

UCLA Luskin School of Public Affairs

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Pathways to Environmental Justice: Advancing a Framework for Evaluation

An Outcome of



**Closing the Environmental Justice Gap:
A Workshop on Advancing Evaluation Methods**

**September 30, 2011
UCLA Royce Hall**

UCLA Luskin School of Public Affairs

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Center**
FOR INNOVATION



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2012

UCLA Luskin School of Public Affairs

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About the UCLA Luskin Center for Innovation

The Luskin Center for Innovation, founded with a generous gift from Meyer and Renee Luskin, unites the intellectual capital of UCLA with forward-looking civic leaders to address pressing issues and translate world class research and expertise into real-world policy solutions. Research initiatives are supported by teams of faculty and staff from a variety of academic disciplines. The Luskin Center supports these initiatives by funding original research, scholars, conferences, technical internships and solution-oriented speaker series.

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Pathways to Environmental Justice: Advancing a Framework for Evaluation

About the Study

This report seeks to advance a framework that could be used by researchers, regulators, grantees, and other community members interested in the effective design and implementation of policies and programs to reduce environmental inequities, with the ultimate goal to close the environmental justice gap. The report builds upon a briefing paper created by the UCLA Luskin Center for participants of “Closing the Environmental Justice Gap: A Workshop on Advancing Evaluation Methods.” This landmark gathering hosted by the Luskin Center on September 30, 2011, brought together researchers and environmental justice leaders from across the nation to develop the sub-field of environmental justice (EJ) policy and program evaluation.

About the Authors

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Acknowledgements

The UCLA Luskin Center thanks the U.S. Environmental Protection Agency (EPA) for sponsorship and intellectual leadership on “Closing the Environmental Justice Gap: A Workshop on Advancing Evaluation Methods.” In particular, we would like to recognize the insights and leadership from EPA staff members Lisa Garcia, Charles Lee, Devon Payne-Sturges, and Katherine Dawes. In addition to the workshop program development, Dawes and Paynes-Sturges also contributed very significantly to the pre-workshop briefing paper, which served as a foundation from which this report is based.

The authors are grateful to the event’s Steering Committee members: Paul Ong, UCLA Luskin School of Public Affairs; Manuel Pastor, University of Southern California’s Program for Environmental and Regional Equity; Rachel Morello-Frosch, UC Berkeley School of Public Health & Department of Environmental Science, Policy and Management; and Douglas Houston, UC Irvine Department of Planning, Policy & Design & the Metropolitan Futures Initiative. We acknowledge their intellectual leadership.

Disclaimer

The UCLA Luskin Center appreciates the contributions of the aforementioned individuals and their agencies and organizations. This document, however, does not necessarily reflect their views or anyone else involved in the workshop. U.S. EPA staff and others listed make no claims regarding the accuracy or completeness of the information in this report. Any errors are the responsibility of the primary authors.

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Pathways to Environmental Justice: Advancing a Framework for Evaluation

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I. Executive Summary

I.1 Context for this Report

We are at a turning point in the environmental justice movement. For 30 years, community members have protested environmental inequities and advocated measures for environmental justice (EJ). For the past 25 years, researchers have built a large body of evidence scientifically documenting environmental disparities. Governments at the federal, state, and local levels have responded with policies that first focused on non-discriminatory action, i.e. prevent their policies and programs from worsening the EJ gap.

More recently, government agencies have begun to interpret their EJ mandate more broadly, not only attempting to prevent their policies and programs from exacerbating environmental disparities, but also proactively seeking to improve distributive justice. In addition, some decision-makers are beginning to integrate EJ considerations into a broader suite of policies and programs, beyond EJ explicit efforts. Much of the progress is due to community members who advocate for policies and also directly design and implement an array of projects and programs to improve environmental health conditions for their families and neighbors. These policies and programs attempt to reduce environmental disparity by preventing or conditioning the siting of polluting facilities in overburdened neighborhoods; by focusing environmental enforcement, remediation and benefits in EJ areas; and by building community capacity.

With this progress comes a growing need to evaluate the EJ work that has been done. While there is a great deal of research examining environmental inequalities, we have few studies that explore evaluative questions about the effectiveness of the various EJ programs and policies at preventing, ameliorating or eliminating environmental inequalities. The EJ movement is headed towards a greater focus on evaluation, and this report is meant as one of the first steps to help stakeholders—including community members, activists, researchers, regulators, and other agency administrators—realize the benefits of evaluation.

Evaluations have measured and improved the effectiveness of a wide range of public policies, programs and practices in other fields. Researchers, regulators, and EJ advocates can use evaluation as a critical tool for many reasons, including the following.

- 1) Generate knowledge to improve the program or policy;
- 2) Inform future efforts;
- 3) Hold government agencies accountable for making meaningful progress on EJ issues and;
- 4) Highlight success to funders and decision-makers; and
- 5) Make the case for integrating EJ strategies into more policies and programs.

1.2 Objective of this Report

This report advances a nascent discussion about how evaluation methods can be applied and tailored to the EJ field. This discussion was jump started at “Closing the Environmental Justice Gap: A Workshop on Advancing Evaluation Methods,” hosted by the UCLA Luskin Center for Innovation on September 30, 2011. This landmark gathering in Los Angeles brought together environmental justice leaders from across the nation, and the event’s discussion served as a foundation for this report.

The objective of this report is to provide an easily accessible foundation of information and a framework to help stakeholders utilize policy and program evaluation to advance environmental justice. It is a primer on evaluation and puts the subject in an environmental justice context. There is not just one way to do evaluation and this is not an exhaustive instructional guide for conducting a specific type of evaluation or types of evaluation. Rather, this report suggests further readings and resources while focusing on the introduction of key evaluation concepts within the context of the environmental justice field. As funders increasingly require EJ project, program, and policy data derived from evaluations, this report will help EJ stakeholders participate by understanding the following.

- 1) What can be gained from evaluation?
- 2) How can evaluation be conducted and utilized within a theory of change framework?
- 3) What are key types of evaluation and how and when can they applied to your policy and program processes?
- 4) What are key considerations and challenges?
- 5) How could you overcome these barriers and why this would be worth doing?

There are entire disciplines devoted to policy evaluation and program evaluation, and complex evaluations can require extensive training to perform. However, beginners can easily develop a set of evaluation tools that can go a long way in improving the design and implementation of EJ policies and programs, and in turn, improving the movement’s effectiveness at closing the EJ gap.

1.3 Intended Audience for this Report

EJ advocates and their organizations are the primary audience for this report, providing these groups an introduction to evaluation and a framework within which to either conduct or participate effectively in evaluations to advance environmental justice. In addition, the authors hope that the framework presented in this report will be utilized by regulatory agencies and researchers to assess a program or policy’s progress in reducing environmental inequities. We have reached a critical point in the EJ movement when we are ready to ask: What were the impacts of the first generation of EJ strategies, policies and programs, and how do we improve the next phase?

2. Introduction

2.1 History of the EJ Movement and EJ Research

The environmental justice (EJ) movement emerged in the early 1980s as overburdened communities began to receive national attention for their struggles against inequitable siting of polluting facilities. Many environmental justice scholars and activists recognize the 1982 Warren County, North Carolina protests as the symbolic birth of the movement. Activists protested the dumping of millions of pounds of toxic soil in Warren County, the county with the highest percentage of African Americans in the state. As the decade progressed, grassroots efforts from across the country coalesced into a national movement.

At the same time, scholarly research began to document the disproportionate impacts of environmental pollution on different social classes and racial and ethnic groups. The year after the Warren County protests, the U.S. Government Accountability Office (GAO) undertook an investigation of the four major hazardous waste landfills in the South, discovering that the communities around all four landfills were disproportionately African American. Both the protests and the GAO study prompted the United Church of Christ's Commission for Racial Justice to study the correlation between hazardous waste sitings and race at the national level. The seminal works by the United Church of Christ's Commission for Racial Justice (1987) and Robert Bullard (1990) provided empirical evidence of environmental racism, the disproportionate exposure to toxins and pollutants suffered by minorities (Ong, 2010). While a wave of studies challenged this early research (see, for example, Anderton et al., 1994; Bowen, 2000; Oakes et al., 1994), a subsequent set of studies have tackled this issue with increasing methodological sophistication and have found that income, race and other socioeconomic variables (including linguistic isolation and measures of political engagement) often matter in the distribution of both stationary and mobile sources of environmental hazards (see, for example, Bullard et al., 2007; Houston et al., 2004; Mohai and Saha, 2006, 2007; Morello-Frosch and Lopez, 2006; Pastor et al., 2006). Among these later studies, a meta-analysis conducted by Evan Rinkus (2005) examining forty-nine empirical studies found evidence of racial disparity in environmental hazard burdens regardless of "the type of risk examined, the level of aggregation employed, or the type of control variables used in the analysis" (p. 233, 2005).

Due to continued environmental justice activism and scholarly research, policy-makers began to take action. In 1992, the U.S. Environmental Protection Agency (EPA) released the first governmental report comprehensively examining EJ, entitled "Equity: Reducing Risk for All Communities." Shortly thereafter the EPA established what ultimately became known as the Office of Environmental Justice, and in 1993 it created the National Environmental Justice Advisory Committee to provide independent advice and recommendations to the Administrator on EJ matters.

Then in 1994, President Clinton issued an Executive Order on Environmental Justice (EO 12898), mandating that all federal agencies incorporate EJ into their missions (see Box 1). The

federal agencies addressed this mandate in different ways and to different extents. Federal resources started to be directed at minority and low-income communities, especially in brownfield development and lead-based paint remediation efforts. In addition to the federal government, local governments across the United States have made considerable efforts to address issues of environmental justice. According to Environmental Justice for All: A Fifty State Survey of Legislation, Policies and Cases, 41 states have adopted EJ policies and seven states have enacted EJ statutes (Bonorris, 2010). Common state actions on environmental justice include forming EJ task forces and advisory groups as well as conducting research on environmental disparities.

Box 1. Executive Order (EO) 12898

On February 11, 1994, President Clinton issued EO 12898, “Federal Actions to Address Environmental Justice in Minority and Low-Income Populations.” EO 12898 tasks each federal agency with making EJ “part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” The EO requires the development of an agency-wide EJ strategy that at a minimum:

- 1) Promotes enforcement of all health and environmental statutes in areas with minority populations and low-income populations;
- 2) Ensures greater public participation;
- 3) Improves research and data collection relating to the health of and environment of minority populations and low-income populations; and
- 4) Identifies differential patterns of consumption of natural resources among minority populations and low-income populations.

The EO does not create any new legal rights, but requires federal agencies to implement the EO’s provisions consistent with, and to the extent permitted by, existing law. One of the laws directly implicated is Title VI of the Civil Rights Act of 1964, which prohibits discrimination on the basis of race, color, and national origin.

<http://www.archives.gov/federal-register/executive-orders/pdf/12898.pdf>

2.2 Where We Are and Where We Are Going

As described above, there is now a large body of research documenting environmental inequality, and this research has influenced the proliferation of EJ policies and programs

undertaken by federal, state, and local governments. In addition to enacting a growing number of policies and programs directed at environmental justice, decision-makers are also strengthening their ability to consider the EJ consequences of all policies and programs, regardless of whether EJ is the primary objective, and to integrate proactive EJ strategies into a broader suite of policies and programs.

With this progress comes a growing need to evaluate the EJ work that has been done. We have few studies that explore evaluative questions about the effectiveness of the various EJ strategies, policies and programs at preventing, ameliorating or eliminating environmental inequalities. We have reached a critical point in the EJ movement when we are ready to ask: What were the impacts of the first generation of EJ strategies, policies and programs, and how do we improve the next phase?

Evaluations have measured and improved the effectiveness of a wide range of public policies, programs and practices in other fields, and this report begins a discussion about how evaluation methods can be applied to the EJ field.

2.2.1 Plan EJ 2014 and Timeliness of this Report

This report is particularly timely because of EPA's recent development of [Plan EJ 2014](#). Although all federal agencies are mandated to consider the EJ implications of their decisions and activities, the EPA has a particularly large effect on environmental justice as it is responsible for the implementation of many federal environmental protection statutes. In January 2010, EPA Administrator Lisa Jackson cited environmental justice as a top agency priority, calling for "a new era of outreach and protection for communities historically underrepresented in EPA decision making" and the inclusion of "environmental justice principles in all of [EPA's] decisions." In order to implement this priority, the EPA developed Plan EJ 2014.

Marking the 20th anniversary of EO 12898, Plan EJ 2014 is the agency's roadmap for integrating environmental justice into its programs, policies, and activities. It has three broad objectives: (1) protect the environment and health in overburdened communities; (2) empower communities to take action to improve their health and environment; and (3) establish partnerships with local, state, tribal, and federal governments and organizations to achieve healthy and sustainable communities. Plan EJ 2014 outlines a comprehensive EJ strategy that includes program initiatives, scientific, legal and resource tool development efforts, and cross-agency focus areas. Cross-agency focus areas include guidance and support for integrating EJ into rulemaking, permitting, compliance, and enforcement, and community-based and administration-wide action on environmental justice.

The US Government Accountability Office (GAO) has had a continual interest in EPA's environmental justice effort. In its most recent October 2011 evaluation, the GAO commended the EPA for its efforts to integrate environmental justice in all EPA programs, policies and activities. Specifically, GAO commended EPA for defining a clear mission and goal for its environmental justice efforts, ensuring the involvement and accountability of agency leadership in these efforts, and coordinating with other federal agencies. However, the GAO advised the

EPA to take additional actions to help ensure effective implementation of EO 12898, specifically highlighting the need to develop performance measures for EPA's implementation plans. Performance measures are an evaluative tool that will allow the EPA to track agency progress on its EJ goals.

Now that the EPA has begun to systematically incorporate environmental justice consideration into its core policies, programs and activities by developing the requisite guidance and tools, it is time to develop evaluation approaches that can appropriately assess the effectiveness of these efforts. By outlining some evaluation tools and considerations, this report provides a framework for how EJ 2014 can address the implementation of GAO's recommendations, among a myriad of application possibilities beyond the scope of EPA.

2.3 Why Evaluate?

Evaluation can be a critical tool to (1) generate knowledge to improve the program or policy; (2) inform future efforts, (3) highlight policy and program results (4) hold government agencies accountable for making meaningful progress on EJ issues and (5) integrate EJ strategies into more policies and programs.

2.3.1 Generate Knowledge to Improve the Program or Policy

Evaluation can be defined as assessment through objective measurement and systematic analysis. In conducting evaluations, policy and program designers and implementers critically and self-consciously reflect on their activities, reaching new levels of understanding and clarity about how their policies or programs are intended to work and whether they have proved effective at achieving their goals. Evaluation can be used to measure a policy or program's outcomes and impacts, to assess whether a policy or program is remedying the problems it originally sought to address, and to determine what is helping or hindering effectiveness. Evaluation is not about labeling a policy or program as a success or a failure, but rather is meant to help identify aspects of a policy or programs that work and aspects that prove problematic in order to make improvements. Without evaluation, policy and program designers and implementers cannot know when their desired outcomes have been achieved, and they do not have the opportunity to improve the effectiveness of their interventions.

2.3.2 Inform Future Efforts

A policy or program evaluation is useful not only in improving the effectiveness of the policy or program at hand, but also in improving the effectiveness of policies and programs in other communities and in future efforts. Without the documentation that evaluation provides, a successful policy or program is an isolated event without larger implications. Evaluation can be used to grow the knowledge base of the EJ movement – determining whether a policy or program is worth replicating, discovering best practices, and helping advocates, regulators and policy-makers better select among alternative policies to achieve results in a world of limited resources. Evaluation can be used to translate success to other communities and next

generation policies and programs. Without evaluation, the EJ movement will not have the cumulative knowledge to enhance future policy and program development.

2.3.3 Highlight Results

In a time when governments and private foundations are placing more and more emphasis on scientific, quantitative decision-making, evaluation is a critical tool for justifying and prioritizing EJ policies and programs. The cost-benefit assessment of the federal Clean Air Act is an example of how evaluation can be used to gain legitimacy and assure sustained support. Part of the reason this environmental law has broad support is that the U.S. EPA has periodically evaluated and reported on the overall costs and benefits of the legislation and has found that the benefits of the Clean Air Act overwhelmingly outweigh the costs (the EPA has valued the total monetized health benefits achieved by the Clean Air Act in the first twenty years of its existence at 22.2 trillion, and the total compliance costs at a relatively low 0.5 trillion).¹ The impact of these reports on public perception demonstrates that evaluation is a powerful tool for demonstrating the worth of a policy or program. This example, however, is not meant to suggest that monetary impacts are the only outcomes that should be evaluated; other quantitative as well as qualitative results can be powerful. Public and private foundations that fund EJ policies and programs depend on good data and systematic analysis to justify their investments. Evaluation therefore is critical to translating individual policy or program successes into improved support and growth of the EJ movement.

2.3.4 Ensure Accountability

Evaluation promotes transparency and accessibility by communicating the inputs, activities, outputs, outcomes and impacts of a policy or program to the public. It is therefore a critical tool for holding those in charge of implementing EJ policies and programs accountable for making meaningful progress on EJ issues. The success of EJ policies and programs could be improved by increasing agency accountability through the use of evaluative tools and metrics such as establishing clear goals, determining performance measures, and conducting regular reporting. Evaluation can help enforce agencies' commitment and ensure that their commitment is meaningful and their work effective.

2.3.5 Integrate EJ Strategies into More Policies and Programs

Evaluation can be used as a tool to incorporate EJ strategies into a broader array of policies and programs. Many existing policies and programs with primary objectives that are not EJ related have negative EJ side effects, unintentionally perpetuating or exacerbating environmental disparity. Because of EJ policies like EO 12898, many decision-makers now consider the EJ consequences of policies and programs and make an effort to prevent negative EJ side effects. Furthermore, decision-makers are beginning to move beyond just preventing unintended EJ side effects, and are now actively incorporating strategies to reduce the EJ gap and improve distributive justice. Evaluation can be used as a tool to strengthen and expand these attempts to proactively infuse positive EJ strategies into a broader suite of policies and programs.

¹ Benefits and Costs of the Clean Air Act: <http://www.epa.gov/air/sect812/>.

2.4 How to Use this Report

As the EJ movement is headed toward a greater focus on evaluation, this report is meant to help stakeholders get involved. The objective of this report is to provide an easily accessible foundation of information and a framework to help stakeholders utilize policy and program evaluation to advance environmental justice. This report can help stakeholders participate by understanding (1) what can be gained from evaluation; (2) the different ways that evaluation is conducted and utilized within a theory of change framework; (3) strategies for how evaluation can be used within policy and program processes; (4) key considerations and challenges; and (5) how we might overcome these barriers and why this would be worth doing. There are entire disciplines devoted to policy evaluation and program evaluation, and complex evaluations can require extensive training to perform. Yet beginners can easily develop a set of evaluation tools that can result in improved design and implementation of EJ strategies.

2.5 Key Definitions and Distinctions

Before we get started, it is important that we provide definitions for some commonly used terms that critical to the understanding of this report. These terms can mean different things to different people, and therefore it is important that we clarify how they are used in this report.

Environmental Justice (EJ): As defined by the U.S. Environmental Protection Agency (U.S. EPA), “environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”

“EPA’s goal is to provide an environment where all people enjoy the same degree of protection from environmental and health hazards and equal access to the decision-making process to maintain a healthy environment in which to live, learn, and work.”

Environmental Justice Gap: Low income communities of color systematically experience disproportionately greater adverse environmental risks and impacts, and fewer positive environmental benefits compared to high income communities. This phenomenon is known as the environmental justice gap.

EJ Policies are legal mandates, regulations and decision-making principles that adopted using EJ considerations and guidelines to address environmental and environmental health disparities.

EJ Programs are specific interventions, projects or initiatives that are aimed to produce outcomes to address environmental and environmental health disparities.

EJ Strategies are operations, methodologies, and behaviors that are either an explicit focus of an EJ program or policy or an element incorporated into a broader policy or program. EJ strategies seek to ensure community participation in decision-making and

produce outcomes that address environmental and environmental health disparities.

Policy Evaluation: Policy evaluation is the empirical analysis of data to determine the effects of governmental policies enacted due to laws, guidance or regulation. Policy evaluation typically uses aggregated data over time.

Program Evaluation: Program evaluations are individual systematic studies conducted periodically or on an ad hoc basis to assess how well a program is working, and why.

2.6 Key Distinctions

In order to begin to develop a framework for EJ evaluation, we must first clarify what is being evaluated and why. For the purpose of this report, we introduce our following definitions of the scope of EJ, the ultimate goal of the EJ movement, and the goal of policy and program evaluation.

2.6.1 The Scope of Environmental Justice

Environmental justice includes both negative environmental outcomes and positive environmental benefits; it is not just about getting bad things out of a community, but also about adding good things. The EJ gap can therefore be addressed either by reducing environmental exposure, or by increasing community resilience.

2.6.2 The Ultimate Goal of the EJ Movement

Much discussion and debate in the EJ field has centered on the ultimate goal of EJ policies and programs. The authors of this report see the ultimate goal of EJ policies and programs as reducing the EJ gap. It is important to differentiate between the goal of reducing the EJ gap (distributive justice), and the goal of nondiscriminatory actions (procedural justice). Government can be race-neutral in its policies and programs, but that may not be sufficient to overcome societal and market forces that can reproduce and potentially amplify environmental inequalities. It is critical that minority and low-income communities not only receive equal treatment under the law, but that this translates into substantive equality in terms of environmental harms and benefits.

It is also important to make the distinction between reductions in inequality and society-wide reductions in exposure to hazards, something that in itself is very desirable. Reducing overall levels of air pollutants, for example, benefits minorities and non-minorities alike but might not affect the pre-existing gap in exposure and health risk. Environmental justice goes beyond just reducing overall harms or increasing overall benefits to reducing inequalities in harms and benefits.

2.6.3 The Goals of Evaluation

This report focuses on evaluating the effectiveness of policies and programs at advancing environmental justice. While there are many studies documenting the EJ gap, and many EJ policies and programs with the objective to help close the EJ gap, there have been few studies

evaluating the actual effectiveness of these policies and programs in doing so. In this paper we will introduce a new element – a set of tools around evaluation – that can be used to tell us whether policies and programs are effective in advancing environmental justice.² An important consideration in evaluating effectiveness is recognizing, for a specific policy or program, where in the chain of effects the evaluation should focus. Policies and programs have multiple levels of intended effects: outputs are intended to spark a chain of intermediate outcomes that are intended to ultimately lead to environmental changes. Evaluators should identify the link in the causal chain of effects being measured, and to draw conclusions on effectiveness accordingly (see the following chapter, Chapter 3, for a discussion on logic models and performance measurement).

Effectiveness assessments can measure different levels of effects, as well as different aspects of effectiveness. Some assessments only attempt to determine whether the desired effects of a policy or program were observed, while others attempt to determine whether and to what extent the policy or program was responsible for the observed effects (uncovering a causal link). Other effectiveness evaluations go a step further and consider how and why the policy or program achieved or failed to achieve its intended effects. Still others try to discern whether the effects were produced in the most efficient way. These different types of effectiveness evaluation require different methods and metrics.

The authors recognize the importance of tight performance metrics; yet tight performance metrics should not be limited to those that can be quantifiably measured. Key elements of many EJ programs are challenging to capture quantitatively, such as intermediate outcomes like leadership-building and increased collaboration, and long-term impacts like improved quality of life or a shifted paradigm of environmental regulation. Evaluation in the EJ context should be concerned not only with quantifiable outcomes but also the skills, knowledge and perspectives acquired by the individuals who are involved with the project.

This desire to view evaluation as a management and learning tool for stakeholders is rooted in the conviction that project evaluation and project management are inextricably linked and that “good evaluation” is nothing more than “good thinking.” Evaluation then is not an “event” that occurs at the end of a project, but rather an ongoing process that helps stakeholders better understand the project; how it is impacting participants and the community; and how it is being influenced/impacted by both internal and external factors. Many funders support the use of context evaluation and implementation evaluation techniques rather than a sole focus on outcome evaluation with quantifiable measures of program effectiveness. Ultimately, evaluation as management and learning tool should lead to an effective project/program and a greater capacity to implement it.

² An effectiveness assessment attempts to determine whether the effects of the policy or program match the policy or program’s goals and objectives. This differs from an effects assessment, which considers both the intended and unintended effects of a policy or program.

3. Theories of Change, Performance Measurement and Evaluation within Program and Policy Processes

3.1 Introduction

The EJ movement has ambitious goals that should not be compromised or reduced. Yet change happens incrementally, and it is difficult to connect on-the-ground implementation of a particular EJ policy or program to expansive goals like eliminating the EJ gap. This section introduces tools and frameworks that help us break down the policy or program process into smaller, achievable steps with their own specific, timely, measurable goals. In this way we can complement our big vision with tight metrics. This will not only make it easier to evaluate the effectiveness of our policies and programs, but will also help us design and implement our policies and programs more successfully.

We begin this section by modeling the stages of a program and discussing how policies and programs generate chains of effects. These ideas are then used to introduce a theory of change framework for understanding and articulating how stakeholders can expect to reach long-term goals, and to introduce the use of performance measurements for tracking progress towards those goals. Finally, we explain how these tools can be used as a starting point for evaluation, and the types of evaluations that can be undertaken.

3.2 Logic Models, Theories of Change, and Performance Measurement

Figure 1 is a simplified linear model that shows the relationship between a program's work and its desired results. Programs have resources, activities, outputs, and desired outcomes; a *logic model* illustrates the logical (causal) relationships among these program elements. Logic models take a systems approach to communicate the path toward a desired result.

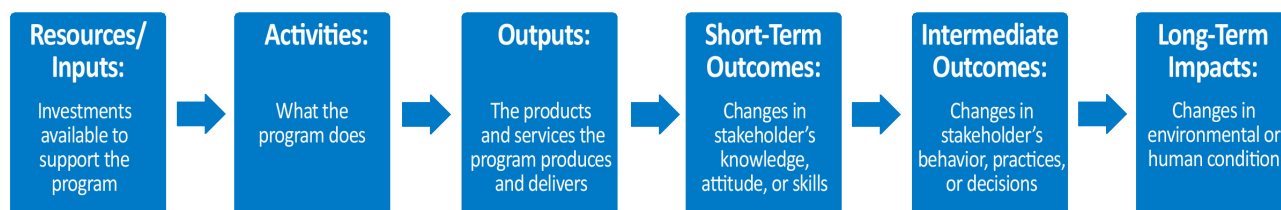


Figure 1: The program “Logic Model” adopted from “Guidelines for Evaluating an EPA Partnership Program (Interim).” (EPA and the National Center for Environmental Innovation, March 2009).

Figure 1 shows that programs have multiple levels of intended effects: outputs spark a chain of outcomes that ultimately lead to long-term impacts. Box 2 distinguishes among these various levels of effects.

Box 2. Types of Effects (Crabbé and Leroy, 2008; EPA, 2001; Gysen et al., 2006; Mickwitz, 2003)

- **Output:** Outputs are the tangible results of a project, program or policy or program; the products and services delivered by the project, program or policy makers. (Examples: more field inspectors and citations on industry; a map of EJ areas.)
- **Outcome:** This refers to the response of targeted stakeholders to the project, program or policy outputs; the impact of the outputs on behavior. (Examples: fewer factories out of compliance; more investment in EJ areas). One outcome often leads to another and then another, generating a chain of outcomes.
- **Impact (Environmental Change):** This describes the consequences of the behavioral changes, including immediate, intermediate and long term impacts. These impacts include actual changes in the state of the environment, health and quality of life impacts, as well as broader economic and structural changes. (Examples: cleaner air, improved health and reduced environmental disparity).

Note: The connections between outputs, outcomes, and environmental changes are rarely straightforward. It is important to consider effects at various scopes – from immediate effects to ultimate objectives – and chart the causal links.

Evaluations of specific policies and programs often focus on the most proximate effects of the policy or program, the outputs. Outputs can be directly linked to policy or program activities and inputs, and therefore causality can be readily confirmed. But the EJ movement is concerned not only with the effectiveness of a policy or program at producing outputs, but also at influencing intermediate outcomes, and ultimately at helping to achieve long-term impacts. In order to address the effectiveness of a specific policy or program in influencing larger impacts (like reducing the EJ gap), we must first connect the outputs and intermediate outcomes of the policy or program to those downstream effects in a chain of causality. All the intermediate micro-steps and linkages have to be true for the policy or program to be effective in influencing environmental change. Charting the chain of causality allows us to check our mental models and assumptions about what a policy or program is actually achieving and how we can know.

The general program logic model in Figure 1 can be applied to a specific EJ program in order to communicate how a program is intended to work to produce its desired goals. Below we present an example logic model. This logic model describes one of the investments made by the Harbor Community Benefit Foundation, a nonprofit that invests in community capacity building in the overburdened communities around the Port of Los Angeles.

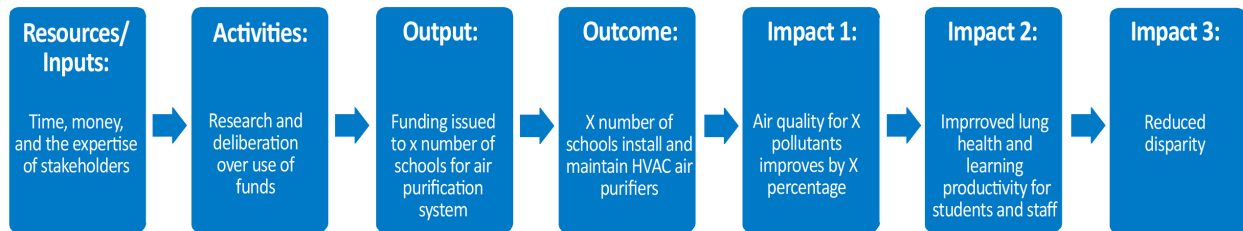


Figure 2: Hypothetical logic model for the Harbor Community Benefit Foundation's air filtration project for impacted schools

This logic model illustrates a sequence of cause-and-effect relationships among the program's inputs, activities, outputs, outcomes and impacts. It represents just one of many pathways to change for the Harbor Community Benefit Foundation. It is important to note that the logic model makes the process appear like a clear linear progression when in actuality its linkages are more complex. This simplification is deliberate; the purpose of a logic model is to summarize into basic categories a complex theory about how a program works.³

This complex theory upon which the logic model is based is called a **theory of change**. While a logic model provides a simplified understanding at a glance, a theory of change gives a more detailed narrative story. It elaborates on the program's intended path of change, explaining how and why each step in the causal chain will lead to the next.

Logic modeling and **theories of change** are powerful tools for program stakeholders, especially during the early stages of program design. The process of creating a logic model allows stakeholders to uncover and examine their underlying assumptions about how a program will work. Often different stakeholders will have different views about causal relationships; these differences can be discovered and possibly reconciled by logic modeling. Additionally, many stakeholders find identifying early program activities and long-term goals relatively easy, but lack an explicit understanding of the intermediate steps required to link the two. Developing a logic model compels stakeholders to articulate and plan for all of the mini-steps that need to occur before the program's ultimate goals can be achieved.

In addition to being helpful to program development, logic modeling and theories of change can be used to improve the quality of program evaluation. Logic modeling and theories of change strengthen an evaluator's understanding of a program and, in particular, they clarify the often unidentified intermediate steps that must be taken to reach a long term outcome. This helps an evaluator address all of the program's elements, and assess the strength of the causal linkages among those elements.

³ For an additional resource, consider taking EPA's free online web-based training course "Picturing your Program: An Introduction to Logic Modeling, available at: <http://www.epa.gov/evaluate/lm-training/index.htm>.

Performance measurement is defined as the ongoing monitoring and reporting of program accomplishments against progress towards pre-established goals. Each input, activity, output, outcome or impact outlined in the logic model can be translated into a clearly defined and quantifiable performance measure. For instance, an evaluator could set standards for and measure the amount of time or resources engaged in a program (inputs), the type or level of activities accomplished (activities), the direct products and services delivered (outputs), and/or the results of those products and services (outcomes and impacts). Selecting which program elements to measure and setting the performance standard for each element depends on the unique context of each individual program. Attributes of a successful performance measure include⁴:

- 1) **Linkage:** the measure aligns with policy or program goals so that behaviors and incentives generated by the measure support the achievement of those goals.
- 2) **Clarity:** the measure is clearly stated and the name and definition of the measure are consistent with the methodology used to calculate it so that the data is not confusing or misleading.
- 3) **Measurability:** The measure must be quantifiable so that it is clear whether a policy or program's performance is meeting expectations.
- 4) **Objectivity:** To the extent possible, the measure is free from significant bias or manipulation.
- 5) **Reliability:** The measure produces the same results under similar conditions.
- 6) **Coverage:** The suite of performance measures chosen together cover all of the stages in the logic model and address all of the policy or program goals with limited overlap.

Performance measurement and logic modeling complement each other. Logic modeling maps out how activities, outputs, and outcomes connect to long-term goals, helping identify elements of the program that can yield useful evaluation data. Performance measurement builds on logic modeling, developing performance measures for elements identified in the logic model. Both logic modeling and performance measurement can be used to develop a comprehensive program evaluation that examines and draws conclusions about the effectiveness of a program's design, implementation, and impacts, and makes recommendations for adjustments that may improve results.

4 List adopted from US Government Accountability Office's October 2011 report "Environmental Justice: EPA needs to take additional actions to help ensure effective implementation."

Box 3. Summary of Tools*

Logic Model: A graphical illustration of the sequence of intended causal relationships among a program's components; a roadmap showing the intended path from a program's inputs to its ultimate effects.

Theory of Change: A narrative clarifying how and why the program is expected to realize its desired change. A theory of change articulates the assumptions about how a program is intended to be implemented and function to create change.

Performance Measurement: An ongoing process that monitors and reports on a program's progress and accomplishments, against progress towards pre-established goals, by using pre-selected performance measures. Performance measurement attempts to gauge whether a program's theory of change is working by measuring various program elements against performance standards.

Program Evaluation: Systematic studies conducted to assess how well a program is working and why. Program evaluation uses measurement and analysis to answer specific questions about program components and results.

*Adopted from the EPA's Program Evaluation website: www.epa.gov/evaluate/basicinfo/index.htm.

3.3. Evaluation and the Program Cycle

By periodically tracking policies and programs as they occur, performance measurement can detect issues early on before a detailed evaluation can be accomplished, keeping policies and programs on pace and accountable to the public. Program evaluations go several steps further. Evaluations are individual systematic studies conducted periodically or on an ad hoc basis to examine aspects of a program or assess how well a program is working, and why. Program evaluations can incorporate performance measures to assess whether a program has accomplished its intended results, but also attempt to determine why and how these results have been achieved, in order to help stakeholders improve the program. Because program evaluation requires a broader and more in-depth examination than performance measurement, it cannot occur as often and is more likely to be performed by an outside evaluator.

3.3.1 Types of Program Evaluations

As described previously, program evaluation is a systematic study with a well-defined methodology that uses measurements and analysis to answer specific questions about how well and why a program is working to achieve its objectives. Evaluations can assess different aspects of a program's effectiveness: whether intended effects are achieved (from outputs to outcomes

and impacts), whether and to what degree the program itself is responsible for the change, and how the program’s design and/or implementation influences the success of the program at reaching its objectives. Answering these different questions requires a focus on different elements of the program’s pathway to change. We are including once again the visual illustration of the program logic model, this time highlighting types of evaluation that can be conducted during different stages (Figure 3). Table I then provides more information about these evaluation types.

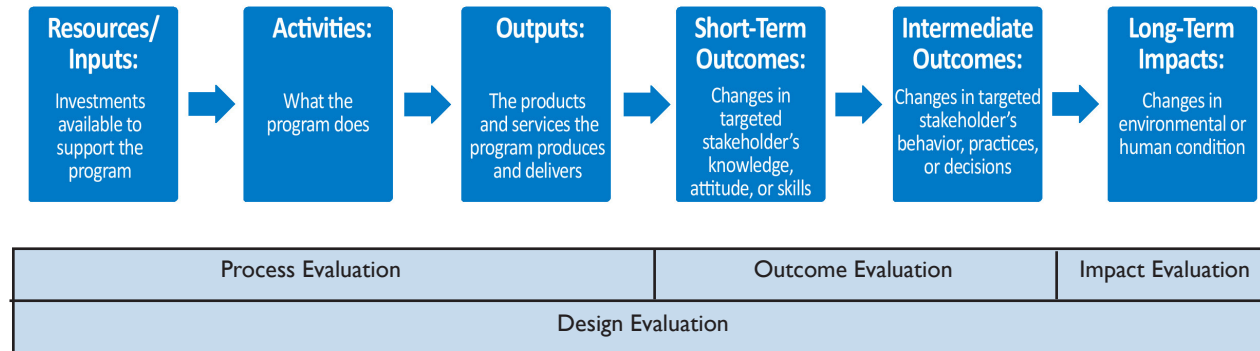


Figure 3: The program logic model as represented by when certain types of evaluation are appropriate to conduct

EVALUATION TYPE	WHAT IT DOES	WHY IT IS USEFUL
Design Evaluation	Analyzes whether a program’s approach is conceptually sound	Informs program design and in-creases the likelihood of success
Process Evaluation	Assesses how well a program is being implemented; asks what processes are working, what are not working	Checks how well program plans are being implemented and what process changes might be needed
Outcome Evaluation	Assesses the extent to which a program has demonstrated success in reaching its stated short-term and intermediate outcomes	Provides evidence of program accomplishments and short-term effects of program activities
Impact Evaluation	Measures the causal relationship between activities and outcomes— asks whether a program’s activities caused its goals to occur	Provides evidence that the program, and not outside factors, has led to the desired effects

Table I: Types of Evaluation

Table I does not represent a comprehensive list of program evaluation types nor fully indicate

the range of options available for how to use evaluation as a program tool. The type of evaluation you select will depend on the phase of project or program development, the purpose of the evaluation, and the questions you are attempting to address, among other considerations. Key questions to ask when planning, preparing, and implementing an evaluation can be found in the last section of this chapter (page 19).

It is beyond the scope of this framework proposing report to provide instructional guidelines for how to conduct the various types of program evaluation. The authors recommend seeking additional information on websites that serve as a clearinghouse of resources, including EPISA's Program Evaluation site: www.epa.gov/evaluate/.

3.4 Evaluation and the Policy Cycle

Policy evaluation shares some similarities with program evaluation. Figure 4 presents a model of the policy-making process. It includes the same stages as the program logic model, as well as some earlier stages (identifying issues, agenda-setting, designing policy options and selecting a policy). This model is just one of many ways to represent the policy-making process, and like all models, it is a simplification of reality.⁵ We chose this model because it highlights key stages in the policy cycle in which evaluation can occur. Evaluations may focus on multiple stages of the policy-making process, one stage in isolation, the links between stages or the process as a whole.

⁵ This particular framework conceives of the policy-making process as a series of steps in an ongoing cycle. This makes policy-making appear more like a rational, goal-oriented process than may be realistic. It also focuses on policy elements and actions rather than actors, and therefore does not illustrate the complex interactions among stakeholders.

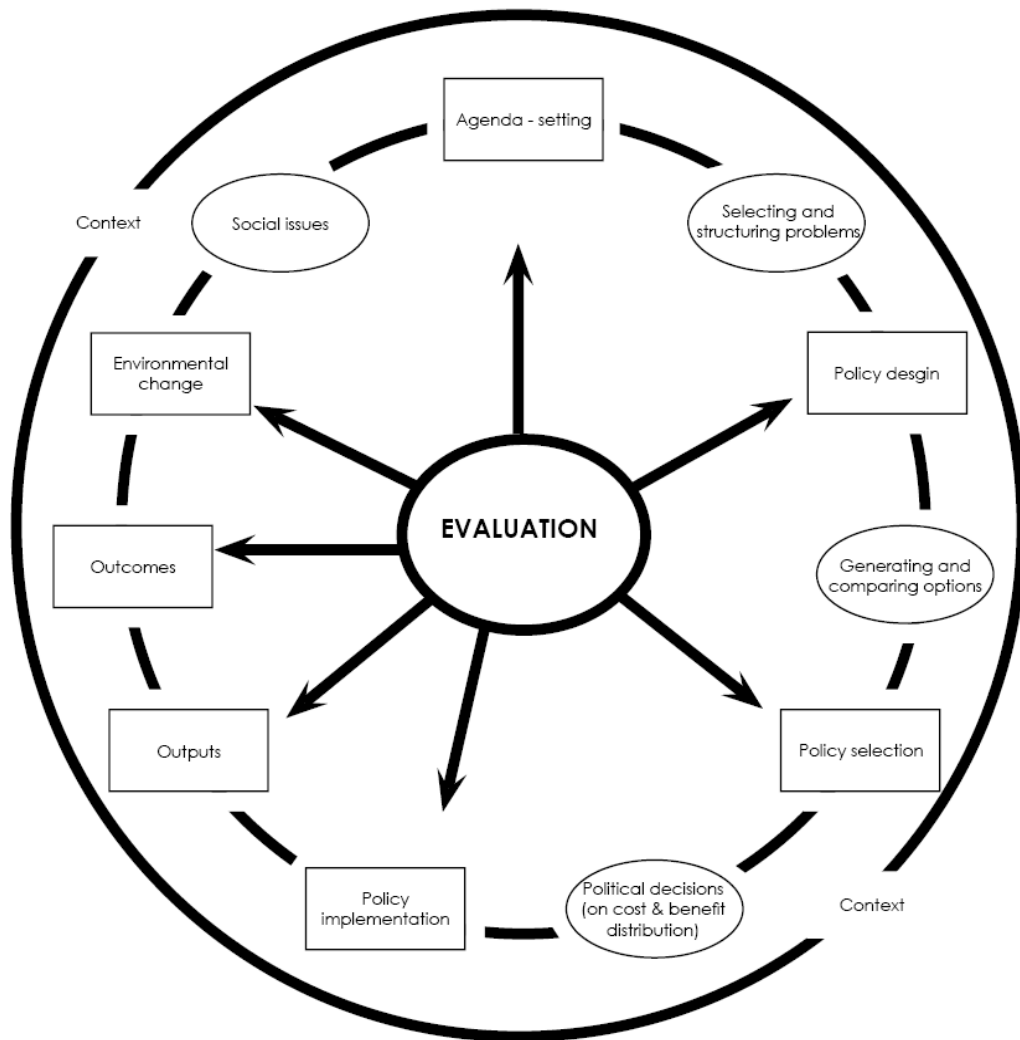


Figure 4: The policy cycle, adopted from Crabbé and Leroy, 2008.

The model in Figure 4 represents the policy cycle as being encased within a larger context. This is done in order to highlight the influence of outside forces on every stage of the process. Agenda-setting, as well as policy design, selection and implementation are affected by, among other things, the availability of scientific information, the power relations among stakeholders, and the prevailing ideologies of the time and place. Often choices are determined by institutional culture, structures, needs and limitations more than by considerations of effectiveness.

In order to truly understand the success or failure of a policy or program, evaluators must consider the political, economic, institutional, environmental and geographic context. Context evaluation is a form of evaluation that allows for the systematic consideration of these types of circumstances and can be usefully employed as part of a multi-disciplinary and flexible approach to evaluation. The following chapter provides more tips for understanding the context when evaluating within an EJ context.

3.5 Key Questions to Consider During Evaluation Planning and Execution

By improving our use of evaluation, we can better design and implement EJ policies and programs that address the ultimate goal of closing the EJ gap. Below is a list of key questions that evaluators can consider in order to improve evaluation planning and execution.⁶

- **Who has the need for what information and why?** Developing a list of potential stakeholders with their questions, information needs and interests in the evaluation will help determine the purpose of the evaluation and secure buy-in.
- **What is the policy or program that you have been asked to evaluate?** Define or describe the policy or program in terms of inputs, activities, outputs and outcomes. This will help organize stakeholder questions and information sources around key policy or program components.
- **What issues and/or problem areas have already been identified?** Is there already sufficient information to answer many of the questions? A literature review or interviews with stakeholders may determine that an evaluation is not needed.
- **What information sources exist?** If readily available sources do not exist, how feasible is it to obtain them? This will drive the design of the evaluation.
- **What will the policy or program do with the information or results once it receives them?** The evaluation should be timed and designed to feed into decision-making processes.
- **Who is the principle owner of the evaluation?** It is important the evaluator has the capability or authority to make effective use of the evaluation information.

⁶ Adopted from a paper by Michael Mason (2002), accessed from the EPA website: <http://www.epa.gov/evaluate/pdf/consider.pdf>.

4. Evaluation within the EJ Context

4.1 Understanding the Context

Understanding the landscape of EJ policies and programs is important to develop effective assessments, as different types of EJ policies and programs will present unique challenges and require different evaluation approaches. This section begins by making the distinction between policies and programs with explicit EJ objectives and the much broader category of policies and programs that do not have explicit EJ objectives but do have significant EJ implications. There are opportunities to integrate proactive EJ strategies into policies and programs that fall within this second category, and we provide an example of one such attempt.

We outline some of the major strategies utilized in policies and programs to advance environmental justice, and we provide real-world examples of specific community-based programs that utilize these main types of EJ strategies. By making distinctions among the types of EJ strategies employed and by describing example programs, we provide context for our discussion of evaluation and prompt consideration of the real-world application of the evaluation tools discussed in the previous section. Note, however, that the EJ programs and strategies highlighted below do not by any means comprise the entire universe of current or future programs and strategies.

4.1.1 Considering EJ in a Broader Suite of Policies and Programs

We can evaluate all policies and programs through an EJ lens to determine whether they have a positive impact, negative impact, or no impact at all on environmental disparity. As discussed earlier in this report, many policies and programs with main purposes that are not EJ-related have EJ side effects. It is important to note that just because these EJ effects are not intended does not mean that they are necessarily unanticipated. Identifying and anticipating the ways policies and programs reproduce or generate disparity can enable one to address that disparity or prevent it in the first place.

Seemingly neutral and uniform policies and programs may produce and perpetuate discriminatory outcomes in unexpected ways. The activities that generate or perpetuate disparity may occur during policy and program design, implementation, or monitoring (see Section II on policy and program cycles). In response to the concern over the EJ side effects of government activities, President Clinton passed Executive Order 12898, mandating that all federal agencies consider the environmental justice consequences of their policies and programs. Since then, there has also been a proliferation of EJ mandates at the state, regional and local levels, with California and its regional air districts being among the most active. As a result, government agencies are developing tools and indices for incorporating EJ principles into agency decision-making and are attempting to make EJ a part of institutional culture.

Recently, agencies have begun to interpret their EJ mandate more broadly, not only attempting

to prevent their policies and programs from worsening the EJ gap, but also incorporating proactive EJ strategies that will improve distributive justice. In this way, they are moving beyond just addressing environmental disparity as an unintended side effect of policies and programs, and making environmental justice an intended outcome.

EJ programs and strategies can be incorporated as components of a wide range of non-EJ specific government activities. A particularly productive area in which to incorporate EJ programs and strategies is into the core government functions of environmental agencies and specifically integrating EJ strategies into the design of major regulatory activities such as permitting, rule-making, compliance, and enforcement. For example, risk assessment can be revised to include population and place-based analyses that consider cumulative impacts and the distribution of impacts; standards can be set in a way that addresses the issue of localized pollution hot spots; permits can be conditioned or denied based on EJ grounds; and permit requirements can be enforced in a way that addresses EJ by enhancing penalties in overburdened communities, returning penalty money directly to the affected communities, or targeting enforcement resources in overburdened communities. These example EJ strategies range from adding a consideration of distributive justice to current policies, to transforming the way we conceptualize and undertake regulatory activities.

One example of the incorporation of an EJ strategy into a non-EJ specific environmental regulation is the South Coast Air Quality Management District (SCAQMD)'s Dry Cleaners Initiative in southern California. SCAQMD is tasked with carrying out the provisions of the federal Clean Air Act within the Los Angeles air basin and nearby air basins. SCAQMD added an EJ strategy as part of its broader rule to phase out a toxic chemical used by dry cleaners over an 18-year period. In order to phase out the use of the chemical, SCAQMD provided financial incentives to dry cleaners who switched to less toxic chemicals early. They gave establishments in EJ neighborhoods priority for this incentive money, attempting to gain the quickest reductions in overburdened communities and thus reduce the EJ gap. This is a step beyond just preventing negative EJ consequences; SCAQMD attempts to focus resources in overburdened communities, incorporating a proactive EJ strategy into a broader air quality regulation.⁷

4.2. Programs that Utilize EJ Strategies and Example Logic Models

This section highlights key EJ strategies. An EJ strategy can be the explicit focus of a policy or program, or can be one element of a broader policy or program (as in the SCAQMD example). The list is not meant to be definitive, but rather a starting point for a more comprehensive understanding of how to address environmental disparity. Ultimately, the pathway to change will be a combination of these strategies, some more relevant to different situations.

⁷ See Section 4.3 for information on evaluation of the SCAQMD initiative.

Common EJ Strategies taken in EJ Programs:

- 1) **Assess and incorporate disproportionate cumulative impact considerations** in standards, rules, permits, and other aspects of the policy and program process to ensure protection of overburdened communities.
- 2) **Build community capacity**, including collaborations and partnerships, technical assistance, community-based participatory research and other approaches that empower communities and lead to results.
- 3) **Target or focus pollution reduction, mitigation, and community revitalization resources in overburdened areas.**
- 4) **Improve information disclosure, surveillance, and enforcement in overburdened areas.**

The following is meant to ground the report's conceptual discussion on evaluation in real-world examples. By providing examples of programs that utilize different EJ strategies and their logic models, we hope to shed light on these strategies, and in the process strengthen the capacity for program-specific assessments. It is important to note that while each program is used as an example of one EJ strategy, most of these programs make use of a combination of strategies. For instance, most EJ programs incorporate community capacity building to some degree.

It is also very important to note that the following four example programs only represent a small range of EJ programs of limited scale. They are important examples of community-based EJ efforts. However, they certainly do not comprise the universe. Many programs, policies, and strategies pertinent to advance environmental justice are not addressed in this brief report (or even yet embarked upon in the collective practice). For instance, the following examples do not speak to the integration of EJ in legislation, rule-making or regulatory efforts.

4.2.1 Assess and Incorporate Cumulative Impact Considerations

Current environmental regulation typically uses a chemical-by-chemical, source-by-source approach. This does not reflect the lived experience of EJ community members who must contend with cumulative impacts from numerous and varied risks. Cumulative analysis is a strategy for examining disparities from all pollutants rather than a single source at a time in order to redefine and refine the location and magnitude of environmental risk. One challenge with this EJ strategy is that information on cumulative impacts alone cannot reduce disparity – the information must be utilized for such activities as setting standards and prioritizing areas for policy intervention. Those who assess cumulative impacts must be aware of how the information they produce will be linked in a causal chain to reduced environmental disparity and let this ultimate goal help inform the design of the cumulative impact assessment. For instance, if the tool is meant to be utilized by decision makers, it must be understandable to people other than just scholarly researchers. Furthermore, if it is meant to be employed by EJ advocates and their EJ organizations, it must be transparent as well as credible to this important group of stakeholders.

California/EPA's Environmental Health Screening Tool

The California Office of Environmental Health Hazard Assessment (OEHHA) within the California Environment Protection Agency (Cal/EPA) released a draft tool in July, 2012 to screen the environmental health of California's communities. The draft California Communities Environmental Health Screening Tool (CalEnviroScreen) uses existing environmental health and socio-economic data to compare the cumulative impacts of environmental pollution on Californian communities. The model includes three components representing pollution burden – exposures, public health effects, and environmental effects – and two components representing population characteristics – sensitive populations and socioeconomic factors.⁸

Pollution and population factors interact to produce additive effects that result in severe environmental health disparities realized in California. The first step in addressing these cumulative impacts is identifying and measuring them, which is what OEHHA's screening tool will do. Once the California Environment Protection Agency (Cal-EPA) has adopted and utilized the adopted tool to better understand the location and extent of impacts, they could potentially incorporate that information into rule-making, permitting, and other regulatory processes.

A hypothetical evaluation of this process could assess whether the state was able to effectively use its cumulative impacts screening tool to inform policy and programs designed to reduce cumulative impacts in disproportionately impacted communities. The below logic model, and the other program logic models that follow, are examples meant as a starting point for discussion. Like all logic models, they only capture one simplified chain of causality within a larger theory of change and therefore cannot be relied upon to gain a full understanding of the programs. You will notice that in these logic models we have left out the first two steps in the chain of causality: inputs and activities. This was done for the purpose of a simplified learning process. It is also important to note that the below logic model on OEHHA's cumulative impact screening methodology is merely hypothetical. While OEHHA, as part of Cal-EPA, released a draft screening tool, Cal-EPA has not formally adopted any such methodology to assess cumulative impacts, nor guidelines to accompany such a tool, nor made any determinations whatsoever about how a screening methodology could impact permitting and regulatory processes.

8 California Office of Environmental Health Hazard Assessment (July 30, 2012). Draft California Communities Environmental Health Screening Tool: Proposed Methods and Indicators. <http://oehha.ca.gov/ej/pdf/DraftCalEnviro-Screen073012.pdf>

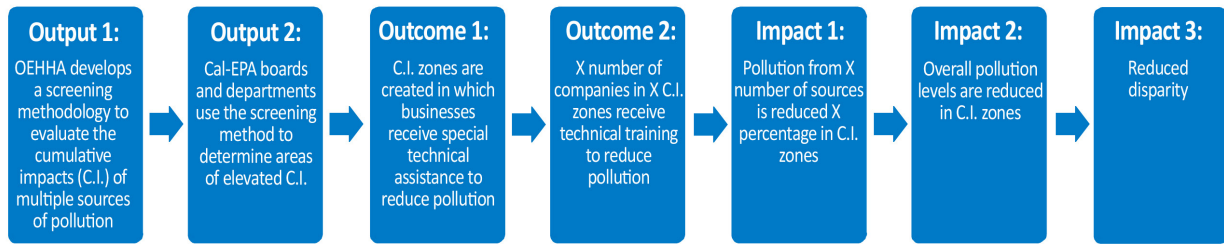


Figure 5: Hypothetical logic model of OEHHA’s cumulative impacts screening method

4.2.2 Community Capacity Building

Community capacity building includes training, technical assistance, community-based participatory research, community organizing and social action. Capacity building efforts are usually driven by community leaders and organizers and directed at information gathering, public outreach and education, community participation and community access to decision-making. Democratizing environmental protection is critically important to the EJ movement because low income and minority communities faced with environmental disparities are critical stakeholders in any effort to address those disparities. Furthermore, the extent to which the community is involved in a policy or program is a large part of whether that policy or program holds legitimacy for that community.

One challenge with evaluating capacity building strategies is that their immediate process-oriented goals tend to be vague and hard to measure. Policies and programs that employ a capacity-building strategy need specific performance standards that translate terms like “capacity” and “advocacy” into metrics that can be tracked. Another challenge in evaluating capacity buildings strategies is that their immediate goals are process-oriented when the ultimate goal is outcome-oriented: reduced disparity. There is a tendency to only track these process-oriented goals and assume that greater capacity will translate into reduced environmental disparity. It is important that we instead follow the causal linkages and evaluate whether improved capacity actually leads to outcomes that will address environmental and environmental health disparities.

U.S. EPA’s CARE Program: Pacoima Beautiful Grants

The EPA’s CARE Program is a prime example of a program that employs a capacity building strategy to advance environmental justice. CARE provides two levels of grants: awarded organizations use Level 1 grants to identify and prioritize environmental risks, and to form partnerships with various stakeholders. Level 2 grants are available to organizations that have successfully completed CARE I. They fund the implementation of programs and projects that address the community’s needs identified in CARE I and require an alliance with local businesses.

In May 2009, The National Academy of Public Administration completed a three-year evaluation of the CARE program. This evaluation is available online at: http://www.napawash.org/pc_management_studies/CARE/5-21-09_Final_Evaluation_Report.pdf, or find it on the “publications” page of the EPA CARE’s website. To find out more about the CARE Program in general, visit the website: <http://www.epa.gov/care/>.

Since 2005, EPA CARE has awarded 66 Level 1 grants and 38 Level 2 grants throughout the country. The nonprofit Pacoima Beautiful is one example of an organization that has received EPA Level 1 and 2 CARE grants. Pacoima Beautiful is a grassroots non-profit organization based in the pollution overburdened community of Pacoima in Los Angeles’s San Fernando Valley. Pacoima Beautiful used the CARE grants for a host of capacity-building activities: educating the community about local environmental issues; ground-truthing to identify toxic substances and prioritizing risks; identifying environmental concerns for each of the community’s industries; building partnerships with local businesses; encouraging businesses to voluntarily adopt better business practices; and training businesses in best practices.

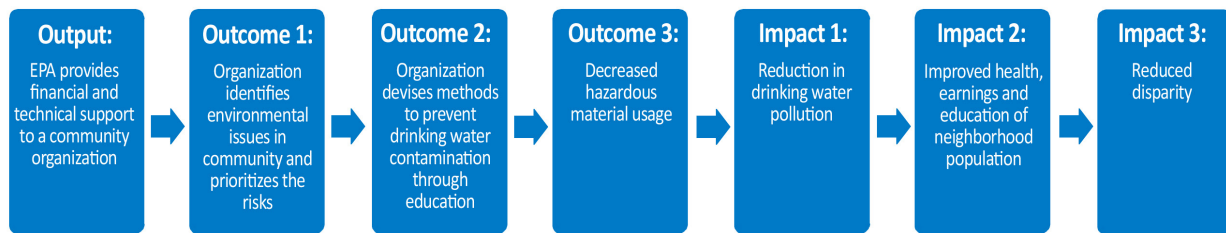


Figure 6: Hypothetical logic model for an EPA’s CARE Program grantee’s project

4.2.3 Mitigation of Disproportionate Impacts and Community Revitalization

Another set of EJ strategies focus on redressing existing disparities by directing environmental resources into overburdened communities. These strategies reflect the realization that EJ is about both reducing negative environmental outcomes and increasing positive environmental benefits. Mitigation efforts address existing pollution problems while revitalization efforts improve community resilience. One key challenge in evaluating mitigation and revitalization efforts is to consider the results at various scopes – not only assessing whether the community in question is receiving greater environmental services, but also whether this is reducing disparity more broadly or just rearranging the deckchairs on the Titanic. Another key consideration is whether these strategies are producing unintended effects, particularly the unintended effect of gentrification and displacement of communities.

Harbor Community Benefit Foundation

The Harbor Community Benefit Foundation (HCBF) employs strategies of mitigation and

revitalization. This foundation was established through an agreement between the Port of Los Angeles and community, environmental, health, and labor organizations in order to fund and carry out mitigation and other public benefit projects for the communities impacted by port related operations. HCBF invests in projects that improve port communities' health, quality of life, access to open space, and economic opportunities.

Note: Again, the following logic model is hypothetical. It focuses on just one aspect of the HCBF's investment that was previously prioritized as part of the agreement between the Port of Los Angeles and community, environmental, health, and labor organizations.

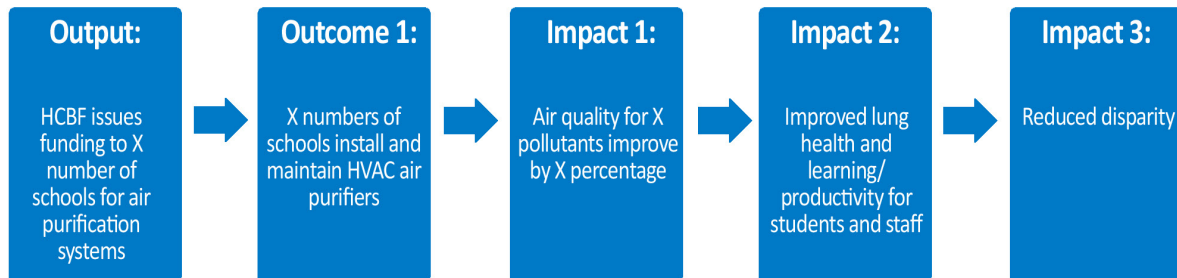


Figure 7: Hypothetical logic model of an initiative of the Harbor Community Benefit Foundation

4.2.4 Information Disclosure, Surveillance, and Enforcement in Overburdened Areas

Another strategy for addressing environmental disparities is strengthening the deployment of environmental regulations in overburdened communities. This involves tracking polluters, assessing whether they are in compliance with environmental regulations, and enforcing environmental laws on those out of compliance. One challenge with evaluating this type of strategy is that its effectiveness can ultimately depend on outside factors or coordination between multiple government agencies. Another important evaluation consideration is whether tracking, compliance and enforcement efforts will subside once the program is retired or whether long term capacity is being built so that community members can provide “eyes on the ground” monitoring in partnership with government agencies over the long term.

Los Angeles Area Environmental Enforcement Collaborative

The Los Angeles Area Environmental Enforcement Collaborative is an initiative that incorporates EJ strategies into non-EJ specific environmental regulation enforcement by focusing enforcement resources in overburdened communities. The Collaborative involves communities along the I-710 corridor in Los Angeles that contend with cumulative impacts from industrial sources and mobile sources including rail and truck traffic associated with freight movement. The Collaborative uses community-driven ground-truthing to identify targets for inspection and compliance and then directs enforcement officers in these areas of concern. Previously, enforcement efforts were not focused on a specific geographic area and instead enforcement

activity was dependent on community tips. Now through the work of the Collaborative, enforcement agents are specifically assigned to the I-710 corridor and are working proactively with the community to watchdog industries.

Note: An important aspect of the Collaborative's program not captured in the below hypothetical logic model is its capacity building activities. The Collaborative helps government agencies build and sustain partnerships with community organizations and their members by offering voluntary programs, tools, grant opportunities, education information and trainings for community members. In this way the Collaborative hopes to increase neighborhood engagement in the decision-making process so that community members have a role in sustaining enforcement efforts.

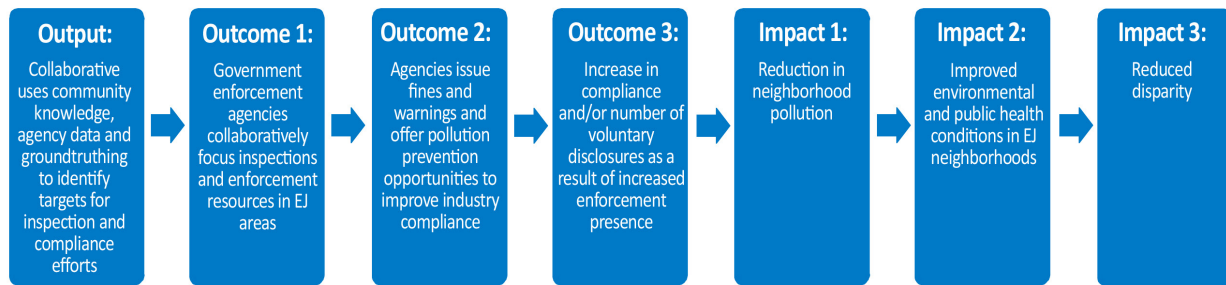


Figure 8: Hypothetical logic model for the Los Angeles Area Enforcement Collaborative

4.3 Evaluation in the EJ Context: A Case Study

Evaluations are not intended to sit on a shelf, but to have practical consequences. They can inform policy and program design, selection and implementation, as well as impact agenda-setting and the larger policy debate surrounding issues in the EJ field. Because learning is not an automatic result of the evaluation process, it is important to design evaluations with the policy and/or program's context in mind. In this subsection we examine evaluation within the EJ context by exploring a real world example of an EJ program evaluation.

Professor Paul Ong of the UCLA Luskin School of Public Affairs has conducted an evaluation of the South Coast Air Quality Management District's (SCAQMD) dry-cleaners initiative. As described earlier in this chapter, SCAQMD provided financial incentives for dry cleaners to switch early to the use of a less toxic chemical, and gave priority to establishments in EJ neighborhoods (defined as having a poverty rate above a given level and experiencing high levels of cumulative exposure). Despite this pro-EJ policy, Ong's analysis of available data shows that dry cleaners in low-income, predominantly minority and EJ designated areas are less likely to be early adopters of green technologies, and this finding holds even after accounting for firm and market characteristics (Ong, 2011). The results demonstrate the value in revisiting the program design and implementation to ensure that intended results are aligned with actual results. The study also provides lessons for evaluators. One of the lessons learned from this on-going evaluative effort is that the required micro-level data to isolate the independent program

effects is extremely difficult and costly to assemble. The expense and challenge of collecting performance data to address the most complex evaluative question of causal impact and contribution partially accounts for the dearth of program evaluations.

More program evaluations will be achievable if we design EJ policies and programs with evaluation in mind. Although well-intended, the goals of EJ policies and programs are often stated in general terms with a lack of clarity about the desired outcomes. Additionally, there are too few efforts to monitor quantifiable outcomes. We thus need to utilize tools and metrics such as logic modeling and performance measurement by which to monitor and measure progress toward clearly defined and quantifiable EJ goals.

4.4 Challenges and Lessons for Overcoming Barriers

There are countless ways to design and implement policy and program evaluations, and certain evaluation approaches will prove more applicable than others depending on the context. Environmental justice issues have special characteristics that affect the evaluation of the policies and programs used to address them. The objective of this section is to help stakeholders understand key considerations, barriers and opportunities in conducting evaluation within an EJ framework. This discussion is first grounded in a brief history of evaluation, which informs current practices. This section provides examples of how barriers and challenges to evaluation have been overcome in other fields, and outlines a set of principles that could be considered to better design and execute successful evaluations in the EJ context.

4.4.1. How We Got Here and Where We Can Go: Lessons Learned from Other Fields

This sub-section provides a brief historical background of evaluation, associated challenges, and lessons learned. Although humanity has long attempted to solve social problems using some kind of rationale or evidence (e.g., evaluation), program evaluation in the United States officially began with the ambitious, federally-funded social programs of the Great Society initiative during the mid- to late-1960s (W.F. Kellogg Foundation, 1998, pg 4). Even as resources poured into these programs, there were not enough resources to solve all of our social problems and decision makers had to target their investments. During this period, “systematic evaluation [was] increasingly sought to guide operations, to assure legislators and planners that they [were] processing on sound lines and to make services responsive to their public” (Cronbach et al, 1980, pg 12).

Since the years of the Great Society, pressure to demonstrate the effectiveness of social programs has only increased, in part because of the influence of the scientific method on evaluation in the human services and educational fields. The scientific method is based on hypothetico-deductive methodology, which involves researchers/evaluators testing hypotheses about the impact of a social initiative using statistical analysis techniques. The hypothetico-deductive model is designed to explain what happened; show causal relationships between certain outcomes and the “treatments” or programs aimed at producing these outcomes; and answer the ultimate question: *Was the program effective?*

However, the conventional research method has some limitations. The criteria necessary to conduct these evaluations limit their usefulness to primarily single interventions programs in fairly controlled environments (W.K. Kellogg Foundation, 1998, pg 6). A focus on measuring statistically significant changes in quantifiable outcomes is not always useful in helping to understand complex, comprehensive, and collaborative community programs, especially the system change reforms and comprehensive initiatives that current social justice proponents seek to implement. The conventional method may not tell us how and why programs work, for whom, and in what circumstances, among other process and implementation questions. And yet given the increasingly complex social problems we face, including with regards to environmental justice, these are important questions to address.

The W.K. Kellogg Foundation employs certain principles that can help to overcome these challenges. An abridged version of these evaluation principles is as follows (pg 2-3):

- 1) **Strengthen projects and build capacity:** Evaluation should not be concerned merely with specific outcomes, but also with the skills, knowledge and perspectives acquired by the individuals who are involved with the project. This desire to view evaluation as a management and learning tool for stakeholders is rooted in the conviction that project evaluation and project management are inextricably linked and that “good evaluation” is nothing more than “good thinking.” Effective evaluation then is not an “event” that occurs at the end of a project, but rather an ongoing process that helps decision makers better understand the project; how it is impacting participants and the community; and how it is being influenced/impacted by both internal and external factors. Ultimately, evaluation should leave to an improved project/program and a greater capacity to implement it.
- 2) **Design evaluation to address real issues:** Evaluation efforts should be community based and contextual (based on local circumstances and issues). The purpose should be to identify problems and opportunities in the project’s real communities, and to provide staff and stakeholders with reliable information from which to address problems and build on strengths and opportunities.
- 3) **Create a participatory process:** When possible, evaluations should value multiple perspectives and involve a representation of people who care about the project. Effective evaluations also prepare organizations to use evaluation as an ongoing function of management and leadership.
- 4) **Use multiple approaches:** Evaluation methods should include a range of techniques to address important evaluation questions.
- 5) **Allow for flexibility:** Evaluation plans should take an emergent approach, adapting and adjusting to the needs of an evolving and complex project.

4.4.2 Challenges and Considerations for Evaluation in the EJ Context

There are common issues that arise when conducting evaluations in any field. These include limitations on time, money, and data. Certain challenges, however, are either more prevalent or fairly specific in the evaluation of EJ policies and programs. Below we outline key evaluation considerations relevant to the EJ field, and make suggestions for how to overcome these challenges. This discussion builds upon the aforementioned five principles.

Application of Quantitative Measurement and Data Limitations

The limitations of classical quantitative evaluation methods are particularly apparent in the world of environmental justice. In general, the EJ movement is critical of cost-benefit analysis (CBA), for example, believing that CBA largely fails to address distributional issues, as well as confuses ability to pay with willingness to pay when attempting to quantify environmental harms and benefits. Another challenge with using quantitative measurement methods in the EJ context is that direct costs of environmental regulations usually happen upfront and are relatively straightforward to quantify, while benefits are often diffuse and occur in the future, and therefore are often discounted.

Yet, evaluations in the EJ field often require both environmental data and data on the policy or program itself. There are many challenges with collecting and utilizing data, as discussed below

Knowledge Deficits

Issues of environmental justice often involve data that is uncertain, complex and technical. There is also a lack of necessary data, especially longitudinal and micro-level data. This limits evaluators' ability to measure change over time. In addition, much pollution data is collected at the federal level which means it cannot account for more fine grain differences among states, regions and localities.

Subjectivity and Context

Collecting and assessing data can be a subjective process. Who is collecting the evaluation data and what data they are collecting matters. For instance, consider the process of collecting and assessing data on environmental risk. When scientific consultants typically assess risk, they focus primarily on cancer risk and on risk in specific subpopulations of people, and they make many assumptions in applying their particular studies to the general human population.

The spatial and temporal context of data collection also matters. EJ policies and programs are primarily place-based and therefore the data is highly contextual; it cannot be assumed that the same results apply to other communities and different times. When a policy or program is evaluated at the local level, an important question is whether the outcomes are unique to the specific place and its context, or whether the results of the evaluation are transferable and scalable.

Exogenous Change

Just because desired outcomes are observed does not mean they are the result of the policy or program. Attributing results to an intervention, establishing that causal link, is extremely difficult. In order to isolate the contribution of a specific policy or program, evaluators need data not only directly related to the intervention, but also data on outside factors that may influence outcomes. Outside of a laboratory, only so much control of confounding variables is possible. Furthermore, even if a policy or program can be linked with some confidence to an effect, the path to success may be different than anticipated in the policy or program designer's theory of change. How and why a policy or program succeeds or fails can also be in large part determined by external factors such as the availability of funding.

Selecting Metrics

Evaluators in the EJ field struggle to select the appropriate unit of analysis for studying EJ populations and the appropriate comparison populations. They also struggle to select among measures of disparity; for instance, they can measure levels of pollution, proximity to environmental harms, actual exposure to harms, or health outcomes. There are also metrics of resilience such as access to parks, health insurance and nutritious food. Sometimes metrics are selected not based on what is most useful, but on what data is available.

The authors believe that it is important to utilize tight performance metrics while taking action to address environmental disparities. Yet tight performance metrics should not be limited to those that can be quantifiably measured. Key elements of many EJ programs are challenging to capture quantitatively, such as intermediate outcomes like leadership-building and increased collaboration, and long-term impacts like improved quality of life or a shifted paradigm of environmental regulation. As previously discussed, many funders, such as the Kellogg Foundation, support the use of context evaluation and implementation evaluation techniques rather than a sole focus on outcome evaluation with quantifiable measures of program effectiveness. Evaluation should be seen as a tool that can be used to improve a program throughout the program cycle rather than merely done at the end of a program's funding cycle to prove its worth.

Community Participation

Evaluations related to EJ are ideally open, transparent and sensitive to community concerns and include meaningful community involvement. Program evaluations sometimes require separation between evaluators and stakeholders, and this will remain the case for some evaluations in the EJ field. However, community-driven project or program evaluations could be particularly productive in the field of EJ for a number of reasons. First and foremost, people from impacted communities and/or people with awareness of the successes, challenges, difficulties and sensitivities associated with EJ have expertise that is highly relevant to evaluation and will help ensure that the approach taken is realistic and authentic. Just as critically, involvement helps make the evaluation meaningful to stakeholders, enhancing the actual utilization and implementation of insights and recommendations drawn from the evaluative process. Evaluations

will not be utilized, and therefore will be an inefficient use of resources, if they do not answer questions that are important to stakeholders and if stakeholders do not have the capacity to use them. Ensuring that community stakeholders are meaningfully involved in the evaluation process stimulates ownership and understanding, and thus utilization.

Another reason for community participation is that many EJ community members have well-warranted feelings of distrust towards top-down initiatives driven by federal agencies and academia. If an evaluation is conducted without sensitivity to this issue, communities may interpret evaluations as government meddling, or worse, they may see evaluation as a negative tool used to criticize their work and ignore their voices. For this reason, involvement needs to be genuine; if community members feel that they are only superficially represented and that their input is not wanted or valued, than they will be rightfully weary of future evaluation. Furthermore, participation does not necessarily mean the evaluation is capturing true public interest because of issues of representation (who is chosen to speak for the community), resource equality and capture by powerful interests. Before representation can be meaningful, communities need to first build the capacity—the technical, political and financial ability—to be involved in the evaluative process. Starting the evaluation process early in the program life cycle can help to build this capacity to affect later stages of evaluation.

Varied Audiences

As just discussed, in order for evaluations to be utilized, they must be meaningful to stakeholders. Ensuring that evaluations are accessible to all stakeholders can pose a significant challenge for EJ policies and programs, because audiences tend to be particularly diverse in this area. Relevant stakeholders include affected community members, industry located in the area, people in policy-making positions and various levels and branches of government.

At the most fundamental level, epistemological differences can arise among stakeholders, most typically with government agencies and academics giving primacy to scientific knowledge, and EJ advocates or community members placing more value on experiential knowledge. These epistemological differences translate into different notions of expertise and require different methodologies and evidence in order for evaluation results to be accepted. For example, while one group of stakeholders may favor established methodologies like quantitative risk assessment and prioritize risk based on mathematical probabilities, another may hold greater esteem for alternative methodologies like ground-truthing and may see residents' priorities as an important consideration in assessing risk.

Diverse stakeholders also use language differently, making it a challenge to articulate the results of an evaluation in a way that is conducive to utilization by all. For instance, the technical jargon of a trained evaluator may create distance with community members. The terms “object” of evaluation and “target” community may be neutral to a career evaluator, but problematic in the EJ world. Awareness of language sensitivities in the EJ community can improve acceptance and utilization of the conclusions and recommendations of evaluations.

Finally, different audiences have different definitions of the content and scope of the term “environmental justice.” These definitional differences arise from different conceptions of equity and fairness, which themselves are the result of different values and belief systems. Without agreement on the problem at hand, evaluations will struggle to define and measure effectiveness in a way that will satisfy all stakeholders.

Again, early action is important. Defining terms, performance measures, and key evaluation questions early in the program life cycle will go a long way to ensuring a successful evaluation.

Fear of Failure

Evaluation can illicit the fear of identifying failures. Yet embracing and acknowledging imperfections and set-backs is part of an effective evaluation that allows stakeholders to improve a program and build their capacity to execute it. If policies and programs have strategic-reevaluation built into them, this would help stakeholders see evaluation less as a tool for identifying success or failure, and more as a tool for adaptive change and improvement.

A major challenge in any evaluation is the competing interests of using the evaluation to prove a policy or program’s worth, versus using the evaluation to critically assess and improve the policy or program. Although evaluations can rightfully be used to highlight the successes of a program, there is a critical distinction between evaluation and promotion. The authors believe that evaluation should not be conducted simply to prove that a project worked, but also to improve the way it works. Evaluation can be a management and learning tool to help make projects, programs and policies as effective as possible. While it can be a challenge to motivate an implementer to agree to have their program under a microscope when they are fighting for resources, the fear can be assuaged when evaluation is viewed as a tool for long-term success rather than to prove success. In addition, funders now often require the use of some basic evaluation techniques throughout the program development process, rather than just the assessment of end results.

Time Constraints and Funding Limitations

With EJ policies and programs, impacts take time to surface, especially those impacts further down the causal chain. The program and policy paths have many links and actors, and there is often a time lag between activities and their effects. This requires evaluation that continues after the program has run its course, as well as consistent data over time. Funding the monitoring and reporting of impacts is a challenge, as many grants dry up when policies and program activities end. It is important that evaluation be built into funding plans so that there is money to measure longer term effects and document results. Without documentation, a successful policy or program is an isolated event, without broader implications for the EJ movement. Building evaluation into a project budget from the onset is a way to document results and seek future support for later reiterations of the program. With that said, resource constraints are still real issues. Unfortunately EJ policies and programs are already challenged with limited funding; it is difficult to prioritize resources for evaluation when there are so many other important actions.

Unintended Effects

Improving the environment in an EJ community does not necessarily guarantee reduced disparity. Two commonly feared negative side effects of EJ initiatives are a loss of jobs and gentrification. Evaluating the effectiveness of EJ policies and programs demands a careful assessment of unintended effects like these. This requires a consideration of effects at varied scopes to determine whether risk is actually reduced rather than just shifted to another EJ community. For instance, if an EJ initiative pushes truck traffic out of one community and into another equally overburdened community, then that initiative did not reduce the EJ gap. But if that initiative influenced a shift in truck technology that made all new trucks cleaner, then it would reduce the EJ gap not only in the existing community, but in other communities as well. Another common unintended effect of environmental regulation is risk tradeoffs where people substitute one environmental harm with another. For instance, an initiative to get people to stay inside on bad-air days will not improve health outcomes if people experience significant indoor pollution from something like lead-based paint. The complexity of EJ issues calls for system thinking and broad perspectives.

5. Conclusion

Why Overcoming Barriers is Worth Doing

Over the past 25 years, researchers have documented environmental disparities. Since then, government agencies and non-profit organizations have implemented a growing number of policies and programs that employ EJ strategies. Yet there is limited evidence of their effectiveness at closing the EJ gap. Whether the proliferation of EJ policies and programs is really affecting underlying disparities—and which strategies are most efficient at doing so—is a topic that is both timely and worthy of attention.

While evaluative tools have been used in the past mainly to measure the EJ gap, this report begins a discussion of how these tools can be used to assess and improve the effectiveness of policies and programs that are aimed to produce outcomes that address environmental and environmental health disparities.

A logic model—and the pathway to change it represents—can be used to map out how activities, outputs, and outcomes connect to long-term goals. Performance measurement then involves monitoring and reporting on program progress and accomplishments. Finally, program evaluation builds on these as a formal assessment that can answer key questions to help improve a program and draws conclusions about the effectiveness of its design, implementation, and results.

Evaluations vary in when they are conducted as part of program or policy development and implementation. As such, evaluators can focus on various levels of effects—from direct outputs, to short-term and intermediate outcomes, to finally distributional impacts farther down the chain of causality. One key type of program evaluation, outcome evaluation, assesses the extent to which a program has demonstrated success in reaching its stated short-term and intermediate outcomes. However, merely measuring statistically significant changes in quantifiable outcomes is not always useful in helping to understand complex, comprehensive initiatives that environmental justice proponents seek to implement. Some funders recommend using techniques from context evaluation and process evaluation to improve a program, as well as outcome evaluation and impact evaluation to assess outcomes and impacts, and inform future efforts.

Evaluation is a critical tool for improving a program or policy, determining effects, and generating knowledge to improve the effectiveness of future efforts. Yet as the EJ movement continues to fight for acknowledgement and financial support, those involved in policies and programs may view evaluation with caution because of fears of increased delays and costs, and the possible exposure of weaknesses that will provide critics with ammunition. Fears can be assuaged by

viewing evaluation as a management and learning tool to help make projects, programs and policies as effective as possible. In addition, evaluation can provide evidence of success that will make a policy or program more robust against criticism. Evaluation can provide the EJ movement with critical information about when desired outcomes have been achieved as well as can help improve the effectiveness of current interventions and generate cumulative knowledge that enhances future policy and program development to close the environmental justice gap.

6. Resources

The following list of guides and tools are taken from the Program Evaluation section of the US EPA's website: <http://www.epa.gov/evaluate/>. Neither the EPA nor the authors of this report endorse any of the sites and resources contained therein. The authors include these sites merely as potential resources for readers of this report. This is not a comprehensive list of resources available and relevant to conducting evaluation within an environmental justice context.

Evaluation Guides

The following evaluation guides from various organizations discuss principles and instructions for conducting program evaluations or creating performance measures.

- [Achieving and Measuring Community Outcomes: Challenges, Issues, Some Approaches \(PDF\)](#) (34 pp, 77K) — This report, created by the United Way, outlines some of the key issues that they have had and the different ways that they have tackled them.
- [AEA Guiding Principles for Evaluators](#) — Guidelines from the American Evaluation Association that provide a set of standards for performing ethical evaluations.
- [Evaluation Handbook \(PDF\)](#) (116 pp, 1.1MB) — W.K. Kellogg Foundation's handbook outlines the basic information on evaluation, the history of evaluation, and how to conduct an evaluation.
- [Framework for Program Evaluation in Public Health](#) — The Center for Disease Control provides general guidelines for doing an evaluation, and even though it is meant specifically for the public health sector, many of the principles are applicable to evaluations across the board.
- [Joint Committee on Standards for Educational Evaluation \(JCSEE\)](#) — JCSEE publishes widely recognized standards on evaluation.
- [Logic Model Development Guide \(PDF\)](#) (71 pp, 280K) — W.K. Kellogg Foundation published this guide to provide basic information on logic models as well as instructions and exercise on how to create them.
- [Practical Evaluation for Public Managers: Getting the Information You Need \(PDF\)](#) (49 pp, 188K) — The Department of Health and Human Services created this document to discuss why program evaluations should be conducted, good techniques for evaluating programs, and how to incorporate evaluation into managing programs.
- [Program Measurement and Evaluation: Definitions and Relationships \(PDF\)](#) (2 pp, 86K) — The Government Accountability Office has provided this document to describe and discuss the relationship between evaluation and performance measurement.

- [Taking Stock: A Practical Guide to Evaluating Your Own Programs](#) — Horizon Research Inc. has created this guide to evaluating programs and includes everything from getting started to reporting your results.
- [Understanding Evaluation: The Way to Better Prevention Programs](#) — This report, prepared by the U.S. Department of Education, explains the basics of evaluation, especially in regards to education, and then uses a fictitious case study to further illustrate the steps of an evaluation.
- [User-Friendly Handbook for Project Evaluation \(PDF\)](#) (92 pp, 379K) — The National Science Foundation has developed this report to detail how to do an evaluation.

Tools

The following tools can be used to conduct evaluations.

EPA Tools

- [Program Evaluation Glossary](#) — Glossary that reflects the meaning of the evaluation terminology from both the social scientist's and the practitioner's point of view
- [Online Logic Model Training](#) — An online course with interactive features that provides users with the basic steps for creating a logic model
- [Guidelines for Measuring EPA Partnership Programs \(PDF\)](#) (49 pp, 1.1MB) — Guidelines for developing and using performance measures for EPA Partnership programs
- [Guidelines for Evaluating EPA Partnership Programs \(PDF\)](#) (68 pp, 1.7MB) — Guidelines for conducting evaluations of EPA Partnership programs
- [Guidelines for Formatting Evaluation Reports and Presentations \(PDF\)](#) (14 pp, 269K) — Guidelines to writing reports and presentations
- [Worksheet for Planning, Conducting and Managing Program Evaluations \(PDF\)](#) (37 pp, 201K) — Worksheet that helps evaluators focus and conduct an evaluation as well as present the results
- [ICRs for Program Evaluation](#) — This set of documents describes the guidelines that EPA must follow when collecting information from the public. These guidelines are used to minimize the burden that the government places on the public.

Tools from Outside EPA

- [Logic Model Resources](#) — University of Wisconsin provides a self-study online module for developing a logic model.

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