriza, uno de los aspectos que de inmediato debemos considerar es el de las importantes diferencias en la Cultura de la Información que existe en los dos países.

Lo que quisiera hacer durante los siguientes minutos es hablar acerca de algunos de los aspectos de estas dos culturas, tal y como se presentan, dadas las condiciones actuales de acceso y las iniciativas existentes en la región fronteriza -especialmente en la parte occidental de la frontera, donde ATI realiza la mayor parte de sus labores, y particularmente con respecto a las iniciativas emprendidas a manera de proyectos de colaboración entre gobiernos locales y grupos de interés público no lucrativos, incluyendo a Arizona Toxics. (He anexado a la copia de mi ponencia, que se encuentra a su disposición en la mesa, una lista de algunas de las actividades que ATI lleva a cabo con respecto al derecho a la información).

Mi plática se divide en cuatro secciones:

- *Acceso en General*
- *Acceso en el lado Americano*
- *Acceso en el lado Mexicano*
- *Acceso Intermedio.*

### ***Acceso en General***

Antes de pasar a considerar los aspectos regionales del problema, es conveniente revisar algunas definiciones de términos y contextos. En primer lugar, aunque la frase "Acceso a la Información



sobre Medio Ambiente" sea de tan amplio alcance, me enfocaré únicamente al acceso en el sentido comúnmente limitado del derecho que asiste a los trabajadores y a las comunidades para conocer la información referente a los materiales peligrosos a los que se pueden ver expuestos.

En segundo lugar, yo uso el término *materiales peligrosos* en el sentido más amplio de la expresión, como sinónimo del término *sustancia tóxica y producto peligroso*, e incluyendo algunos otros términos (generalmente limitados en cuanto a su significado jurídico) como *sustancia peligrosa, residuo peligroso, sustancia química tóxica, sustancia extremadamente peligrosa, contaminación o contaminante, plaguicida*, etc.

En tercer lugar, el concepto de Acceso a la Información comprende una gran variedad de puntos de acceso a través del ciclo total de vida de los materiales peligrosos. Estos puntos están comprendidos dentro del alcance de una gran variedad de dependencias, instituciones y empresas, y tienen que ver con varios tipos de niveles o clasificaciones sobre los cuales podemos requerir información. Por ejemplo, si queremos información acerca de 1) sustancias, organismos o productos específicos; 2) plantas, sitios o incidentes específicos; 3) regiones ecológicas o geográficas específicas; o 4) si queremos tener acceso a los datos globales que tiene alguna instancia gubernamental o internacional, una empresa o sector empresarial, una universidad, o incluso todo un gobierno o el sistema Internet.

Como cuarto punto, el universo de datos es tan extenso, las opciones en el ciberespacio son tantas, y la vida es tan corta, que las consultas, si queremos que sean útiles, deben restringirse a satisfacer metas específicas. Los trabajadores y el público generalmente buscan información en los dos primeros niveles: una sustancia o un producto específico que se relacione con una ubicación geográfica en particular. De manera práctica, a la mayoría de las personas no les importa cuanta Sustancia XXX se necesita para matar a alguien o para provocar malformaciones en los bebés; por lo general la gente solamente quiere obtener respuestas a algunas preguntas básicas como: *¿realmente se necesita esto? Y si no se necesita, ¿por qué lo siguen usando? Y si realmente se necesita, ¿para qué es necesario? ¿quién se ve beneficiado? y ¿han hecho todo lo posible, han agotado todos sus recursos para garantizar que no provoque daños?* La evaluación de riesgos generalmente no interesa sino a aquellos que buscan alguna manera de empujar la contaminación hasta cierto límite, en vez de eliminarla en la mayor medida posible. Lo que a la mayoría de la gente le importa son los peligros intrínsecos y la prevención.

Finalmente, aunque muchas de las iniciativas del derecho a la información se enfocan de manera natural hacia la planeación y la respuesta a emergencias, a fin de atender las amenazas más inmediatas y catastróficas que enfrentan nuestras comunidades y el medio ambiente, la inquietud sobre las emergencias se relaciona con un solo aspecto del ciclo de vida de los materiales peligrosos; la prevención de la contaminación y enfermedades requiere de información más exhaustiva e integrada.

Con base en estos parámetros, para brindar un flujo efectivo de información que incluya efectivos mecanismos de recopilación, captura, mantenimiento, análisis, diseminación de datos, y otras tareas relacionadas, el *Acceso a la Información* se debe entender como algo que va más allá de la mera *disponibilidad* o *divulgación* de datos. En este sentido, el *Acceso a la Información* debe incluir como mínimo los siguientes aspectos:

- **identificación** de sustancias químicas específicas en determinados lugares de generación, recepción, almacenamiento, uso, distribución, así como de los peligros inherentes a algunas materias primas y sustancias en proceso, de la forma en que se presentan en la producción primaria, y en su carácter de productos secundarios o residuales.
- **clasificación** de la composición física, química, biológica y radiológica de los materiales,

sus peligros inherentes y riesgos asociados, así como la capacidad y los planes que las empresas y comunidades tienen para su manejo.

- **etiquetado** de los productos con el fin de identificar sus constituyentes peligrosos (como residuos de aditivos y plaguicidas en los alimentos y solventes en las pinturas), y etiquetado de cargamentos peligrosos (mediante manifiestos de envío, letreros en los vehículos de transporte, y manifiestos de residuos peligrosos).
- **pruebas** en laboratorio y campo de las propiedades de los materiales, incluyendo su toxicidad crónica y aguda, lixiviación, persistencia, bioacumulación, corrosividad, reactividad, y otros peligros de carácter físico, biológico o radiológico.
- **seguimiento** de los materiales peligrosos de principio a fin, incluyendo el seguimiento de los productos comercializados y de los residuos o la degradación de productos en el medio ambiente.
- **monitoreo** encaminado a determinar el alcance de la contaminación ambiental en el aire, el agua, el suelo y los receptores biológicos, incluyendo la vegetación, la fauna y el ser humano.
- **correspondencia** de los datos de seguimiento comerciales y ambientales con los datos sobre la salud de la comunidad.
- **capacitación y educación** de los trabajadores y el público acerca de los tipos, cantidades y ubicaciones de los materiales a los que pudieran verse expuestos, y sobre los peligros que dichos materiales representan para la salud humana y el medio ambiente. Asimismo, información sobre formas de prevenir la exposición y los daños que ocasionan las emisiones rutinarias y de emergencia, y sobre las herramientas que pueden usarse para encontrar la información que se desea obtener.

*Un programa adecuado y efectivo de derecho a la información* constituye una puerta de acceso a estos y otros puntos, con el objeto de que se nos proporcione la información que necesitamos para protegernos, proteger el medio ambiente y a las generaciones futuras.

### ***Acceso en el Lado Americano***

Los Estados Unidos comenzaron suponiendo, como dijo Thomas Jefferson, que una sociedad democrática depende de una ciudadanía informada, y la Cultura de la Información que se ha ido desarrollando durante los últimos 200 años a partir de esa premisa ha dado como resultado una complicada estructura de leyes y reglamentos cuyo propósito es garantizar tanto el derecho del público a la información como el derecho del individuo a la privacidad.

Según este sistema, cuando menos en teoría, detrás del deseo de contar con Acceso a la Información se encuentra el concepto de la Libertad de Información -y ambas ideas, aunque en grados distintos, están contenidas en el marco legislativo de protección a la salud y al medio ambiente en el lado norte de la franja fronteriza.

Con esto obviamente no quiero dar a entender que en los Estados Unidos todo marcha perfectamente bien y de manera transparente, ni que el público pueda encontrar fácilmente todo lo que quiere conocer acerca de los materiales peligrosos y la contaminación ambiental. Durante los últimos veinticinco años ha habido avances, empezando con la aprobación de leyes de divulgación como la *Ley Nacional de Política Ambiental*, y la *Ley de Agua Limpia*, pero aún hay muchos vacíos de información, y el público aún sigue ignorando la mayoría de los peligros

ambientales a los que se ve expuesto, y por consecuencia, se le impide tener una participación efectiva en los procesos de toma de decisiones con los que se determina el tipo y alcance de dichas exposiciones.

Por ejemplo, la EPA calcula que su Inventario de Emisiones Tóxicas (TRI, por sus siglas en inglés), desarrollado en base a la Ley de Planeación de Emergencias y Derecho de la Comunidad a la Información de 1986 (EPCRA), y generalmente reconocido como el más extenso programa de derecho a la información en el mundo, solamente cuenta con informes de menos del 5% de las emisiones ambientales y transferencias de sustancias tóxicas que se llevan a cabo anualmente en los Estados Unidos. Esta bajísima cifra no nos debe sorprender si tomamos en cuenta que de 650,000 a un millón de sustancias que se comercializan, solamente 50 a 100,000 se reconocen generalmente como peligrosas (en base a EPA, OSHA, etc.), y que aún a pesar de las recientemente ampliadas reglas del TRI, solamente unas 600 de estas sustancias están sujetas a requisitos de notificación, y únicamente cuando las transferencias son por cantidades mayores a 10,000 a 25,000 libras, y solamente si la emisión o transferencia la lleva a cabo algunas de las pocas industrias que la EPA clasifica como fabricantes.

La falta de información que nos aqueja obedece a varios factores, incluyendo, por supuesto, al tan citado culpable, la falta de recursos; pero francamente, yo creo que al problema de los recursos se le da mayor importancia de la que tiene en una sociedad que puede darse el lujo de pagar millones de dólares al año a algunas personas para que traigan una pelotita de arriba a abajo en una cancha.

Además de los recursos, tenemos que reconocer que la ciencia muchas veces no trabaja a la misma velocidad que la tecnología, y que dado el ritmo del desarrollo tecnológico, muchas veces nos vemos forzados a enfrentarnos con sustancias tóxicas del siglo XXI, aún cuando solamente contamos con información del siglo XX - y en algunos casos, con información y herramientas incluso más antiguas. El estudio de la toxicología ecológica, por ejemplo, está apenas en pañales, y los estudios epidemiológicos se van desarrollando muy lentamente y ya cuando se dan hechos consumados. La ciencia actual apenas acaba de empezar a analizar los efectos de algunas mezclas y mecanismos de la toxicidad, y recién se acaba de descubrir que pequeñas dosis de algunas sustancias químicas (por ejemplo la dioxina), pueden provocar enfermedades, ser precursoras de ellas o estar relacionadas con otros factores causales, incluyendo otros contaminantes.

Además, estamos viendo (cada vez más a medida que se va agilizando el tráfico en la Supercarretera de la Información) que muchas de las barreras al acceso son producto de tecnologías informativas inadecuadas, así como de las complejidades técnicas de la recopilación, suma, comparación, interpretación y difusión de datos. Y generalmente no son más que ambigüedades que surgen de la falta de experiencia en el manejo de distintos juegos de datos.

Aún dentro de una misma dependencia como la EPA, el intercambio de datos muchas veces se hace casi imposible, ya que los distintos tipos de bases de datos con los que cuenta esta dependencia, por una gran variedad de motivos, simplemente no pueden intercambiar información. Y ese problema, por supuesto, se complica cuando una dependencia o un país trata de intercambiar información con otro, o cuando el público intenta entrar a alguna de las fuentes de datos que tiene el gobierno.

Pero en muchos casos, algo aún más importante que estas dificultades técnicas es la ampliamente neutralizante Subcultura del Ocultamiento, que subsiste en relación simbiótica con la falta de voluntad política y se alimenta de intrínsecas barreras al acceso como las que representan la apatía, la inercia, la incompetencia y el elitismo. Algunos poderosos cabilderos y abogados, en busca de sus mezquinos intereses fomentan el tortuguismo, las deficiencias en la ciencia, como

la evaluación de riesgos, e ideas tan raras como la que señala que las sustancias químicas, al igual que los seres humanos, deben considerarse inocentes hasta que no se compruebe su culpabilidad. Muchos de los vacíos más profundos en nuestros programas de investigación y en nuestras bases de datos son el claro resultado de deliberados intentos por obstruir o de alguna forma retrasar la difusión de la información.

La resistencia al acceso y la transparencia se puede ver reflejada de manera muy clara en las políticas sobre los secretos comerciales que existen en nuestro sistema legislativo, en base al cual algunas industrias contaminantes, con el solo hecho de decir que sus datos constituyen Información Empresarial Confidencial (o IEC, como se le conoce en el medio), pueden legalmente negar al público (y en ocasiones hasta al gobierno) grandes cantidades de información con respecto a la existencia, disposición, efectos sobre la salud, seguridad y medio ambiente de miles de materiales peligrosos que producen y distribuyen. En lugar de que la IEC constituya, como se pretendía que fuera, una protección legítima para la competencia entre empresas, generalmente esta medida se convierte en un engaño para evitar hacer desembolsos por concepto de prevención de la contaminación y enfermedades.

Por ejemplo, la base de datos más extensa del mundo sobre efectos de las sustancias químicas en la salud es la que mantiene la Agencia de Protección Ambiental de los Estados Unidos (EPA), de conformidad con la *Ley de Control de Sustancias Tóxicas* de 1976 (TSCA). La base de datos TSCA contiene información acerca de más de 70,000 sustancias tóxicas comercializables, tal y como la presentan sus propios fabricantes. Aun así, dadas las políticas de IEC de la EPA, la mayoría de esta información no está a disposición del público.

La historia de la gestión de sustancias químicas está repleta de ejemplos de sustancias "seguras" que han salido a la venta y que luego resultan verdaderamente peligrosas. No es necesario ir lejos, solamente pensemos en los BPCs, CFCs, DDT, mercurio, plomo y dietilestilbestrol, por mencionar solo algunas. La ley TSCA fue aprobada hace veinte años con el objeto de ayudar a prevenir este tipo de problemas, pero gracias a la IEC y a la Subcultura del Ocultamiento de la cual se alimenta, menos del 1% de las sustancias que se comercializan han sido analizadas adecuadamente, y los resultados de la mayoría de las pruebas que se han realizado no están a disposición del público.

La Información Empresarial Confidencial es ya de por sí perjudicial, pero sus efectos se potencializan por el hecho de que ayuda a generar un síndrome espiral mediante el cual entre menos sabe la gente acerca de los efectos de los materiales peligrosos, menos puede hacer para solucionar los problemas, incluyendo el del ocultamiento en sí. Por consecuencia, durante los últimos dos años, hemos visto en el Congreso Estadounidense y en las legislaturas estatales algunos de los más fuertes ataques en la historia de la libertad de información y el derecho del público a la información (incluyendo propuestas de ley que en las que se aboga por el privilegio de la auto-auditoría, la abolición del TRI, análisis costo-beneficio obligatorios, mezquinos y destructivos presupuestos para la investigación y la normatividad, etc. -ataques emprendidos por las industrias que usan y emiten sustancias tóxicas).

### *Acceso en el Lado Mexicano*

Muchas de las peores características de la Subcultura del Ocultamiento han hallado cabida en México también, donde no solamente la legislación ambiental, sino la idea del derecho a la información son muy recientes. Aunada a la grave escasez de recursos financieros que sufre México, la Subcultura del Ocultamiento nos da como resultado una grave falta de información acerca de las condiciones de los materiales peligrosos en la República Mexicana en general y en especial en la frontera.

La Constitución Política de los Estados Unidos Mexicanos dispone el Derecho a la Información, pero este se entiende como un concepto mucho más reducido que el recientemente adoptado Derecho a Saber, que hasta ahora no se ha hecho acreedor a ninguna posición jurídica en México, aunque en años recientes algunas asociaciones civiles e instituciones académicas mexicanas han venido construyendo un clima que con el tiempo puede generar el reconocimiento jurídico de al menos algunos de los principios del derecho a la información.

El principal aliciente de este cambio, al igual que de la adopción de una legislación ambiental en México hace algunos años, y de la actual expansión del marco legislativo ambiental, ha sido la influencia de la comunidad internacional. Las leyes y costumbres internacionales tienden a cobrar más fuerza en México y en naciones menos desarrolladas que en los Estados Unidos, y así ha sucedido, por ejemplo, con el informe de 1987 de la Comisión Brundtland acerca de desarrollo sustentable, así como con su sucesor, la Cumbre de la Tierra de 1992, realizada en Río de Janeiro, y con las declaraciones consensuadas sobre el derecho a la información firmadas por más de 178 países participantes de la Cumbre (incluyendo los tres miembros del TLC).

El informe de la Comisión Brundtland, *Nuestro Futuro Común*, indica que *Promover políticas de desarrollo sustentable a nivel nacional e internacional nos exige la realización de un inmenso esfuerzo para informar al público y garantizar su apoyo.* Y la Agenda 21, el llamado "Plano para el Futuro" de la Cumbre de la Tierra, al referirse a los peligros de las sustancias químicas tóxicas menciona que *Se debe reconocer el principio del derecho de la comunidad y de los trabajadores a conocer la información sobre los riesgos [químicos]* (Cap. 19.8). Asimismo, el Principio 10 de la Declaración de Río llama a los estados a facilitar y fomentar la concientización y participación del público poniendo a su disposición la información.

Estas y otras directrices internacionales similares han tenido un efecto directo en la reciente implementación del más avanzado proyecto oficial de derecho a la información instrumentado por el gobierno federal mexicano, cuya pieza central es el levantamiento, a fines de 1995 y principios de 1996 en el estado de Querétaro, de un Registro de Emisiones y Transferencias de Contaminantes (RETC), una variante de lo que en los Estados Unidos se conoce como el Inventario de Emisiones Tóxicas (TRI).

Con base en los lineamientos del RETC que ha desarrollado la Organización para la Cooperación el Desarrollo Económico (OCDE) en respuesta a la Declaración de Río y a Agenda 21, y con la colaboración de algunas de las ONGs de los estados fronterizos mexicanos, el registro nacional piloto recopiló una gran cantidad de datos con los que anteriormente no se contaba, sobre cerca de cien materiales peligrosos usados en varias plantas industriales del estado de Querétaro.

Aún no se han publicado los resultados definitivos del inventario, pero México ha considerado la posibilidad de volver a hacer el RETC o de optimizar la información existente sobre Querétaro, e incluso se ha contemplado la posibilidad de implementarlo en otros estados, de manera que el programa piloto se convierta en un valioso precedente para otros proyectos de recopilación de datos en la República Mexicana, incluyendo los de la región fronteriza. La Comisión de Cooperación Ecológica (CCE) de América del Norte, por ejemplo, al igual que SEMARNAP, la instancia encargada del medio ambiente en México, ha recibido peticiones para llevar a cabo un RETC en la zona de Tijuana como parte del Global Programme of Action de la UNEP, encaminado a proteger el medio ambiente marino de Contaminantes Orgánicos Persistentes (COPs).

El primer paso en la prevención de enfermedades, contaminación y emergencias es la identificación de peligros, y la implementación de un RETC ciertamente sería un gran paso hacia el derecho a la información. Pero también es necesario que se vayan dando otros cambios en la Cultura Mexicana de la Información para poder brindar al público un completo acceso a la

misma.

Por ejemplo, en los Estados Unidos, una de las principales fuentes de información ambiental y al mismo tiempo uno de los foros más interactivos para la participación pública en la toma de decisiones de carácter ambiental lo brinda el proceso de obtención de licencias por el cual tienen que pasar las plantas para obtener su cédula de operación. De manera general, la mayoría de las leyes ambientales estatales y federales del lado americano de la frontera exigen que la gestión de permisos se lleve a cabo de manera transparente, dando aviso al público, permitiendo su escrutinio y tomando en cuenta sus opiniones. El tipo, la cantidad y las condiciones de manejo de los materiales sólidos que se usan en las empresas son materia de información pública, y la participación ciudadana generalmente arroja como resultado una leve modificación de los permisos y los planes antes de que la instancia gubernamental autorice el permiso definitivo.

En México este esencial ingrediente del derecho a la información no existe; la información contenida en los permisos se considera como un asunto que incumbe solamente a la instancia normativa en cuestión, y los datos que presenta la empresa o que de alguna otra forma recaba la dependencia generalmente se consideran como Información Empresarial Confidencial, cuya divulgación al público puede ser considerada una violación no solamente de los convenios celebrados entre la industria y el gobierno, sino de la ley misma.

Lo mismo se puede decir respecto a otro de los principales medios de divulgación de información ambiental, el proceso de Evaluación de Impacto Ambiental (EIA). Las EIAs (conocidas en México como MIRs o Manifiestos de Impacto Ambiental), han sido reconocidas a nivel mundial como una importantísima herramienta para la toma de decisiones de carácter ambiental. En la típica versión estadounidense, la Evaluación Ambiental (EA) o el Estudio de Impacto Ambiental (EIS) comprenden un elaborado proceso en el que se realizan detallados análisis obligatorios y se dan a conocer los posibles impactos de las obras propuestas y acciones alternativas creíbles. Mediante este mecanismo se exige dar aviso al público y brindarle oportunidades para emitir comentarios sobre el borrador antes de adoptar e implementar el documento final. Los tribunales federales han dispuesto que el EIS debe aclarar suposiciones, vacíos de información y otras incertidumbres, así como también definir su influencia sobre la clasificación de posibles impactos del producto.

Hasta hace poco, los requisitos federales de la EIA en México eran de lo más avanzados, y en ellos se exigía a una gran variedad de industrias que antes de empezar operaciones, presentaran informes descriptivos acerca de las emisiones y descargas que se proyectaban. Los requisitos mexicanos de alguna forma eran más estrictos que los de la EPA en los Estados Unidos, con los cuales se exigían manifiestos de impacto ambiental solamente en proyectos federales, o proyectos financiados con recursos federales.

Sin embargo, en cierto aspecto el programa estadounidense es mucho más fuerte, por el hecho de que en él se exige que todas las EIA se den a conocer al público, y que a este se le dé oportunidad para expresar sus opiniones. En México el proceso de la EIA, al igual que el proceso de obtención de licencias para las plantas, generalmente está cerrado al público; la información generalmente la intercambian solamente el gobierno y la planta. Además, recientemente México ha limitado aún más su programa, de manera que ahora se le exige a menos empresas la presentación de Evaluaciones de Impacto Ambiental.

Como los programas mexicanos de protección e información ambiental son relativamente nuevos y constantemente cambian, hay motivos para esperar que el país rápidamente pueda vencer algunos de estos problemas al tiempo que evita los de redundancia, incompatibilidad, y algunos otros que han plagado a los Estados Unidos. Mientras tanto, el acceso de la ciudadanía a la información sigue siendo bastante restringido en el lado sur de la frontera.

### *Acceso Intermedio*

A pesar de la promesa del TLC y de la explosión informativa posterior a la apertura de industrias, lo que conocemos acerca de los materiales peligrosos en nuestras comunidades, lugares de trabajo y en el medio ambiente en general, sigue siendo menos que lo que desconocemos, y lo que desconocemos es lo que constituye la respuesta a las preguntas elementales de quién, qué, dónde, cuándo, cuánto y por qué.

Desde la aprobación del TLC, cientos de nuevas plantas han iniciado operaciones en nuestras comunidades fronterizas, y nosotros no contamos con información sobre los tipos y las cantidades de materiales peligrosos que utiliza, almacena y emite la mayoría de ellas. Y muchas de estas empresas, como antes del TLC, son empresas estadounidenses que se trasladan a México precisamente en busca de requisitos menos estrictos de notificación y normatividad.

Aún con lo significativos que puedan ser estos vacíos de datos sobre el sector industrial urbano, tenemos incluso menos información acerca del sector rural. Por ejemplo, se carece de información sobre la ubicación y los contenidos de las plantas de disposición de residuos tóxicos no clasificadas, el impacto ambiental de las minas, la contaminación de las superficies por el uso de plaguicidas agrícolas y no-agrícolas, así como la exposición humana a estas sustancias. Y tanto en el ambiente rural como en el urbano, existe una gran escasez de información sobre la posible relación entre las condiciones ambientales y los problemas de salud humana y ambiental que se han identificado.

A pesar de estas deficiencias (y en parte debido a ellas), de cierta forma en la región fronteriza tenemos una mejor oportunidad de responder algunas de estas preguntas que en el resto del país, ya que las negociaciones en el marco binacional no necesariamente se limitan a sus respectivos países, sino que las naciones, si existe voluntad política y no se violan los principios de soberanía, pueden elegir el mejor de los dos sistemas para crear un nuevo y ejemplar ambiente informativo.

La mejor oportunidad para abrir el acceso en ambos lados de la frontera se encuentra en el nivel municipal, donde pueden a veces tomarse decisiones sin tener que pasar por políticas de compromiso y retóricas de alto nivel que aparecen con tanta frecuencia en las discusiones a nivel federal. A nivel local, los proyectos de cooperación entre el gobierno y las ONGs representan una oportunidad para aplicar la experiencia adquirida a nivel local a problemas particulares de la región, y las instancias estatales y municipales pueden aprovechar los actuales programas de descentralización implementados por ambos gobiernos federales.

Por ejemplo, uno de los más exitosos ejemplos de cooperación binacional ha sido la planeación y respuesta a emergencias, un campo que desde siempre ha estado relacionado con las condiciones y los problemas locales. Es este un campo que ofrece a las comunidades un punto de inicio relativamente fácil para el proceso de apertura, y por consecuencia, se ha visto beneficiado por varias de las recientes mejoras al derecho a la información. Incluso más aparente ha sido la continua optimización de la capacitación sobre materiales peligrosos que se brinda a los cuerpos de respuesta a emergencias en ambos lados de la frontera. Ahora tenemos una comunidad de servicios de emergencia mucho mejor capacitada que en años anteriores (todavía no contamos con todo el equipo que se necesita para los servicios de emergencia, pero ese, aunque más triste, es otro cantar).

En la zona fronteriza entre Arizona y Sonora se han empezado a implementar iniciativas de planeación y respuesta a emergencias; una de las más recientes es la creación de un Equipo Fronterizo de Acciones de Respuesta, grupo binacional compuesto de varios servicios de

emergencia, ONGs y organizaciones académicas, quienes trabajan conjuntamente en aspectos de planeación y respuesta, incluyendo la notificación a las autoridades municipales acerca del envío de materiales peligrosos en camiones y ferrocarril, y en la realización de actividades de monitoreo para determinar el alcance de la contaminación generada por los derrames y las fugas de materiales en su transporte a través de la frontera.

Pero aún en las actividades de planeación de emergencias la Subcultura del Ocultamiento viene a cerrarnos el paso. En las ciudades de Nogales, Arizona y Nogales, Sonora, por ejemplo, la Asociación de Maquiladoras recientemente proporcionó a los servicios de respuesta a emergencias del condado de Santa Cruz alguna información acerca de los materiales peligrosos que se usan en algunas de las maquiladoras del lado mexicano, no sin antes hacer que la instancia prometiera que esa información no se haría del conocimiento del público. También se han celebrado convenios similares entre plantas bajacalifornianas y los servicios de emergencia de la Alta California.

Aún cuando se le permitiera al público el acceso a la información sobre planeación y respuesta a emergencias, esto sería solamente una mínima parte de todo lo que se necesita. Las emergencias no se presentan por sí solas, sino que son parte de un contexto que incluye todo el ciclo de vida de los materiales peligrosos. Lo que se necesita son sistemas de planeación y manejo de datos sobre materiales peligrosos que puedan relacionar la planeación y respuesta a emergencias con otros aspectos como la planeación del uso de suelo y la salud comunitaria.

Esta era la intención del Proyecto Fronterizo del Derecho a Saber que en 1993 iniciaron ATI y Enlace Fronterizo, una asociación civil con sede en Agua Prieta, Sonora. Hasta donde yo sé, la única información a que está a disposición del público sobre materiales peligrosos utilizados en plantas del lado mexicano de la frontera es la contenida en el inventario de sustancias tóxicas usadas en las maquiladoras de Agua Prieta; inventario que formó parte de ese proyecto. Este inventario era innovador en varios sentidos, incluyendo el hecho de que fue concebido e instrumentado por grupos de interés público no lucrativos. El proyecto se pudo realizar gracias a la gran cooperación de las autoridades municipales y estatales; sus resultados se dieron a conocer al público, y se logró coordinar la información sobre planeación y respuesta a emergencias con la referente a materias primas, uso en las plantas, emisiones rutinarias, y otra información sobre contabilización de los materiales.

Este enfoque integrado de apertura es también la base de un proyecto que esperamos iniciar pronto en el área de Naco, Sonora, y Naco, Arizona. Tomando como fundamento el diálogo facilitado por ATI que durante un año han venido sosteniendo las autoridades estatales y municipales encargadas de la planeación del uso de suelo en ambos lados de la frontera entre Sonora y Arizona, el Proyecto de Datos de Manejo de Tóxicos en Naco está encaminado a desarrollar un inventario de materiales en esta zona y a incorporar esta información a un sistema de manejo de datos enlazado con el GIS del Condado de Cochise, y que podrá usarse tanto para la planeación del uso de suelo como para la planeación de respuesta a emergencias.

Los actuales esfuerzos que se realizan en pro del derecho a la información en la frontera recorren toda la gama de proyectos, desde los de recopilación de datos y capacitación (como la serie de talleres para pequeñas empresas y comunidades acerca de varios temas de prevención de la contaminación que ATI ha venido llevando a cabo en colaboración con la ciudad de Nogales y otras comunidades), hasta los proyectos de mera información teórica (como la compilación de un Diccionario de Datos sobre Tóxicos y la Lista de Referencia de Tóxicos en la Frontera, para usarse en el GIS de la cuenca del Río Tijuana).

Espero que con este panorama les haya dado una idea de la magnitud de los esfuerzos que se realizan para ampliar el acceso del público a la información en la frontera, y que esto les sea útil



a ustedes en sus propios esfuerzos. Para concluir, quisiera mencionar una importante iniciativa del derecho a la información que sin embargo se está viendo amenazada. La Comisión de Cooperación Ecológica Fronteriza (COCEF), organismo establecido por los países participantes en el TLC para certificar proyectos fronterizos de mejoramiento ambiental que sean merecedores del financiamiento del Banco de Desarrollo de América del Norte (BANDAN) y de otras fuentes, ha brindado una de las más prometedoras oportunidades para ampliar el derecho a la información en la región.

Durante los últimos dos años, la COCEF ha mejorado significativamente la Cultura de la Información en la zona fronteriza, al desarrollar un proceso de certificación al cual se incorporan innovadores y avanzados procedimientos de participación pública, y lo que es más importante aún, al desarrollar, mediante un proceso de participación pública, unos Criterios que los promotores deben cumplir para que su proyecto pueda ser certificado.

Entre esos Criterios para la Certificación se encuentra un requisito mediante el cual se exige a los promotores que lleven a cabo, presenten y obtengan la aprobación de una evaluación de impacto ambiental para su proyecto. Las EIAs que se presentan para cubrir este requisito representan el único instrumento con el que cuentan los ciudadanos, los gobiernos, la COCEF y el BANDAN para determinar los posibles efectos ambientales y la sustentabilidad de los proyectos propuestos. Sin embargo, en su reunión de este mes en Juárez, el Consejo Directivo de la COCEF va a considerar una propuesta para eliminar el requisito de la EIA, argumentando que como la legislación mexicana o estadounidense no siempre exige la presentación de una EIA, la COCEF no debe exigirla.

Si se adopta, esta propuesta destruirá el programa de participación pública de la COCEF, y retrasará gravemente los avances que esta institución ha logrado en materia de la promoción del desarrollo sustentable en la región fronteriza. La eliminación del requisito de la EIA representará una gran victoria para la Subcultura del Ocultamiento contra la que tanto han luchado la COCEF y otros organismos.

Espero que en vez de retroceder en aras de la privacidad, el Consejo Directivo de la COCEF pueda convencerse de reafirmar su compromiso con la transparencia, y contemple el panorama de la frontera como una zona en la cual podemos escapar de las cadenas de la vieja Subcultura del Ocultamiento, para permitir que la protección ambiental y el desarrollo sustentable avancen más allá de las barreras que limitan el acceso del público a la información en ambos lados de la línea divisoria, ayudando a crear una nueva Cultura Binacional de la Información fundamentada en la Libertad de Información, el Derecho a Saber y los mejores ejemplos de transparencia que se puedan encontrar en ambas naciones.

## ***Tijuana River Watershed Toxics Data Project Final Report, Selections (1996)***

Michael Gregory, Laurie Durazo and Bruce G. Carey, submitted in partial fulfillment of EPA Assistance # 824438-01-0, Bisbee, Arizona (30 October 1996)

### ***Project Overview***

As it flows north across the international boundary from Mexico, the Tijuana River forms one of the last remaining functional wetlands of southern California, the biological significance of which has been recognized by (among other things) the establishment by the US National Oceanic and Atmospheric Administration (NOAA) of the Tijuana River National Estuarine Research Reserve. Arising in and for three-quarters of its length flowing through the state of Baja California, before emptying into Imperial Bay on the Pacific coast, the Tijuana River suffers from channelization, damming and sedimentation on both sides of the border as well, as urban discharges and other insults as it drains the transboundary Tijuana-San Diego metroplex, with the result that the naturally intermittent stream in this semi-arid environment has become an effluent-dependent water carrying heavy loads of contaminants that significantly impact the estuarine wetland and present significant health hazards to people and wildlife (including several threatened and endangered species) using the water.

Sewage discharges into the river in recent years, for instance, have created a variety of public health problems and have been linked to outbreaks of gastrointestinal diseases, cholera, hepatitis B and malaria. Heavily contaminated outflows into the marine environment have forced repeated closures of beaches from the border to Coronado Island. Unless checked, contamination is expected to worsen rapidly as the explosive growth the area has experienced in the past quarter century increases dramatically in the next few years. Tijuana, for instance, with a current population of approximately 1.1 million, is expected to surpass that of Los Angeles by the year 2050. Urban industrialization, characterized by the installation of some 650 *maquiladora* plants discharging into the watershed between 1965 and 199, is expected to increase similarly. The urban core of Tijuana, now covering some 60,000 acres, is projected to increase by more than 80% to cover 108,000 acres by the year 2013.

Until recently, the transboundary situation of the watershed has prevented pursuit of a coordinated, integrated approach to solving the problems, and at present there is no convenient location where one can find a listing of the existing data systems, databases, etc. for pollutants or potential pollutant sources in the Tijuana River Watershed.

In March 1994, however, NOAA provided initial funding for the development of a Geographic Information System (GIS) mapping of the watershed. At a binational "User-Needs Assessment Workshop" held in San Diego in eight months later as part of the GIS Project, some 120 people from a broad range of educational, scientific, planning, political and non-profit organization fields, identified water quality and contingency planning for toxic discharges into the river as a major concern of communities on both sides of the border.

As the first GIS project funded to map a transboundary watershed on the US-Mexico border, the TRY GIS Project is relevant to the whole border region. It is intended to integrate binational multi-media ecological and socio-demographic data to facilitate comprehensive understanding of relationships between human and environmental processes in the transboundary ecosystem, thereby engaging planners on both sides of the border to explore solutions that address socio-economic and environmental issues in an integrated manner and to model impacts from various proposed activities so planners can be proactive rather than reactive in determining preventive and remedial actions.

In addition to addressing site-specific issues, the GIS Project has been proposed as a vehicle for several pilot projects with implications throughout the border region and beyond. In particular, it has been suggested, for instance, that the GIS Project could be the vehicle for developing a pilot binational integrated database which could in turn, become a basis for environmental data-sharing among NAFTA partners.

The current Toxics Data Project was designed to address some of the concerns of the 1994 needs assessment workshop, to provide an essential link between scientific-academic and grassroots NGO sectors called for by the GIS Project workplan, and otherwise to facilitate toxics data integration in the border region. For purposes of the Project, the term *toxics* was defined broadly, as synonymous with the terms *hazardous materials*, *hazardous substances* and *dangerous goods*, and inclusive of such other (often more legally limited) terms as *hazardous waste*, *toxic chemical*, *extremely hazardous substance*, *pollution* or *pollutant* or *contaminant*, *pesticide*, etc.

Specifically, the project was designed to:

- Further the objectives of the ongoing right to know programs of Arizona Toxics Information and Proyecto Fronterizo de Educación Ambiental
- Assist the GIS managers in identifying information sources on toxics data on both sides of the border required for GIS mapping of the watershed, with particular attention to identifying Mexican information sources (e.g., agency and municipal data systems)
- Develop the framework for a binationally integrated data dictionary on toxics impacting the Tijuana Watershed
- Facilitate development of criteria for binational, multi-disciplinary data harmonization and other aspects of integrated data management to address issues of accessibility and interpretability, with particular regard to data management issues raised by the institutional framework of both countries and to the need for community involvement in environmental policy and planning.
- Facilitate effective interface of Tijuana River Watershed GIS personnel with toxics decision-makers in Mexico, including government agencies, research institutions and community organizations.
- Provide a basis for development of outreach materials and activities to facilitate transborder dialogue among governmental, academic, private and public sectors, including other community groups, regarding the implications of integrated data for policy and planning decisions.
- Provide a consistent basis for identifying pollutant sources in the watershed.

The project was carried out during the year beginning September 1995 through a collaborative effort of ATI and Proyecto Fronterizo de Educación Ambiental, non-profit organizations based in Bisbee, Arizona and Tijuana, Baja California, respectively. Funding was provided in part by the US Environmental Protection Agency under auspices of the joint EPA-SEMARNAP Border XXI program. This document and its appended attachments constitute the final report for the Project.

***Acronyms and Abbreviations Used in this Paper/Siglas y Abreviaciones Utilizados in esta Reporte***

ADEQ	Arizona Department of Environmental Quality/ Secretaría del Medio Ambiente del Estatal de Arizona
ADMS	Aerometric Data Management System/ Sistema de Manejo de Datos Aerométricos
AIRS	Aerometric Information Retrieval System/ Sistema de Recuperación de Datos Aerométricos
ARB	Air Resources Board/ Comisión de Recursos del Aire
ARIP	Accidental Release Information Program/ Programa de Información sobre Emisiones Accidentales
ARP	Accidental Release Prevention/ Prevención de Emisiones Accidentales
ARS	Arizona Revised Statutes/ Estatutos Revisados de Arizona
ATEDS	Air Toxics Emission Data System/ Sistema de Datos sobre Emisiones Contaminantes a la Atmósfera
ATSDR	Agency for Toxic Substances and Disease Registry/ Agencia para Registro de Sustancias Tóxicas y Enfermedades
BRS	Biennial Reporting System/ Sistema de Reporte Bienal
CalEPA	California Environmental Protection Agency/ Secretaría para la Protección Ambiental del Estado de California
CAS	Chemical Abstract Service/ Servicio de Química Abstracto
CEC	Commission on Environmental Cooperation/ Comisión para la Cooperación Ambiental
CEMPRA	Clasificación de Empresas de Alto Riesgo/ Classification of High Hazard Facilities
CENAPRED	Centro Nacional para la Prevención de Desastres/ National Center for Prevention of Disasters
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act/ Ley General de Respuesta, Compensación y Responsabilidad Ambiental
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System/ Sistema de Información sobre la Respuesta, Compensación y Responsabilidad Ambiental
CFR	Code of Federal Regulations/Código de Regalamentos Federal
CHMIRS	California Hazardous Materials Incident Reporting System/ Sistema de Reportes sobre Incidentes de Materiales Peligrosos de California
CICA	Center for Investigation of Contamination of Air/ Centro de Información sobre Contaminación del Aire
CICOPLAFEST	Comisión Intersecretarial para el Control de Plaguicidas, Fertilizantes y Sustancias Tóxicas/ Interagency Commission for Control of Pesticides, Fertilizers and Toxic Substances
CILA	Comisión Internacional de Límites de Aguas/ International Boundary and Water Commission
CNA	Comisión Nacional del Agua/ National Water Commission
COLEF	Colegio de la Frontera Norte/ Northern Border College
CUPA	Certified Uniform Program Agency/Agencia para el Programa de Certificación Uniforme
DHHS	Department of Health and Human Services/ Secretatría de Salud y Servicios Humanos
DOL	Department of Labor/ Secretaría de Trabajo
DPR	Department of Pesticide Regulation/ Departamento de Regulación de Pesticidas
DTSC	Department of Toxic Substances Control/ Departamento de Control de Substancias Peligrosas
EIDRS	Emissions Inventory Development and Reporting System/ Sistema de Desarrollo y Reporte de Inventario de Emisiones
EIS	Emissions Inventory System/ Sistema de Inventario de Emisiones

EPA	Environmental Protection Agency/ Secretaría de Protección al Ambiente
EPCRA	Emergency Planning and Community Right-to-Know Act/ Ley para Planeación de Emergencias y Derecho a Saber de la Comunidad
FIDS	Facility Information Data System/ Sistema de Información de Instalaciones
FINDS	Facility Index Data System/Sistema de Datos sobre Índices de Instalaciones
FR	Federal Register/ Registro Federal
GIS	Geographic Information System/Sistema de Información Geográfica
HAPS	Hazardous Air Pollutant/ Contaminante Atmosférico Peligroso
HAZTRAKS	Electronic Database for tracking hazardous materials crossing the US-Mexico border, funded and maintained by EPA, INE, and U.S.Customs/Programa informático financiado y manejado por la EPA, INE y Aduana EE.UU. usado para el seguimiento de los materiales y los residuos peligrosos que cruzan la frontera entre México y los EE.UU.
HMMP	Hazardous Material Management Plan/ Plan de Manejo de Materiales Peligrosos
HSDB	Hazardous Substances Databank/ Banco de Datos sobre Substancias Peligrosas
HSEES	Hazardous Substances Emergency Events Surveillance/ Vigilancia sobre Eventos de Emergencias de Substancias Peligrosas
HWIS	Hazardous Waste Information System/ Sistema de Información sobre Residuos Peligrosos
IDLH	Immediately Dangerous to Life or Health/ Inmediatamente Peligroso para la Vida y la Salud
IBWC	International Boundary and Water Commission/ Comisión Internacional de Límites de Aguas
INE	Instituto Nacional de Ecología/ National Ecology Institute
IUPAC	International Union of Practical and Applied Chemists/ Union Internacional de Profesionistas en Química Práctica y Aplicada
LGEEPA	Ley General del Equilibrio Ecológico y la Protección al Ambiente/ General Law of Ecological Equilibrium and Environmental Protection
LGS	Ley General de Salud/General Health Law
LOL	List of Lists/ Lista de Listas
NATICH	National Air Toxics Information Clearinghouse/ Consejo Nacional de Información sobre Contaminantes de la Atmósfera
NCPD	National Coastal Pollutant Discharge/ Descargas Nacionales de Contaminantes Costeros
NHEXAS	National Human Exposure Data Survey/ Levantamiento Nacional de Datos sobre Exposición Humana
NIH	National Institutes of Health/ Institutos Nacionales de Salud
NIOSH	National Institute for Occupational Safety and Health/ Instituto Nacional para la Seguridad y Salud Ocupacional
NLM	National Library of Medicine/ Biblioteca Nacional de Medicina
NOAA	National Oceanic and Atmospheric Administration/ Administración Nacional de Oceánica y Atmosférica
NOM	Norma Oficial Mexicana/ Official Mexican Standard
NPL	National Priority List/ Lista de Prioridades Nacionales
NTE	Norma Técnica Mexicana/ Mexican Technical Standard
OAR	Office of Air and Radiation/ Oficina de Aire y Radiación
OECD	Organization for Economic Cooperation and Development/ Organización para la Cooperación y el Desarrollo Económico
OES	Office of Emergency Services/ Oficina de Servicios Emergencias
OPPT	Office of Pollution Prevention and Toxics/Oficina de Prevención de Contaminación y Substancias Tóxicas
OSHA	Occupational Safety and Health Administration/Administración de Seguridad y Salud Ocupacional

OSWER	Office of Solid Waste and Emergency Response/Oficina de Desechos Sólidos y la Respuesta para Emergencias
OW	Office of Water/ Oficina de Agua
PNPC	Programa Nacional de Protección Civil/ National Civil Protection Program
POTW	Publicly Owned Treatment Works/ Plantas para Tratamiento, de Propiedad Publica
PSM	Process Safety Management/ Manejo de Seguridad en Procesos
PURS	Pesticide Use Reporting System/ Sistema de Reporte sobre Uso de Pesticidas
RCRA	Resource Conservation and Recovery Act/ Ley de Conservación y Recuperación de Recursos
RCRIS	Resource Conservation and Recovery Information System/ Sistema de Información sobre la Conservación y Recuperación de Recursos
RETC	Registro de Emisiones y Tranferencias des Contaminantes/ Pollutant Release and Transfer Register
RODS	Record of Decision System/ Sistema de Registro de Decisiones
RSPA	Research and Special Programs Administration/ Administración de Investigación y Programas Especiales
Salud	Secretaría de Salud/ Ministry of Public Health
SDSU	San Diego State University/ Universidad Estatal en San Diego
SEDESOL	Secretaría de Desarrollo Social/ Ministry of Social Development
SEMARNAP	Secretaría de Medio Ambiente, Recursos Naturales y Pesca/ Ministry of Environment, Natural Resources and Fisheries
SIC	Standard Industrial Classification/ Clasificación Industrial Estandar
SEC	Securities and Exchange Commission/ Comisión de Seguridades y Intercambios
SNIFF	Sistema Nacional de Información de Fuentes Fijas/ National Information System for Fixed Sources
SNICA	Sistema Nacional de la Calidad Ambiental/ National Environmental Quality System
SNMA	Sistema Nacional de Monitoreo Atmosférico/ National Air Monitoring System
SWIS	Solid Waste Information System/ Sistema de Información sobre Desechos Sólidos
TNRCC	Texas Natural Resources Conservation Commission/Comisión/ Comisión para la Conservación de Recursos Naturales de Texas
TRI	Toxics Release Inventory/ Inventario de Emisiones Tóxicos
TRIS	Toxics Release Inventory System/ Sistema de Inventario de Emisiones Tóxicos
TSCA	Toxic Substances Control Act/ Ley para el Control sobre Sustancias Tóxicas
WRCB	Water Resources Control Board/ Comisión para Regulación de Recursos del Agua

### ***The Information Environment***

Problems with the information environment of the Tijuana River Watershed are symptomatic of information access problems throughout the US-Mexico border region and indicative of toxics data management issues that are becoming increasingly urgent worldwide (perhaps especially in binational border regions) as economic integration and globalization promote widespread production and dissemination of hazardous materials.

Like companies in other areas of the border, those operating in the Tijuana River Watershed are often subject to what can be a bewildering array of environmental reporting requirements. The problem is especially acute for those operating on the US side of the border where, depending on the size, type and industrial sector of the operation, a facility manager may have to fill out and submit to one or more government agencies fifty or more environmental reports in any given year.

These reports can require, for instance, data on 1) the identity, quantity, quality, location, destination, physical and chemical make-up, and potential hazards of hazardous (i.e., dangerous

or potentially dangerous) materials; which are 2) received, stored, handled, produced, processed, treated, disposed at or distributed from the site; 3) release or transfer of such materials as emissions, discharges, spills, shipments, etc., or efforts to prevent or reduce their release or transfer in or to the various environmental media (air, land, water, organisms) in the form of products (or product components), by-product or waste; and 4) measures taken by the company to protect workers, the public and the environment from adverse effects of such materials. Data may be reported for purposes of monitoring, permitting or planning that is required by laws, regulations, court orders, business efficiency, social demands, public relations, ethics, etc. Furthermore, reports may be required by authorities at local, regional, state, federal and bi- or international jurisdictional levels, each using a different reporting format and calling for sometimes redundant, but typically different (though often only slightly different) data.

Such data may come from private businesses, government bodies, profit organizations or individuals. Data may be media-specific (e.g., a list of water contaminants or air pollutants) or multi-media (e.g., total releases from a site).

Data may also be site-, facility-, or incident-specific or may be aggregated by region, industrial sector or other source. Likewise, data may be substance-, product- or organism-specific, or may be aggregated by family, genus, type, or other category including effect (e.g., carcinogens, mutagens, corrosives), use (e.g., plasticizers, pesticides, solvents), or provenance (e.g., goods in commerce, substances regulated, household hazardous waste).

The variety and multiplicity of these data and the forms/formats in which they are reported place a significant burden on companies required to report, on agencies charged with recovering and processing the data, and on members of the public attempting to find and understand the data or to obtain an overall assessment of environmental conditions at the local, regional, national, binational or global level.

No single report contains (or links to) all the data necessary to any given user, often because data is not available. The best-known and broadest-scope pollutant release and transfer reporting system in the world, for instance, the USEPA Toxics Release Inventory (TRI), provides limited information on only about 5% of the environmental releases in the US. Even less information is available in Mexico. These large data gaps result from a combination of factors, including the fact that equivalent information is not required from all industrial sectors nor for all environmental media. Mexico, for instance, requires some reporting on certain solvents when used as raw materials in certain industrial situations, but does not require equivalent reports on those same solvents when they are released to the air.

Even when data is available, frequently it is not accessible, for while the thousands of reports submitted by companies and generated by governments and academic institutions contain a wealth (some would say a glut) of data, that data often is difficult to access in the first place and is reported in formats that are not mutually compatible or not easily convertible to mutually readable systems, so comparing or aggregating data from various sources is often difficult to impossible.

The difficulty may be further compounded with data systems constructed by different agencies (e.g., the US Department of Transportation and the US-EPA), different states or different countries. The problem may be even more complicated if, as is often the case, the two information sources use different software, and the problem is compounded even more when the information seeker attempts to access and compile/compare/aggregate data from a variety of agencies or other sources at various jurisdictional levels.

The barrier to linkage may occur at the systemic structural level, or at the level of smallest detail,

in what are known in electronic data management language as “data elements.” For instance, currently, there is not even a uniform definition of basic geographical locator terms like “site” and “facility”—so (depending on which form/system we look at), we may be asked to identify a *business*, a *company*, a *unit*, or a *source*; *sources* and *facilities* within a *site*; *sites* and *locations* within a *source* or *facility*; etc.



## ***Proyecto de Datos sobre Tóxicos para la Cuenca del Río Tijuana: Reporte Final, Selecciones (1996)***

Michael Gregory, Laura Durazo, and Bruce G. Carey, traducido por Laura Durazo, Entregado en Cumplimiento Parcial del Compromiso de Apoyo con la EPA # 824438- 01-0 (30 de Octubre de 1996)

### ***Panorama General***

En su flujo hacia el norte a través de los límites internacionales con México, el Río Tijuana forma en su desembocadura una de las últimas extensiones funcionales de humedales del sur de California. Su importancia biológica ha sido reconocida por la National Oceanic and Atmospheric Administration (NOAA) de los E.E.U.U quien estableció en este sitio la Reserva Nacional de Investigación del Estero del Río Tijuana para la conservación. El Río Tijuana que se origina en Baja California y principalmente fluye por ese estado antes de desembocar en Imperial Beach en la costa del Pacífico sufre las consecuencias de las canalizaciones, construcción de presas y sedimentación en ambos lados de la frontera, así como de las descargas de drenaje urbano y otros tipos de insultos en su paso por el conjunto metropolitano transfronterizo Tijuana-San Diego. Esto ha dado como resultado que estos arroyos y escurrimientos que corren en forma intermitente en este árido medio ambiente se hayan convertido en un sistema dependiente de los afluentes que llevan grandes cargas de contaminantes que impactan significativamente los humedales del estero y presentan grandes peligros de salud para la población humana y la vida animal (incluyendo a varias especies en peligro de extinción) y silvestre que necesita del agua para su sobrevivencia.

Por ejemplo, en años recientes las descargas de aguas negras al río han creado una gran variedad de problemas de salud que han sido asociados a brotes de enfermedades gastrointestinales, cólera, hepatitis B y malaria. Los escurrimientos superficiales altamente contaminados que terminan en el medio ambiente marino han provocado que las playas, desde la frontera hasta la Isla Coronado, se cierren con más frecuencia. A menos que sea controlada, es de esperarse que la contaminación empeore ya que el crecimiento explosivo que ha tenido esta área durante el último cuarto de siglo tiende a incrementarse dramáticamente en los próximos años. Se espera que Tijuana, con una población actual de aproximadamente 1.1 millones, sobrepase a Los Angeles para el año 2050 y que la industrialización urbana, caracterizada por la instalación de unas 650 maquiladoras que han descargado sus desechos en la cuenca entre 1965 y 1991, también aumente en forma similar. Se proyecta que el núcleo urbano de Tijuana que hasta ahora cubre unas 60,000 acres, aumente más de un 80% hasta cubrir 108,000 acres para el año 2013.

Hasta hace poco tiempo la situación transfronteriza de la cuenca había impedido que se estableciera un programa coordinado e integrado para la solución de problemas, y hasta ahora no hay una fuente única de información capaz de proveer un listado de los sistemas de datos, bases de datos, etc. existentes que se refieran a los contaminantes o a las fuentes potenciales de contaminación en la Cuenca del Río Tijuana.

Sin embargo, en marzo de 1994, la NOAA proporcionó los fondos iniciales para el desarrollo de un Sistema de Información Geográfica (SIG) que mapeará la cuenca. En un "Taller binacional de Evaluación de las Necesidades de los Usuarios" que se llevó a cabo en San Diego a los ocho meses de iniciado el Proyecto SIG, unas 120 personas pertenecientes a una gran variedad de campos profesionales organizados (educativo, científico, planeación, político, y de interés social), identificaron como dos de las mayores preocupaciones de las comunidades de ambos lados de la frontera la calidad del agua y la planeación de contingencias en caso de

descargas tóxicas al río.

Como primer proyecto llevado a cabo con fondos del SIG para hacer el mapa de la cuenca transfronteriza en la frontera México-EU, el Proyecto SIG de la Cuenca del Río Tijuana (CRT) es relevante para toda la región fronteriza. Está diseñado para integrar datos ecológicos y socio-demográficos binacionales de multi- medios para facilitar una comprensión integral de las relaciones entre los procesos ambientales y humanos en el ecosistema transfronterizo de la cuenca, y de esta manera involucrar a los planeadores de ambos lados de la frontera en la exploración de soluciones que se refieran a los problemas socio-económicos y ambientales de forma integrada para diseñar modelos de los impactos que las varias actividades propuestas puedan tener. De esta manera se propone que los planeadores tomen un papel proactivo en vez de reactivo con acciones más bien preventivas en el manejo de la cuenca.

Además de facilitar el abordaje georeferenciado de temas de interés, el Proyecto SIG ha sido propuesto como vehículo para varios proyectos pilotos con implicaciones para toda la zona fronteriza. Se ha sugerido muy particularmente, que el Proyecto SIG sirva de marco para desarrollar una base binacional integrada de datos que a su vez se convierta en la base de un intercambio de datos sobre medio ambiente para los miembros del TLC.

El presente Proyecto de Datos sobre Tóxicos fue diseñado para atender algunas de las preocupaciones que emanaron del "Taller de Evaluación de Necesidades" llevado a cabo en 1994 para proporcionar un vínculo esencial entre los sectores académico- científico y de las ONGs considerados en el plan del Proyecto SIG, y para facilitar la integración de datos sobre tóxicos en la región fronteriza. Para los propósitos de este Proyecto, el término Tóxicos se definió ampliamente como sinónimo de los términos *materiales peligrosos*, *substancias peligrosas* y *bienes peligrosos*, e incluye a los términos (legalmente más limitados) como *residuo peligroso*, *químico tóxico*, *substancia extremadamente tóxica*, *contaminación o contaminante*, *pesticida*, etc.

El proyecto fue diseñado específicamente para:

- Seguir adelante con los objetivos de los programas sobre derecho a la información que realizan Arizona Toxics Information y Proyecto Fronterizo de Educación Ambiental
- Asistir al Proyecto SIG en la identificación de fuentes de información para obtener datos sobre tóxicos en ambos lados de la frontera como lo requiere el SIG de la cuenca, prestando particular atención a la identificación de las fuentes mexicanas de información existentes en los tres niveles diferentes de gobierno.
- Desarrollar el marco de referencia para un diccionario integrado binacionalmente referente a los tóxicos que impactan la Cuenca del Río Tijuana.
- Facilitar el desarrollo de criterios para la armonización binacional multidisciplinaria de datos y otros aspectos del manejo integrado de datos, para abordar los problemas de accesibilidad e interpretación, con énfasis particular en los problemas de manejo derivados del marco institucional de ambos países y en la necesidad de involucramiento comunitario en la política y planeación ambiental.
- Facilitar la interfase efectiva del personal del Proyecto SIG de la Cuenca del Río Tijuana con los tomadores de decisiones en materia de tóxicos en México, incluyendo a las dependencias gubernamentales, instituciones de investigación y organizaciones comunitarias.

- Proporcionar una base para el desarrollo de materiales y actividades de divulgación que faciliten el dialogo transfronterizo entre los sectores gubernamentales, académicos, privados y públicos, incluyendo a todos los grupos comunitarios, en el proceso participativo de la toma de decisiones de políticas y planeación relevantes a las implicaciones de los datos integrados.
- Proporcionar una base consistente para la identificación de fuentes de contaminación en la cuenca.

El proyecto se llevó a cabo durante un año, comenzando en septiembre de 1995, a través de un esfuerzo colaborativo de ATI y Proyecto Fronterizo de Educación Ambiental, ambas organizaciones no lucrativas con base en Bisbee, Arizona y Tijuana, Baja California, respectivamente. Los fondos para este proyecto fueron proporcionados en parte por la Agencia de Protección Ambiental (EPA), bajo los auspicios del programa conjunto denominado Programa Frontera XXI EPA- SEMARNAP. Este documento y sus Anexos constituyen el reporte final para la obtención de fondos para el Proyecto.

***Siglas y Abreviaciones Utilizados in esta Reporte/Acronyms and Abbreviations Used in this Paper***

ADEQ	Arizona Department of Environmental Quality/ Secretaría del Medio Ambiente del Estatal de Arizona
ADMS	Aerometric Data Management System/ Sistema de Manejo de Datos Aerométricos
AIRS	Aerometric Information Retrieval System/ Sistema de Recuperación de Datos Aerométricos
ARB	Air Resources Board/ Comisión de Recursos del Aire
ARIP	Accidental Release Information Program/ Programa de Información sobre Emisiones Accidentales
ARP	Accidental Release Prevention/ Prevención de Emisiones Accidentales
ARS	Arizona Revised Statutes/ Estatutos Revisados de Arizona
ATEDS	Air Toxics Emission Data System/ Sistema de Datos sobre Emisiones Contaminantes a la Atmósfera
ATSDR	Agency for Toxic Substances and Disease Registry/ Agencia para Registro de Sustancias Toxicas y Enfermedades
BRS	Biennial Reporting System/ Sistema de Reporte Bienal
CalEPA	California Environmental Protection Agency/ Secretaría para la Protección Ambiental del Estado de California
CAS	Chemical Abstract Service/ Servicio de Química Abstracto
CEC	Commission on Environmental Cooperation/ Comisión para la Cooperación Ambiental
CEMPRA	Clasificación de Empresas de Alto Riesgo/ Classification of High Hazard Facilities
CENAPRED	Centro Nacional para la Prevención de Desastres/ National Center for Prevention of Disasters
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act/ Ley General de Respuesta, Compensación y Responsabilidad Ambiental
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System/ Sistema de Información sobre la Respuesta, Compensación y Responsabilidad Ambiental
CFR	Code of Federal Regulations/Código de Regalamentos Federal
CHMIRS	California Hazardous Materials Incident Reporting System/ Sistema de Reportes sobre Incidentes de Materiales Peligrosos de California

CICA	Center for Investigation of Contamination of Air/ Centro de Información sobre Contaminación del Aire
CICOPLAFEST	Comisión Intersecretarial para el Control de Plaguicidas, Fertilizantes y Sustancias Tóxicas/ Interagency Commission for Control of Pesticides, Fertilizers and Toxic Substances
CILA	Comisión Internacional de Límites de Aguas/ International Boundary and Water Commission
CNA	Comisión Nacional del Agua/ National Water Commission
COLEF	Colegio de la Frontera Norte/ Northern Border College
CUPA	Certified Uniform Program Agency/Agencia para el Programa de Certificación Uniforme
DHHS	Department of Health and Human Services/ Secretaría de Salud y Servicios Humanos
DOL	Department of Labor/ Secretaría de Trabajo
DPR	Department of Pesticide Regulation/ Departamento de Regulación de Pesticidas
DTSC	Department of Toxic Substances Control/ Departamento de Control de Sustancias Peligrosas
EIDRS	Emissions Inventory Development and Reporting System/ Sistema de Desarrollo y Reporte de Inventario de Emisiones
EIS	Emissions Inventory System/ Sistema de Inventario de Emisiones
EPA	Environmental Protection Agency/ Secretaría de Protección al Ambiente
EPCRA	Emergency Planning and Community Right-to-Know Act/ Ley para Planeación de Emergencias y Derecho a Saber de la Comunidad
FIDS	Facility Information Data System/ Sistema de Información de Instalaciones
FINDS	Facility Index Data System/Sistema de Datos sobre Índices de Instalaciones
FR	Federal Register/ Registro Federal
GIS	Geographic Information System/Sistema de Información Geográfica
HAPS	Hazardous Air Pollutant/ Contaminante Atmosférico Peligroso
HAZTRAKS	Electronic Database for tracking hazardous materials crossing the US-Mexico border, funded and maintained by EPA, INE, and U.S. Customs/Programa informático financiado y manejado por la EPA, INE y Aduana EE.UU. usado para el seguimiento de los materiales y los residuos peligrosos que cruzan la frontera entre México y los EE.UU.
HMMP	Hazardous Material Management Plan/ Plan de Manejo de Materiales Peligrosos
HSDB	Hazardous Substances Databank/ Banco de Datos sobre Sustancias Peligrosas
HSEES	Hazardous Substances Emergency Events Surveillance/ Vigilancia sobre Eventos de Emergencias de Sustancias Peligrosas
HWIS	Hazardous Waste Information System/ Sistema de Información sobre Residuos Peligrosos
IDLH	Immediately Dangerous to Life or Health/ Inmediatamente Peligroso para la Vida y la Salud
IBWC	International Boundary and Water Commission/ Comisión Internacional de Límites de Aguas
INE	Instituto Nacional de Ecología/ National Ecology Institute
IUPAC	International Union of Practical and Applied Chemists/ Union Internacional de Profesionistas en Química Práctica y Aplicada
LGEEPA	Ley General del Equilibrio Ecológico y la Protección al Ambiente/ General Law of Ecological Equilibrium and Environmental Protection
LGS	Ley General de Salud/General Health Law
LOL	List of Lists/ Lista de Listas
NATICH	National Air Toxics Information Clearinghouse/ Consejo Nacional de Información sobre Contaminantes de la Atmósfera

NCPD	National Coastal Pollutant Discharge/ Descargas Nacionales de Contaminantes Costeros
NHEXAS	National Human Exposure Data Survey/ Levantamiento Nacional de Datos sobre Exposición Humana
NIH	National Institutes of Health/ Institutos Nacionales de Salud
NIOSH	National Institute for Occupational Safety and Health/ Instituto Nacional para la Seguridad y Salud Ocupacional
NLM	National Library of Medicine/ Biblioteca Nacional de Medicina
NOAA	National Oceanic and Atmospheric Administration/ Administración Nacional de Oceánica y Atmosférica
NOM	Norma Oficial Mexicana/ Official Mexican Standard
NPL	National Priority List/ Lista de Prioridades Nacionales
NTE	Norma Técnica Mexicana/ Mexican Technical Standard
OAR	Office of Air and Radiation/ Oficina de Aire y Radiación
OECD	Organization for Economic Cooperation and Development/ Organización para la Cooperación y el Desarrollo Económico
OES	Office of Emergency Services/ Oficina de Servicios Emergencias
OPPT	Office of Pollution Prevention and Toxics/Oficina de Prevención de Contaminación y Substancias Tóxicas
OSHA	Occupational Safety and Health Administration/Administración de Seguridad y Salud Ocupacional
OSWER	Office of Solid Waste and Emergency Response/Oficina de Desechos Sólidos y la Respuesta para Emergencias
OW	Office of Water/ Oficina de Agua
PNPC	Programa Nacional de Protección Civil/ National Civil Protection Program
POTW	Publicly Owned Treatment Works/ Plantas para Tratamiento, de Propiedad Publica
PSM	Process Safety Management/ Manejo de Seguridad en Procesos
PURS	Pesticide Use Reporting System/ Sistema de Reporte sobre Uso de Pesticidas
RCRA	Resource Conservation and Recovery Act/ Ley de Conservación y Recuperación de Recursos
RCRIS	Resource Conservation and Recovery Information System/ Sistema de Información sobre la Conservación y Recuperación de Recursos
RETC	Registro de Emisiones y Transferencias des Contaminantes/ Pollutant Release and Transfer Register
RODS	Record of Decision System/ Sistema de Registro de Decisiones
RSPA	Research and Special Programs Administration/ Administración de Investigación y Programas Especiales
Salud	Secretaría de Salud/ Ministry of Public Health
SDSU	San Diego State University/ Universidad Estatal en San Diego
SEDESOL	Secretaría de Desarrollo Social/ Ministry of Social Development
SEMARNAP	Secretaría de Medio Ambiente, Recursos Naturales y Pesca/ Ministry of Environment, Natural Resources and Fisheries
SIC	Standard Industrial Classification/ Clasificación Industrial Estandar
SEC	Securities and Exchange Commission/ Comisión de Seguridades y Intercambios
SNIFF	Sistema Nacional de Información de Fuentes Fijas/ National Information System for Fixed Sources
SNICA	Sistema Nacional de la Calidad Ambiental/ National Environmental Quality System
SNMA	Sistema Nacional de Monitoreo Atmosférico/ National Air Monitoring System
SWIS	Solid Waste Information System/ Sistema de Información sobre Desechos Sólidos
TNRCC	Texas Natural Resources Conservation Commission/Comisión/ Comisión para la Conservación de Recursos Naturales de Texas
TRI	Toxics Release Inventory/ Inventario de Emisiones Tóxicos

TRIS	Toxics Release Inventory System/ Sistema de Inventario de Emisiones Tóxicos
TSCA	Toxic Substances Control Act/ Ley para el Control sobre Sustancias Tóxicas
WRCB	Water Resources Control Board/ Comisión para Regulación de Recursos del Agua

### ***Medio Ambiente Informativo***

Los Problemas con el ambiente informativo de la Cuenca del Río Tijuana son sintomáticos de los problemas de acceso a la información en toda la región fronteriza México -EU e indicativos de los temas de manejo de datos sobre tóxicos que se están volviendo urgentes en todo el mundo, y especialmente en las regiones fronterizas binacionales a medida que la integración económica y la globalización promueven la extensa producción y diseminación de materiales peligrosos.

Como las empresas que operan en otras áreas de la frontera, aquellas que operan en la Cuenca del Río Tijuana a menudo están sujetas a un confuso conjunto de requerimientos de reporte. El problema es especialmente grave para las empresas que operan en el lado norteamericano donde, dependiendo del tamaño, tipo, y sector industrial de operación, un gerente puede tener que llenar y entregar a una o más agencias gubernamentales, cincuenta o más reportes ambientales en un determinado año.

Estos reportes pueden incluir, por ejemplo, datos sobre 1) la identidad, cantidad, calidad, localización, destino, composición física y química y riesgos potenciales de los materiales peligrosos; que son 2) recibidos, almacenados, manejados, producidos, procesados, tratados, desechados en, o distribuidos desde el sitio; 3) la liberación o transferencia de materiales tales como emisiones, descargas, derrames, embarques, etc, o los esfuerzos para prevenir o reducir su liberación o transferencia en o hacia los diferentes medio ambientes (aire, tierra, agua, organismos en forma de productos o componentes de productos), los sub-productos o residuos; y 4) las medidas tomadas por las compañías para proteger a sus trabajadores y los problemas públicos y ambientales causados por los efectos adversos de dichos materiales.

Los datos pueden referirse a monitoreos o permisos de la planeación conforme a los requisitos establecidos por leyes, reglamentos, órdenes judiciales, eficiencia administrativa, demandas sociales, relaciones públicas, ética, etc. Además, los reportes pueden ser requeridos por autoridades de los niveles municipales, regionales, estatales, federales y de jurisdicción bi- o internacional, cada uno de los cuales utiliza un formato de reporte diferente y exige datos, muchas veces redundantes, pero diferentes, (aunque sea mínimamente).

Dichos datos provienen de negocios privados, dependencias de gobierno, organizaciones privadas o individuos. Los datos pueden ser relativos a un medio específico (por ejemplo, una lista de contaminantes de agua o de aire) o multi- medios (por ejemplo, las emisiones totales de un solo sitio).

Los datos también pueden ser específicos para un sitio, establecimiento o incidente, o pueden ser agregados por región, sector industrial u otra fuente. Asimismo, los datos pueden ser específicos para una sustancia, producto u organismo, o pueden ser agregados por familia, género, tipo o cualquier otra categoría incluyendo sus efectos (carcinógenos, mutágenos, corrosivos), su uso (plasticidas, pesticidas, solventes), o proveniencia (bienes comerciales, sustancias reguladas, desechos domésticos peligrosos). La variedad y multiplicidad de estos datos y los registros y formatos que se utilizan para reportarlos representan una carga significativa de trabajo adicional para las empresas que están obligadas a reportar, para las agencias encargadas de recuperar y procesar los datos y para los ciudadanos interesados en localizar y entender dichos datos, o por lo menos obtener una valoración general de las condiciones ambientales a nivel municipal, regional, nacional, binacional y global.

No existe un reporte único que contenga (o vincule) todos los datos necesarios para un usuario particular. El sistema de reporte más conocido y amplio del mundo relativo a la emisión y transferencia de contaminantes, TRI (Inventario de Emisiones Tóxicas) de la US-EPA, proporciona información limitada sobre aproximadamente el 5% de las emisiones ambientales en los EU. Existe aún menos información disponible en México. Estas grandes brechas de datos resultan de una combinación de factores, incluyendo el hecho de que no se requiere de información equivalente de todos los sectores industriales ni para todos los medio-ambientes. México, por ejemplo, requiere que ciertos solventes sean reportados cuando se utilizan como materia prima en ciertos procesos industriales, pero no requiere reportes equivalentes de esos mismos solventes cuando se liberan al aire.

Aún cuando existen datos disponibles, frecuentemente éstos no son accesibles, ya que, los miles de reportes entregados por las diferentes empresas y generados por los gobiernos y las instituciones académicas contienen gran riqueza de información (algunos dicen que es una inundación de información). Sin embargo, los datos son, en primer lugar, difíciles de acceder además de ser reportados en formatos que no son mutuamente compatibles o fácilmente convertibles a sistemas mutuamente traducibles, por lo que la comparación o agregación de datos de diversas fuentes es a menudo difícil o hasta imposible.

Esta dificultad se complica más con los sistemas de datos establecidos por diferentes agencias (por ejemplo, el Departamento de Transportes de EU y la US-EPA), los diferentes estados o los diferentes países; y aún más, como a menudo es el caso, si las dos fuentes de información utilizan diferente software, y si quien busca la información intenta acceder y compilar/ comparar/ agregar datos de una variedad de dependencias o de otras fuentes desarrolladas en función de jurisdicciones diversas.

La barrera para la traductibilidad puede ocurrir a nivel de la estructura del sistema, o a nivel del más pequeño detalle, en lo que se conoce dentro del manejo electrónico de datos como "elementos de datos". Por ejemplo, en la actualidad todavía no existe una definición uniforme de los términos geográficos básicos de localidad tales como "sitio" y "establecimiento"—así que, (dependiendo de la forma/ sistema de que se trate), se podrá pedir identificar *un negocio, una empresa, una unidad o una fuente; fuentes, y establecimientos dentro de un sitio; sitios y localizaciones dentro de una fuente o establecimiento, etc.*

## Community Access to Environmental Information in the U.S.-Border Region (1997)

Michael Gregory, presented to the Seventh Annual Transborder Library Forum, Ciudad Juárez, Chihuahua (22 February 1997)

As a research organization working on pollution-related concerns, Arizona Toxics Information has two main functions: providing information and helping to develop and resolve policy issues. The two cannot be easily separated, but today I would like to at least begin by focusing on the first.

As an information provider, today's topic —Alternative or Non-Traditional Sources of Environmental Information in the Border Region—suggests to me several questions; for instance, what **is** environmental information, and what can it or should it be? And how such information is, can or should be provided. These are the kinds of questions any information provider must ask, non-governmental organization as well as governments.

A couple of weeks ago I had occasion to attend a workshop at a small college in northern Arizona where similar questions were being asked. The participants were mostly graduate students and faculty and teachers from environmental education courses around the country. The discussion centered around methods of teaching and a variety of approaches and contents were considered. Since most of the participants were inclined towards experiential rather than traditional methods of scholarship, the subject matter was generally discussed in terms of deep ecology, stewardship, caring, personal responsibility. . .until I finally asked what, exactly, is the subject matter of your courses—what precisely is the *it* you teach when you teach environmental ed?

In the past few years, ATI has published several major research studies; presented a hundred or so talks or seminars for citizen groups, businesses and local government; participated in a variety of government and business advisory panels, all of which required that we have accurate, current information. As someone who has spent most of his adult life surrounded by books, it came as something of a shock to me to realize that during these years of intense and productive environmental activism, we have very seldom gone to a library for information.

To some extent, this is because our offices are located in a rural area, about 100 miles from the nearest research library. Like most individuals and community groups, we cannot afford to travel or make long distance calls to the urban information centers. But more important, the information we need is often not in the libraries, or is so esoteric that it is just as quick or quicker for us to track it down ourselves through government or university offices or the Internet than to try to explain the topic, source and probable location to the librarian. And because the issues we work on are often time sensitive, quickness is a serious consideration.

For similar reasons, we do not usually advise community groups to go to libraries. The two exceptions to that rule are, first, when citizens need background information on science, politics or legalities; and second, when a local library has become the repository for regulatory information about a local industry or waste site. In recent years governments in the US have increasingly agreed to place permitting documents, environmental impact assessments and other kinds of public information in public libraries near the regulated facilities, and in some cases when the governments and companies haven't been cooperative, we have worked with librarians to set up the files ourselves to facilitate public access and participation.

But usually the *kind* of information citizens need we would not send them to libraries for. The groups who call on us for assistance are typically faced with an imminent threat of some sort—a proposal for a new mine or hazardous waste dump in their backyards, toxic emissions from a



business, pesticide spraying in the neighborhood, destructive changes in a law or regulation or land-use. The *kinds* of information they and we need typically are regulatory, legal, toxicological, ecological or political. And it needs to be current. And it needs to be in a form that will be immediately useful, in a language non-specialists can understand. And it needs to be placed in a context so we can understand the influences on and implications of our situation and actions.

What we need is information that is *to the point*, that addresses the specific problem we are faced with, whether it's a permit to burn hazardous waste or a river being poisoned with toxic discharges. We need *strategic* information, a term I'll come back to in a few minutes.

The information explosion of the past twenty-five years means that most libraries have not been able to keep up. This may be especially true in the relatively new field of environment. The vast number of reports from business and government and research institutions has for the most part overwhelmed our traditional acquisition, cataloging and archiving capabilities. When we do call on libraries for help, it is usually for articles on current research from science and law journals

Government has trouble keeping up with itself. One of the most frustrating (and in some senses enlightening) aspects of being an environmental activist is not being able to get copies of government documents—often because one office of the bureaucracy doesn't know what data the office next door has generated or collected. The US-EPA has been notorious for not having its information systematized well enough to retrieve information when needed, and not having information in compatible languages and formats so data from one department can be correlated with that of another—let alone with that of another agency or another country. It has been truly a case of the left hand not knowing what the right hand is doing. And at the state level, the informational logjam is usually even worse.

Arizona Toxics has recently published a bilingual *Vocabulary of Environmental Planning Terms for the US-Mexico Border*, and that exercise pointed up again for me many of the basic issues involved in communicating about environment, especially communicating about technical matters like toxic substances and pollution prevention. We have also just published a bilingual *US-Mexico Border Reference List of Hazardous Materials*, which is best described as a work in progress. In that effort we compiled a list some 2500 substances of interest in the border region, and tried to name them and sort them in ways that would allow the various concerned publics to easily access medical and regulatory information about them through hard copy. That exercise brought us, as it always does, hard up against the glaring facts of enormous data gaps in government files on these substances and their industrial sources, and remarkable incompatibilities between the databases the various government entities do have.

Which, of course, was one of the reasons we undertook those projects in the first place. EPA and INE have been making a concerted effort in the past couple of years to correct their informational resource problems, but that process is painfully slow, and even when we do get homepages and similar paraphernalia, they are almost always filled only with descriptive information or meta-data, not the data we spent valuable time on the Internet trying to find. For the foreseeable future, it is clear that non-governmental organizations like ATI will continue to have a major role to play as information providers.

Given this fairly common by-passing of traditional information sources by NGOs (non-governmental organizations), what I would like to do for the next few minutes is share with you from our point of view some of the practical considerations and issues involved in our environmental information-seeking and information-providing in the border region.

### ***Ways of Knowing***

I am not a linguist (and, in fact, like most gringos, am embarrassingly monolingual), but I am a student of language and culture which, to some extent, all information providers, especially in a bilingual region like the border, must be. As students of language, we know that every language teaches more than just its “subject matter” (i.e., its denotation). That is why in English when we talk about learning a foreign language we use a metaphor and say that to really learn a language one has to get a *feel* for it. Information teaches/communicates more than just the “facts” it points to. Which is part of the reason that so much is *always* lost in translation.

What is known is to a great extent determined by the way of knowing. Sources and means of information, including the vehicle of language itself, are important determinants of knowledge. As the old Romantic poets taught in response to what is sometimes called the First Industrial Revolution, knowledge of a rose gained from the dissecting table is not the same knowledge gained in the field, and it may not even be the same rose.

*What* we understand has a lot to do with *how* we understand—which brings up some interesting linguistic, semantic and cultural issues, for instance, about such basic information words as *understanding* and *information* itself.

Of those two, the word *information* is in some ways far easier both to gloss etymologically and to translate between English and Spanish since the words are cognates in our two languages *information/información*, derived from the same Graeco-Latin roots, meaning something like “to shape within” or “*from* within,” a very Platonic notion of learning.

With the English word *understanding*, things are not quite so straightforward. *Understanding* is the verbal noun of the verb *to understand*. *Under-standing* comes into English through Old High German from the Latin and, ultimately, from the presumed Indo-European root \**stā*, which is also at the conceptual base of the words *stable*, *stationary*, *static* and *state*. *Understanding*, then, in English, is conceptually very close to the words *substance* and *substantial*. The English base is cognate with the modern German *verstehen*, though the English prefix *under-*, obviously related to the German *unter*, is conceptually closer to the Latin sense of *inter-* (‘among’) than to the Latin *sub-*, meaning ‘below’, or to the German *ver-*, meaning ‘before’ or ‘in front of’ (which, in turn, is closer to the Greek *epistasthai*, ‘to stand before’).

*Under-* is also different from the preposition that prefixes *entender*, the Spanish verb most commonly used to translate English *understanding*. *En-tender*, literally, ‘to stretch out in’ or ‘within’ is a modified form of *tender*, ‘to stretch out’, both of which are closely related to Latin roots of approximately the same meanings, and both a little more distantly related to Spanish *tener* and Latin *tenēre*, ‘to have’ or ‘hold’ (with, at least in Latin, connotations of land-holdings, as in *tenure*, and thinnings or *extensions*), and both are *radically* different from the English ‘to stand under’. (Unless we care to make some leap of faith to see in the connection between *tender* and *tener* the connotation of *stasis*, in the sense that what is held is stationary, a sense also caught in the English locution, ‘to hold still’; the tenuousness of such identifications may be suggested by the ambiguities evidently *intended* by the American author Henry Miller in titling one of his books *Stand Still like the Hummingbird*.)

These are issues of *anthropological* or *cultural linguistics*, and though there is controversy among the various schools, and some scholars would argue that such language differences do not mean that people in our two cultures actually *understand* differently, few I hope would disagree with the basic premise that *what* we know depends to some extent on *how* we know; that vocabulary relates in some way to our experience of the environment, is both influenced by and has influence on our perception and, therefore, on our *understanding* of the environment.

Or, put another way, the world appears differently to a person using one vocabulary from what it appears to a person using another. Lawyers are taught in law schools that “reasonable people may disagree.” Experience teaches us that unreasonable people may also disagree, and although more than one school of anthropologists in recent years has argued about some of these questions, I would hope that none may reasonably disagree that vocabulary influences our perception, if only in that our words *tend* to make us more aware of certain aspects of experience than others, or give us a *tendency* to make distinctions in nature that speakers of another language may not habitually notice.

To cite another example. Our understanding of death, if we are used to people dying in a hospital with the assistance of modern life-support systems, is very different from our understanding if we are used to people dying at home, in their own beds, in touch with family and friends. What some people think of as “scientific” information would have us believe that in either case death itself is the same—and this may be so, but clearly the *dying* is different, and for many people, perhaps most people, it is very difficult to distinguish death from one’s experience of dying.

We may say something similar of birth and life: certainly our understanding of life—the meaning or value we place upon life itself—is different if our experience of birth is anesthetic, preceded and followed by efficient attendants dressed in white, or if, on the other hand, our experience is wide awake, at home, attended by family and midwife. Both experiences may be equally as personal, and total, but they are experiences of very different contexts or settings; the *information*, the *informing* of our selves, is considerably different.

Something similar may be said of environmental information—and may be especially true of information about pollutants. If we learn about chemicals from scientific journals or government reports, we are likely to have a different understanding than if we learn about them from watching someone die of nicotine-induced lung cancer or emphysema, or watch a deformed child being born.

Our understanding of an event on TV is different from our experience of the actual event. A refinery exploding on TV is aesthetic, removed, controlled, a play of cool shapes and colors in a small frame. A chemical bleve in our neighborhood is a holocaust.

Part of *how* we know is the *form* in which *information* comes to us, and as anyone knows who has had to convert a meticulously designed text to an ASCII format for email, the information contained in and conveyed by a “flat file” is different from the information of a paper prepared for visual presentation with fancy fonts and spacings. As Marshall McLuhan said, TV is a cool medium but real life, if not always hot, is at least warm.

And as we also know, environmental interest is not abstract or cool, but personal, concerned, even sometimes visceral. Our understanding of chemicals is different if we see them as matters of life and death than if we see them as value-free molecules in a laboratory or as valuable commodities in the global market. And if our understanding is different, so may be our response—for instance, our political response, our interest in seeing social change about chemicals in our environment.

In any case, my point is that language has cultural dimensions (as well as *dementions*), and these are important aspects of communicating information, aspects which must be considered in addition to the well-known difficulties of bilingual translation and interpretation. Our problems in understanding are compounded when new *forms of knowing* or *kinds of knowledge* come up, as they have with *analogical* (wave) information, *ecological* information, *digital* (binary) information, and *toxics* information, four peculiarly 20<sup>th</sup> C informational phenomena (the last

two of which are both largely derived from military research).

To some extent we're talking here about the qualities of information, but those are hard to distinguish from the substance, the content, the heart of the issue. The question of what something is besides its attributes, what *substance* is without *extension*, is, of course, one of the major sticking points of western epistemology.

Which brings us back to one of the questions I asked at the beginning: what is the *it* that environmental education teaches? When I asked that question at the college workshop, there was some hemming and hawing and a few remarks and the workshop broke up shortly after without coming to consensus.

But we might ask a similar question of ourselves. A great deal of energy and somewhat lesser amount of money these days is going into "environmental education" in the sense of "public information." This is good. . .but what is the 'it' we're teaching? Which environmental information is of concern? *Limpia*, recycling, unleaded gas, personal responsibility and individual response are all important, but what is their context, what one of the workshop participants called the "big picture"? Is our recycling of aluminum cans and newspapers really going to save the world, even in the long run? Of course not, and insofar as our personal actions are precipitated by the universal guilt suggested in the common sentiment that "everyone is to blame" for our current polluted culture (an idea also expressed with approval at the workshop), our actions are little more than a counter-productive failure to analyze, a begging of the questions of *why* there is a problem, of what and who is at the *root* of the problem, and of *how* can it best be addressed.

We want to teach and take responsibility, yes, and recycling is of course a good thing, but we also have to teach something about the *scale* of industrial and post-industrial society, and how to take responsibility in and for that, because that is the context. *Scale*, in fact, may be the most important factor that makes ours a different context from the traditional: *scale* even more than *kind* of information and *form*. But however they measure up to each other, those three are certainly some ideas to keep in mind when we think about the new informational situation: *kind*, *form* and *scale*.

### ***Traditional, Neo-Traditional, and Non-Traditional***

If by "traditional information" we mean information from books and libraries, schools and government and business, then "non-traditional" information may mean two things: 1) digital information from such sources as computers, databases, etc.; and 2) "contextual" or other largely "non-literate" information from word-of-mouth, hands-on demonstration, etc.

In some ways these two kinds of "non-traditional" information—one high tech, the other by definition pre- or non-high tech—are very similar, almost as though a circle has been closed so that pre-industrial and post-industrial society have come face to face, because, for instance, person-to-person oral communication, in-person information exchange, is the **most** traditional form of all, and is by far still the most common means of transferring environmental information along the border, and cyberspace, the Internet, like the telephone, has become a way for people to talk to each other

I would prefer a three-part split, in which we distinguish "traditional", "neo-traditional" and "non-traditional. In this formulation, "Traditional information" tends to be more subtle, based on contextual and memory-based forms of knowledge gained from living in a nature-based society and nourished by interactive learning with other human beings and ecologically-based value systems; "Non-traditional information" is the child of post-industrial culture, and is

characterized by data-based forms of information transmissible in digital form.

“Neo-traditional culture” is in between these: in the terms of Marshall McLuhan, it is not as warm as human contact, but not as cold computer databases; its medium is initially books and paintings and other hard-copy forms, but is transitional to analog information, the wave-based data of radio, TV, “walkmen” and “boomboxes”.

My experience is principally in what are known as right to know (RTK) issues and with non-governmental organizations, local governments, individuals—the public—as well as state and federal governments and bi- or international bodies. The concept of RTK implies the right to have access, i.e., the opportunity to access information. It implies, therefore, the provision of ‘user-friendly’ information of a kind and in a form that “the public” can recognize and use. *Access* and *utility* go hand in hand.

But ‘user-friendly’ is itself a term implying a type of non-traditional information. In traditional societies, the idea of ‘user-unfriendly’ information does not typically arise. Or, put another way, we can say that information is ‘user-unfriendly’ by definition if it is not ‘traditional’.

This is not say that all ‘traditional’ knowledge is “easy” or simple or that ‘user-*un*friendly’ necessarily means more complex or sophisticated. We have come a long way from the patronizing 18th and 19<sup>th</sup> C conceptions of the so-called “primitive mind”; we recognize now, for example, that the belief systems of all peoples, including those we sometimes call “traditional societies,” are at comparable levels of complexity, the more traditional systems often apparently more complex than some more so-called “modern” societies.

The “traditional knowledge” of indigenous communities, for instance, and the information systems by which such knowledge is communicated over generations, are certainly not in any sense simple or simplistic. As researchers have amply shown, the modes of apprehending reality in such societies can be highly complex with a richness our scientifically-trained minds and culture have difficulty understanding. This is particularly true for traditional knowledge about the environment.

We need only think of some aspects of Native American languages to appreciate how comprehensive and exacting such traditional informational systems may be, and to glimpse some of the difficulties in providing non-traditional environmental information to traditional communities.

To give one classic example, following the linguist Benjamin Whorf’s lead: How does one provide information about “acid precipitation” to indigenous peoples who have a multiplicity of contextual or situational terms for what in English is collapsed into the one word *snow* (and the Aztecs collapsed even more, having only one word for what in English we call *snow*, *ice* and *cold*), but for whom our term is so non-specific as to seem abstract or be nearly meaningless? This is a far more complicated issue than the normal problems of language to language translation we were examining above.

Another example: how does one communicate problems of air, water and food contamination to a people who have no experience of such things? For instance, we know today that certain toxic byproducts of our industrial and post-industrial society have contaminated globally, that such man-made substances as DDT and PCBs are found in the polar ice caps and in the tissues of every organism in the world, often in concentrations our scientists know to be life-threatening. The fatty tissue of some whales and walrus have been found to contain such high levels of PCBs that they could be classified as toxic waste under US environmental standards.

But how does one communicate this fact and its associated health and social implications, how does one provide this information, to people whose vocabulary does not include such concepts as pollution and chemical contamination, and whose experience does not include such esoteric fields as biochemistry, or even germ theory?

And how does one communicate the even more difficult information about fallout from atomic bomb testing and the explosion at Chernobyl? Or the effects of microwave radiation from military installations in the far north? Or greenhouse gases and holes in the ozone layer?

Another example. The basic food of certain indigenous peoples in the Pacific Northwest region of the US is fish; river fish may account in some cases for as much as 70% of their diet. For centuries these cultures have lived on the great northwest rivers like the Columbia, utterly dependent for their subsistence on the great salmon runs. But today, not only are the salmon fisheries disastrously low, in some cases closer to extinction than the people themselves, but the salmon that remain contain high levels of PCBs, far above the limits set for the diet of the average US population, principally from the wastewater discharges of pulp and paper mills that line the river.

These may seem to be extreme examples and dismissed by some because they fall into that category of abusing indigenous peoples that is so characteristic of the history of our dominant culture. But the same kinds of informational problems occur in non-indigenous situations too, and affect far more people. For instance, how does one provide information about, say, the transgenerational effects of certain hormone-mimicking chemicals, i.e., the ability of these substances to which we give the clumsy name “endocrine-disruptors”—usually manmade products of our industrial society—to cause birth defects not only in the children of mothers and fathers exposed to them, but in the children of those children, and their children, and so on?

How are we to communicate this information, and environmental health information—intervention and prevention techniques—to people whose medical understanding is based on what our dominant culture tends to dismiss as “folk” or “traditional” medicine, on ideas of hot and cold disease, for instance?

The issue is not just historical, but tends to follow ethnic and economic lines in our society and involves a wide array of communications issues being tentatively addressed these days in the US under the rubric of “environmental justice.” In a society such as ours, where economic inequities are growing daily more profound, the information coming from the top down encounters many of the same communication problems. The work of ATI, for instance, is not usually with indigenous societies or “traditional cultures,” but with groups in our cities, people well-acquainted with television and plastics and other consumer-products of our technology, but unacquainted with or unequipped to deal with the by-products of our consumerism.

The very familiarity of people with products generates similar informational conditions as ignorance. Today, for instance, many people, when confronted with some of the unpleasant realities of pollution, are inclined to say something like “everything causes cancer” or “all politicians are corrupt” or “nothing I can do is going to change anything,” a powerlessness that is in some ways not too different from the sheep-like or paralyzing attitude expressed in the “everyone is to blame” belief I mentioned earlier.

In other words, our communication problem is not just lack of information, or lack of the right information or right kind of information, but sometimes too much information, a glut of information, without a corresponding public education about the technologies that control our lives. Under conditions of increasing proliferation of toxics such as characterize the Mexico-US border, lack of access not only contributes materially to disempowerment of individuals and

communities (while at the same time contributing to psycho-social dis-ease and unrest by re-enforcing primal fears of the unknown), but substantially increases the potential for environmental contamination and adverse impacts on environmental health. De-mystification of toxics issues is an urgent public information and public health need.

Yet despite the wealth of data available in this Age of Information, we simply do not know what is out there (in our air, soil, water and food) or in here (in our blood, tissue, organs), and we do not know what dangers what is out there and in here pose to us, our fellow inhabitants of the earth, or to our progeny in future generations.

But how do we provide this kind of information to people who can't read, or, as with too many students today, people so programmed by "techno-speak" and canned information that they can't follow, let alone construct, a logical argument, who can't tie sound-bytes into rational sequences but only juxtapose aural and visual images, who think in associations rather than trains of thought?

People who can't think logically are at the mercy of propaganda and advertising, especially from the electronic media; they are in a very real sense, disempowered.

Digital information may be interactive (although the current trend is to restrict interaction to images, leaving actual data read-only), but it assumes (and helps create) an intellectually passive audience, one that can *move* or *re-act*, but not *act*. In this sense, certainly, it may not be going too far to say that the *form* of the non-traditional information is a significant part of the content.

### ***Communicating within the Community: the Example of Risk Communication***

Some of the neo-traditional and non-traditional aspects of this situation can be illustrated by the differing informational needs of the general public and the more technical public in response to the issues of government regulation and corporate responsibility raised by the increasing risk from ever-smaller doses of the new chemical threats.

For the past twenty-five years, legislatures, courts, administrative meeting rooms and academic circles all around the world there has been an intense debate going on about these questions of dose, exposure, effect, natural background, and so forth. Because a great deal of the debate centers around clean-up of existing pollution at hazardous waste sites or emissions from existing industrial facilities, and because the cost of clean up increases geometrically the smaller the concentration of contamination controlled or remediated, the question "How clean is clean?" has become a commonplace in the regulatory arena.

To answer such questions, the technical public, schooled in the new information and its technology, and familiar with the precision of our contemporary instruments for measuring the infinitesimal differences in biological effects of extremely minute particles, tends to call for yet more precision, yet more attention to detail. The regulatory standards, they argue, are based on outdated, imprecise, information. For instance, they say, regulating the mere *presence* of a substance as our laws now do, requiring prevention or clean-up of any *detectable amount*, doesn't make sense, or isn't fair, because with our new digital instruments we now routinely measure contamination at levels many magnitudes lower than we ever could when such laws were written.

For this technical sector, the answer tends to become calls for "Sound Science," by which is usually meant, "Better Risk Assessment." In only a very few cases is there proof, the argument goes, that such small doses as we now detect cause injury or disease. The current standards are too strict. Regulation should be based on our knowledge, we should set standards at the levels we

know cause harm, and until we have such proof we should let the market, not the bureaucrats and courts, regulate.

It is no accident, of course, that in this caricature I've drawn, which I trust we all recognize, the technically literate public is more or less identical with the investing sector, and it should be obvious that while we search for Absolute Proof or the Perfect Risk Assessment, regulatory delays translate into profits.

The general public, on the other hand, who generally inhabit the lower-income brackets, especially in our border communities, tend to have less faith in either Sound Science or the Market. Although, like their more well-to-do counterparts, they are inclined to uncritically identify science and technology, and are if anything even more addicted to the gadget-driven joys of consumerism, they have also learned from often bitter experience to be cynical or highly skeptical.

Because for a number of reasons (malnutrition, lack of sanitation, proximity to toxics sources, etc.) those with lower incomes are most likely to bear the full brunt of pollution, and to some extent exactly because they are not conversant with the niceties of high-tech information, they are far less concerned with knowing exactly how few parts per million or billion of which fraction of which isomer it takes to subject which percentage of which people to which kind of death or disease.

Not that such information is of no of interest, but rather that it does not communicate to them what it communicates to the digitally sophisticated; or, to use a more precise Americanism, for most people it does not *compute*, largely because it is of so little *use*. It is not, for us, *strategic information*, information that will help us protect ourselves from the effects of pollution.

While the information gathered for a risk assessment may be strategic for a polluting industry insofar as it helps delay or lessen regulation, or indicates how much pollution they can get away with, knowing whether the calculated risk is one in a million or four in a billion is of little practical use to most of us, and so we simply don't care about that.

While it may be useful to know that the risk *is* calculated (in the slightly different sense of the term), by whom, to whose benefit, the degree of risk is useless information at best, and non-information or dis-information at worst. It is of little interest because (1) we don't understand the methodology and the language, and experience has taught us not to trust what we don't understand; (2) experience has also taught us not to trust government-business assertions of safety in general and probabilities in particular, and even more particularly, probabilities (like risk calculations) used to justify or condone our exposure to toxic substances.

Risk Communication has become a subject of college courses and a source of good income for many consultants, but what it too often boils down to is a Public Relations pitch to persuade the public that the communicator's particular brand of pollution is good for us, or at least not as bad as another brand. (As the man said, There's lies, damned lies, and then there's risk assessment.)

Only with great effort can risk information become strategic information for most people, and there are generally far easier ways to get the information we need. What is that information? The information we do want, is the information we need in order to protect ourselves: information about the kind, amount and properties of the substances (i.e., chemical-specific and source-specific information) as well information about what is being done to prevent exposure, to reduce their use and release. In general, we don't care how little or how much of X-stuff is there; if the stuff is not good for us in the first place, we want to know what is being done and what can be done, to keep it out of our faces, out of our lungs, out of the water, air and food, out of our



children, born and unborn.

The information we want, in other words, is not risk information, but hazard information, not risk management information but hazard abatement information. Risk assessment and risk management require a far greater degree of trust than hazard identification and hazard abatement, and that trust, if it ever existed, has been largely eroded in our communities. People naturally enough tend to want action, rather than just promises. Action—clean-up of waste dumps, stopping the discharge of toxic wastes into the sewers and into the air— is a very traditional non-verbal form of information. And when action *isn't* taken, when the pollution isn't stopped (as it obviously hasn't stopped on the border, despite the promises of NAFTA), then we want to know why we are continuing to be exposed, by whom, for whose benefit?

Once *that* data is collected and harmonized, it will be more apparent what is still missing, what needs yet to be generated. And none of that has much to do with risk assessment.

Strategic information is information based on needs identified by communities closest to where the problems are located. The participation of communities is essential in determining how their needs will be identified and answered, and what kinds of research will be undertaken to find answers to their environmental problems. And this is true if we are talking about environmental education in general, environmental infrastructure development (e.g., BECC/NADBank projects) in particular, or any of a variety of other environmental health situations.

In the Douglas, Arizona/Agua Prieta, Sonora region, for instance, we are now designing an environmental health research project to identify and test intervention and prevention methods in regard to widespread public concern about high incidence of respiratory disease, cancer, lupus and other problems. The project is being designed and will be implemented with the participation of representatives from a broad cross-section of the community with assistance from state and local health officials, university scientists and technicians, and, of course, federal money.

The unique aspect of this project is the broad participation of the community at every stage from conception through final evaluation. In a very real sense, this is a community-based project not only because its goal is to develop and test a model of what successful community-based research might mean, and how useful it might be, but because it is bent on discovering and addressing the informational needs of the community.

What is already being found (not unexpectedly) is that while digitized information is useful to the academics, technicians and statistically-inclined governmental decision-makers, the community at large does not communicate digitally, but needs very “traditional” information input opportunities and products—person to person information exchange, usually by word of mouth, with the kind of personal empathy and interpretation of data that turns data into information and information into real communication.

### ***The New Information Market***

One of the peculiarities of neo-traditional and the new non-traditional information that distinguishes them from the traditional is that they require particular technologies. The new digital technology, of course, has been actively promoted by both government and industry in the past few years. In its 1993 National Performance Review, for instance, the US Executive Branch said that “public officials should view information technology as the essential infrastructure for governments of the 21st century, a modernized electronic government to give citizens a broader, more timely access to information and services through efficient, customer-responsive processes” (*National Performance Review Accompanying Report, Reengineering*

*Through Information Technology*, 1993; quoted in, EPA, *Providing Information to Decision Makers to Protect Human Health and the Environment*, 1995, p.iii).

The information technology business is obviously very good. According to recent OECD studies, more than 50% “of total GDP in the rich economies is now knowledge-based.” Knowledge-based services are growing even faster than the high-tech industries. In this environment, economic “scarcity” now means an inability to understand and use knowledge (cf. *Economist* 28 Sept 96, pp.43-44).

Other characteristics of this new global market condition, especially as it pertains to the information technology share, are of interest. For instance, worldwide, the number of people on the Internet grows by about 1%/day. As of about two weeks ago, about 40 million people in 110 countries now had access to the Net. But over 80% of the world’s population still don’t have a telephone and more than half of all connected computers are in the US.

If you will pardon my re-working an over-worked metaphor, while a few million of us are zooming along on the information highway at greater and greater speeds (presumably achieving greater and greater mass), most people in the border region, as in the rest of the world, are not even hitch-hiking along the shoulder.

So if we can talk about knowledge and information as economic statistics, we can also now talk legitimately about such things as “*information poverty*” (in the midst of *information plenty*) and *information elitism* (despite the universal reach of globalized digital culture). This condition raises important policy questions.

For example, one of the most important breakthroughs in public participation in the US-Mexico border region has been the development of the public information procedures of the Border Environment Cooperation Commission (BECC) here in Juárez. Through the Udall Center’s BECCNet, the BECC has been able to establish a highly effective mechanism for exchanging information about projects and operating procedures. Through use of the BECCNet, officials and the public have been able to engage in a series of lively discussions that are widely recognized as informative and helpful—which have been a key factor in development of the BECC’s criteria for certifying environmental infrastructure projects—and those criteria, exactly because they have been developed with broad public comment, are among the most progressive mechanisms in the world for furthering sustainable development.

But while the BECC has developed innovative public notification and comment procedures, they are largely premised on the existence of a computer-equipped and computer-literate constituency. While many in the US may have access to the Internet and a basic ability to use it, informal polls have shown that at best only about 10% of the 100 or so environmental and community groups on the Mexican side of the border have computer-capability. So while electronic communication has in many ways enhanced public participation, it is far too economically selective to take the place of other methods for involving the public.

It has often been remarked that the Internet, through its contribution to *information decentralization*, can provide a major impetus to worldwide democratization. By its very nature it cannot be hierarchical or centralized. But it can be made off-limits, unavailable and inaccessible in various ways—the most obvious being economically.

Information access has become the center of stock market feeding frenzy, and the business pages of the *New York Times* and the *Economist*, (and, I imagine, *Il Financiero* and the *Wall St. Journal*, and others) have for several months carried many articles both on the corporate adventures of the information sector and the marketing of information services and information

itself.

Some of these stories have a chilling effect on those of us who believe in freedom of information because they are replete with phrases like the “value of information,” but have absolutely no reference whatsoever to the content of information, except to reiterate contemporary dicta like “information loses value over time” and “flat-rate pricing is the ultimate degradation of the whole idea of information access.”

As one letter to editor in the *Times* says, “If information is seen by the user as nearly free, as with unlimited access at a fixed rate, then the information becomes nearly worthless.” What a warped sense of values, as though information were only of monetary value, as if education were merely a temporary acquisition to be traded in on the next fad.

The danger of public access being interrupted by tollgates is very real. There is a great deal of information available to those who can afford it—and there are a great many entrepreneurs out there trying to figure out ways to make a killing by selling access to public information. If such entrepreneurs have their way, capital will control digital information, much as it does the print and analog media today.

The US government has been particularly ready to abet this process. Ten or fifteen years ago, for instance, the executive branch decided to begin **privatizing access to public information**. The federal government is the largest provider of public information in the US, and on the flimsy excuse of trying to save money through paperwork reduction President Reagan issued an Executive Order that gave control over government research and publications to the Office of Management and Budget, with a clear directive to severely limit output of and access to government information.

One way of limiting access was to start charging citizens for information that had been generated with their own tax money. That process has continued with some loosening through the following two presidents. For instance, the major chemical database on polluters in the US, the Toxics Release Inventory, the heart of the Community Right to Know law, was initially available to citizens only by paying a considerable fee the National Library of Medicine or to a private company that had direct access; in either case, the information was inaccessible to most citizens until RTK Net, a non-profit environmental organization, convinced the government to provide the data to them so they could post it on the Internet.

Many other important chemical databases, however, remain inaccessible for exactly the same reason. For instance, we recently tried to access part of the government’s *Registry of Toxic Effects of Chemicals*, one of the world’s most complete chemical databases, so we could provide some of the information to border residents in a more useful form. We found that we could obtain the information only by paying several hundred dollars either to a private company or to the National Library of Medicine. In either case, again, the cost was prohibitive, making the information effectively inaccessible.

It seems that even when we have freedom of information, the information is not free. One of the greatest threats to public access is privatization and making such information accessible to lower income populations in the border region is a major goal of Arizona Toxics, and we would hope other information providers, like public libraries, would join us in that effort.

Pricing is one form of information control. Other threats to access may be more subtle. For instance, to oversimplify by reverting to clichés again, in traditional cultures information content and access were controlled by the priest or medicine man, the king and war-lord, and by that amorphous entity, tradition itself; while in neo-traditional cultures control by is typically exerted

by other elites, governments, scientific and academic institutions, and businesses.

In the digital age, though content and access may both be harder to control, the roles of the traditional gatekeepers may be taken over or implemented in more subtle ways by such agencies as Internet Service Providers (ISPs) and Web Search Engines or Browsers which allow access but can unobtrusively control the topics and sources to be accessed by selecting and filtering so that information may be limited not so much by who and what they *allow*, as by the scope of their vision, which is ultimately based on the commercial concerns of their clientele.

A similarly subtle form of control is exerted through the *form* in which information is provided. Form often makes the difference between *available* and *accessible*. For instance, the EPA recently began changing most of its chemical databases on the Net from database to PDF format. Unlike a database format, which can be manipulated by who ever downloads it, PDF provides a “fixed format”— an “image” or text rather than manipulable data, so that what the general information seeker ends up with is “canned” data, not quite as rigid as “read-only” information, but still not easily put into database format so it can be compared with other data. As a result, in effect, the agency or agent that does the canning controls both access and content

This reminds me of an incident that occurred a couple of years ago during one of the OECD workshops where we were developing the guidelines for nations to develop toxics inventories (which was the process that led to Mexico’s current effort to develop its Registro de Emisiones y Tranferencias de Contaminantes (RETC)). A major discussion was held at the workshops around the issue of *data vs information*. Some industry representatives from Europe questioned the public’s insistence on data, saying that the public only needed information about the data, that is, interpreted data.

But, in fact, especially when we are dealing with the Internet, there are important issues of accountability and comparability that make public access to data essential. For instance, when data is presented on the Net, it can change rapidly and with no warning. There is no fixed point of reference as there is in hard copy. We know when a book was published and when its various editions came out, so there is a high degree of verifiability and accountability in regard to hard copy data. Electronic data can only achieve that level of certainty with great care, if at all, and such care is not usually taken; consequently, data received over the Net has significant problems of accountability and verifiability: there are as yet no established methodologies for quality control and quality assurance on the Net, no accepted standards, and there may never be.

Decentralization can be a step toward democratization, but it can also lead to anarchy.

So it is important that *every* user be able to access and manipulate data, strip out sections of databases and compare them to other databases, run whatever tests the user sees fit to run, to test them against whatever measures of truth or validity he or she wants to test them against. That is freedom of information. And guaranteeing the accountability and accessibility that guarantee that freedom may one of the major roles of public libraries in the future

### ***Conclusion***

- Often the issue of how to provide information means how to provide access to information
- Often the “non-traditional” way of providing information means re-discovering the “traditional” ways of communication
- We need to provide non-traditional in non-traditional ways : GIS, databases, Internet, computers, etc, but we also need to provide it by

- by mouth, person to person
- small groups rather than mass media
- in terms people can understand
- in translation not only into native tongues but into traditional ways of thinking/understanding

## **Lista de Referencia de Tóxicos en la Frontera México-EU. Edición Homepage (1997)**

Michael Gregory and Michael Dearing (19 de marzo 1997)

*La Lista de Referencia sobre Sustancias Peligrosas en la Frontera México-E.E.-U.U., Edición Homepage* es una versión abreviada de la Lista de Referencia original que está disponible como Documento de Investigación de ATI. Debido al tamaño de la lista, entre otras consideraciones, la *Edición Homepage* contiene todas las sustancias incluidas en la lista original, pero únicamente muestra las primeras tres de seis columnas de referencia contenidas en el original: Nombre en Inglés, Nombre en Español y Número de CAS.

La *Edición Homepage* proporciona dos versiones, una en orden alfabético por el nombre en Inglés de las sustancias (Edición en Inglés) y una en orden alfabético por el nombre en Español de las sustancias (Edición en Español).

Esta Lista hace referencia a más de 3000 sustancias que aparecen en varias listas publicadas por dependencias de los gobiernos federales y estatales de México y los Estados Unidos en relación con diversas leyes, reglamentos y normas, así como sustancias identificadas como carcinógenos por la Agencia Internacional para la Investigación de Cáncer. La Edición Homepage no incluye la columna incluida en el original, la cual indica las fuentes en las que se encuentran dichas sustancias. Sin embargo, a continuación se proporciona una descripción de las Listas de Fuentes, incluyendo fechas de publicación, a partir de la cual se cumplió la Lista de Referencia. Se advierte que la *Edición Homepage* es una tabla de 380 KB que puede tardar varios minutos para aparecer en su pantalla.

La Lista de Referencia sobre Sustancias Peligrosas en la Frontera México-E.E.U.U. es proporcionada como un servicio al público para fines informativos. Aunque se ha hecho un esfuerzo para que sea precisa y completa, solamente las listas obtenidas directamente de las oficinas de gobierno pueden ser consideradas apropiadas para propósitos de cumplimiento.

La Lista de Referencia y nuestro homepage están bajo construcción continua. Le agradecemos que nos haga notar sus correcciones y otras sugerencias para mejorarla.

### ***Clave para la Listas de las Fechas en la Lista de Referencia sobre Tóxicos en la Frontera***

- A. "Contaminantes Tóxicos de Aire" listados bajo el inciso §112 (b) de las Reformas de la Ley de Aire Limpio de EEUU de 1990.
- B. "Sustancias tóxicas" sujetas a Planes de Prevención de Contaminación y publicadas el 1o de agosto de 1992 por el Departamento de Calidad Ambiental de Arizona conforme a los Estatutos Enmendados de Arizona 49-961
- C. "Sustancias Reglamentadas" sujetas a los reglamentos de planeación de la Prevención de Emisiones Accidentales (40CFR Parte 59 y 68) conforme al inciso §112(r) de las Reformas de la Ley de Aire Limpio de EEUU de 1990
- D. "Sustancias altamente riesgosas" designadas por la Secretaría de Gobernación/SEDESOL en el Primer Listado de "Actividades Altamente Riesgosas" publicado en el Diario Oficial el día 28 de marzo de 1990 conforme a la Ley General de Equilibrio Ecológico y Protección al Ambiente.
- E. "Sustancias altamente riesgosas" designadas por la Secretaría de Gobernación/

SEDESOL en el Segundo Listado de "Actividades Altamente Riesgosas" publicado en el Diario Oficial el día 4 de mayo de 1992 conforme a la Ley General de Equilibrio Ecológico y Protección al Ambiente.

F. "Substancias Químicas Altamente Peligrosas" sujetas a los requerimientos de Manejo de Seguridad en el Proceso de OSHA 29CFR conforme al inciso §112(r) de las Reformas de la Ley Federal de Aire Limpio de 1990 y publicadas in 57FR6356 (24 de Febrero 1992)

G. "Substancias" listadas por INE conforme al Estudio Piloto para el Registro de Emisiones y Transferencia de Contaminantes de 1995-1996

H. "Substancias Químicas Tóxicas" sujetas a ser reportadas por §313 del Toxics Release Inventory (TRI) conforme a Ley para Planeación de Emergencias y Derecho a Saber de la Comunidad (EPCRA; o SARA Título III) [*Lista de las Listas* de EPA, EPA Homepage, Febrero 1997].

I. "Carcinogenicos Humanos Conocidos" designados por la Agencia Internacional para Investigación sobre Cáncer (*Monografía de IARC, Suplemento 7, 1987*, incluyendo la clasificación de Febrero de 1997 de TCDD).

J. "Carcinogenicos Humanos Probables" designados por la Agencia Internacional para Investigación sobre Cáncer (*Monografía de IARC, Suplemento 7, 1987*).

K. "Sustancias y Grupos de Sustancias Conocidas como Carcinogenicas" designados por el Programa Nacional de Toxicología, incluyendo sustancias previamente listadas pero ahora excluidas solo porque se considera que no hay exposiciones en los EEUU. *Reporte Anual Séptimo sobre Carcinogenicos: Sumario* (Departamento de Salud y Servicios Humanos de EEUU, 1991) [NTP Homepage, Marzo 1997].

L. "Sustancias y Grupos de Sustancias Razonablemente Anticipadas que sera Carcinogenicas" designadas por el Programa Nacional de Toxicología, *Reporte Anual Séptimo sobre Carcinogenicos: Sumario* (Departamento de Salud y Servicios Humanos de EEUU, 1991) [NTP Homepage, Marzo 1997].

M. Substancias Tóxicas del "Primer Listado" publicado por la Secretaría de Salud en la Gaceta Sanitaria de Octubre de 1987 conforme a la Ley General de Salud.

N. Substancias Tóxicas del "Segundo Listado" publicado por la Secretaría de Salud en la Gaceta Sanitaria de Diciembre de 1987 conforme a la Ley General de Salud.

O. "Constituyentes que hacen peligroso a un residuo por su toxicidad al ambiente" listados por INE conforme a la Norma Oficial Mexicana NOM- PA- CRP-001/ ECOL/93 conforme al Artículo 3 de la Ley General de Equilibrio Ecológico y la Protección al Ambiente.

P. "Residuos de Materias Primas que se Consideran Peligrosas" listadas por INE en la Norma Oficial Mexicana NOM- PA- CRP-001/ECO/93 Anexo 4, Tabla 3 conforme al Artículo 3 de la Ley General de Equilibrio Ecológico y la Protección al Ambiente.

Q. "Residuos y Bolsas o Envases de Materias Primas que se Consideran Peligrosas" listadas por INE en la Norma Oficial Mexicana NOM- PA- CRP-001/ECOL/93 Anexo 4, Tabla 4 conforme al Artículo 3 de la Ley General de Equilibrio Ecológico y la Protección al Ambiente.

R. "Substancias Peligrosas" sujetas a reglamentos establecidos en 40CFR Tabla 302.4 por la US-EPA conforme a la Ley General de Respuesta Compensación y Responsabilidad Ambiental (CERCLA, el "Superfund") [*Lista de las Listas* de EPA, EPA Homepage, Febrero 1997].

S. "Substancias Extremadamente Peligrosas" con "Cantidades Umbrales" numericas y sujetas a reporte conforme a §§302-304 de la Ley para Planeación de Emergencias y Derecho a Saber de la Comunidad (EPCRA; o SARA Titulo III) [*Lista de las Listas* de EPA, EPA Homepage, Febrero 1997].

T. "Substancias Extremadamente Peligrosas" sujetas a reporte conforme a §§302-304 de la Ley para Planeación de Emergencias y Derecho a Saber de la Comunidad (EPCRA; o SARA Titulo III) y con "Cantidades Reportables" establecidas en 40CFR Tabla 302.4 por la US-EPA conforme a la Ley General de Respuesta Compensación y Responsabilidad Ambiental (CERCLA, el "Superfund") [*Lista de las Listas* de EPA, EPA Homepage, Febrero 1997].

U. "Contaminantes Prioritarios" sujetos a reglamentos establecidos en 40CFR243 por la US-EPA bajo el inciso &307(a) conforme a la Ley de Agua Limpia.

V. "Sustancias peligrosas" sujetos a reglamentos establecidos en 40CFR116-117 por la US-EPA bajo el inciso &311(b)(2)(a) conforme a la Ley de Agua Limpia.

Además, el matriz indica los codigos para los "Residuos Peligrosos" listados por la US-EPA en 40CFR261 conforme a la Ley de Conservación y Recuperación de Recursos.



## **A List of Lists for the US-Mexico Border Region: New Software for Integrating Public Right to Know with Local Land-Use and Emergency Planning (1997)**

Michael Gregory, presented to the Unison Institute/US-Environmental Protection Agency Toxics Release Inventory and Right-to-Know Conference, "Building for the Future," Washington, D.C. (8-10 September 1997)

### **Abstract**

The informational needs of local communities in regard to hazardous materials principally involve the issues of accessibility and comprehensiveness of data. Needed data is often either unavailable (due to data gaps or administrative causes) or fragmented among various sources that cannot be easily located, linked or interpreted. Problems of inaccessibility range from non-standardization of names and non-comparability of data and databases among agencies, to exorbitant fees for public data, to arcane data reporting, storage and retrieval procedures (including unreasonable confidentiality policies).

In order to address some of these problems, during 1996-1997, Arizona Toxics Information (a non-profit organization based in Bisbee, Arizona), under contract to the Arizona Emergency Response Commission and in cooperation with the Cochise County (Arizona) Planning Department, the Ayuntamiento de Naco (Sonora), the Cochise County Local Emergency Planning Committee, and others, developed a pilot toxics data management system for planners in the adjacent communities of Naco, Arizona and Naco, Sonora, including a bilingual (Spanish-English) facilities reporting form, a toxics inventory of sites and a software-based bilingual integrated cross-reference list ("list of lists") of over 3000 substances of concern in the US-Mexico border region.

### ***Local Needs and Needs in General***

Maybe the first point to be made about local informational needs is that, like the needs of the public in general, they can't be wholly anticipated or defined. Like democracy, of which it is a major component, right to know is open-ended. Attempts to predetermine the needs run the high risk of narrowing the public's right to know and limiting the beneficial uses the information might lead to.

So although we can fairly easily identify some of the specific kinds of public needs, and some basic informational characteristics, we need always to keep in mind the danger in assuming that by making such identifications we have produced either an authoritative or exhaustive list.

The test in a democratic society should be, not what does the public have a need for, but what does the public *not* have a right to know, and (keeping in mind Jefferson's admonition about the need for an informed citizenry), what information, if any, can we be sure will *not* be useful to members of the public in defending ourselves from the dangers of our technologies?

On the other hand, practically speaking, although there is a lot to be said for generating and disseminating information just to satisfy our quest for knowledge and the public's right to know, the data universe is so large, the options in cyberspace so many, and life so short, that information searches, if they are to be very useful, must be focused on strategic ends. Right to know, especially at the mercy of a reluctant agency or industry, can too easily become a substitute for taking preventative action, the right to *say no*.

Workers and the public generally are looking for information about a specific substance or product that occurs at a specific geographic location. Most people don't care or need to how little Methyl-Ethyl-Badstuff it takes to kill us or deform our babies; they usually just want answers to a few basic questions like *Is this stuff necessary? And if not, why is it still here? And if it is,*

*necessary for what? for whose benefit? And are they going all out, sparing no expense, to make sure it doesn't cause harm?* Risk assessment is rarely of practical concern except to someone looking for a way to push pollution to some limit, rather than eliminate as much as possible; what concerns most people is intrinsic hazard and prevention.

One of the strengths of the EPA's Toxic Release Inventory (TRI) is that it is a hazard-based system, rather than risk-based; the mere inclusion of a substance on the list provides the public with *hazard identification*, the first step in any hazardous material management process.

In some ways, land-use planners are under even more pressure than environmental regulators or emergency planners or other local information users to directly address those public concerns, so generally they have to look at more substances and far smaller quantities than those established as EPCRA thresholds or regulatory emission limits. In residential areas, for instance, besides routine emissions from smokestacks or vents, discharges to sewers and streams, and potential emergencies, land-use planners may need to address concerns about odors generated by small auto or fiberglass shops, or cyanide used at home jewelry businesses, or one-gallon containers of pesticides kept or mixed in the garage of the local exterminator.

Restrictions of right to know (such as sectoral exemptions or quantity and employee thresholds) are not conducive to toxics use reduction or other pollution prevention methods, and are not generally seen as prudent or acceptable by people living next door. Any amount, and any kind or size of operation, is of concern.

Public needs for hazardous materials information go well beyond mere *availability* or *disclosure* of data, but require an active flow of information to make the data both accessible and useable. An adequate information system must provide for:

- **identification** of specific chemicals at specific sites of generation, receipt, storage, use, distribution and hazard, including both raw and process materials, as they occur in both primary production and as secondary or waste products
- **characterization** of the physical, chemical, biological and radiological make-up of materials; their physical, biological and ecological properties; their intrinsic hazards and their associated risks; and of the capability and plans of firms and communities for managing them
- **linking** of commercial and environmental tracking and monitoring data with community, worker and environmental health data; with alternatives and pollution prevention information; with legal background; etc.
- **proactive dissemination** of the data and accompanying information, including free or below-cost access at locations and times convenient to the public
- **training and education** of workers and the public not only about the kinds, amounts and whereabouts of materials they are potentially exposed to and the hazards such materials pose to human health and the environment; but about how to prevent exposure and injury from both routine and emergency releases; about how to observe and interpret data; and about the tools they can use to help find the information they want.

### ***Standardization***

In addition, one of the primary needs at all levels, local to international, is the need for hazmat data to be reported in a consistent format with a standard, alpha-numeric nomenclature.

Currently, citizens and communities are faced with a bewildering array of chemical lists, formats, names, codes, and other elements—often with different basic identifiers for the very same substance.

There is no one standard nomenclature for chemicals, and no standard format for reporting about them. There is not even a consistent term for the basic category of substances we are concerned with—so we have resorted in the past few years to warping the plain meaning of words like *toxics* to make them synonymous with similarly warped but more clumsy terms like *hazardous materials*, *hazardous substances* and *dangerous goods* in their broadest senses, and making them inclusive of such other (often more legally limited) terms as *hazardous waste*, *mine waste*, *toxic chemical*, *extremely hazardous substance*, *pesticide*, *agricultural run-off*, *radiological material*, *bio-hazard*, *sewage*, *reactive agent*, *pollution* or *pollutant* or *contaminant*, etc.

The situation is a gold-mine for lawyers and consultants, but simply confusing and disenfranchising for most people, including most local government officials.

One of the most frustrating examples of the non-standardized identifier problem is the different names used by DOT and EPA, which results, e.g., in emergency planners and responders (who typically use DOT lists and terminology) not talking the same language as environmental planners and regulators (who typically use EPA lists and terminology). Each bureaucracy is a kingdom isolated within its own language.

EPA itself is made up of a number of fiefdoms, again, each with its own lists and language, so that until recently the databases of the Office of Water, for example, could not communicate smoothly with the database at the offices of Air and Radiation or Emergency Preparedness.

The problem, of course, is significantly compounded when we are trying to coordinate with another country, as we are forced to do in a border zone.

### ***Integrated Data for Integrated Planning***

Standardization is one of the issues that TRI and its avatars (e.g., the Canadian NPRI and the new Mexican RETC, and especially the new North American PRTR) have begun to address. But I would like to emphasize a need not very well addressed in these existing government systems, the need for comprehensiveness and integration.

As the ethicist Hans Jonas has pointed out, in our technological environment ethical action requires knowledge commensurate with the “causal scale of our action” and its consequences [*The Imperative of Responsibility*, University of Chicago Press, 1984, p.8]. This admonition is especially relevant to the global and cumulative effects of our technological actions.

Single-purpose, single-media or otherwise narrowly-conceived lists are necessarily of limited value in assessing the “scale of our actions” and fail to acknowledge the great overlap in informational needs among different users.

Instead, we require a more inclusive view, a multi-media, multi-sectoral, multi-purpose (and, in many regions, a multi-lingual) approach: integrated lists, integrated reporting, integrated inventories, integrated data management systems, integrated planning.

### ***The Ambos Nacos Project***

One way to address some of these needs is through use of an integrated set of source lists

which can provide *indicators of concern*. For instance, if a particular substance is listed by the IARC as a carcinogen, by EPA as an air toxic and by the Secretaría de Salud as a highly toxic substance, whether or not the exact NOEL or LD<sub>50</sub> is known, it's obvious there is some cause for concern. As mentioned earlier, one of the major strengths of the EPA's TRI is that it provides basic *hazard identification*. The usefulness of this approach is evident from the popularity of EPA's *List of Lists* (LOL), one of the most-used documents supplementing the whole EPCRA library.

But although the EPA's LOL, like TRI list itself, especially with the recent expansions, are steps towards integration, they're still far too restricted in terms of pollutant source, chemical properties and thresholds to claim comprehensiveness. The *ATI List of Lists for the US-Mexico Border Region* (*Border LOL*) was designed to address some of the needs not met by TRI and other generally available lists.

The current edition of the Border List grew out of a binational project called "The Ambos Nacos Pilot Integrated Hazardous Materials Data Management Pilot Project for Land-Use/Emergency Planning" (or, for short, the Naco Project), which was conducted during 1996 and 1997 in the small adjacent communities of Naco, Arizona and Naco, Sonora. The project was carried out by Arizona Toxics Information under auspices of the Cochise County (Arizona) Planning Department in cooperation with the Ayuntamiento of Naco, Sonora, the Cochise County Local Emergency Planning Committee and others, with funding from a US-EPA grant administered by the Arizona Emergency Response Commission.

The Project was designed to assist local planners, through a replicable training methodology transferable to other communities, in siting, permitting, zoning and other land-use decisions about hazardous materials. Specific objectives included enhancing pollution and accident prevention, minimizing the occurrence of hazmat emergency incidents, and enhancing cooperative integrated emergency and land-use planning (including binational planning) in the US-Mexico border region.

The Naco Project built upon a previous year-long project carried out by ATI under an EPA Border XXI grant which brought together land-use and emergency planners from southeast Arizona and northeast Sonora to discuss issues of mutual concern, including the potential of land-use planning as a tool for pollution prevention. One of the outcomes of that project was establishment of information-sharing procedures among local land-use planning agencies of the two countries.

The Project also built on a long-standing Memorandum of Understanding (MOA) between the Cochise County Planning Department and the LEPC, under which the LEPC reviews applications for land-use permits and advises the Planning Department on hazardous materials concerns.

The Naco Project was built around three complementary concepts:

- The goals of emergency planners and land-use planners are best served by an integrated approach that addresses the needs of both.
- Planning in border communities is best accomplished binationally.
- A key component towards such integrated planning is an integrated toxics data management system.

Besides development of the *Border List of Lists*, significant activities of the project included:

- development of hazardous materials procedures for County planning personnel
- development of an MOA between the Cochise Planning Department and LEPC on data management procedures
- data collection for a hazardous materials inventory of facilities in the binational Ambos Nacos area

In addition, one of the more interesting products was the development and field testing of a model *Hazardous Materials Data Collection Form for Land-Use Planning*. Unlike the relatively comprehensive and generic hazmat reporting form ATI had designed for the Tijuana River Watershed GIS in conjunction with the immediately prior iteration of the *Border List*, the Naco Project questionnaire was specifically designed as a primary screen for land-use permit applications for small and very small facilities (*farmacias* in Naco, Sonora, for instance, that normally carry no more than five or ten liters of rubbing alcohol).

While the Tijuana Watershed GIS format includes all of the TRI Form R and many other data elements from reporting formats in the two countries, the Naco questionnaire contains only a smattering of Form R and other elements—but those determined to be most essential to local planners including, for instance, a detailed environmental compliance history of the applicant.

If answers to the questionnaire indicate a potential for concern, a number of follow-up actions may be initiated, including use of more comprehensive reports, like the Form R or the Uniform Fire Safety Code questionnaire.

Finally, the Project included:

- hands-on training of County planning personnel in hazardous materials data entry and storage
- hands-on training of County planning personnel in use of CAMEO for Window and the ATI software
- instructor and student training materials in the form of a course Curriculum with several appendices

*These last three points need to be especially emphasized:* our experience in application of integrated lists and hazmat data management in several situations over the past few years indicates that *user training is of utmost importance*.

Training is needed by all sectors: reporters (e.g., businesses); recipients (e.g., governments); workers; the public. At the local level, this means providing the most basic introductions to chemical terminology, properties and effects, as well as training in the fundamentals of data entry, storage and retrieval.

Small businesses (including self-employed individuals) often are especially in need of training on the most elementary chemical aspects of their operations—starting with the kind of hands-on training required by OSHA’s Hazard Communication Standard and going on to lifecycle characteristics of their materials.

One of the important lessons learned from the Naco Pilot is that even though the training

curriculum is generally replicable, every community will have particular characteristics and will require specific hands-on application of the training materials.

### ***The ATI Border List of Lists***

The "Hazardous Materials Reference List for the US-Mexico Border" developed for the Naco Project was originally conceived as being of use principally to communities, agencies, organizations and individual citizens interested in knowing what materials are regulated or otherwise of concern to both nations and was designed to facilitate an integrated approach to hazmat management. Consequently, it includes lists that are of interest for a variety of reasons other than just "release and transfer."

The present form of the *List* has evolved through some two previous iterations applicable to two separate contexts, including:

- 1) a hazmat inventory of the maquiladoras in Agua Prieta, Sonora (sister city of Douglas, Arizona), and
- 2) the binational Tijuana River Watershed GIS (in conjunction with, as mentioned earlier, development of a synoptic hazmat reporting form).

Initial needs assessment during the Naco Project indicated that the obvious tool for integrating land-use and emergency planning data management in the county would be CAMEO, the software most used by emergency planners and responders in the US.

But while many mutual data management needs can be met by CAMEO, we found that some planning needs would require a complementary software. For instance, we found that:

- CAMEO does not include Spanish synonyms for hazardous materials
- CAMEO does not have string search capability, so a substance can be found only if the opening characters are known
- CAMEO cannot distinguish which of several chemical synonyms a CAS number goes with, and so in some cases has several CAS numbers for a single substance, thereby providing little help in cross-referencing to other databases (many of which are keyed to CAS numbers)
- CAMEO does not easily allow "and/or" searches for substances with multiple characteristics (e.g., those on several regulatory lists)
- CAMEO chemical list is restricted to substances regulated under US emergency statutes; it does not identify Mexican emergency lists or various non-regulatory health effects lists (e.g., the National Toxicology Program lists of carcinogenic substances)
- CAMEO data is updated only every few years, so may not have current information (e.g., as of May 1996, CAMEO did not contain a full and accurate list toxic chemicals subject to EPA Toxics Release Inventory reporting)

The ATI software was designed to complement CAMEO by addressing some of these limitations.

The *Border LOL* is a subset of the Arizona Toxics Information *Toxbase*. The executable program

is written in Foxpro to run under Windows 95 or Windows 3.1 and requires about 20MB space. The current edition (Toxbase 4.13) contains tabulated information on 3162 substances in five datasets drawn from 22 separate source lists issued by the State of Arizona, US and Mexican federal government agencies, and international agencies.

The database is searchable by English and Spanish names, by CAS numbers, by RCRA and and INE waste codes where applicable, as well as by some 50,000 synonyms, and by partial names or strings. In addition, the system will indicate which of the 22 source lists a substance appears on, and allows all substances on a given list or set of lists to be called up.

Finally, the source lists represent a variety of hazardous materials concerns, including:

1. Health (e.g., the IARC and NTP lists of carcinogens, two Secretaría de Salud lists of toxic substances, and toxic chemicals on the SARA 313/TRI list and the RETC (Mexico's version of the TRI)
2. Emergency planning and response (e.g., SARA 302/304 extremely Hazardous Substances, the two Secretaría de Gobernación lists of highly hazardous substances, and the EPA and OSHA lists of substances subject to accident prevention and process safety management under section 112(r) of the *Clean Air Act*)
3. Media-specific pollutant lists (e.g., the air toxics listed in the *Clean Air Act* section 112(b) and contaminants listed by EPA pursuant to sections 307 and 311 of the Clean Water Act)
4. Specific use or concern substances (e.g., those on Arizona's Pollution Prevention Planning list, which consists of several state and federal lists)
5. Hazardous wastes (including listed RCRA and CERCLA-RQ wastes and chemical-specific wastes contained on several lists published by INE, Mexico's Instituto Nacional de Ecología).

## Right to Know in Ideal and Practical Contexts (1999)

Michael Gregory, presented to Proyecto Fronterizo de Educación Ambientale, Texas Center for Policy Studies and University of Arizona Udall Center, “Encuentro sobre Medio Ambiente Fronterizo/ Second Annual Meeting on the Border Environment,” Tijuana, Baja California (22 April 1999)

### *The Ideal Context*

The art critic E.H. Gombrich once wrote that “in order to know what is being said, we have to know what *might* be said” (which is to say, we can’t know what something means until we know what it might mean).

Similarly, we might say that we can’t know what a PRTR (Pollutant Release and Transfer Register) is really good for until we know what it *might* be good for.

To decide that—to figure out what a more or less complete Right to Know program or relatively perfect Right to Know (RTK) situation might look like—we may want to look into *the ideal context* of information access.

In that context, we might begin by 1) stating what we want the ideal situation to be or what kind of information we really *want*, then 2) look at some of the most complete existing environmental information systems, then 3) decide how to go about getting what we want—in other words, *define the practical with the idea in mind*.

In my experience, *what most community groups want, first and foremost, is zero emissions*. Our ultimate goal is not to *know* about pollution, but to *end* it. Information is useful, but not an end in itself and not usually a necessary ingredient toward the real goal. (We can, for instance, end pollution in many situations simply by pulling a switch without ever having any of the quantitative data that PRTRs accumulate.) Although industry and government always say that isn’t possible, is just idealistic wishful thinking, in fact zero emissions in most cases is technologically possible, just politically difficult. But that is what we want and *as representatives of civil society, that is our job: to make that ideal a practical reality*.

When we can’t get pollution prevention, then we want information. In that regard, again in my experience, the kind of information most community groups especially want is what we might call *strategic information: i.e., information that will help us protect ourselves from exposure*.

And this is one of the main points I want to stress today: from the point of view of the general public (i.e., civil society), *the main purpose of PRTRs is to provide public information to citizens so we can protect ourselves*.

That is what the PRTR decision at the Earth Summit in Rio was all about, which is why the CEC (North American Commission for Environmental Cooperation) and Mexico are involved in PRTRs today. And that context (i.e., the context of Sustainable Development around which the Earth Summit was convened and the NAFTA sidebar agreements signed), it’s undoubtedly true and important that *there can be no Sustainable Development without free exercise of the public’s Right to Know* because without Freedom of Information there can only be the tyranny of those *in the know*, a dictatorship of those with the power that knowledge adds to those already powerful.

But practically speaking, down at ground zero in the communities where we live and work, *faced with an increasingly toxic environment, our first concern has to be self-protection*.



## *The Practical Context*

As we have heard, PRTRs are one of the most effective mechanisms for access to information on hazardous materials in our communities, and one of the most effective tools for promoting pollution prevention. But, of course, in most of Mexico, and especially here in the northern border, as we know, PRTRs do not exist—and even north of the border, in the US and Canada, they are only one of many mechanisms citizens must use to get the information we need to protect ourselves.

In the US, government and business are automatically expected to provide environmental information freely, unless they can show good reasons not to (such as threats to national security, invasion of personal privacy, and unfair business competition). Despite its origins in commercial and financial machinations—the US has Freedom of Information firmly set in its founding principles. Something similar is true in Canada.

But in Mexico, as we all know, Freedom of Information is a relatively new—and highly controversial—concept. Money, power and bureaucratic red tape make public access to environmental information difficult in all three countries, but especially in Mexico, the only one of the three where it's actually illegal for the government to disclose information it holds on the potential environmental impacts of companies that store, ship, make, process, emit, discharge, or otherwise use hazardous materials.

But we have to remember, important though it is for citizen groups to insist on a real PRTR system in Mexico, even if Mexico did have a good PRTR system, the public's information would be incomplete, because PRTRs are by definition incomplete, designed to look at only a small part of the hazardous materials universe.

PRTRs as we know them in North America:

- address very short lists of chemicals compared to the 70,000 - 100,000 hazardous substances governments and intergovernmental organizations estimate are in commerce
- do not address non-point pollution sources like agricultural use of chemicals, transportation exhausts, and urban run-off
- collect information from only a very limited number of sectors
- have very high reporting thresholds, so millions of pounds of pollutants are never reported

*That is the practical context*, and considering that context, we may want to look at what already exists or is under development and compare it to what we really want in order to see what we should go for.

The US RTK program is generally regarded as the most complete in the world—and everyone seems to agree that it works pretty well. You've already heard quite a lot about TRI and NPRI programs, so I won't say much more about them.

Since 1986, with passage of the federal *Emergency Planning and Community Right to Know Act* (EPCRA), a lot of the information we want has been easier to get. EPCRA established two right to know mechanisms. The better-known of the two is the Toxics Release Inventory (TRI), the US version of the PRTR, which is compiled and published annually by EPA with site-specific and chemical-specific information on over 600 toxic substances released and transferred from

several thousand facilities in several industrial sectors.

The second, and in some ways more useful part of EPCRA, establishes the right on any citizen to find out the kinds, amounts, storage and handling procedures and other information about any dangerous substances at any facility, as well as what the firm is doing to prevent and mitigate effects of accidents involving those substances.

This year, the US has gone even further in giving the public tools to protect itself from chemical accidents. Under provisions of the federal *Clean Air Act*, publicly-available RMPs (Risk Management Plans) will be submitted by thousands of facilities throughout the country setting out what the companies are doing to prevent accidents involving some of the more dangerous materials they use.

Even more advanced systems are under development. The State of Texas, for instance, is developing what is called CURE—Consolidated Uniform Report for the Environment—and the State of Arizona is developing what it calls the AZURITE system—Arizona Unified Repository for Informational Tracking on the Environment. Both of these are models for integrated environmental information from a wide range of reporting systems. They are being designed to allow not only simplified reporting from industry, but easier processing by governments and easier access by the public. Similar projects are underway in other states.

But we can't wait for what the governments offer. And we don't have to. Communities can and should develop information programs locally to get the information we need.

In Agua Prieta, Sonora, for instance, in 1994, with the cooperation of the state Protección Civil office and the Ayuntamiento, ATI and Enlace Ecológico, A.C. conducted and made public a hazardous materials inventory of the Agua Prieta maquiladoras—the first integrated, publicly-available hazardous materials inventory done of a border community. That document (soon to be available in Spanish thanks to INCITRA and La Neta) can be used as a guide for others citizens groups.

Two years later, ATI and Proyecto de Educación Ambiental constructed and published in English and Spanish *A Toxics Data Dictionary for the Tijuana River Watershed GIS*, which presented a fairly comprehensive and strategically organized set of metadata (i.e., the *categories of information*) that is gathered (but not integrated) by government agencies on both sides of the border.

Last year, Proyecto Fronterizo published a study of the maquiladoras in Tijuana, which indicated that there was, in fact, no publicly-available data for many of the information categories listed in the *Data Dictionary*.

Both these documents are available (the first from ATI, and the second from PFEA) and can be used as a guide to the kinds of information that should be included in local inventories.

The Tijuana Watershed publication also presented a bilingual reference List of Lists of identified toxic substances of concern in the border region. The following year, ATI converted that reference list into a bilingual searchable software tool that contains over 3000 substances drawn from 22 different lists compiled by Mexican and US federal and state agencies, as well as international health organizations. That software is available free of charge from the Director of the Arizona Emergency Response Commission (contact Mr. Dan Roe, SJDirector, AZRC, at 602/231-6345 or roed@dem.state.az.us).

***What information do we want and not want?***

Having looked at some of the ideal and existing options, what do we want?

1) We want *chemical-specific information*. Practically speaking, aggregated data is relatively worthless for purposes of preventing exposure or other impacts of the hazardous materials. Information on kinds of hazardous wastes, for instance, is not as useful as information on the specific toxic chemicals in the wastes. (In fact, generally speaking, attention to wastes is not to the point at all: focusing on wastes is a diversionary tactic industries and governments use to keep the public from focusing on toxic use reduction at the front end of the processes.)

2) We want *site-specific information*. Although information sorted by industrial sector or geographic area or biosystem is useful and interesting, in order to best protect ourselves, we need to know exactly which facility, what owners, and what processes of which facility are the source of the hazardous material.

3) We want *hazard information*. We want to know what the *properties* of the materials are that make them hazardous. We do not particularly want or need to know what the *risks* of the material are. Debates about risk are a time and energy trap that in general we do not want to get caught in. This is an important distinction to make, and a difficult one in Mexico because in Spanish we usually use the same word for *risk* and *hazard*, but the concepts need to be differentiated.

- *Hazard information* is about the material itself—is it corrosive? is it explosive? is it carcinogenic? neurotoxic? an endocrine disruptor? a persistent bioaccumulative toxic?
- *Risk information*, on the other hand, is about management of the material—we want to know that too, but it is not nearly as important to us as the hazard information.
- Exactly because so many substances used by industry these days are toxic in extremely small doses, and their effects are so often unknown until it's too late, *our goal must be zero emissions: not risk reduction or risk management, but hazard elimination.*
- In any case, until we know what the hazard is, we can't judge how effective the management is ("You can't know how bad the damage is, until you know how bad it might be.")
- We also don't want to get into the trap of debating the definition of *pollutant*. If it's there, if it's brought into existence or put into our environment unnaturally—that is, by human activity, especially commercial or governmental activity—then we have a Right to Know what and where it is, how much there is, who put it there, why, etc. Toxicity is not the main issue: our right to a clean environment is.
- We also don't usually want or need detailed information about how little of a substance it takes to poison us. The issue is not just toxicity or other hazards, but our right to a natural environment, free from waste products released by somebody else for their profit.
- Toxicity or other hazards are only part of the issue. Experience should have taught us by now that chemicals should never be considered innocent until proved guilty—just the opposite. Rather than victims having to prove harm, polluters should have to prove no harm—or, better, prove societal benefit—before they're allowed to produce or release materials. (This, by the way, is the general intent of the *Toxic Substances Control Act*, a US federal law passed in 1976 but never fully implemented by EPA.)

4) We want to know *why the facility is a source, and what its owners are doing to stop it from being a source*. Part of that is risk information, but mostly it's *information about source reduction and pollution prevention and the political will to make them real*.

5) We want *mandatory reporting of comprehensive, integrated, easily-accessible information, information* covering all environmental media, all substances created or put into our environment in unnatural quantities and at unnatural times and locations by all sectors of society, beginning with the commercial, governmental and military sectors.

Mexico's RETC (*Registro Emisiones y Transferencia de Contaminantes*) got off to a good start, but the starting date was a long time ago and the list of substances is so short as to be practically worthless to the public.

We don't have to argue the fine legal points of distinction between Right to Know and Right to Information and the other variations that have delayed the process here in Mexico for too long. *The Right to Know all those kinds of information is a universal human right—part of our right to life—and must be codified into civil laws and regulations of all nations*.

As citizens of the global environment, that is one our main needs and purposes. But meanwhile, we have to decide, again in practical terms, how to get there.

### ***Strategic Action***

We cannot wait for the RETC. Waiting for federal governments to give out what they know can mean a lifetime of waiting. People are being exposed now, people are getting sick now, the environment is suffering in all of our countries now. Information is a right of all people in the world, and must be obtained for our own protection as soon as possible.

While we certainly want PRTR-type information, and should certainly continue to insist that a comprehensive, nationwide, publicly-accessible RETC be completed in the near future, we have to push at the state and local level too—and for more information that the federal PRTR is likely to provide for a long time to come. We need to:

- Go for permits and permit compliance information—including permitted emission limits, monitoring records, and enforcement histories
- Go for emergency information—including not only kinds and amounts of hazardous materials, but accident and release prevention information
- Go for Environmental Impact Analysis information
- Go for local, and especially state, access to information, use the *municipios* and emergency response agencies (e.g., local or state-level Protección Civil)—especially important with the decentralization going on in Mexico
- Work with the US and Canadian NGOs to push the parent companies and international industry associations of the maquiladoras to disclose the same information they already have to disclose to the US and Canadian governments
- When that doesn't work, cooperate with US and Canadian NGOs (e.g., Environmental Defense Fund and RTK Net) to publish on the Internet the *probable* toxic inventories of