CHAPTER SEVENTEEN

Citizens, Science, and Data Judo

Leveraging Secondary Data Analysis to Build a Community-Academic Collaborative for Environmental Justice in Southern California

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Over the last decade California has become a hotbed of environmental justice activism. The fuel behind this political momentum has been effective community organizing and advocacy by a variety of organizations seeking fundamental changes in environmental health policy and regulation at the regional and state levels. In this context it has become clear that the recent focus of California policymakers on questions of environmental justice is politically rooted in the state’s changing demographic realities. Legislators representing crucial swing-vote communities are attaining positions of political power that have enabled them to push forward new environmental health and justice initiatives. In 1999, the California legislature passed Senate Bill 115, a measure that directs the Governor’s Office of Planning and Research to coordinate environmental justice initiatives across state agencies, including the California Environmental Protection Agency. In light of these political gains, state and local agencies have been seeking feedback from environmental justice groups on how to identify issues and solutions to environmental health problems.

Although regulatory agencies have developed systems to ensure that decision making includes some form of community participation (such as access to

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information, public comment periods, and public meetings and hearings), these processes tend to be focused on procedural justice and have not necessarily ensured equitable outcomes in regulatory, zoning, and siting decisions. Ensuring that community participation in these policy and regulatory efforts is effective requires extensive preparatory work, including building capacity and addressing language and scientific literacy needs. Moreover, if governmental agencies are to truly enhance effective public participation in the regulatory arena, they need to recall two key lessons from years of environmental justice organizing. First, diverse communities have important insights and localized knowledge about ways in which environmental hazards may be affecting their health and well-being (Morello-Frosch et al., in press). Second, although scientific analysis is critical to informed decision making, this expertise should not be the sole driver of whether and how agencies respond to environmental health and justice problems (Loh & Sugarman-Brozan, 2002). Community organizations, which have traditionally had to muscle their way into the policymaking and regulatory process, should also be welcomed as a resource for broadening the range of voices and should be empowered to improve community environmental health in the most effective way possible. Community-based participatory research (CBPR) can be an effective means to address this issue, and there are multiple methods that community organizations and their academic partners have developed with the aim of enhancing community engagement in environmental justice issues in policymaking and regulation. The use of secondary data sources is one such method and will be the focus of this chapter.

In 1998, the Southern California Environmental Justice Collaborative (SCEJC) was formed to build a regional initiative to promote environmental health and social justice issues in Southern California. This six-year collaborative involves a community-academic partnership that combines research on regional economic development and environmental health, public policy advocacy, and community organizing. The partners in the collaborative are

- Communities for a Better Environment, a California-based environmental justice organization with strong organizing roots in the South Coast area
- A multidisciplinary academic research team
- Liberty Hill Foundation, a Los Angeles–based community foundation specializing in grant making, technical assistance, and capacity building for community-based organizations

The goals of the collaborative are twofold: to improve environmental health in low-income communities of color in Southern California by conducting community-based participatory research on air quality and environmental justice and to build the capacity of community-based environmental justice advocacy organizations through secondary grant making and training opportunities.
This chapter demonstrates how the Southern California Environmental Justice Collaborative has applied a CBPR approach in order to conduct research using secondary data sources. We begin by describing each partner involved and how these groups function as a partnership. We then focus on the role environmental health research plays in the collaborative, discussing the rationale for depending on secondary data analysis and the ways in which the partners collectively develop projects, interpret data, and disseminate study results. We also briefly describe how the collaborative has leveraged data to promote policy change and bolster organizing. We briefly explore how the collaborative’s research model has sought to transform traditional scientific approaches to studying community environmental health. We conclude with a discussion of some of the challenges of this research method and the lessons learned from the collaborative’s work.

THE PARTNERS IN THE SOUTHERN CALIFORNIA ENVIRONMENTAL JUSTICE COLLABORATIVE

Communities for a Better Environment (CBE), founded in 1978, was one of the first organizations in the country to focus primarily on the human costs of industrial pollution and to promote environmental health as an issue strongly connected to social and economic equity. Although the focus of this chapter is on CBE’s work in Southern California, the organization has had, until a recent set of budget cutbacks, over twenty-five staff members in both Northern and Southern California, primarily organizers interspersed with attorneys and research staff. As an environmental justice organization with a strong community organizing base, CBE implements what it terms the triangle strategy in its work, integrating organizing, science-based advocacy, and legal intervention. The organization is keenly aware of the pitfalls of relying too heavily on litigation or science-based advocacy, yet it has prioritized developing organizational capacity in these areas to supplement its primary emphasis on community organizing. In short, CBE’s triangle strategy is rooted in the theory that science-based advocacy and litigation, when applied under grassroots direction and leadership, can be successfully leveraged to promote effective policy change (Communities for a Better Environment, 2004).

The Liberty Hill Foundation was founded in 1976 as a community foundation that promotes progressive social change in Los Angeles through grantmaking, technical assistance, and capacity-building activities and through promoting progressive philanthropy in the region. As a partner in the collaborative, Liberty Hill has played a critical role in building regional capacity to support environmental justice organizing through two mechanisms. First, Liberty
Hill provides seed funding to small neighborhood organizations working on environmental justice, to support their organizing and mobilization campaigns. Typically, these grants are the first outside funding received by these grassroots, resident-based groups. The money is often used to pay stipends and phone bills, print leaflets, and provide transportation to legislative and regulatory agencies to provide testimony. Funds have also been used to conduct scientific testing of air and water samples. Second, Liberty Hill sponsors and coordinates the Environmental Justice (EJ) Institute, which offers a series of trainings to grantees and other community members representing nearly sixty grassroots organizations. The trainings involve experts from a variety of disciplines (for example, law, public health, computer science, and environmental health science) and trainers in media advocacy, fundraising, and nonprofit management. Topics have included environmental laws, health risk assessments, community-based research, toxics and hazardous materials, public agency accountability, navigating the policy process, and organizational effectiveness. The key to high participation in the EJ Institute has been the provision of transportation, simultaneous translation services, child care, and meals that enable the mostly low-income community members to attend.

The research team encompasses a multidisciplinary group of collaborators from the University of California, Santa Cruz (Center for Justice, Tolerance and Community), Occidental College (Department of Environmental Studies/Science), and Brown University (Center for Environmental Studies and Department of Community Health in the School of Medicine). The three researchers bring expertise from the fields of environmental health and epidemiology, economics and urban planning, and environmental science. All three came to the collaborative with experience in working with community partners, and many of their academic endeavors have focused on supporting community economic development and improving environmental policymaking and the regulatory process (Morello-Frosch, 2002; Pastor, Dreier, Lopez-Garza, & Grisby, 2000; Boer, Pastor, Sadd, & Snyder, 1997; Sadd, Pastor, Boer, & Snyder, 1999). All three have committed their academic careers to combining rigor, relevance, and reach—that is, to conducting high-quality research that has relevance for policy and that simultaneously sustains training, outreach, and publication efforts that engage diverse constituencies.

Communities for a Better Environment and Liberty Hill initiated the preliminary conversations with the researchers that culminated in the formation of the Southern California Environmental Justice Collaborative. Southern California has a very active environmental health and justice grassroots and nonprofit community working on a range of issues through advocacy, organizing, and education. Throughout the region, disproportionately high rates of a number of negative health impacts are increasingly being linked to poor air quality, toxic chemicals in consumer products, and the pollution generated from traffic, power
plants, and other industrial sites that are a part of the urban environment (Kelly, 2003). Residents in heavily affected neighborhoods have organized to challenge such environmental health problems, yet critical aspects of the EJ advocacy network in Southern California needed to be strengthened in several areas. First, environmental justice issues in the Southern California region had not been addressed in a holistic way that promoted an effective regional voice for community environmental health and social justice. Second, there was a paucity of scientific research documenting the regional character of environmental inequality in Southern California. Therefore a coordinated regional strategy conducted through a community-academic-foundation collaborative could help build regional capacity and leadership by emphasizing community organizing to create public awareness, voice, and political pressure; to conduct legal and policy work to promote change; and to perform scientific research on environmental health and demographics to help environmental justice groups more effectively engage in data judo with regulators and policymakers. Data judo is a process through which communities marshal their own scientific resources and expertise to conduct research and leverage the data necessary to support policy and regulatory change.

After a period of planning and some initial experience working together on small research projects, the collaborative partners (that is, the research team and representatives from CBE and the Liberty Hill Foundation) sought and successfully attained three years of funding support from The California Endowment. The total grant was $1.7 million dollars, with 27 percent of the money supporting the organizing work of CBE; 55 percent going toward training, secondary grant making, and organizational capacity building to support EJ organizing and advocacy work throughout the area; and the balance (18 percent) supporting the generation of air pollution and environmental hazard studies on the South Coast region. This grant was subsequently renewed at a lower level for an additional two years. The collaborative was also able to leverage funding from the California Wellness Foundation to support work on children’s health and environmental justice.

DEVELOPING APPROACHES TO CBPR ON ENVIRONMENTAL JUSTICE

The experience of CBPR is well documented (Arcury, Quandt, & McCauley, 2000; Israel, Schulz, Parker, & Becker, 1998; Minkler & Wallerstein, 2003; Shepard, 2000), and recently, CBPR approaches in the area of environmental justice have gained wider recognition and funding support, largely through the many projects funded by the National Institute of Environmental Health Sciences (Loh &
Despite the inherent challenges in bridging the academic and activist worlds to collect and interpret scientific data, one key asset of a CBPR approach is that the involvement of communities who directly experience exposures and diseases of concern can promote new avenues of research and encourage innovation in analytical techniques. Further, collaboration allows substantive community involvement in several phases of the research process, including formulating research questions, collecting data, and disseminating results to diverse constituencies and the scientific community through peer-reviewed publications, organizing, community presentations, and the media.

The research goals of the collaborative have been twofold: to conduct relevant and rigorous research on air quality that supports advocacy and organizing and to provide the training necessary to help community-based organizations understand the scientific information that drives the regulatory process and policymaking. Although the collaborative’s focus on Southern California is partly shaped by its organizing activities and partners, there are additional justifications for its regional emphasis. Southern California has a unique regulatory history in terms of its ongoing struggle to solve some of the worst air pollution problems in the country and yet still promote economic growth. With the majority of its population now comprising people of color, Southern California has also become a bellwether of demographic and socioeconomic change for both the state and the nation. Finally, a regional focus on environmental justice research is consistent with the fact that industrial clusters, as well as land-use planning decisions, are often regionally rooted (Pastor, Dreier, et al., 2001); thus the equity question is how the social and environmental health effects of urban development are distributed within regions and among the demographically diverse communities that host them (Morello-Frosch, Pastor & Sadd, 2001).

The collaborative has a unique decision-making structure for prioritizing research projects and determining which to undertake. Essentially, any partner can bring a research idea to the table, but the community partner, CBE, is the final arbiter on questions of research project timing, design, and priorities. Once these decisions are made, the research partners gather data and conduct analysis independently. At times the final study results may not validate CBE’s advocacy objectives. Nevertheless, the researchers ensure ample opportunities for discussion with community partner representatives as data analysis occurs in order to hear suggestions on new ways to approach complex analytical questions and to solicit feedback on how study results might be interpreted. This decision-making and feedback structure for the research was developed by the collaborative after substantial preliminary discussion between members of CBE, Liberty Hill, and the research team, held during planning meetings at the outset of the work. This structure was formalized in a written document in order to clarify how the collaborative should prioritize requests for conducting research.
from environmental justice organizations that worked with CBE but that were not directly involved in the collaborative itself. The need to formalize this structure grew out of an action-oriented research project requested by another EJ organization that was not directly involved in the collaborative to assess the environmental justice impacts of the expansion of the Los Angeles airport on the predominantly African American community of Inglewood. This project was resource intensive, and that led the collaborative partners to see the importance of balancing the collaborative’s workload, ensuring that it would focus on its initial commitments to fundamental research on environmental justice issues with regional relevance and would avoid overextending its research resources by reactively responding to multiple requests to conduct specialized projects. Therefore the partners met to discuss, develop, and write a document that clearly spelled out the mechanism they would follow to prioritize and carry out research (see Appendix P). This communication and decision-making process derives from the partners’ collective desire to ensure the scientific legitimacy of the research while also ensuring that the questions the collaborative pursues ultimately inform policy and organizing strategies on critical environmental justice issues in the South Coast region.

Structurally, the collaborative has set up several processes to promote ongoing communication, continual internal feedback among partners, and evaluation of its work. Partners meet in person at least three times per year for an entire day to carry out their work, discuss issues or challenges that arise in their projects, plan future endeavors, and assess whether and how they are achieving project goals and objectives. These meetings are supplemented with periodic conference calls as necessary. The collaborative also holds annual retreats to plan new work and to strategize on the most effective way to integrate the partners’ research and organizing efforts with political opportunities to promote policy and regulatory change that supports environmental justice. Within this context the community partner plays a leading role in prioritizing and setting goals and objectives for the collaborative’s organizing, research, and advocacy work.

The Liberty Hill Foundation has assumed the primary role in managing the administrative work of the collaborative, which includes tracking the budget and expenses, coordinating work on reports to funding agencies, and helping to facilitate strategic planning efforts to ensure that project goals and objectives are met. In addition to its grant-making, training, and capacity-building functions, Liberty Hill also supports the media advocacy efforts of the collaborative.

The collaborative also works with an external evaluator, hired at the outset of the work. She attends all collaborative meetings, helps structure ongoing project planning and community feedback mechanisms, and has been conducting an extensive evaluation of the impact the collaborative has had in the policy arena by interviewing policymakers, regulatory officials, funding agencies, and
members of Southern California’s environmental justice community. In addition to the evaluator’s ongoing feedback at collaborative meetings, she provides a final written process and outcome evaluation to collaborative partners and to our funder. (See Chapter Twelve for an examination of the documentation and evaluation of a CBPR partnership using in-depth interviews and closed-ended questionnaires.)

Identification and Selection of Secondary Data
At the outset of this project, the collaborative partners decided to employ secondary data analysis as the core of their research activities. (See Chapter Sixteen for an examination of the use of secondary data analysis and other methods for analyzing the impact of policies on public health.) Although primary data collection is generally viewed as the gold standard in research, it has some major drawbacks. First, CBE was concerned about the fact that primary data collection requires substantial financial resources and organizational capacity to carry out effectively. Second, primary data collection conducted in collaboration with community-based organizations with a clear stake in study outcomes is vulnerable to misguided criticism from the mainstream scientific community or from skeptical policymakers who seek to marginalize CBPR research by arguing that the methods used suffer from systematic bias or lack objectivity (Anderton, 1996; Foreman, 1998). Given some of the high-stakes policy issues CBE was grappling with at the time, the organization and the researchers agreed that the collaborative should address some of the persistent methodological challenges in the field of environmental justice research by using secondary data, specifically, data already collected by environmental regulatory authorities such as the U.S. Environmental Protection Agency (EPA), the California Environmental Protection Agency (Cal/EPA), the California Air Resources Board, and others. In short, drawing from the experience of other mainstream environmental organizations, CBE and the researchers believed that analyzing the data gathered by the state’s government and the national government would be a powerful way to draw regulatory attention to environmental justice issues.

Moreover, using secondary data sources allowed the collaborative to take advantage of major advances in air emissions inventories, such as the Toxic Release Inventory and the EPA’s National Air Toxics Assessment and Cumulative Exposure Project, which estimates exposure information on outdoor air pollution on a national scale. Because of “right-to-know” laws that make this air pollution data publicly available, the research team was able to generate numerous studies that have built up the body of evidence on the significance of environmental inequality in Southern California. Secondary data analysis has allowed the collaborative both to economize and stretch its scarce resources for research and to strengthen the power and legitimacy of its arguments in the policy arena by demonstrating that its study results are based on data collected by
federal and state agencies, which skeptics may view as more legitimate and scientifically objective.

Analysis of Secondary Data
Part of what the collaborative sought to do is document Southern California’s environmental health *riskscape*—that is, demographic and geographical distributions of pollution burdens—in ways that are both analytically rigorous and empirically compelling to residents, researchers, and policymakers. The analytical methods used for this research involved computer-based mapping technology, multivariate statistical analysis, environmental health risk assessment, and spatial statistics. The research team developed myriad indicators for assessing potential environmental inequalities, including location of potentially hazardous industrial emission sources (Pastor, Sadd, & Morello-Frosch, 2002), location of treatment storage and disposal facilities (Pastor, Sadd, & Hipp, 2001; Sadd et al., 1999), and estimated health risks associated with outdoor air toxics exposures (Morello-Frosch, Pastor, Porras, & Sadd, 2002; Morello-Frosch, Pastor, & Sadd, 2001; Morello-Frosch, Pastor, & Sadd, 2002; Pastor, Sadd, & Morello-Frosch, 2002, 2004; Morello-Frosch & Jesdale, 2003). The team used traditional regulatory tools of risk assessment to answer scientific and policy questions about the significance of ambient pollutant concentrations for distributions of cancer and respiratory risks among diverse communities (Caldwell, 1998; California Air Pollution Control Officers’ Association, 1993; California Environmental Protection Agency, 1997a, 1997b; “Guidelines for Carcinogenic Risk Assessment,” 1986; U.S. Environmental Protection Agency, 1986; U.S. Environmental Protection Agency, Office of Research and Development, 1993). This allowed the collaborative to address the question of whether patterns of environmental inequality existed and which communities bear the largest burdens of potential health impacts.

The research team regularly shared and discussed study results with the other collaborative partners. Results were formally reported, and conceptual issues related to the research findings were regularly discussed at the in-person meetings and the conference calls involving the research team, CBE, and Liberty Hill. Researchers worked with CBE policy staff to solicit input on how interpretations of study results should be communicated to diverse audiences such as other community organizations, the media, policymakers, and key environmental regulatory officials. Manuscripts drafted by the researchers were circulated and shared among collaborative partners and PowerPoint presentations were developed by the researchers and posted on the collaborative Web site to ensure that all partners could access and use this information in their work. Often presentations were developed jointly by CBE and the researchers to target specific audiences. Although the researchers disseminated study results at professional academic conferences, both CBE and the researchers played
primary roles in disseminating research results to other environmental justice organizations, the media, policymakers, and regulators.

Dissemination of Research Results to Enhance Community Participation in Environmental Policymaking and Regulation

Communication is critical to the Southern California Environmental Justice Collaborative; it needs to reach specific audiences and then help them make a visceral connection to the issues of environmental justice. Whether the collaborative is publishing study results or conducting “toxic tours” of communities affected by toxics, the interdisciplinary work of the research team, coupled with the advocacy experience of CBE and Liberty Hill, gives the collaborative flexibility in framing messages about community environmental health so they are appropriate for such diverse audiences as public health officials, regulators, urban planners, industry, the media, and policymakers.

In order to apply research results toward promoting policy change, the collaborative has developed various dissemination strategies. (See Chapter Thirteen for a discussion of the development of dissemination procedures in a CBPR partnership.) These include publication in the peer-reviewed scientific and policy literature, media outreach, and development of public outreach materials. All decisions regarding dissemination activities are made collectively by the researchers, CBE, and Liberty Hill. The researchers take the lead on activities related to peer-reviewed publications, and CBE and Liberty Hill take the lead in developing media strategies and community-based outreach. Since the beginning of the collaborative, all partners have agreed to give priority to publishing research in the peer-reviewed literature to ensure that results reach an academic audience as well as public health practitioners; this requires targeting publication toward journals in the fields of public health, sociology, urban planning, economics, political science, and public policy.

Media dissemination strategies have entailed interviews and the strategic publication of opinion page editorials in mainstream press outlets. Coverage of the collaborative’s research and organizing work has appeared in the Los Angeles Times, San Jose Mercury News, Sacramento Bee, Wall Street Journal, California Journal, and smaller local media outlets. This brought statewide attention to the collaborative’s research and its implications for organizing and advocacy. CBE plays a central role in shaping media strategies related to dissemination of research results, often working to ensure that press coverage and op-ed pieces are timed to coincide with campaigns to push policy change at either the local or statewide level. For example, media outreach and the placement of an op-ed piece in the Los Angeles Times discussing study results showing the disparate impact of ambient air toxics exposures on residents of color were timed to coincide with major activities in CBE’s ultimately successful campaign to strengthen local air quality district rules governing facility emissions of carcinogenic
compounds (Morello-Frosch, Pastor, & Sadd, 2001; Pastor, Porras, & Morello-Frosch, 2000). Led by CBE, the collaborative partners developed and implemented a similar media strategy to coincide with public hearings sponsored by Cal/EPA regarding its proposed adoption of an environmental justice guidance document for the agency’s programs and offices (California Environmental Protection Agency, Advisory Committee on Environmental Justice, 2003).

Collaborative partners collectively decide authorship for both mainstream press and academic publications. Generally, the community partner, CBE, has opted to coauthor the mainstream press articles (Morello-Frosch, Pastor, & Porras, 2001; Pastor, Porras, & Morello-Frosch, 2000) rather than the research publications, although CBE’s executive director did coauthor one academic publication on environmental health that appeared in an *Environmental Health Perspectives* supplement on CBPR (Morello-Frosch, Pastor, Porras, & Sadd, 2002).

Collaborative partners have also developed other materials for dissemination, such as PowerPoint presentations, that can be tailored to diverse audiences. The researchers generally take the lead in crafting these presentation materials and regularly solicit feedback from community partners on content and format. Both community partners and researchers use these materials to conduct presentations, and decisions about which partner is strategically best suited to present particular collaborative work are reached collectively. Presentation materials are circulated electronically and posted on a password-protected Web site so they can be viewed, edited, downloaded, and shared among the collaborative partners. Community partners and researchers have also discussed the possible development of *foto novelas* in English and Spanish. These materials would graphically display key study results in a way that lay groups could understand so they could use this information in their own advocacy efforts; CBE has done this with some of its own work, but the collaborative has not yet produced such a publication. The partners are also working together to finalize a publication, largely addressed to funders, that discusses the collaborative’s CBPR and advocacy strategy and what the partners have learned from their efforts. The aim of this publication is to disseminate a model of working together that extends beyond the field of environmental justice research; the publication will also include brief descriptions of the substantive study results.

Through the Environmental Justice Institute, administered by Liberty Hill, the researchers have also presented the results of the research conducted under the auspices of the collaborative to the broader environmental justice community in a workshop that highlighted environmental justice concerns in the South Coast region. Moreover, the EJ Institute has provided CBE with an excellent venue for disseminating data collection techniques. In community trainings on establishing “bucket brigades,” community organizations are taught to build simple, low-cost air sampling devices using plastic buckets. An ultimate data judo tool, this technology has been used to draw regulatory attention to air
pollution problems in neighborhoods where fugitive emissions from nearby industries have not been adequately addressed or monitored (Communities for a Better Environment, 2000; Pastor & Rosner, 2002).

**Leveraging Research to Promote Policy Change**

The Southern California Environmental Justice Collaborative’s strategy of linking research, organizing, and advocacy to promote regulatory reforms and policy change has contributed to some impressive victories at the regional and state levels. For example, the collaborative’s study results on the demographic distribution of air toxics and cancer risks in Southern California were leveraged by CBE and other environmental justice groups to compel the regional air quality authority in Southern California to adopt more stringent standards to significantly reduce cancer risks associated with air emissions from industrial facilities (Cone, 2000; Morello-Frosch, Pastor, & Sadd, 2001; Pastor, Porrás, & Morello-Frosch, 2000). Each collaborative partner played a central role in this policy victory. The researchers conducted data analysis demonstrating the disparate impact of carcinogenic air toxics on communities of color in the region, and Liberty Hill provided the financial and administrative support to back CBE’s successful organizing campaign to tighten the standard. Each partner implemented one piece of an effective, collective media strategy: Liberty Hill leveraged its press contacts to ensure that the public hearings and community testimony were well covered by the media, CBE members conducted interviews with several reporters from mainstream and Latino press outlets, and the researchers worked closely with CBE to craft and place an op-ed piece in the *Los Angeles Times* that provided environmental health arguments supporting the proposed emission rule change.

Perhaps most significant has been the way in which the collaborative has effectively supported CBE’s coalition work with other environmental justice organizations statewide that occurs through CBE’s participation on the Cal/EPA Environmental Justice Advisory Committee. The state legislature has passed laws requiring Cal/EPA to coordinate environmental justice initiatives with federal efforts and across state agencies. The culmination of one such legislative effort has been the development of a procedural framework for implementing environmental justice programs in the state. The vehicle for this process is the Interagency Working Group on Environmental Justice, composed of the heads of Cal/EPA’s boards, departments, and offices that are charged with implementing strategies to address environmental justice in their respective programs. The EJ Advisory Committee, comprising key community, business, and regional government stakeholders, was charged with developing recommendations to the Interagency Working Group on the ways environmental justice could be addressed in various programs. CBE played a critical role as an advisory committee member when it used the collaborative’s data and study results to make
the case to industry and government stakeholders that more stringent guidelines were needed to address environmental health disparities in the state. This resulted in the committee’s consensus decision to make recommendations to Cal/EPA that emphasized

1. Developing resources and programs that promote and enhance meaningful public participation in regulatory decision making that affects environmental health, particularly among communities of color who may face particular challenges to participation, such as language barriers

2. Devising new regulatory and scientific approaches to assess the cumulative health impacts of pollution from multiple emission sources on neighborhoods and vulnerable populations like children

3. Integrating the precautionary principle in environmental regulation and enforcement activities in a more systematic way (California Environmental Protection Agency, Advisory Committee on Environmental Justice, 2003).

The last two recommendations are the most controversial. The precautionary principle means that regulators should be more proactive when scientific evidence strongly suggests, but does not yet fully prove, that a production facility or pollutant may be jeopardizing public health, particularly among communities that are already overburdened by toxics and other health challenges. Similarly, the issue of cumulative impact compels regulators to acknowledge that chemical-by-chemical approaches to regulation may not be protective of public health due to the reality that communities are exposed to numerous pollutants in the air they breathe, the water they drink, and the food they eat, and that it is important to assess exposures and health risks holistically when setting standards to protect vulnerable populations such as children. Integrating the precautionary principle with environmental justice concerns opens the way for disparately affected communities to effectively resist siting decisions that may add to existing neighborhood pollution burdens. Industry stakeholders have argued that the precautionary principle is too cumbersome and will impose undue costs on those who can least afford them because it will result in “overregulation” that decreases economic efficiency and threatens jobs.

As members of the EJ Advisory Committee, industry representatives wrongly assumed that environmental justice stakeholders would not have the data to back up their arguments in favor of adding the precautionary principle to the recommendations proposed to Cal/EPA. Therefore, at CBE’s urging, one of the collaborative researchers gave compelling testimony on an environmental health analysis that showed why the precautionary principle should be better integrated into policymaking and regulation. CBE ensured that every committee member
received a copy of a peer-reviewed article on the collaborative’s study, which
gave added validity to the data that were presented at the hearings (Morello-
Frosch, Pastor, & Sadd, 2002). This testimony, combined with a massive mobi-
lization of environmental justice organizations throughout the state, compelled
a consensus recommendation in favor of the precautionary principle. The sig-
nificance of this policy victory exemplifies the effectiveness of the collaborative’s
strategy for social change. Collectively, the partners supported CBE’s advocacy
efforts by leveraging study results through public testimony, engaging in data
judo with industry consultants, and mobilizing local environmental justice
communities to participate in public hearings. This integrated strategy ensured
that the advisory committee’s final recommendations to Cal/EPA addressed the
environmental justice concerns of diverse constituencies in the state.

Other successes achieved by the collaborative in the South Coast region
include leveraging the collaborative’s research linking respiratory risks from
ambient air toxics to diminished academic performance in schools. These
study results were used to persuade the Los Angeles Unified School District
to take a more precautionary approach toward identifying and mediating sites
for school construction, and were also employed to validate arguments favor-
ing more equitable distribution of state monies for school construction
between suburban and urban school districts (Morello-Frosch, Pastor, & Sadd,
2002). Similarly, research demonstrating the disparate environmental health
impact of a planned expansion of the Los Angeles Airport on the predomi-
nantly African American community of Inglewood helped persuade the air-
port authority to take equity issues into account in its environmental impact
statement (Pastor & Sadd, 2000).

**TRANSFORMING TRADITIONAL APPROACHES TO RESEARCHING COMMUNITY ENVIRONMENTAL HEALTH**

The strategy adopted by the Southern California Environmental Justice Collabor-
ative for conducting research and interpreting and disseminating study results
has sought to transform traditional approaches to research on community envi-
ronmental health. In emphasizing secondary data analysis, the collaborative has
promoted new approaches to community-based participatory research on envi-
ronmental justice in three primary ways:

1. *Moving upstream.* An analogy often used to illustrate the role preventive
health should play concerns villagers who notice helpless people floating down-
stream and develop increasingly sophisticated ways to rescue them, yet none
of the villagers thinks to venture upstream to find out why people are falling
into the river in the first place (Steingraber, 1997). Causally linking pollution
with potentially adverse health effects is a tough challenge in the field of environmental health, particularly when populations are chronically exposed to complex chemical mixtures (Institute of Medicine, 1999). Improving epidemiologic methods is one route to addressing this issue. Nevertheless, environmental justice organizations, including CBE, have argued that in the never-ending quest for better data and unequivocal proof of cause and effect, researchers can lose sight of a basic public health principle—namely the importance of disease prevention (Morello-Frosch, Pastor, & Sadd, 2002). Mindful of this principle, the collaborative has supported dual approaches to environmental health research. The first approach seeks to improve epidemiologic methods, such as exposure assessment, to better understand the relationship between pollution exposures and environmentally mediated disease. (See Chapter Eleven for a discussion of the use of exposure assessment in a CBPR project.) The second approach uses environmental risk assessment and secondary data analysis when there is a paucity of human epidemiological data to show cause and effect between pollution exposures and disease. These dual approaches emphasize employing an “upstream” strategy in environmental health research, and thus avoiding the regulatory paralysis that can occur when definitive human data are lacking, and they also provide crucial tools to keep policymaking and regulation moving forward.

2. **Promoting an ecosocial outlook.** By connecting social inequality with environmental degradation and community health, the collaborative’s environmental justice research becomes a framework for understanding the impact of discrimination on the environmental health of diverse communities. This framework also raises the challenge of determining whether disparities in exposures to environmental hazards play an important role in health disparities (U.S. Department of Health and Human Services, 2000; Institute of Medicine, 1999). The collaborative’s research focus is broad and looks beyond individual or lifestyle factors, such as smoking and diet, and toward the environmental and socioeconomic factors that shape distributions of people and pollution. It is for this reason that the research team draws extensively from the field of social epidemiology to inform its research on environmental health and social justice (Krieger, 2001). This framework enables the team to examine issues such as segregation, inequality, and community empowerment as possible drivers of environmental inequality (Morello-Frosch, 2002; Morello-Frosch & Jesdale, 2003; Morello-Frosch, Pastor, Porras, & Sadd, 2002).

3. **Ensuring active community involvement.** Communities for a Better Environment is the final arbiter when the collaborative prioritizes research projects, looking at project needs for advocacy work and organizing. This ensures that the type of research the collaborative pursues is relevant to the communities and region it is studying. Nevertheless, implementing CBPR strategies to address environmental health issues facing communities of color invites open skepticism
from critics seeking to challenge the premise of environmental justice and the role of communities in the research process (Foreman, 1998). As a result, the research team and CBE have been vigilant about methodological and statistical strategies in their approach to secondary data analysis and interpretation of results; indeed, the collaborative’s research faces scrutiny from diverse reviewers, including academic peers, policymakers, and regulators, and ultimately it must pass the test of community wisdom. Despite the challenges, this approach to connecting community and academic partners through action-oriented research enhances the rigor, methodological integrity, and most important, the relevance of the collaborative’s work for environmental policymaking.

**CHALLENGES AND LIMITATIONS**

The collaborative has had to address certain challenges inherent in using secondary data analysis in the context of a CBPR approach to support organizing and policy advocacy. In contrast to other methods used in CBPR efforts, which engage community partners directly in developing study designs and collecting data, a focus on secondary data analysis, by its very nature, limits the depth of community engagement in the research process. Indeed, limitations on the availability of certain secondary data sources can narrow the scope of research questions that a community partner may be able to pursue. Overcoming this limitation requires the collaborative to build in sufficient time for community partners to review and give feedback on data analysis as it evolves and ultimately to actively engage in framing the interpretation of study results. For example, CBE has been interested in examining environmental justice questions related to asthma severity and incidence in the South Coast region, but comprehensive, individual-level data on the communities of interest have not been readily available. However, by working closely with CBE, the research team was able to address that organization’s research question indirectly by conducting an ecological study using noncancer risk assessment to estimate respiratory hazards associated with ambient air toxics exposures among Los Angeles school children (Morello-Frosch, Pastor, Porras, & Sadd, 2002; Pastor, Sadd, & Morello-Frosch, 2002, 2004).

Other challenges to the collaborative’s CBPR approach include managing the research needs and expectations of other environmental justice organizations that engage with the collaborative through the Environmental Justice Institute trainings. Owing to the proliferation of neighborhood organizations that are addressing local environmental health concerns, the demand for new, localized research projects is increasing, and meeting this need could easily drain the resources of the research team and of the collaborative as a whole. In any situation of scarce resources, the challenge for the collaborative has been to effectively
prioritize the partners’ deployment of time and money. After much discussion, the partners collectively decided that a CBPR research strategy based on secondary data analysis would be an effective and efficient approach, one that could promote policy change in a way that would not overwhelm the capacities of the academic partners or unduly burden CBE’s organizational resources. Moreover, the collaborative developed a decision-making structure in which its community partner, CBE, has had the ultimate say on prioritizing research projects and shaping strategies for the dissemination of study results. Although this structure compels the academic partners to relinquish some degree of control related to setting the research agenda, it does not require them to compromise the scientific integrity of their analysis.

Therefore, although a small portion of the research undertaken by the collaborative has been specifically related to narrow campaigns, all three collaborative partners agreed at the inception of their work that research would focus mainly on establishing a regional picture of environmental inequity. Prioritizing secondary data analysis on regional and statewide environmental justice questions has provided a body of evidence to support specific actions such as tightening air quality rules, promoting the adoption of cumulative exposure strategies by the state, and pushing for cleaner, safer schools.

LESSONS LEARNED AND IMPLICATIONS FOR PRACTICE

The experience of the Southern California Environmental Justice Collaborative offers some lessons that transcend CBPR approaches to promoting policy change and inform the very nature of productive alliances between funders, community-based organizations, and the academy. The first lesson is to build the base to move policy. Often when community-based organizations engage with academic partners in scientific research and succeed in gaining entry as valid stakeholders in the policy arena, there is the danger that they may abandon the work of organizing. Yet the primary reason community groups are invited to the policy table is the political pressure that is rooted in an organized community base. In their strategic planning, the collaborative partners believed that a CBPR approach emphasizing secondary data analysis rather than primary data collection would allow CBE as the community partner to engage effectively in research without pulling organizational and staff resources away from its core organizing functions. The role of Liberty Hill has also ensured that the collaborative remains vigilant about meeting the need to nurture new community voices, organizing the Environmental Justice Institute, finding seed funding for nascent environmental justice organizations, and providing resources to mobilize communities to participate in public action and debate.
The second lesson is to build organic relationships between partners. This collaborative was not convened in response to a request for proposals. The partners had already formed deep relationships through their prior environmental justice work in the South Coast region. This experience is not something that can be easily replicated, but it does suggest the importance of forming academic-community collaboratives proactively and scaling up those partnerships that are authentic and sustainable. The success of the collaborative’s model and the strength of the partner relationships have sustained the collaborative’s work, both when funding was abundant and when funding temporarily ran dry. The ability of the collaborative to sustain its research, organizing, and advocacy over the last six years is firmly rooted in the partners’ collective commitment to the goals of their work and their unique CBPR method of leveraging secondary data analysis to promote policy change. Using secondary data analysis as the core of a CBPR research strategy enabled the academic partners to keep the research portion of the collaborative active during a temporary lull in the funding stream.

The third lesson flows from the second: make long-term investment in change. There is a tendency among many foundations to think in terms of short-term progress, particularly given the pressures to show accountability, demonstrate measurable outcomes, and make a smooth transition to long-term sustainability. These expectations can have the unintended effect of promoting opportunistic partnerships that have difficulty completing projects or ones that focus primarily on grantsmanship. The Southern California Environmental Justice Collaborative has had the benefit of multiyear investments made by several foundations, especially The California Endowment, the Ford Foundation, and the California Wellness Foundation. This has allowed the partners to think beyond short-term campaigns and work to build a regional framework for social change. Ultimately, building community capacity to promote changes in environmental policy and regulation requires a regional approach. Indeed, shutting down a chromium plating facility operating near an elementary school requires a well-organized neighborhood or parent-teacher organization, but advocating for tighter rules on facility siting and emissions to protect all schoolchildren regionwide requires empowering organizations across neighborhoods, racial divides, and economic strata as well as ensuring that they have the technical and organizational capacity to effectively engage in the planning and rule-making process. Achieving this goal requires building in flexibility that allows partners to respond nimbly to opportunities and challenges, shifting directions and resources as necessary.

More important, however, is the partners’ desire to support the replication of their collaborative model, with its pillars of research, organizing, advocacy, and community capacity building, to other regions. This long-term goal of replication and ensuring its sustainability requires resources. Although start-up
monies have been critical for supporting single-issue campaigns and coalitions, developing a framework to achieve sustainable social and political change for environmental justice requires a significant long-term investment. Some large foundations and governmental agencies like the National Institute of Environmental Health Sciences have taken on this long-term challenge by investing in academic-community collaboratives that promote research that is inclusive and participatory (O’Fallon & Darry, 2002). Yet much of this work is still conducted on the margins, as few governmental agencies and foundations invest significant resources to support long-term work that integrates research and advocacy.

CONCLUSION

The achievements of Southern California Environmental Justice Collaborative show that it is time to mainstream the marginal: academic-community collaboratives that emphasize secondary data analysis in their CBPR approach to promoting environmental justice can be powerful agents for policy change without compromising the standards of rigorous scientific research. These partnerships promote not only good science but science that is focused on important problems that affect the lives of real people, and they do so while enhancing community capacity and participation in research and advocacy—all of which can ultimately improve the regulatory and policymaking process. In light of these results, governmental agencies and foundations need to proactively support such work. Increased long-term investment in this work would also encourage more academic researchers to engage with community organizations in pursuit of scientific research that addresses the real-world environmental health challenges faced by communities of color and the poor. Ultimately, promoting the development of new community-academic collaboratives in other regions nationwide will be critical to broadening constituencies and deepening public understanding of the connections between social justice, racial equality, public health, and environmental sustainability.

References


Pastor, M., Porras, C., & Morello-Frosch, R. (2000, March 16). The region’s minorities face major health risks from pollution: Justice demands that the AQMD cut emissions. *Los Angeles Times*, p. 9.


