

8 The Promise of Local Environmental Health Initiatives

One of the most powerful ways to influence the behavior of a system is through its purpose or goal.

—Donella Meadows, *Thinking in Systems* (2008, 138)

This book examines three local initiatives to promote urban environmental health equity by changing policies, systems, and environments. The initiatives developed to address diverse environmental health problems: lead hazards in rental housing in Rochester, New York; the built environment in Duluth, Minnesota; and goods movement around the ports of Los Angeles and Long Beach, California. In each case, stakeholders confronted a long-standing environmental health inequity. All three built collaborative efforts across disciplinary barriers and leveraged multiple sources of knowledge. They also built their partners' capacity and influenced how local decisions are made in ways that are likely to foster future reductions in health disparities. This chapter highlights the common themes across all the cases, reflects on the potential to disseminate lessons learned in other communities, and suggests how similar efforts might be supported elsewhere in the future.

Origins of the Local Initiatives

In each of these cases, an individual who was not an environmental public health professional played a significant formative role. These initiators called attention to the problem from an outsider's perspective, transcending existing management systems. Professionals in relevant organizations then

helped to characterize the nature of the problem, identify gaps in existing policies, and communicate relevant information. Community members contributed their perspectives on their lived experience of the problem, either directly or through community based organizations. The multifaceted understanding that emerged from this collaboration helped reframe the problem and develop systems-change solutions.

In Rochester, elementary school principal Ralph Spezio made the connection between lead and his students' learning challenges. Through his efforts to learn how to protect the children in his school from lead exposure, he connected with the local health department, pediatricians, public interest lawyers, researchers, and many others who helped characterize the nature of this entrenched problem in Rochester. His focus on children's education and well-being set the stage for a coalition that looked beyond existing health department programs to respond to lead poisoning cases and identified the drivers of housing-based lead hazards facing low-income children. The Coalition to Prevent Lead Poisoning (CPLP) went on to promote lead-safe housing by promoting a local lead law and supporting actions.

Although many local government professionals contributed to the launch of Duluth's health equity efforts, a concerned community member played a key role in establishing durable collaboration. Mimi Stender's personal passion to promote healthy living in Duluth motivated her to create Fit City Duluth as a policy, systems, and environmental change-focused organization. With strong support from organizations including the YMCA and the Local Initiatives Support Corporation (LISC) and an active board, Fit City provided a hub where community, government, and private stakeholders could work together to promote system changes. Both Fit City Duluth and its successor organization, the Healthy Duluth Area Coalition, leveraged government and private support for a wide range of local initiatives. The training and technical assistance provided to Duluth stakeholders through national initiatives like Pioneering Healthy Communities, Safe Routes to School, and health impact assessments helped build local capacity to promote healthy food access and active living. At the same time, the city's planning and economic development efforts increased the community's focus on health equity with support from the Minnesota Department of Health, the U.S. Environmental Protection Agency, and Minnesota Brownfields, among others. Together, these efforts influenced public decision processes like neighborhood planning, complete streets design, community gardens,

transportation plans, and brownfield redevelopment efforts to benefit low-income neighborhoods.

At the 2001 town hall meeting on environmental health in Southern California, longtime environmental justice activist Jesse Marquez told the assembled group of community members, academics, and journalists that his community was suffering from air pollution from the ports. Marquez was one of several local community leaders who later joined with academic partners to form THE Impact Project. This initiative elevated the consideration of health in goods movement decisions by building on the complementary skills of academics and community groups—all of whom were outsiders to the government institutions responsible for regional goods movement decisions. The resulting effort had significant system-wide impacts on how community concerns and health information were considered in subsequent goods movement decisions in the region and beyond.

These genesis stories suggest that successful local environmental health initiatives may arise outside of the institutions officially responsible for managing environment and public health. When these community stakeholders teamed up with experts and agencies, they were able to collaboratively identify new strategies and solutions. Thus, although these efforts were not initiated by environmental or health agencies, governmental actors were important to the initiatives' sustainability, effectiveness, and impacts.

Sustaining Dynamics

Accounts of environmental justice initiatives often emphasize the role of crisis in initiating action. However, that was not the driving dynamic in these three cases. In fact, the trends surrounding each environmental hazard of concern were generally improving. Lead poisoning was on the decline in Rochester, Duluth was redeveloping, and regional air quality in Southern California had improved markedly. Thus, these initiatives called attention to environmental health inequities against the backdrop of overall improvement. Environmental injustices typically arise because of the lack of political power of affected populations. These collaborations derived persuasive power from highlighting health inequities.

These efforts to reframe a long-standing environmental issue in terms of health disparities brought together diverse stakeholders. Each initiative built on local resources including engaged university partners, active community

groups, collaborative local government staff, or dedicated host organizations. In each case a significant role was played by a local entity that was mission-driven to promote environmental health partnerships. This commitment provided a base of support for collaboration. As already noted, each of these efforts was initiated outside existing management systems, but was later fostered by a local organization with a mission to promote collaboration, the ability to work across disciplines, and the capacity to leverage outside resources.

There are many other communities with lead problems, pollution from ports, and challenging built environments that have not given rise to systems-change initiatives. Why did collaboration occur in these cases? Looking back on their experiences, the stakeholders in each case reflected that the “stars aligned” in unexpected ways that allowed them to overcome the inertia of existing management systems. But the case descriptions also suggest that local organizations “helped the stars align” by seeking to promote partnerships, access multidisciplinary knowledge, and tap resources to support the effort. This suggests that absent increased support for these convening functions, such initiatives are not likely to proliferate.

Unfortunately, communities with the greatest needs are least likely to have the capacity to initiate efforts like those described in this book. Counterintuitively, environmental health equity may be a less powerful concept in the most vulnerable communities, where an intense focus on poverty, jobs, and economic development can supersede concerns about health and environment. Accordingly, Cummings (2018, 345) warns that “social movement efforts to build progressive cities may create islands of greater equality amid a larger sea of inequality—causing the gap between the politics of progressive big cities and the politics of everywhere else to grow wider, reinforcing polarization.” Conscious efforts can be made in every sector to support proliferation of effective local environmental health initiatives in less economically well-endowed communities.

Common Themes of Local Environmental Health Initiatives

The three cases presented in this book represent very different issues, geographies, communities, and institutions. However, their experiences revealed several common themes that may be relevant to other local environmental health initiatives.

- *Health equity is a powerful idea in many environmental management issues.* In all three cases, a focus on combating health inequities brought energy, resources, and new partners to focus on a long-standing environmental problem. Although stakeholders may not have articulated the problem explicitly as “health equity” or “environmental justice,” they motivated action by highlighting unfair access to environmental benefits or distribution of harms associated with health disparities.
- *Collaboration is a process, not an organization.* None of these initiatives formed a separate fiscal entity, but rather coordinated efforts between existing organizations. Each aimed to “put itself out of business” by changing systems and building capacity so that it was no longer needed. Creating opportunities for collaboration was more important than maintaining a new, standalone organization. Participants in all three cases emphasized that the opportunity to learn, plan, and develop solutions together allowed them to be successful despite lack of a formal organization.
- *Many types of organizations can be effective conveners if they are predisposed to partnering.* Each initiative included at least one organization that had coalition building as part of its mission. Rochester’s lead coalition was hosted by several organizations that were committed to coordinating community partnerships, including the Rochester Primary Care Network, the Finger Lakes Health Systems Agency, and United Way. An academic environmental health outreach program whose goal was to support community partnerships played a key role in both CPLP and THE Impact Project. In Duluth, the state health department directed local health departments to develop community coalitions and promote systems change. Even though many of the core organizations were prohibited from direct policy advocacy, their commitment to partnering, informing, and developing public support helped sustain these efforts.
- *Boundary spanners are created, not born.* In each case, individuals stepped outside their institutional silos to address the problem in a new way. Many professionals welcomed the opportunity to work beyond their agency structures and program limitations. Several of the key actors in each case were longtime employees of key organizations and were given permission by their home agency to participate. For many, this was their first experience collaborating with different sectors. They became

enthusiastic about partnering to solve long-standing community problems their home organization could not address alone.

- *Research can be helpful, but translation is essential.* In two cases (CPLP and THE Impact Project), a local university hosted an environmental health science center funded by the National Institute for Environmental Health Sciences (NIEHS) whose mission included translating research to address local environmental health concerns. These centers also provided access to leading researchers in lead and air pollution, respectively. In Duluth, public health agency partners provided analysis of health data while the city and consultants contributed environmental expertise. As a result, all three initiatives had the capacity to credibly synthesize, communicate, and apply environmental health information to local problems.
- *Locals are listening.* Although these cases were locally initiated, they were informed by national efforts. All three initiatives tapped into national resources through grants, training programs, pilot project funding, publications, or conferences. These interactions also benefited the national groups by providing evidence of successful dissemination of their ideas and serving as a model for other communities.
- *There are tradeoffs between measuring success in terms of environmental determinants versus health outcomes.* Each initiative highlighted data showing health disparities associated with an environmental concern. However, they all generally refrained from promising immediate health improvements as a result of the policy changes they promoted. Instead, they relied on existing environmental health research to argue that addressing environmental determinants would eventually contribute to health improvements. Tapping into concerns about human health to focus attention on environmental interventions required developing a consensus around causality and a community commitment to take actions with indirect, long-term, or unmeasurable effects on public health.

Although these insights relate to environmental health initiatives, they may also inform collaborations in other issue areas. Similar dynamics may exist around local initiatives to promote education, transportation, or criminal justice equity. Analysis of additional case studies could inform efforts to better support local environmental health initiatives in the future.

Supporting Local Environmental Health Initiatives

Most communities experiencing environmental health disparities do not give rise to local collaborative initiatives like those described in this book. This suggests that local initiatives will not spontaneously emerge under current conditions, but rather need to be intentionally encouraged. These case studies suggest several ways to better promote, support, and sustain such efforts.

Although increasing funding opportunities would likely encourage additional collaborative work, many other barriers remain, including institutional structures, individual incentives, and cultural constraints to partnering. Corburn (2005, 215) calls the “jazz of practice” an essential component of environmental justice collaborations, in which “professionals are expected to situate themselves in this struggle and make this a centerpiece of their work. By being playful, improvisational, and open to new ‘players,’ the jazz of practice encourages professionals to remake existing models of environmental-health decision making.” However, many professionals face barriers to such “improvisation,” including grant funding restrictions, limited budgets, hierarchical management systems, and simply having too much to do. As Steelman (2010, 196) notes, “Individuals working under conditions of weak structures and challenges to legitimacy will face daunting hurdles. Under these conditions, work first needs to take place within the structures and culture before innovation stands a reasonable chance of longer-term implementation.” In other words, many of the key players needed for a successful local environmental health initiative may lack the capacity, training, guidance, or incentive to partner with community groups. Institutions may need to work consciously to change their cultures and structures in ways that facilitate their staff members’ participation in innovative collaborative efforts. Community groups, academia, government agencies, and funders can all create conditions in their institutions that are more conducive to collaboration. Each sector may use different approaches to do so, as described below.

Community Groups

Community groups face numerous barriers to participating in local environmental health initiatives. The greatest challenge is usually time. Most community groups have limited core support, so participating in partnership

meetings takes staff away from funded projects and essential activities. THE Impact Project addressed this challenge by building funding for partner groups' staff into its grants. However, before obtaining funding, the participants contributed significant time to develop the initiative. Under-resourced community groups must constantly make strategic decisions about whether participating in collaborative efforts is a wise investment of their limited staff time.

Environmental justice groups often build support and membership by organizing in opposition to established interests. Participating in collaborative initiatives with government or academic partners can thus threaten their independent identity and image in the community. As Corburn notes (2005, 216), communities can benefit from "shifting the discourse from protest and refusal to engagement with problem solving." However, they can also lose credibility among their base of support if the outcome of collaboration does not meet their members' needs. The expectations for community group roles in environmental health initiatives should recognize these dynamics as potential limits to their collaboration.

Finally, many small community groups have rapid staff, board, and membership turnover. This can undermine the social outcomes of collaborative initiatives: the development of individuals' capacity, networks, and relationships. Anticipating turnover, community groups can set up internal systems for maintaining institutional memory (i.e., rotating staff participation or regular reporting among staff) and communicating regularly with their constituents about their roles in collaborative initiatives and the value of such work. Community groups should seek funding opportunities that sustain their internal capacity for external collaboration, although these are notoriously difficult to find.

Academia

Both CPLP and THE Impact Project had strong involvement by academics. However, the universities involved both had a unique resource: an environmental health science center that was charged by its funder—the National Institute of Environmental Health Sciences—to use its research capacity to address community problems. In practice, this meant that the academic centers had Community Outreach and Engagement Core (COEC) staff that could convene meetings, initiate partnerships, write grants, and facilitate engagement by researchers. There are other models that similarly support

community engagement, such as cooperative extension programs at land grant universities, but these are the exception rather than the rule among academic institutions. Most universities lack dedicated resources for outreach, engagement, and translation of research.

In fact, academics are often implicitly discouraged from engaging with community efforts because these activities detract from research, publication, and grant writing. Few universities take faculty members' community engagement activities into account in promotion and tenure decisions. Increasing funding opportunities for community-based participatory research can encourage academics' engagement but does not typically provide ongoing support for partnership building, collaborative problem-solving, applied analyses, and educational outreach. Additionally, academics may be discouraged from participating in politically controversial issues, particularly when they work at publicly funded institutions. For example, when Andrea Hricko wrote a letter to the Gateway Cities Council of Governments (GCCOG) in 2004 asking that minutes of meetings about the I-710 Major Corridor Study be made public, her dean received a letter of complaint from GCCOG questioning her efforts as "political" (Hricko 2016).

On the other hand, positive contributions to community efforts can be a source of goodwill and can enhance public relations. Such reputational benefits accrue to the institution as a whole, however, not the individual department, faculty, staff, and students involved. Recognizing this, some universities provide core support for engagement activities to encourage community engagement. A growing number of universities host "science shops," institutes focused on generating community solutions, and multidisciplinary problem-focused clinics (Trubek and Farnham 2000; Israel et al. 2006; Tryon and Ross 2012). Additional efforts to remove barriers, increase incentives, and provide support for academics to engage in local environmental health initiatives could make technical, strategic, and logistical support more widely available to community initiatives.

Government

Healthy Duluth and CPLP benefited from collaboration with government agencies. In Duluth, local health department staff was supported by the state health department's directive that they work with communities to promote systems change. The city's economic development staff became engaged through brownfield redevelopment grants that encouraged health

assessments and the planning department partnered actively in several HIAs. Both the mayor of Rochester and the Monroe County public health director voiced strong support for CPLP's efforts to promote primary prevention. This endorsement provided city and county staff with flexibility, if not a mandate, to participate in CPLP. Later, both the city and county highlighted their support of CPLP in their lead hazard control grant applications to the U.S. Department of Housing and Urban Development (HUD), which gave extra points to applicants with strong community partnerships. Although THE Impact Project did not collaborate directly with agencies that govern goods movement decisions, its members participated in numerous advisory committees, hearings, and review processes alongside government staff and elected officials.

Thus, in all three cases, mandates, incentives, or opportunities established by higher levels of authority supported collaboration with government staff. When leaders or funders set clear expectations for participation, staff are more likely to collaborate. Nonetheless, even when given permission or encouragement, spending time in collaborative initiatives may seem like a luxury that overburdened government staff cannot afford. In the long run, government staff participation in partnerships can yield dividends in terms of leveraging community and private-sector support for agencies' goals. Matsuoka and colleagues (2011, 61) point out that "cities across the country face enormous economic and budgetary challenges. The result has been layoffs, furloughs, and elimination of environmental and regulatory enforcement programs. New partnerships with the nonprofit sector, when deeply rooted in the public sector, can provide local authorities more tools and resources to address health and environmental impacts." Integrating these kinds of collaborations into staff job descriptions, designating official positions on boards for government representatives, and requiring community engagement as part of program goals can help public servants prioritize partnering.

However, it is also important to acknowledge that direct participation by government agency staff can create conflict—or at least discomfort—if an initiative is targeting that agency for change. Recognizing this, the Rochester and Duluth initiatives did not include their government partners in decision-making roles. Efforts to facilitate government involvement in partnerships should be sensitive to this constraint. For example, government

staff may be designated as “advisory” members to avoid appearing to endorse policy advocacy or positions critical of current agency practice.

These cases also show the importance of collaboration between sectors of government and how joining community partnerships can promote such interagency collaboration. As emphasized throughout this book, many environmental health problems fall between the purviews of institutions that focus on health and those responsible for environmental management. In all three cases, partnering with stakeholders *outside* government increased collaboration *between* government agencies. This was accomplished by providing a forum for collaboration that involved staff from multiple governmental agencies and publicly praising their joint efforts. As agency leaders explore the potential of collaborating with other government institutions to address ongoing issues of environmental health, they should recognize the role outside groups can play in promoting coordination with other governmental entities. As Koontz noted (2004, 184), “The interaction and shared deliberation inherent in collaboration may enhance relations both among and between nongovernment and government representatives by promoting trust, network development, and participatory democracy.”

However, social scientists who have studied collaborations for ecosystem management have identified multiple institutional, structural, and social barriers to government agencies and staff members’ ability to engage in effective collaborations (Koontz 2004; Wondolleck and Yaffee 2000). Civil service tends to reward strict implementation of agency programs and rules, which does not traditionally include forging partnerships and collaborating with new partners (Grenadier, Holtgrave, and Aldridge 2018). However, as agency goals and resources change, they may recognize the importance of collaboration with outside groups in systems change. Unfortunately, significant gaps in collaborative skills have been noted among the existing public health workforce (Trochim et al. 2006; McGinty, Castrucci, and Rios 2018). This suggests new training needs. For example, the San Francisco Health Department has developed a systematic training program to “foster a culture of learning, trust, and innovation, and to support our public health colleagues in promoting health equity” (San Francisco Department of Public Health 2018). This type of initiative recognizes that the incentives, structural barriers, and cultural norms facing government professionals need to

be clearly recognized, and sometimes intentionally reoriented, in order to promote their successful participation in collaborative efforts (Wondolleck and Yaffee 2000; Steelman 2010).

A final way government agencies can support collaborative initiatives is as a funder. Changes in funding mechanisms that apply to all funders, including government agencies, may better support local environmental health initiatives.

Funders

All three initiatives faced challenges financing their collaborative efforts. Participants noted that it was particularly difficult to get financial support for the core functions of convening such as communicating with members, developing strategic plans, and supporting meetings. Accordingly, increased sources of financial support for local collaborations would likely spawn more environmental health initiatives. For example, the Duluth initiative benefited from national efforts to support local healthy built environment collaborations and health impact assessments. The fact that all these local groups leveraged external financial support suggests that additional national resources may foster more successful local initiatives.

Funders generally prefer to support efforts that are time-limited, well defined, and clearly measurable through objectively reported outcomes (Israel et al. 2006). However, collaborative environmental health initiatives are by definition emergent, unpredictable, and long term. It is difficult to evaluate their impacts, particularly their long-term contributions toward building capacity and changing relationships, their indirect effects, and their ability to shift priorities of existing systems. Nonetheless, these cases are rich with examples in which small amounts of funding for collaboration contributed to significant long-term changes in policies, systems, and environments. Therefore, it seems likely that expanding private, agency, and academic funding for collaborative initiatives could expand these kinds of efforts.

However, different *kinds* of funding are also needed. Funders increasingly acknowledge the value of community collaborations and aim to support them through longer-term funding of dedicated staff positions, nonrestricted funds, or increased overhead rates on grants to community groups. Funding of this kind is particularly important to provide community groups with flexibility in staff activities and the ability to invest time in building

new partnerships, sustaining relationships, and developing institutional memory. Funders should explore additional mechanisms that provide core support for convening, flexibility to adapt as problems are reframed, developmental approaches to evaluation, and functions like monitoring, implementation, reporting, and dissemination to other communities.

The funding, cultural, and institutional constraints of many community groups, academics, and government institutions pose barriers to environmental health initiatives. Several of the initiatives presented in this book were often referred to by their participants as “stars aligning” moments, when their institutional goals, resources, and opportunities overcame such barriers in ways that allowed them to partner successfully. As described previously, community groups, academic institutions, government agencies, and funders all have roles to play in helping the stars align by changing their practices, processes, and programs to better incentivize collaborative efforts.

Developing Networks for Dissemination

Although each of these initiatives emerged from a unique local context, their experiences organizing for environmental health systems change may be informative for other communities. As noted previously, many cities have reached out to CPLP members to learn how Rochester developed and implemented its lead law. However, there is no established mechanism for active dissemination of these experiences through a national network; thus, there may be many other cities that could learn from the Rochester lead coalition but are not aware of its program. How can we help cities learn from each other’s local environmental health initiatives? There are several options for promoting local-to-local learning to explore.

In some cases, there may be existing networks that could disseminate lessons from local initiatives into other communities. One past example of sharing a local initiative’s learning with a wider audience through an existing national network is the Transportation Research Board (TRB) case study on THE Impact Project (National Academies of Sciences Transportation Research Board and Strategic Highway Research Program 2011). This report made THE Impact Project’s collaborative experiences widely available to transportation planners nationwide. Several foundations have played

important roles in sharing local community experiences, including the Robert Wood Johnson Foundation's case studies of local collaborations for active living and the Pew Charitable Trust Health Impact Project's online database of health impact assessments (Active Living by Design 2018; Pew Charitable Trusts 2018a). However, these resources are often limited to initiatives that are funded by the sponsoring foundation or program.

With growing interest in local approaches to promoting health equity and environmental justice, conferences and publications increasingly share lessons learned from local environmental health initiatives. In recent years, the American Public Health Association, the American Planning Association, and the National Association of County and City Health Officials have all featured local environmental health initiatives at their national conferences. Several peer-reviewed journals also regularly publish articles on community environmental health initiatives, both as research articles and in special sections designed to highlight community partnerships.

There are fewer opportunities for community groups to share perspectives nationwide. The Moving Forward Network initiated by THE Impact Project is a promising example of such a forum (Moving Forward Network 2018). Similarly, the Active Living by Design program promotes information exchange between communities about collaborative efforts (Active Living by Design 2018). It is important to note that both of these efforts are primarily funded by private foundations and that maintaining sustained funding for intercity networks of community groups may be challenging.

Thus, there are some issue-specific opportunities for local groups to share their stories and learn from others. However, local groups may have limited capacity to participate in these learning networks. Local initiatives seldom have the time or resources to tell their stories—never mind a venue to share them, identify which elements may be relevant to others, or even respond to questions from others. This suggests that funders of local environmental health initiatives should incorporate support for staff time and travel to participate in activities that make their experience accessible to and let them learn from others.

How these lessons are communicated, and the level of detail examined in each local case, is also important. Many traditional case study reports simply provide short summaries of accomplishments without reporting on the group's processes, struggles, and resources. Such cursory treatments may suggest that strategies, policies, or approaches can be simply transferred from

one community to another. As shown by the lesson of Benton Harbor—the Michigan city that adopted but failed to implement a Rochester-like lead law—this is seldom the case. An essential part of dissemination involves unpacking the context and details of the collaborative process, the challenges of cross-sector data analysis, and the strategies for sustaining community engagement.

National organizations can play an important role in promoting local-to-local learning about collaborative environmental health initiatives. For example, the health impact assessment map from the Health Impact Project (Pew Charitable Trusts 2018a) makes HIAs from all over the country publicly available in a searchable database. The interactions each of the case studies had with national groups and other communities suggest that locals are receptive to learning from other efforts. However, their capacity to do so may be limited by the availability of information, time to do research, and skepticism that others' experiences will translate to their community.

A Message for Individuals

Government agencies, nonprofits, consultants, and researchers have produced numerous training materials, books, and guides on promoting successful collaboration. Although these resources can help people plan collaborative efforts by laying out key principles, process recommendations, and resource needs, they may paint an ideal picture of collaboration that can be hard to achieve in practice. There are often real barriers and risks to participants from all sectors. Collaboration can take time from other mission-essential (or career-enhancing) activities. Partnering with organizations that have aligned but not congruent interests can undermine credibility, and failure to achieve shared goals can erode crucial relationships.

The three case studies examined in this book suggest that changes are needed in every sector to support successful local environmental health initiatives. Even absent such systemic changes, individual community members, government employees, researchers, or other professionals can all play a role in promoting collaboration. Wondolleck and Yaffee (2000, 250) call collaboration “a kind of awkward dance that none of us knows the steps to.” Similarly, the former surgeon general Joycelyn Elders once famously quipped, “Collaboration has been defined as an unnatural act between non-consenting adults. We all say we want to collaborate, but what we really

mean is that we want to continue doing things as we have always done them while others change to fit what we are doing" (Backer 2003).

These statements recognize that collaboration must be advanced by real people facing real political constraints, competing priorities, and resource limitations. Collaboration has become such a popular notion that people may fail to realistically consider their goals, barriers, and institutional interests—as well as those of their potential partners. This can lead to misunderstandings, conflict, and loss of trust. Wondolleck and Yaffee conclude their comprehensive analysis of successful collaboration for ecosystem management with a "message to individuals" considering partnering outside of their organization. To paraphrase their advice:

1. *Numerous opportunities exist*: build on the most immediate with small steps.
2. *There is no one right way to promote collaboration*: experiment, evaluate, and adapt.
3. *Collaboration does not always work*: don't take it personally, and don't lose sight of your own interests.
4. *Collaboration is not rocket science*: persistence, humility, honesty, sincerity, and listening carefully will get you a long way, *but also ...*
5. *Collaborative skills can be learned*: training in communication, group process, and facilitation—either as an individual or with the whole group—can improve effectiveness.

Thus, individuals should carefully consider their personal incentives, goals, and constraints before embarking on a collaborative effort, then ask the same questions of potential partners (Wondolleck and Yaffee 2000, 249).

A final point for individuals to remember: failure may not be failure. Well-conceived, focused, and amply supported collaborations often fail to achieve their initial objectives. Collaboration is not always the most productive or timely way to solve a problem of environmental health inequity. Even "failed" collaborations may provide an opportunity for the individuals involved to form relationships, gain knowledge, or incorporate new objectives in their future work. The potential for such "invisible successes" in the face of "visible failures" (Korfmacher 1998) is why the social outputs of collaborative efforts are emphasized in the Local Environmental Health Initiative Framework.

Poverty, Environment, and Health

Kjellstrom and others have noted that “poverty is not only a question of money, but it has ... other dimensions: lack of *opportunities* (for employment and access to productive resources), lack of *capabilities* (access to education, health, and other public services), lack of *security* (vulnerability to economic risks and violence), ... lack of *empowerment* (absence of voice, power, and participation), (and) lack of a *health-supporting physical living environment*. These five dimensions stem from inequality as the root causes of poverty” (2007, 86).

There is a positive feedback loop between environmental health inequities and poverty. Poorer people are more likely to be exposed to environmental hazards, live in neighborhoods with few health-supportive facilities, lack the resources to avoid hazards, or have limited resilience to environmental risks. Living in unhealthy environmental conditions can exacerbate economic challenges by limiting opportunities for education, transportation, and access to employment. Cumulative stress related to environmental hazards, poverty, and disordered neighborhoods contributes to health problems. These relationships between poverty and environmental health can be reinforced by discrimination, racism, and social stigma. Local environmental health initiatives cannot single-handedly end poverty, but they have the potential to mitigate the bidirectional connections between poverty and environmental injustice.

There are several ways that local environmental health initiatives can address the two-way relationship between environmental health and poverty. First, explicitly recognizing that poverty, racism, and historical marginalization of disadvantaged groups contribute to current environmental health inequities can help local environmental health initiatives argue for devoting additional resources to counteract observed disparities. Second, these initiatives can create opportunities to reduce poverty through their activities. This may require reaching out to stakeholders involved in economic development, education, antiracism initiatives, and workforce development to find ways that environmental health initiatives can support their efforts. Conversely, environmental health initiatives must be mindful of causing unintended negative consequences for neighborhood well-being, such as contributing to gentrification and community displacement. Third, environmental injustice is experienced at the neighborhood,

home, and individual level. Therefore, the knowledge, values, and preferences of affected communities must inform the process, strategies, and approaches from problem identification through promoting specific solutions. This requires interaction between multidisciplinary experts and communities, often using a variety of approaches. Finally, making progress on an environmental health problem can inspire ongoing efforts to address the root causes of poverty.

These three cases provide examples of how collaboration around locally identified problems can develop solutions that help address both poverty and environmental health inequities. In fact, their local focus makes them better poised to identify complementary opportunities and avoid unintended negative consequences than state or federal programs. Local environmental health initiatives alone cannot end economic inequity, but they have the potential to augment community development efforts. Struggling municipalities may consider environmental improvements to be of secondary importance to economic development efforts. However, these cases suggest that local environmental health initiatives have the potential to help combat broader social inequities.

Toward Health Equity in Local Environmental Policies

In each case, local stakeholders identified an ongoing issue of environmental injustice and successfully reframed it as an issue of health inequity. They harnessed the expertise of community groups, technical experts, and government agencies to understand the issue. They learned about how existing federal and state policy, economic forces, local historical factors, demographics, and culture shaped the local environmental health problem. This allowed them to understand key drivers of trends, identify opportunities for systems change, and formulate strategies.

Although many of these efforts engaged governmental actors, none of the collaboratives had official authority. Therefore, they needed to work with existing institutions to achieve systems change. In so doing, they developed networks and built the capacity of participants to engage in future policy processes. In most cases, they fostered broader community engagement in local issues beyond their initial scope. They elevated health equity as a goal for environmental management systems. By increasing community

awareness of and support for environmental health equity, they increased the likelihood of sustained systems change and laid the foundation for future efforts.

None of these initiatives had visible outcomes like shutting down an industrial polluter, blocking a development, or banning a dangerous chemical. Rather, they shifted existing management systems toward addressing the upstream drivers of environmental health inequities. Thus, these types of efforts may be a promising approach to resolving long-standing issues of environmental injustice. This begs the question: How might we build on these experiences to more universally, systematically, and proactively address the gaps in existing environmental management systems to reduce health inequities through local action?

First, removing barriers and increasing incentives for local stakeholders to engage in collaboration could promote this kind of cross sector problem-solving. As described previously, there are many barriers to collaboration. Funding collaborative efforts is part of the solution, but changes in institutional incentives and cultures are also needed. Second, we could enhance opportunities to learn from and disseminate local environmental health initiatives. These three cases are just a small sample of ongoing local efforts throughout the country to address environmental health injustices. Helping communities learn from each other could promote more effective local initiatives. It is also essential to extract lessons about the failures of existing environmental and health management systems that gave rise to the locally identified problems. Some of these failures could be addressed through changes at the state or federal level. Third, these efforts support the idea that considering “Health in All Policies” can be a powerful political, practical, and analytic approach to addressing local environmental health inequities. Although the “Health in All Policies” concept is gaining traction at the federal and state levels, few localities have embraced the idea. Developing tools to facilitate consideration of health in all local policies may help other communities, researchers, agencies, and funders promote health equity in multiple sectors.

It is important to design collaborative structures that are appropriate to the problem at hand. Indeed, the collaborative efforts profiled in this book exhibited a wide range of approaches, from informal to structured collaboration. None aimed to build a sustained formal partnership, but rather

promoted new relationships, practices, and priorities within existing institutions. Such questions of appropriate collaborative processes and structures merit careful consideration by future researchers and practitioners.

Integrating health equity goals into policies in multiple sectors requires new ways of engaging communities; forming partnerships between government, academia, and interest groups; harnessing multidisciplinary sources of knowledge; and developing funding streams that support these efforts. This book shows how collaboration at the local level can help existing management systems better address environmental drivers of health disparities. An explicit focus on environmental health and justice can drive systems for managing the environment to more efficiently, effectively, and equitably promote healthy communities.

Public Health as an Ecosystem

Decades ago, environmental advocates, researchers, and agencies recognized that siloed, single-agency approaches were insufficient to protect the health of ecosystems. Environmental disasters, public conflict, failure to meet environmental quality standards, and slow species recovery efforts were taken as evidence that environmental protection needed a new approach: cross-sector collaboration, more public engagement, and holistic ecosystem management. In response, a wide range of collaborative ecosystem management institutions were developed to better protect natural resources as integrated systems. The aim of ecosystem management was to promote ecological integrity, a more holistic goal than the single-sector approach of most prior environmental management systems (Grumbine 1994).

Similarly, escalating health care costs and growing health inequities demonstrate that our current approaches to protecting public health are failing. Growing appreciation for the importance of social determinants of health suggests that protecting public health requires collaboration between multiple agencies, diverse sources of knowledge, and robust community involvement. Public health professionals increasingly recognize engagement in community collaboration as an important growth area for health departments seeking to reduce health disparities through systems change (McGinty, Castrucci, and Rios 2018; Fraser, Castrucci, and Harper 2017; DeSalvo et al. 2016; Trochim 2006).

The need for a systems approach to public health is particularly clear with respect to environmental health. The separate management of environment and public health has contributed to many environmental health inequities. Each of the cases in this book shows how siloed management systems failed to prevent cumulative, comprehensive, and inequitable impacts on health. Broader consideration of health equity in multiple decision-making arenas is needed to address environmental contributors to health disparities. These cases also suggest that adopting environmental health equity as a goal may facilitate new solutions to long-standing environmental problems.

The field of ecosystem management was built on the promising initial experiences of informal collaborations such as voluntary watershed protection associations. Over time, collaboration was institutionalized to various degrees by state, federal, and nongovernmental organizations. The promise of the local environmental health initiatives portrayed in this book suggests that these approaches have the potential to reduce environmental health inequities. Further research is needed to explore how such efforts could be better supported, disseminated, and institutionalized to help reduce health disparities. Treating public health like an ecosystem with many interdependent parts, perspectives, and processes requires new bridges between existing institutional silos. Communities, academics, public health professionals, environmental managers, urban planners, and funders all have roles to play in building these bridges. Collaborative management of urban environments can speed progress toward the goal of achieving environmental health equity.

