

# Environmental Justice

**O**n February 11, 1994, President Clinton issued Executive Order 12898, placing environmental justice firmly on the nation's political agenda. The order directs federal agencies to incorporate environmental justice principles into their day-to-day operations. In addition, the order promotes nondiscrimination in federal programs involving human health and the environment, and ensures that minority and low-income communities are given the opportunity to participate in decisionmaking.

Concerns about environmental "injustices" are not a new phenomenon. In fact, the first mention of inequities in the distribution of environmental hazards was published 25 years ago, in the first annual report of the Council on Environmental Quality (see Box 6.1). While progress has been made in addressing environmental justice issues, much still remains to be done before, as President Clinton stated as he issued the Executive Order, "all communities and persons across this nation live in a safe and healthful environment."

## BACKGROUND

Historically, federal and state agencies have set pollution standards to protect all citizens equally from environmental pollution. Air and water quality standards, for

example, are set to protect the nation as a whole. The environmental justice movement, however, has brought national attention to the fact that environmental hazards are not shared equally and that minority and low-income communities bear a disproportionate share of the nation's air, water, and waste problems. Several studies have found that the geographic distribution of municipal and hazardous landfills, incinerators, and abandoned toxic waste dumps are located primarily in minority and low-income neighborhoods. Minority and low-income communities may face a number of other environmental risks as well; for instance:

- African Americans and Hispanic-origin populations are more likely than whites to live in areas with reduced air quality (Figure 6.1).
- Low-income residents living in older, poorly maintained buildings are more likely to be exposed to dangerous levels of lead.
- Migrant farm workers are more likely to be exposed to hazardous levels of pesticides and less likely to have access to adequate protective clothing.
- In some areas, Navajo land and water supplies are contaminated with uranium, which may be contributing to the high incidence of organ cancer among Navajo teenagers.

**Box 6.1**  
**Milestones in the Environmental Justice Movement**

- 1971 Council on Environmental Quality annual report notes inequities in distribution of environmental hazards.
- 1982 500 citizens are arrested for demonstrating in opposition to the siting of a PCB disposal landfill in the predominantly black and poor Warren County, North Carolina.
- 1983 The General Accounting Office investigates relationship between race and the siting of four commercial hazardous waste landfills in the Southeast. At three of the four landfills, African Americans made up the majority of the population living nearby. At least 26 percent of the population in all four communities was below the poverty level.
- 1987 United Church of Christ's *Toxic Wastes and Race in the United States* is released and concludes that race, not income, was the factor more strongly correlated to residence near a hazardous waste site. It found that the proportion of minorities in communities with a hazardous waste facility is nearly double that in communities without one. Where two or more such facilities are located, the proportion of minorities is more than triple.
- 1990 Michigan Conference on Race and the Incidence of Environmental Hazards is held, bringing together academics, activists, and policymakers around the issue of environmental justice.
- 1992 The Environmental Protection Agency's (EPA's) Environmental Equity Working Group, established in 1990, releases *Environmental Equity: Reducing Risk for All Communities*, which concludes that racial minorities and low-income people are disproportionately exposed to lead, selected air pollutants, hazardous waste facilities, contaminated fish, and agricultural pesticides in the workplace.
- EPA establishes the Office of Environmental Equity (renamed the Office of Environmental Justice in 1994).
- 1994 President Clinton issues Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requiring federal agencies to develop a comprehensive strategy for making environmental justice part of their daily operations.
- The Interagency Working Group on Environmental Justice is established, chaired by EPA Administrator Carol M. Browner and comprised of the heads of 11 agencies and several White House offices.
- Update of United Church of Christ report finds that minority populations in 1993 are more likely to live in ZIP codes where hazardous waste facilities are located than they were in 1980; race/ethnicity remains a stronger indicator of proximity to a facility than income.

As discussed later in this chapter, other studies have presented conflicting evidence as to whether a disproportionate burden exists, especially in the area of waste facility siting. Setting aside these

controversies, however, environmental justice has to do with more than documented disproportionate exposure to environmental hazards. It is primarily about raising awareness of and sensitivity

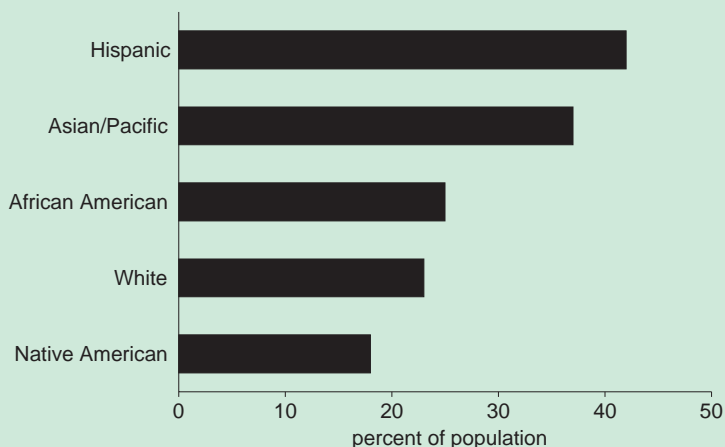
to the issues, and about trying to achieve fairness in U.S. environmental policy and in how environmental policy decisions are made. Examples of environmental "injustices" could include a permitting office that authorizes a hazardous waste landfill in a predominantly minority area without considering other sites or without consulting community residents; a state agency that publishes environmental hearing notices only in English, even though the affected community is largely Spanish-speaking; or a federal water pollution study that does not take into account the fact that members of a nearby Native American tribe consumes fish from a waterbody in greater quantities than the national average, possibly exposing them to higher doses of toxins.

Thus, environmental justice has to do with equal protection from environmental hazards and the ability of all communities to have a voice in decisions that

affect their health, environment, and quality of life. Communities where residents are unaware of environmental laws and regulations may not be able to make informed decisions about, for example, a proposal to build an incoming hazardous waste facility. In addition, minority and low-income residents may lack the time, money, contacts, information, and other resources needed to take political action. Minorities often face further barriers because of housing discrimination, language differences, and underrepresentation in government offices.

Within the environmental justice movement, debate continues on whether race or income is a stronger influence on exposure to environmental hazards. The landmark 1987 study by the United Church of Christ, *Toxic Wastes and Race in the United States*, found that race was a stronger determinant of proximity to a hazardous waste facility than income.

Figure 6.1 U.S. Populations Exposed to Poor Air Quality, 1993



Source: Fred Seitz and Christine Plepys, *Monitoring Air Quality in Healthy People 2000*, Statistical Notes No. 9 (National Center for Health Statistics, Hyattsville, MD, 1995).

Note: Data refer to proportion of population living in counties with air quality above the primary national air quality standard. Persons of Hispanic origin may be of any race.

Indeed, a review of studies by Paul Mohai and Bunyan Bryant found that race has an effect, independent of income, on the distribution of environmental hazards. Other researchers argue that minorities are disproportionately affected because they are disproportionately poor. Regardless of whether race or income has a more important effect on the distribution of environmental hazards, the environmental justice movement contends that as minority and low-income families become increasingly concentrated in inner cities and other isolated pockets, their communities become the dumping grounds for the waste of the wealthy. To paraphrase Mohai and Bryant, perhaps knowing whether race or income has a more important effect on the distribution of environmental hazards is less relevant than understanding how the conditions that lead to environmental inequity can be addressed and remedied.

## RECENT ACTIONS

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, is the first presidential effort to direct all federal agencies with a public health or environmental mission to make environmental justice an integral part of their policies and activities. The order focuses federal attention on the environmental and human health conditions of minority and low-income populations with the goal of achieving environmental protection for all communities. Among

other things, the executive order creates an Interagency Working Group on Environmental Justice; requires each federal agency to develop an agencywide environmental justice strategy; and directs agencies to include information about minority and low-income communities in their research, data collection, and analysis on human health and environmental issues (see Box 6.2).

President Clinton issued an accompanying memorandum to the executive order for the heads of all departments and agencies, directing them to take appropriate and necessary steps to ensure that:

- in accordance with Title VI of the Civil Rights Act of 1964, each federal agency shall ensure that all programs or activities receiving federal financial assistance that affect human health or the environment do not directly, or through contractual or other arrangements, use criteria, methods, or practices that discriminate on the basis of race, color, or national origin;
- each federal agency shall analyze the environmental effects, including human health, economic, and social effects, of federal actions, including effects on minority and low-income communities, when such analysis is required by the National Environmental Policy Act of 1969 (NEPA); and
- each federal agency shall provide opportunities for community input in the NEPA process including identifying potential effects and mitigation measures in consultation with affected communities and improving the accessibility of meetings, crucial documents, and notices.

**Box 6.2**  
**Highlights of Executive Order 12898**

Executive Order 12898 directs each federal agency to make environmental justice part of its mission by identifying and addressing disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.

One significant provision of the order is the establishment of an Interagency Working Group (IWG) on Environmental Justice. IWG is chaired by Environmental Protection Agency Administrator Carol M. Browner and is comprised of the heads of 11 agencies and several White House offices, including the Departments of Agriculture, Commerce, Defense, Energy, Housing and Urban Development, Health and Human Services, Interior, Justice, Labor, and Transportation; the Council of Economic Advisors; Council on Environmental Quality; Domestic Policy Council; Office of Management and Budget; and Office of Science and Technology Policy. The Nuclear Regulatory Commission and National Aeronautics and Space Administration also have participated in IWG.

IWG provides guidance to federal agencies on criteria for identifying disproportionately high and adverse human health or environmental effects on minority and low-income populations; it also coordinates, provides guidance, and serves as a clearinghouse for each agency as it develops an environmental justice strategy to ensure consistent administration, interpretation, and enforcement of programs, activities, and policies. IWG is also responsible for coordinating and stimulating cooperation among agencies in their research efforts.

The executive order also directs each federal agency to do the following:

- Develop an agencywide environmental justice strategy, to be completed within 12 months of the date of the order. As part of this strategy, each agency was required to identify and begin work on several specific environmental justice projects. The agencies are required to report on their progress to IWG, which compiles this information and submits it to the President on an annual basis.
- Include diverse segments of the population in epidemiological and clinical studies, including segments at high risk from environmental hazards, such as minority populations, low-income populations, and workers. It emphasizes the need for environmental human health analyses to consider multiple and cumulative exposures.
- Provide minority and low-income populations with the opportunity to participate in the development and design of research strategies.
- Collect, maintain, and analyze information on the consumption patterns of populations that principally rely on fish and/or wildlife for subsistence.

The executive order explicitly encourages public participation by stating that the public may submit recommendations to federal agencies relating to the incorporation of environmental justice principles into federal agency programs or policies. It allows each federal agency to translate crucial public documents, notices, and hearings relating to human health or the environment for limited-English-speaking populations; and requires that each agency ensure that these documents, notices, and hearings be concise, understandable, and readily accessible to the public.

**Box 6.3**

**Historical Measures to Reduce Lead Exposure**

Since the late 1970s, the U.S. government has taken specific actions to reduce lead exposures in the national population, largely by mandating that manufacturers eliminate lead from their products.

- In 1976, a total of 186.47 million kg of lead was used in gasoline in the United States. By 1983, this amount had dropped to 51.59 million kg; and by 1990, lead used in gasoline had been reduced to 0.47 million kg.
- The amount of lead used in soldered cans decreased markedly throughout the 1980s. In 1980, 47 percent of food and soft drink cans were lead soldered. By 1985, this figure had dropped to 14 percent; by 1990, only 0.85 percent of food and soft drink cans were lead soldered. As of November 1991, lead-soldered food or soft drink cans were no longer manufactured in the United States.
- In 1978, the amount of lead in lead-based paint was limited to less than 0.06 percent by weight.

These measures have been effective in reducing overall exposures to lead hazards. Still, lead-based paint remains a problem, predominantly in older, deteriorating housing stock. Eliminating the hazards of lead-based paint will require more than just removing lead from manufactured products; instead, it must be addressed as a holistic environmental justice concern, not simply a housing health or environmental issue. A new strategy that considers the economic and racial parameters of lead exposures and how to address them is needed to reduce lead hazards for all populations.

The executive order and its accompanying memorandum reinforce the need to look at how environmental hazards, and the government policies intended to address them, affect different groups within society. The purpose of the executive order is to heighten sensitivity to possible environmental inequities and to avert disproportionately high and adverse human health or environmental effects of government programs, policies, and activities on minority and low-income populations.

The executive order has made environmental justice a governmentwide initiative, implemented through a wide range of programs, including reducing lead exposures in minority children and

preventing asthma deaths, initiating research about the cumulative effects of environmental exposures in minority and low-income populations, and conducting community outreach and education. A key component of all these programs is giving affected communities the information and voice they need to contribute effectively to the environmental decision-making process. Furthermore, the order acknowledges that developing solutions to local human health and environmental problems requires the combined efforts of federal, state, local, and tribal officials in collaboration with local communities, universities, and private enterprises.

Below are descriptions of some of the Administration's more recent accomplishments in response to the executive order; these provide a sample of some successful projects in which federal agencies are demonstrating progress toward environmental justice through new partnerships.

### Reducing Lead Poisoning among Children

Largely as the result of federal efforts to remove lead from gasoline and soldered cans, blood lead levels in children have decreased significantly since the late 1970s (see Box 6.3). Between 1976 and 1991, the percentage of U.S. children aged 1 to 5 years with blood lead levels above 10 micrograms per dry liter ( $\mu\text{g}/\text{dl}$ ) decreased from 88.2 percent to 8.9 percent. Despite these national efforts, how-

ever, lead poisoning remains one of the major health hazards to America's children under the age of 6. Approximately 1.7 million children still have blood lead levels exceeding the 10  $\mu\text{g}/\text{dl}$  level designated as acceptable by the Centers for Disease Control and Prevention (CDC). The highest average blood lead levels are found among poor, urban, African American and Hispanic children (see Table 6.1). Often, these children live in older, deteriorating buildings and are exposed to lead in peeling paint and dust.

In response to this public health threat, several U.S. agencies have made reducing lead a top priority. Since 1992, the Department of Housing and Urban Development (HUD) has awarded a total of \$279 million in grants to reduce lead hazards in low-income housing. The grant program supports activities such as public education (using local media and

**Table 6.1**  
**Percentage of U.S. Children Aged 1 to 5 Years with Blood Lead Levels**  
**10  $\mu\text{g}/\text{dl}$  or Greater by Race/Ethnicity, Income Level, and Urban Status: 1988-1991**

Income/ Urban Status	Total	Non-Hispanic White	Non-Hispanic Black	Mexican American
Low income	16.3	9.8	28.4	8.8
Mid income	5.4	4.8	8.9	5.6
High income	4.0	4.3	5.8	0*
Central city $\geq$ 1 million	21.0	6.1*	36.7	17.0
Central city $\leq$ 1 million	16.4	8.1	22.5	9.5
Non-central city	5.8	5.2	11.2	7.0

\*Estimate may be unstable due to small sample size.  
 Source: See References, Brody et al.

community-based organizations to ensure widespread dissemination in the neighborhoods where lead poisoning is most prevalent), paint inspection and risk assessments, low-cost interim controls, and lead abatement. In several innovative public housing projects, unemployed residents are being trained to become lead testing and abatement workers, thus incorporating economic development through job creation into the program.

In 1994, HUD and CDC jointly funded competitive grants to Chicago and Providence, Rhode Island, to develop comprehensive, innovative lead poisoning prevention programs in targeted low-income neighborhoods. Local residents are involved in the planning and implementation of these local strategies. The Environmental Protection Agency (EPA) has also established community-based partnerships with other federal agencies and cities, such as Boston and Washington, D.C., to develop lead abatement projects which involve training, inspections, and remediation of lead-contaminated housing. In Boston, the state, city, Roxbury Community College, and local community groups are training unemployed workers in a minority community in how to remove harmful lead paint from homes and bridges. Not only does this program encourage members in these communities to become involved in the restoration of their environment, it also gives minority contractors an opportunity to bid for state and city lead paint abatement contracts, providing much-needed jobs and income.

### **Seeking Equity in Siting Hazardous and Nonhazardous Facilities**

The environmental justice movement was catapulted to national attention because of public concern regarding the siting of hazardous waste facilities. In 1987, the United Church of Christ study, *Toxic Wastes and Race in the United States*, found that in 1980 the proportion of minorities in communities with a hazardous waste facility was nearly double that in communities without one. Where two or more such facilities were located, the proportion of minorities was more than triple. In 1994, the Center for Policy Alternatives, the National Association for the Advancement of Colored People, and the United Church of Christ released a second study, *Toxic Wastes and Race Revisited*, which found that in 1993 minorities were even more likely than whites to live in communities with commercial hazardous waste facilities than they were in 1980 (Figure 6.2).

However, other studies, such as one conducted by the Social and Demographic Research Institute of the University of Massachusetts-Amherst, found no consistent national level of association between the location of commercial hazardous waste facilities and the percentage of blacks and Hispanics residing nearby. Indeed, a June 1995 report issued by the General Accounting Office (GAO) reviews 10 separate studies addressing the demographics of people living near hazardous waste facilities and found that only 3 of these 10 studies concluded that minorities and low-income people were

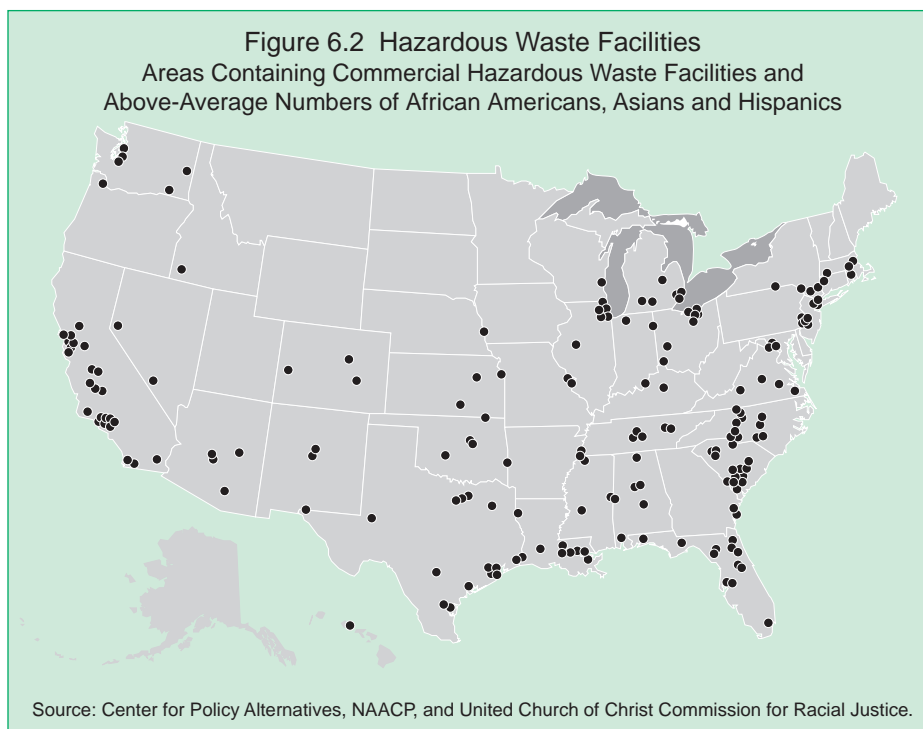


disproportionately represented in these areas. Two studies concluded that there was no significant association between the location of the sites and minority populations; three studies were split as to whether minorities were disproportionately affected by the location of waste facilities; two drew no conclusions from the data. The GAO report notes, however, that all of the studies were limited by study design and underlying assumptions, data availability, lack of time-series analysis, and insufficient information on actual human exposures to harmful materials.

Despite the current lack of consensus among studies, the Administration has made it clear that it is important to be aware of the possibility that some communities may be faced with the siting of

multiple waste facilities, and that these facilities are a concern for community residents. Thus, addressing community concerns and reevaluating procedures by which industries and waste facilities are sited should be among the nation's top environmental justice priorities.

For example, EPA has been working with the city of Chester, Pennsylvania, to address concerns about waste facility siting. The city has one of the highest concentrations of industrial facilities in the state and hosts a number of waste processing plants and two oil refineries. All solid waste from Delaware County is incinerated in Chester, and at least 85 percent of the county's raw sewage and associated sludge is treated there as well. Plans to build a large infectious medical



waste facility were also recently approved. Many of these sites are located close to residential neighborhoods. In fact, a cluster of waste treatment facilities has been permitted within 100 feet of approximately 200 Chester residences.

Residents in Chester have long argued that they house a disproportionate share of the area's wastes and complain of frequent illnesses. Among all Pennsylvania cities, Chester has the highest infant mortality rate, the lowest birth rate, and one of the highest death rates due to certain malignant tumors. In response to community concerns, EPA's regional office initiated two studies to assess environmental regulatory and pollution issues in the city of Chester. The first 30-day study focused on enforcement actions; it just recently issued field citations to a number of underground storage tanks in the neighborhood. In addition, a 180-day study, conducted by a team of toxicologists working with state and local officials, is assessing all available environmental data and human exposure pathways using geographical information systems mapping.

In Brooklyn's Greenpoint and Williamsburg communities, minority and low-income residents have long complained that their neighborhoods appear to be the city's dumping grounds. These two communities have a significant concentration of factories, solid waste transfer stations, hazardous waste storage facilities, sewage treatment plants, and incinerators. The New York Department of Environmental Protection, in conjunction with several EPA headquarters offices and local community groups, formed a partnership for environmental

protection. The partnership identified the community's top priority as being able to monitor the waste facilities to ensure that industries meet environmental standards. To this end, "environmental scorecards" were developed for community members to prepare compliance profiles of local industrial and municipal facilities. Using the data from the scorecards, the city has developed new enforcement strategies which are important steps toward environmental cleanup.

### ***Reducing Risks from Contaminated Fish Consumption***

Some minorities are more likely to be exposed to certain chemical contaminants in the food supply due to dietary differences. For example, Native Americans, Chinese, Vietnamese, and Laotian populations may consume, on average, greater quantities of fish as part of their daily diet. EPA has historically set standards based on national averages of fish consumption, not accounting for the fact that certain cultures may rely on fish for a greater share of their protein. But this orientation is changing. A draft EPA notice for a water permit to discharge effluent containing dioxin from a paper and pulp facility into the Penobscot River noted that the Penobscot Indian Nation had a fish consumption rate nearly twice the national average. These populations thus may be at a much greater health risk from dioxin in fish.

The Administration is taking action to provide greater public health protection for those populations that, for cultural or economic reasons, consume greater

quantities of fish. As part of regular procedures to protect human health, states issue consumption advisories that inform the public that high concentrations of chemical contaminants have been found in local fish and wildlife. A complete database of these advisories, the National Listing of Fish and Wildlife Consumption Advisories, is maintained by EPA's Office of Water to help water quality officials and the public identify where fish contamination is an issue of concern. (See Chapter 5, "Environmental Aspects of Human Health.")

More recently, as required by the executive order, federal agencies have begun to collect information on food consumption patterns among those populations that rely on fish and/or wildlife for subsistence. EPA and the Departments of Agriculture, Defense (DOD), Energy (DOE), and the Interior (DOI) have all launched efforts to study this issue and improve communication with populations at risk. For instance, in the Columbia River Basin—an area with known dioxin contamination—a fish consumption study is under way of the Umatilla, Nez Perce, Yakama, and Warm Spring Tribes. Other programs include research on the effects of Native American cooking practices on mercury concentrations in various fish species prepared for consumption. These studies and the data and information gathered through them could greatly improve the development of more relevant and protective water quality criteria for all populations, regardless of income or race/ethnicity.

### **Revitalizing "Brownfields"**

Throughout the United States, communities are faced with increasing numbers of "brownfields"—empty buildings on contaminated lots that no one wants to develop. While the exact scale of the brownfield problem is unknown, EPA estimates that the number of contaminated sites ranges from 100,000 to 500,000, of which 27 percent are located in urban areas. In addition to posing potential health hazards, brownfields contribute to the poverty in these communities by impeding economic revitalization.

On March 11, 1996, the President announced a brownfield tax incentive that would encourage the cleanup and redevelopment of abandoned or underused contaminated properties in cities and rural areas across the country. Under the President's proposal, environmental cleanup costs would be fully deducted in the year in which they were incurred. The \$2 billion incentive—fully paid for in the President's seven-year balanced budget—is expected to leverage \$10 billion in private investment, returning potentially 30,000 brownfields to productive use. The tax incentive would be available in existing EPA brownfield pilot areas, in areas with a poverty rate of 20 percent or more, in adjacent industrial or commercial areas, and in Empowerment Zones and Enterprise Communities.

The President's announcement builds on the momentum of EPA's Brownfields Action Agenda unveiled in January 1995. EPA has launched a major initiative to encourage cleanup and revitalization of idle, abandoned, or underused industrial

or commercial facilities where opportunities for redevelopment are complicated by existing or potential environmental contamination. The Brownfields Economic Redevelopment Initiative is designed to help states, communities, and private enterprises work together to prevent, assess, safely clean up, and sustainably reuse brownfields. In 1995-96, EPA aimed to fund at least 50 brownfield pilots to support creative two-year explorations and demonstrations of brownfield solutions. In addition, the agency's Sustainable Industries Initiative supports environmentally safe and economically sustainable industries wanting to develop in these areas.

Other agencies are also taking an active role in addressing the brownfield problem. The Department of Commerce, through its Economic Development Administration, is working to ensure that sound environmental and economic development principles are followed and that assessment and cleanup activities are linked with economic redevelopment opportunities. The Department of Labor is providing important resources to leverage job training activities in brownfield pilot cities. EPA and HUD are working together on brownfield redevelopment opportunities on pilots in Empowerment Zones and Enterprise Communities. In addition, an Interagency Task Force on Brownfields was established to stimulate the creation of additional partnerships to provide communities with assistance on key issues such as community involvement, workforce development, and health risks.

Some efforts are already demonstrating some measure of success. In Cleveland, the percentage of land made up of vacant parcels increased from 9 percent in 1977 to 12.5 percent in 1987.

Responding to this challenge, a coalition of businesses, community development corporations, Cuyahoga County officials, neighborhood groups, and other citizens began to work together to tackle the brownfield problem. In 1992, the Cuyahoga County Planning Commission convened a symposium to discuss brownfield redevelopment strategies. The following year, a multistakeholder Brownfield Working Group analyzed the problem of brownfields and made recommendations to the planning commission. Since then, Cleveland has received funding from EPA for two demonstration projects. The planning commission is using an EPA grant to streamline the remediation and redevelopment process of at least three brownfield sites. As part of the project, the commission is to identify financial and regulatory barriers and recommend ways to remedy them. So far, the project has already produced \$3.2 million in new private investment, including the establishment of a new distribution center that has generated more than 170 new jobs in the area.

### *Improving Information*

The Administration has also stressed the need to gather data on exposure and risk levels so as to be able to determine whether there are disproportionately high and adverse human health effects in different population subgroups. To date,

information about the cause-and-effect relationships of many pollutants are still unclear. Furthermore, questions about multiple exposures and how different chemicals may be working synergistically to affect human health have not been answered. For example, do current health and environmental standards protect populations exposed to multiple hazards? What new approaches, criteria, and programs are needed to ensure that they do?

New technologies and advancements in science are helping answer some of these questions. For example, geographical information systems are being used to combine land use, population characteristics, and the location of environmental hazards in one map. The Census Bureau, EPA, Nuclear Regulatory Commission, and other agencies have worked together to develop LandView II, a computerized spatial display of information that will help federal agencies analyze data about the demographic composition of areas surrounding federal facilities. DOE has drafted a tutorial for users of LandView II in characterizing populations surrounding the facilities.

In 1994, President Clinton issued Executive Order 12906, *Coordinating Geographic Data Acquisition and Access: The National Spatial Data Infrastructure (NSDI)*. The order outlines a number of federal agency actions to foster development of NSDI, which is designed to provide a foundation for more efficient collection, management, and use of data. The order also reinforces the Federal Geographic Data Committee's leadership role in directing federal coordination

and federal-state-local cooperation in sharing spatial data. The goal of the executive order is to achieve better access to higher quality geospatial data at lower costs and to make those data available to all interested parties.

The Administration is also encouraging interagency projects that will help identify and reduce the impacts of environmental hazards on human health. One of these projects, the Mississippi Delta Project, is the largest geographic-specific public health initiative ever mounted to study the association between hazardous environmental exposure and health effects in minority and low-income communities. Government agencies participating include the Agency for Toxic Substances and Disease Registry, CDC, EPA, and the National Institutes of Health. In addition, the project will rely on workgroups that include representatives from government, state health and environmental agencies, local universities, and community-based organizations. The project covers 219 counties in seven states (Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee), and more than 8.3 million people. The Mississippi Delta area has a high concentration of transportation routes, heavy and petrochemical industries, waste sites, and other facilities; yet the health impacts of these facilities—especially on minority and low-income communities—are not well-known. In Phase 1 of this three-phased project, the study will attempt to identify the key environmental hazards that might affect high-risk communities as well as evaluate the public health impact

on high-exposure populations. Phases 2 and 3 will focus on identifying needs and developing and implementing successful interventions to protect human health.

As in all its activities, the Administration is making sure to include communities in the design and implementation of studies to gather information about health impacts. In 1994, an agencywide symposium was held on Health Research and Needs to Ensure Environmental Justice. The symposium was a collaborative project involving the public in identifying research programs needed to fill data gaps in critical areas of health, exposure, prevention, and intervention. The cosponsors of the conference included DOE and the Department of Health and Human Services' National Institute of Environmental Health Sciences, the National Institute of Occupational Health and Safety, the Agency for Toxic Substances and Disease Registry, the National Center for Health, and EPA. Over 1,300 people—many from local communities around the country—attended a series of sessions dealing with respiratory diseases, lead poisoning, hazardous waste problems, pesticides exposure, workplace hazards, and Superfund-related problems.

### ***Empowering Communities***

Historically, minority and low-income groups have not been involved in environmental decisionmaking, and few programs have been designed to reach out to these populations. One of the major accomplishments, and continuing goals, of the Administration is to level the play-

ing field and provide communities with the information they need in order to be active participants in environmental decisionmaking processes. Involving stakeholders and developing partnerships with local groups is critical to achieving environmental protection for all communities.

Public meetings have proven to be an effective forum for increasing community participation in environmental decisionmaking. Executive Order 12898 explicitly states that the Interagency Working Group should hold public meetings to receive comments, questions, and recommendations regarding environmental justice issues. On January 20, 1995, a public meeting on environmental justice was conducted at Clark Atlanta University in Atlanta, Georgia. Over 350 people, including representatives from 10 federal agencies, attended the day-long meeting. In addition, an estimated 1,000 people watched the evening session, which was televised via satellite to approximately 40 locations across the nation including Puerto Rico. The purpose of the meeting was to provide an opportunity for the public to share concerns and recommend changes in the agencies' environmental justice strategies.

In addition to public meetings, the Administration has made a wide variety of information available electronically. For example, through the Internet, the public can now directly access databases including the Toxics Release Inventory, scientific reports, and information regarding current major announcements. EPA's Office of Pollution Prevention and Toxics is developing a set of user-friendly com-

puterized spatial analysis tools so that communities can analyze their proximity to possible environmental hazards. The Administration has begun to address language differences as well, and publishes many environmental and other policy documents in multiple languages. EPA's Office of Radiation and Indoor Air, for example, published meeting and hearing notices in Spanish-language newspapers and has provided Spanish-language materials and a translator at all public meetings and hearings. The National Estuary Program has produced multilingual signs and brochures alerting non-English-speaking groups, such as Chinese, Vietnamese, and Laotian populations, of the dangers of eating contaminated fish. The Department of Transportation is taking greater care to involve communities in decisions about highway and other road sitings.

The case of McFarland, California, shows that communities can often find innovative ways to use existing legislation when provided with information about policies relevant to environment and health. A small, low-income, mostly Hispanic, agricultural town, McFarland's residents have been concerned about increased incidences of cancers; fetal deaths; low birth weights; and a number of health effects perhaps attributable to unprotected exposure to pesticides, arsenic, lead, and other heavy metals. A health assessment conducted by the California Department of Health and Human Services from 1984 to 1991 indicated no significant increased levels of cancer but recommended that additional studies

were needed to evaluate air and dust pathway exposures to pesticides.

In 1996, the citizens of McFarland petitioned EPA under Superfund and Executive Order 12898 to reinvestigate the continued health problems. Although pesticide concerns have not generally been addressed under Superfund legislation, residents contended that the pesticide dust drift has created a hazardous waste site. EPA Region 9 is recommending that the agency grant the petitioners' request for preliminary assessment and investigation under Superfund and that a multimedia approach be used to investigate all exposure pathways, including drinking water, soil, and indoor and outdoor air exposures. EPA is also developing community involvement plans which include interviews with residents to record concerns; community input to EPA sampling plans; local information repository, fact sheets, and community meetings; and identification of potential funding sources for community groups to organize outreach efforts.

### ***Enforcing Environmental and Civil Rights Laws***

The memorandum that accompanied Executive Order 12898 states that "application of existing statutory provisions is an important part of this Administration's efforts to prevent those minority communities and low-income communities from being subject to disproportionately high and adverse environmental effects." Since the issuance of the executive order, the Department of Justice (DOJ) has worked with EPA and other federal agen-

cies to fulfill this mandate by enforcing environmental and civil rights laws in a manner that helps ensure that all people live in a safe and healthy environment.

For example, as part of an effort to address recurring environmental problems such as illegal dumping, the U.S. Attorney's Office for the District of Columbia and DOJ's Environment and Natural Resources Division brought criminal action against a company president and employee for illegally disposing of waste chemicals in a residential dumpster of a minority, low-income public housing complex in the District of Columbia. Both defendants pleaded guilty to one felony count under the Resource Conservation and Recovery Act. In the U.S. Attorney's Office in Philadelphia, a local subsidiary of a St. Louis corporation pleaded guilty to violating the Clean Air Act by illegally dumping debris contaminated with asbestos onto a private lot located in a low-income neighborhood in southwest Philadelphia. The respondent agreed to a \$1 million remediation plan.

Where possible, DOJ has undertaken efforts to consult with and inform communities of environmental enforcement-related matters.

## **FUTURE CHALLENGES**

Throughout the federal government, efforts to integrate environmental justice considerations into federally conducted and supported programs continue, and many new projects are only just beginning. One of the goals for the future is to

increase the understanding of how environmental exposures affect human health, especially among minority and low-income communities. In particular, understanding the risks posed by multiple industrial facilities, cumulative and synergistic effects, and multiple and different pathways of exposure will be critical in quantifying the disproportionate burden of environmental hazards on the health and well-being of minority and low-income populations. EPA's Office of Policy, Planning and Evaluation has begun work on a cumulative exposure project which will assess cumulative exposure from air toxics; pollutants in drinking water; and pollutants in food across populations, communities, and geographic areas. The project's goal is to help focus environmental policies on those communities and populations with the greatest cumulative exposures and help aim resources at the most important sources and pollutants.

A second goal will be for all federal agencies to work toward integrating environmental justice concerns into the NEPA process, as directed by the President's accompanying memorandum to Executive Order 12898. The Council on Environmental Quality is currently drafting guidance for agencies on how to incorporate environmental justice concerns into the NEPA process. DOD, DOE, DOI, and EPA have also been taking steps toward this goal. For example, DOI issued the Environmental Compliance Memoranda on Environmental Justice and Trust Resources, which revises NEPA guidelines to require environmental justice consideration within the pro-



gram offices. Accordingly, in Olympic National Park, Washington, DOI incorporated environmental considerations in its NEPA process and developed the Elwha River ecosystem restoration project. The National Park Service worked closely with the Lower Elwha S'Klallam Tribe in developing two environmental impact statements and by creating jobs for tribal members. Restoration of the Elwha River ecosystem improved the native fisheries, primarily for salmon fisheries, and improved recreational use of the park. The Air Force developed a model for environmental justice analysis and used it as part of the development of their base closure process. This model has been inserted into the environmental impact statements for two base disposal actions.

## **CONCLUSION**

While much work remains to be done, the Administration has made important first steps toward raising awareness about environmental justice issues and taking appropriate actions so that no one—regardless of race, color, national origin, or income—suffers disproportionately from adverse human health or environmental effects; and that all people live in clean, healthy, and sustainable communities. Furthermore, the Administration is committed to ensuring that those who must live with environmental decisions—community residents; environmental groups; state, tribal, and local governments; businesses—are given every opportunity to participate in the making of those decisions.

## REFERENCES

- Anderton, Douglas L. et al., "Environmental Equity: The Demographics of Dumping," study by the Social and Demographic Research Institute, University of Massachusetts-Amherst, *Demography*, Vol. 31, No. 2 (May 1994).
- Brody, Debra J. et al., "Blood Lead Levels in the U.S. Population: Phase 1 of the Third National Health and Nutrition Examination Survey (NHANES III, 1988 to 1991)," *Journal of the American Medical Association*, Vol. 272, No. 4 (July 27, 1994), pp. 277-83.
- Bryant, Bunyan, *Issues, Policies, and Solutions for Environmental Justice* (University of Michigan, Ann Arbor, MI, 1994).
- Bullard, Robert D., "Overcoming Racism in Environmental Decisionmaking," *Environment*, Vol. 36, No. 4 (May 1994).
- Bullard, Robert D., *Unequal Protection: Environmental Justice & Communities of Color* (Sierra Club, San Francisco, 1994).
- Centers for Disease Control and Prevention (CDC), *Preventing Lead Poisoning in Young Children* (CDC, Atlanta, 1991).
- Goldman, Benjamin A. and Laura J. Fitton, *Toxic Wastes and Race Revisited: An Update of the 1987 Report on the Racial and Socioeconomic Characteristics of Communities with Hazardous Waste Sites* (Center for Policy Alternatives, Washington, DC, 1994).
- Interagency Working Group on Environmental Justice, "Second Annual Report to the President by the Interagency Working Group on Environmental Justice on Implementation of Executive Order 12898," draft (Interagency Working Group on Environmental Justice, Washington, DC, 1996).
- Malveaux, Floyd J. and Sheryl A. Fletcher-Vincent, "Environmental Risk Factors of Childhood Asthma in Urban Centers," *Environmental Health Perspectives*, Vol. 103, Supplement No. 6 (1995), pp. 59-62.
- Mohai, Paul and Bunyan Bryant, "Race, Poverty, and the Environment: The Disadvantaged Face Greater Risks," *EPA Journal*, Vol. 18, No. 1 (April 1992).
- Mohai, Paul and Bunyan Bryant, "Environmental Racism: Reviewing the Evidence," In: B. Bryant and P. Mohai, eds., *Race and the Incidence of Environmental Hazards: A Time for Discourse* (Westview Press, Boulder, CO, 1992).
- Mott, Lawrie, "The Disproportionate Impact of Environmental Health Threats on Children of Color," *Environmental Health Perspectives*, Vol. 103, Supplement No. 6 (1995), pp. 33-35.
- U.S. Department of Housing and Urban Development (HUD), *Beyond Shelter: Building Communities of Opportunity*, The United States Report for Habitat II (HUD, Washington, DC, May 1996).
- U.S. Environmental Protection Agency (EPA), *Environmental Equity: Reducing Risk for All Communities*, Vols. 1 & 2 (EPA, Office of Policy, Planning, and Evaluation, Washington, DC, June 1992).

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U.S. Environmental Protection Agency (EPA), *Environmental Justice 1994 Annual Report: Focusing on Environmental Protection for All People*, EPA/200-R-95-003 (EPA, Office of Environmental Justice, Washington, DC, April 1995).

U.S. Environmental Protection Agency (EPA), *Environmental Justice Fact Sheet: Interagency Working Group*, EPA/200-F-95-009 (EPA, Office of Environmental Justice, Washington, DC, June 1995).

U.S. Environmental Protection Agency (EPA), *Environmental Justice Implementation Plan*, draft, EPA/300-R-96-004 (EPA, Office of Environmental Justice, Washington, DC, April 1996).

U.S. Environmental Protection Agency (EPA), *Environmental Justice Strategy: Executive Order 12898*, EPA/200-R-95-002 (EPA, Office of Environmental Justice, Washington, DC, April 1995).

U.S. Environmental Protection Agency (EPA), *Environmental Justice: Your Civil Rights*, EPA-150-F-95-001 (EPA, Office of Civil Rights, Washington, DC, September 1995).

U.S. General Accounting Office (GAO), *Hazardous and Nonhazardous Waste: Demographics of People Living Near Waste Facilities*, GAO/RCED-95-84 (GAO, Washington, DC,

D.R. Wernette and L.A. Nieves, "Breathing Polluted Air: Minorities Are Disproportionately Exposed," *EPA Journal*, Vol. 18, No. 1 (April 1992).

World Resources Institute in collaboration with the United Nations Environment Programme, the United Nations Development Programme, and the World Bank, *World Resources 1996-97* (Oxford University Press, New York, 1996).